Exceptionality in Optimality Theory and final consonants in French

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0. Introduction

My goal in this paper is to provide a principled treatment for a few schizophrenic French words exhibiting an apparent confusion regarding the status of their final consonants. By 'principled treatment', I mean a grammar-internal explanation as to why these words behave the way they do, and why their exceptional behavior is basically the only one possible. The words in question include, with variations due to dialectal differences, the numbers given in (1a), and perhaps also the words in (1b).

(1) a. cinq "five", six "six", sept "seven", huit "eight", dix "ten"
b. plus "more", tous "all"

Set C in (2) illustrates with huit the split personality of these words (In the examples in (2), relevant syllable boundaries are marked by a period; relevant consonants are underlined when pronounced and angle-bracketed when silent). In liaison contexts, the final /t/ of huit behaves like a standard latent consonant, showing up before a vowel, but not before a consonant, in parallel with Set A words like petit and in contrast with Set B words like net. Elsewhere, the final /t/ of huit behaves like a standard fixed consonant, in parallel with Set B words like net and in contrast with Set A words like petit.

(2)	liaison contexts before V	 before C	elsewhere (pause)	type of final-C behavior
A. petit "small"	peti.t V	peti<t> . CV	peti<t> //	latent: (t)
B. net "clear"	net.V ~ ne.t V	net . CV	net //	fixed: t
C. huit "eight"	hui.t V	hui<t> . CV	huit //	mixed: (t)-t

Previous treatments have handled these mixed-behavior words in complete disconnection from the rest of the grammar, viewing them as arbitrary exceptions to phonological rules (Schane 1968, Tranel 1976, Clements & Keyser 1983) or as requiring special allomorphy rules (Klausenburger 1984, Picard 1984). Such analyses make it a complete accident that these words behave in the way they do. For any such individual word, a rule feature change or a context switch among allomorphy statements should result in another possible French dialect. My contention is that the exceptions here are in fact narrowly constrained, and that the grammar should characterize the space in which they may be encountered. In my proposal, I do recognize that Set C words are exceptional, but I reduce their idiosyncrasy to a principled minimum which I call 'free suppletion'. Instead of crowding the lexical entries of these words with ad hoc annotations such as rule features or statements of distribution, I strictly confine their exceptionality to their phonological representations. Thus, whereas the words in Sets A and B each have a single type of phonological representation, Set C words have two, one analogous to Set A words and one analogous to Set B words. The crucial distinction between my free suppletion analysis and traditional suppletive analyses is that traditional suppletive analyses must stipulate for each individual lexical entry the surface distribution of their phonological representations; by contrast, in my proposal, this distribution is derived from otherwise needed principles of grammar. The behavior of words like huit is thus explained by the phonology of the language rather than taken to be random.

The broad theoretical interest of this proposal is twofold. First, it represents a case study in taming exceptions in phonological theory by confining the locus of exceptionality to phonological representations, instead of allowing various and sundry statements of a non-linguistic nature in lexical entries (see Inkelas & Cho 1993). This perspective serves to both constrain and explain possible exceptional behavior. Secondly, the analysis can be viewed as an argument in favor of constraint-based theories, since treatments by rule features and traditional suppletion are characteristic of rule-based frameworks, whereas my proposal is made possible by the tools of Optimality Theory (Prince & Smolensky 1993; McCarthy & Prince 1993a,b).

1. Proposal within Optimality Theory

I now turn to the proposed analysis, beginning with a rapid outline (Section 1.1) and a few underlying assumptions (Sections 1.2-1.4).

1.1. Analysis outline

As shown in (3), Set C words like huit are endowed with two phonological representations, one analogous to that of petit, with a latent final consonant (cf. /peti(t)/), the other analogous to that of net, with a fixed final consonant (cf. /net/).

(3) huit A. /hui(t)/ (cf. petit /peti(t)/)
B. /huit/ (cf. net /net/)

Given that the sole oddity about huit lies in its having these two phonological representations, the task at hand is to have the Constraint Hierarchy select the correct allomorphs in the correct contexts. With respect to final consonants, the list of candidates for huit in each of the three contexts in (2) will include the types for both petit and net. In effect, as tabulated in (4), the optimal candidates for petit + V and petit + CV in liaison contexts must respectively best the optimal candidates for net + V and net + CV (since huit + V and huit

+ CV behave like petit + V and petit + CV, rather than like net + V and net + CV); conversely, at the pause, the optimal candidate for net must best the optimal candidate for petit (since huit behaves like net rather than like petit).

(4)

a. huit + V	optimal candidate for petit + V > optimal candidate for net + V
b. huit + CV	optimal candidate for petit + CV > optimal candidate for net + CV
c. huit //	optimal candidate for net // > optimal candidate for petit //

1.2. Assumptions about the representation of final consonants in French

As shown in (5), I assume that latent consonants in French are floating with respect to the skeletal tier, i.e. they lack an x-slot (Tranel 1992, 1993, 1995).

(5) a. floating consonant (t) b. fixed consonant /t/

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                                   x
                                   |
              t                    t
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However, my account of Set C words is independent of the particular floating approach adopted to characterize latent consonants (cf. Scullen 1993, Zoll 1994).

1.3. Constraints

I list in (6) the universal constraints of relevance to the analysis, with brief definitions and some additional comments when warranted.

(6) List of constraints

(i) Syllable structure constraints:

¥ ONSET: Syllables must have an onset

¥ NOCODA: Syllables must not have a coda

(ii) Faithfulness constraints:

¥ PARSE-X: Underlying x-slots must be parsed (i.e. don't delete an x-slot). Since Skeletal Theory imposes an x-slot for parsing a segment into a syllable, this constraint states in effect that a fixed segment must be parsed if no PARSE-X violation is to be incurred.

¥ M-X: Every x-slot belongs to a morpheme (i.e. don't insert an x-slot). This constraint corresponds to Tranel's 1994 AIF (Avoid Integrating Floaters). It is equivalent to FILL-X (see McCarthy 1993). M-X is violated whenever a floating consonant is phonetically realized.

¥ PARSE-RT: Underlying Root Nodes must be parsed (i.e. don't delete a root node). A phonetically unrealized floating consonant creates a PARSE-RT violation.

¥ M-RT: Every Root Node belongs to a morpheme (i.e. don't insert a root node). This constraint is equivalent to FILL-RT (see McCarthy

1993). The insertion of a consonant creates an M-RT violation (as well as an M-X violation).

(iii) Alignment constraints:

¥ ALIGN-X: ALIGN (Stem-x, R, PrWd, R), i.e. a morpheme's final x-slot must be prosodically right-aligned (On the role of left-alignment in liaison, see Tranel 1994). This constraint adapts ALIGN-RIGHT: ALIGN (Stem, R, PrWd, R) (see McCarthy & Prince 1993a, 1994) to take into account the defective structure of floating elements. Morphemes with floating elements on their edges inherently possess tier-dependent alignment properties. For example, in French, a stem with a final floating consonant can never be concurrently right-aligned on the x-tier and on the Root Node tier. In the analysis developed in this paper, the crucial alignment for ALIGN-RIGHT appears to lie with the higher structure (the x-tier). I therefore use the label ALIGN-X, rather than ALIGN-RIGHT, as a mnemonic device to signal that right-alignment is crucially measured with respect to x-slots rather than Root Nodes (it is conceivable that ALIGN-RIGHT forms a family of perhaps universally ranked constraints: ALIGN-X È ALIGN-ROOT È ALIGN-FEATURES).

¥ ALIGN-PP: ALIGN (PP, R, Stem, R), i.e. the end of a phonological phrase must coincide with the end of a morphological word. This constraint fulfills the prediction of Generalized Alignment Theory on the existence of constraints of the form ALIGN (PCat, GCat) (McCarthy & Prince 1993a). Morphemes with a final floating consonant can never satisfy this constraint, since they will always lack a qualifying final element (an underlying x-slot in their long form and an underlying Root Node in their short form).

1.4. Principles regarding constraint ranking

The analysis also relies on two general principles concerning constraint ranking. The first one is the Ranking Cluster Condition given in (7).

(7) Ranking Cluster Condition (RCC):
Two variably ranked constraints each take on the other's relative rankings with respect to other constraints.

In other words, the RCC states that variably ranked constraints behave as a cluster in terms of constraint ranking. The situation is diagrammed in (8).

(8) Given A ~ B (i.e. A and B variably ranked) and X È A È Y,
then X È B È Y, i.e. X È A ~ B È Y

Although there is no inherent necessity for this condition, it reduces the complexity of the learner's task in constructing its language's Constraint Hierarchy and constitutes the natural null hypothesis.

The other general principle I propose, which is stated in (9), provides what I believe to be the logical unmarked status for constraints from the standpoint of learnability, namely that they be dominating.

(9) Constraint Hierarchies Acquisition Principle (CHAP):
A constraint is dominating unless there is positive evidence to the contrary.

In other words, under CHAP, the task of a child in learning a given Constraint Hierarchy is basically to demote constraints when there is positive evidence to do so (cf. Tesar & Smolensky 1993). This proposed acquisition process is diagrammed in (10), with successive demotions of {E, F, G} in (10b), {D} in (10c), and {F,G} in (10d).

(10) a. Initial state {A, B, C, D, E, F, G ...}
b. ÑÝ {A, B, C, D ...} È {E, F, G}
c. ÑÝ {A, B, C ...} È {D} È {E, F, G}
d. ÑÝ {A, B, C ...} È {D} È {E} È {F, G}
e. ÑÝ final Constraint Hierarchy

1.5. Analysis

1.5.1. The central role of ONSET

I take ONSET to be at the heart of the phenomenon of liaison (Tranel 1994, Zoll 1994). Thus, the pronunciation of the floating /t/ in petit + V is motivated by ONSET satisfaction. Its absence from the pronunciation results in a disallowed violation of ONSET. ONSET is satisfied inherently in petit + CV and vacuously in petit at the pause, so the pronunciation of the floating /t/ is unnecessary there. As illustrated in (11), ONSET cannot however be satisfied by failing to parse a fixed segment, as in (11b), or by inserting a consonant wholesale, as in (11c) (T represents the default consonant).

(11) a. joli Ž cureuil 'pretty squirrel'
b. *jol Ž cureuil, *joli cureuil
c. *joli TŽ cureuil

As shown by the tableaux in (13) and (14), I attribute the hiatus in joli Ž cureuil to the partial Constraint Hierarchy in (12). (In these and other tableaux, an apple in the status column signals an optimal candidate, a dagger a non-optimal candidate. A check mark indicates constraint satisfaction, an asterisk a constraint violation. An asterisk followed by an exclamation mark indicates a fatal violation).

(12) *PARSE-X, M-RT È ONSET*

Tableau (13): PARSE-X È ONSET

joli + Ž cureuil	Status	PARSE-X	ONSET
a. joli . Ž cureuil	ð	Ã	*
b. jo . lŽ cureuil		*!	Ã

c. joli . cureuil		*!	Ã

Tableau (14): M-RT È ONSET

joli + Ž cureuil	Status	M-RT	ONSET
a. joli . Ž cureuil	ð	Ã	*
b. joli.TŽ cureuil		*!	Ã

In (13), candidate (a) wins over candidates (b) and (c) because it parses its fixed segments /i/ and /e/ (no violations of PARSE-X). In (14), candidate (a) wins over candidate (b) because it does not incorporate melodic material not present in the input (no violations of M-RT).

1.5.2. Prevocalic liaison context

I now consider the cases from (2) in prevocalic liaison context. (15b) lists the additional partial Constraint Hierarchy needed to account for the facts.

(15) a. PARSE-RT, M-RT È ONSET
b. *ONSET ~ ALIGN-X È M-X*

(In stating Constraint Hierarchies, I adopt the following typographical conventions: constraints separated by commas are unranked with respect to each other and constraints separated by a tilde are variably ranked. In tableaux, unranked constraints are separated by a dotted line, ranked constraints by a continuous line, and variably ranked constraints are identified by both the tilde and a dotted line.)

I will show that (15b) is motivated by the regular cases of net + V and petit + V, together with the RCC given in (7), and that (15) as a whole is sufficient to account for the case of huit + V.

Tableaux (16) and (17) present the two possible outputs for net + V and are intended to demonstrate that ONSET and ALIGN-X are variably ranked.

Tableau (16): ONSET È ALIGN-X

net + V	Status	PARSE-X	M-RT	ONSET	ALIGN-X	M-X
a. ne . tV	ð	Ã	Ã	Ã	*	Ã
b. net . V		Ã	Ã	*!	Ã	Ã

Tableau (17): ALIGN-X È ONSET

net + V	Status	PARSE-X	M-RT	ALIGN-X	ONSET	M-X
a. ne . tV		Ã	Ã	*!	Ã	Ã
b. net . V	ð	Ã	Ã	Ã	*	Ã

In both tableaux, candidate (a) violates ALIGN-X because of the misalignment between the morphology and the prosody. Candidate (a) is optimal in Tableau (16) where ONSET È ALIGN-X and candidate (b) is optimal in Tableau (17) where ALIGN-X È ONSET. Since both outputs are grammatical, I assume that the two constraints are variably ranked: ONSET ~ ALIGN-X.

Tableau (18) presents the most serious contenders for <u>petit + V</u>.

Tableau (18): ONSET È M-X + other rankings by transitivity and the RCC

peti(t) + V	Status	PARSE-X	M-RT	ONSET	~ ALIGN-X	M-X
a. peti . (t)V	ð	Ã	Ã	Ã	Ã	*
b. peti(t). V		Ã	Ã	*!	*!	*
c. peti . V		Ã	Ã	*!	Ã	Ã

I introduce here another typographical convention: in inputs, floating consonants are parenthesized, while in candidates, a parenthesized consonant corresponds to a realized floating consonant, i.e. a consonant endowed with a morphologically orphaned x-slot that causes an M-X violation, as in candidates (a) and (b) in (18).

A comparison of candidates (a) and (c) in Tableau (18) shows that ONSET È M-X. Note that these two candidates satisfy ALIGN-X because the lexically final x-slot in the morpheme <u>petit</u>, the one on the vowel /i/, is prosodically final. By contrast, candidate (b) violates ALIGN-X because the same lexically final x-slot is not prosodically final: the x-slot on the following /t/ intervenes and is not part of the morpheme <u>petit</u>.

The relative ranking of ALIGN-X with PARSE X, M-RT, and M-X is determined by the RCC: since ALIGN-X is variably ranked with ONSET, the RCC bunches ALIGN-X together with ONSET. By transitivity, the partial Constraint Hierarchy in (19) ultimately obtains.

(19) PARSE-X, M-RT È ONSET ~ ALIGN-X È M-X

Tableau (20) presents the top candidates for <u>huit + V</u>.

Tableau (20): ONSET ~ ALIGN-X È M-X (independently motivated ranking)

A. hui(t) + V B. huit + V	Status	PARSE-X	M-RT	ONSET	~ ALIGN-X	M-X
a. hui . (t)V	ð	Ã	Ã	Ã	Ã	*
b. hui . tV		Ã	Ã	Ã	*!	Ã
c. huit . V		Ã	Ã	*!	Ã	Ã

Candidate (a) originates from the input in (20)A, the one with a floating final consonant, while candidates (b) and (c) originate from the input in (20)B, the one with a fixed final consonant. Structurally speaking, candidate (a) in (20) corresponds to the grammatical candidate (a) in Tableau (18) for <u>petit + V</u>, and candidates (b) and (c) in (20) correspond to the grammatical candidates (a) in Tableau (16) and (b) in Tableau (17) for <u>net + V</u>. The partial Constraint Hierarchy established so far suffices to select the correct output for <u>huit</u>.

Specifically, in Tableau (20), the ranking ONSET ~ ALIGN-X È M-X selects candidate (a) over candidates (b) and (c).

The claim in Tableau (20) is that the winning candidate is the one originating from the input with a floating consonant. But candidates (a) and (b) are actually phonetically identical. The question therefore is how do we know that candidate (b) is not the actual output. Two reasons can be given to confirm the choice made by the Constraint Hierarchy. The first reason is purely theoretical and depends on the validity of the RCC. In order for candidate (b) in Tableau (20) to best candidate (a), ALIGN-X would have to be ranked below M-X; by the RCC, it would follow that M-X È ONSET, since ONSET ~ ALIGN-X; but this ranking is incompatible with /peti(t) + V/, which requires that ONSET È M-X (see Tableau (18) above). The alternative therefore would be to have ONSET È M-X È ALIGN-X; but such ranking would be in violation of the RCC, since ONSET ~ ALIGN-X. The second reason is empirical and comes from the behavior of words like dix, for which as shown in (21a), [z] rather than [s] occurs in liaison.

(21) a. dix + V [di.zV] (e.g. dix Ž cureuils 'ten squirrels')
b. dix + CV [di.CV] (e.g. dix cours 'ten courses')
c. dix // [dis] (e.g. ils sont dix 'there are ten of them')

(22) shows the two lexical phonological representations required for dix.

(22) dix A. /di(z)/
B. /dis/

The relevant tableau for (21a) appears in (23).

Tableau (23)

A. di(z)+V B. dis + V	Status	PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X
a. di . (z)V	ð	Ã	Ã	Ã	Ã	*
b. di . sV		Ã	Ã	Ã	*!	Ã
c. dis . V		Ã	Ã	*!	Ã	Ã

As was the case in Tableau (20), the Constraint Hierarchy selects candidate (a) over candidate (b), but this time, one can empirically confirm the accuracy of this choice, since candidate (a), which is the grammatical output with /z/ in onset position, is phonetically different than candidate (b), which is an ungrammatical output with /s/ in onset position.

The important outcome of the analysis so far is that the behavior of Set C words in prevocalic liaison context is independently governed by the Constraint Hierarchy (assisted by the RCC). In other words, the occurrence of one lexical allomorph instead of the other is truly explained by the phonology of the language, rather than being arbitrarily stipulated.

1.5.3. Preconsonantal liaison context

I consider next the cases from (2) in preconsonantal liaison context. (24b) lists the additional partial Constraint Hierarchies needed to account for the facts.

(24) a. PARSE-X, M-RT È ONSET ~ ALIGN-X È M-X
b. *PARSE-X, M-RT È M-X ~ NOCODA*
ONSET ~ ALIGN-X È PARSE-RT
M-X ~ NOCODA È PARSE-RT

I will show that, with one exception, (24b) is motivated by the regular cases of petit + CV and net + CV, together with the RCC given in (7). The crucial exception concerns the relative ranking of NOCODA and PARSE-RT (I assume that M-X and NOCODA are grouped in a cluster by the RCC, because they can be shown to be variably ranked; see Tranel 1994 on interconsonantal schwa deletion). As we will see, the ranking NOCODA È PARSE-RT must be stipulated in order to account for huit + CV, a context where the final /t/ is not pronounced in standard French. But this stipulation corresponds exactly to a case of dialectal variation: in other dialects, the /t/ is pronounced in such a context, requiring the reverse ranking PARSE-RT È NOCODA.

Tableau (25) presents the two most serious contenders for net + CV.

Tableau (25): PARSE-X, M-RT È NOCODA + other rankings by transitivity and the RCC

net + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		PARSE-RT
a. ne . CV		*!	*!	Ã	*	Ã	Ã	*
b. net . CV	ð	Ã	Ã	Ã	Ã	Ã	*	Ã

(25) shows directly that PARSE-X or M-RT È NOCODA. Transitivity and the RCC yield the partial Constraint Hierarchy in (26).

(26) PARSE-X, M-RT È ONSET ~ ALIGN-X È M-X ~ NOCODA

Tableau (27) presents the two most serious contenders for petit + CV.

Tableau (27): ALIGN-X È PARSE-RT + other rankings by transitivity and the RCC

peti(t) + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		PARSE-RT
a. peti . CV	ð	Ã	Ã	Ã	Ã	Ã	Ã	*
b. peti(t) . CV		Ã	Ã	Ã	*!	Ã	*	Ã

(27) shows directly that ALIGN-X È PARSE-RT (candidate (a) violates PARSE-RT because it does not parse the floating consonant of the input). Transitivity and the RCC yield the partial Constraint Hierarchy in (28).

(28) PARSE-X, M-RT È ONSET ~ ALIGN-X È PARSE-RT

There is however no information so far regarding the ranking of PARSE-RT with respect to the cluster M-X ~ NOCODA.

Tableau (29) presents the two best candidates available for huit + CV and shows that NOCODA È PARSE-RT.

Tableau (29): NOCODA È PARSE-RT (standard French)

A. hui(t) + CV B. huit + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		PARSE-RT
a. hui . CV	ð	Ã	Ã	Ã	Ã	Ã	Ã	*
b. huit . CV		Ã	Ã	Ã	Ã	Ã	*!	Ã

On line (a) in (29) is the best candidate for the input with a floating final consonant (cf. line (a) /peti.CV/ in Tableau (27) above). On line (b) is the best candidate for the input with a fixed final consonant (cf. line (b) /net.CV/ in Tableau (25) above). The two candidates in (29) tie on all relevant constraints, except NOCODA and PARSE-RT. Since NOCODA makes the correct selection and PARSE-RT the wrong one, the conclusion is that NOCODA È PARSE-RT.

We now see that in the case of huit in preconsonantal liaison context, the correct outcome cannot really be established on the basis of independently ranked constraints (as opposed to the already examined case of huit in prevocalic liaison context). Contrary to our initial hypothesis, the ranking NOCODA È PARSE-RT must be stipulated specifically on the basis of this case. It is therefore especially important to investigate the empirical consequence of the reverse ranking PARSE-RT È NOCODA (i.e. PARSE-RT È M-X ~ NOCODA, given the RCC).

As diagrammed in Tableau (30), if PARSE-RT È NOCODA, then candidate (b), /huit.CV/, bests candidate (a), /hui.CV/.

Tableau (30): PARSE-RT È NOCODA

A. hui(t) + CV B. huit + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		PARSE-RT	M-X ~ NOCODA	
a. hui . CV		Ã	Ã	Ã	Ã	*!	Ã	Ã
b. huit . CV	ð	Ã	Ã	Ã	Ã	Ã	Ã	*

Interestingly, this outcome is actually broadly attested in another French dialect, Montreal French, as well as sporadically in standard French (see Tranel 1976; 1981a,b) (in Montreal French, high vowels are lax in closed syllables, a detail that can be ignored here).

A full examination of the 'Montreal' system in (31), compared with the 'standard' system in (21) above, can provide a useful picture of the overall situation.

(31) a. dix + V [di.zV] (e.g. dix Ž cureuils 'ten squirrels')
b. dix + CV [dis.CV] (e.g. dix cours 'ten courses')
c. dix // [dis] (e.g. ils sont dix 'there are ten of them')

(31a) corresponds to the selection made by Tableau (32). The relative ranking of PARSE-RT with the M-X ~ NOCODA cluster is of no consequence here, since the higher-ranked ONSET ~ ALIGN-X cluster provides the correctly fatal violations (cf. Tableau (23) above).

Tableau (32)

A. di(z) + V B. dis + V		PARSE-X	M-RT	ONSET ~ ALIGN-X		PARSE-RT	M-X ~ NOCODA	
a. di . (z)V	ð	Ã	Ã	Ã	Ã	Ã	*	Ã
b. di . sV		Ã	Ã	Ã	*!	Ã	Ã	Ã
c. dis . V		Ã	Ã	*!	Ã	Ã	Ã	*

(31b) corresponds to the selection made by Tableau (33). By comparing (33) with Tableau (34) (see also Tableaux (30) vs. (29) above), we see that this time the relative ranking of PARSE-RT with the M-X ~ NOCODA cluster does make a difference. Because the higher-ranked constraints in the ONSET ~ ALIGN-X cluster are satisfied by the two candidates, the selection process is passed on to the lower constraints PARSE-RT and NOCODA, with their relative ranking determining an attested cross-dialectal variation.

Tableau (33): PARSE-RT È NOCODA (Montreal French)

A. di(z) + CV B. dis + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		PARSE-RT	M-X ~ NOCODA	
a. di . CV		Ã	Ã	Ã	Ã	*!	Ã	Ã
b. dis . CV	ð	Ã	Ã	Ã	Ã	Ã	Ã	*

Tableau (34): NOCODA È PARSE-RT (standard French)

A. di(z) + CV B. dis + CV		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		PARSE-RT
a. di . CV	ð	Ã	Ã	Ã	Ã	Ã	Ã	*
b. dis . CV		Ã	Ã	Ã	Ã	Ã	*!	Ã

The data from words like dix point out a basic descriptive flaw in previous accounts. Thus, taking huit as an illustration, it has often been assumed that the utterance of these words with a final consonant pronounced even in preconsonantal liaison context was simply due to the generalization of the allomorph with a final fixed consonant (the prepausal allomorph). The system shown in (31) reveals that this conclusion is not necessarily correct, for if it were, then we should invariably get /dis/ in prevocalic liaison context as well, rather than /diz/. I believe that pronunciations with /dis/ throughout are attested in Montreal French, but they constitute a third dialectal type, where the prepausal allomorph has truly generalized. In sum, there are three types of dialectal variation involved here, which are summarized in (35).

(35)

	liaison context		elsewhere
	before vowel	before consonant	(e.g. at the pause)
Dialect A	diz	di	dis
Dialect B	diz	dis	dis
Dialect C	dis	dis	dis

The difference between Dialects A and B has to do with the relative ranking of NOCODA and PARSE-RT (cf. Tableaux (29) vs. (30) and (34) vs. (33) above). The difference between Dialects A and B on the one hand and Dialect C on the other hand has to do with free suppletion; free suppletion is alive in Dialects A and B, but not in Dialect C. Thus, dix has two phonological representations in Dialects A and B (as discussed above, one with a final floating consonant, i.e. /di(z)/, the other with a final fixed consonant, i.e. /dis/), but a single phonological representation in Dialect C (where it is simply a Set B word, with a final fixed consonant: /dis/).

The Constraint Hierarchy established so far for standard French is summarized in (36).

(36) PARSE-X, M-RT È ONSET ~ ALIGN-X
È M-X ~ NOCODA È PARSE-RT

The behavior of Set C words in preconsonantal liaison context requires one specific constraint ranking not independently motivated by the behavior of words in Sets A and B, but a variation in this very ranking (PARSE-RT È NOCODA instead of NOCODA È PARSE-RT) corresponds to an attested dialectal variation.

1.5.4. At the pause

Finally, I turn to the cases from (2) at the pause. (37b) gives the additional partial Constraint Hierarchy needed to account for the facts.

(37) a. PARSE-X, M-RT È ONSET ~ ALIGN-X
È M-X ~ NOCODA È PARSE-RT
b. *ALIGN-PP È NOCODA*

In the case of petit and net, we will see that the previously established partial Constraint Hierarchy repeated in (37a) suffices to select the grammatical candidates as optimal. For the case of huit, (37b) is necessary, but I will show that this ranking is independently provided by CHAP, the principle given earlier in (9) proposing that a constraint is dominating unless there is positive evidence to the contrary.

Tableau (38) presents the two most serious contenders for petit //.

Tableau (38): ALIGN-X È PARSE-RT

peti(t) //		PARSE-X	M-RT	ONSET ~ ALIGN-X		ALIGN-PP	M-X ~ NOCODA		PARSE-RT
a. peti //	ð	Ã	Ã	Ã	Ã	*	Ã	Ã	*
b. peti(t) //		Ã	Ã	Ã	*!	*	*	*	Ã

The already established ranking ALIGN-X È PARSE-RT selects the correct candidate. Note that ALIGN-PP is irrelevant in the selection process, since both candidates violate ALIGN-PP (the reason for this is that a Phonological Phrase can never properly right-align with a morpheme lexically ending in a floating consonant, because the short form of such a morpheme lacks its final lexical Root Node and the long form includes an extraneous x-slot to support the floating consonant).

Tableau (39) presents the two most serious candidates for net //.

Tableau (39): PARSE-X È NOCODA

net //		PARSE-X	M-RT	ONSET ~ ALIGN-X		ALIGN-PP	M-X ~ NOCODA		PARSE-RT
a. ne //		*!	Ã	Ã	*	*	Ã	Ã	*
b. net //	ð	Ã	Ã	Ã	Ã	Ã	Ã	*	Ã

Here also, the already established ranking PARSE-X È NOCODA selects the correct candidate. Note that ALIGN-PP could be placed at the top of the Constraint Hierarchy and deliver the same result.

Tableau (40) presents the case of huit // and shows that it is necessary to have ALIGN-PP È NOCODA.

Tableau (40): ALIGN-PP È NOCODA

A. hui(t) // B. huit //		PARSE-X	M-RT	ONSET ~ ALIGN-X		ALIGN-PP	M-X ~ NOCODA		PARSE-RT
a. hui //		Ã	Ã	Ã	Ã	*!	Ã	Ã	*
b. huit //	ð	Ã	Ã	Ã	Ã	Ã	Ã	*	Ã

As already noted in passing, the introduction of ALIGN-PP into the Constraint Hierarchy has no incidence on the cases of /peti(t)/ and /net/ at the pause (see Tableaux (38) and (39) above). There are intrinsic reasons for this neutrality. First, as mentioned above, ALIGN-PP is always necessarily violated by morphemes ending in a floating consonant, since these morphemes can never by construction be fully prosodically right-aligned; ALIGN-PP can therefore make no decision in such cases. Secondly, for morphemes ending in a fixed consonant, ALIGN-PP is always necessarily of the same opinion as PARSE-X, since a violation of PARSE-X is automatically de-aligning; PARSE-X and ALIGN-PP will therefore always make the same crucial decision in such cases. Overall, then, ALIGN-PP could with no ill-effects join PARSE-X and M-RT in a group of dominating constraints in our Constraint Hierarchy. To summarize, ALIGN-PP has no apparent upper bound, but it has a lower bound: it must dominate NOCODA.

Since we specifically need ALIGN-PP È NOCODA to account for the behavior of huit at the pause, we must closely examine the empirical consequence of the hypothetical re-ranking NOCODA È ALIGN-PP, in order to test whether the relative ranking of these two constraints could be justified by dialectal variations (cf. above the case of NOCODA and PARSE-RT in preconsonantal liaison context). As already established (see Tableaux (38) and (39) above), the re-ranking has no repercussion for /peti(t)/ and /net/, but huit is obviously affected: as shown in Tableau (41), candidate (a) (/hui/) becomes better than candidate (b) (/huit/).

Tableau (41): hypothetical re-ranking NOCODA È ALIGN-PP

A. hui(t) // B. huit //		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		ALIGN-PP	PARSE-RT
a. hui //	ð	Ã	Ã	Ã	Ã	Ã	Ã	*	*
b. huit //		Ã	Ã	Ã	Ã	Ã	*!	Ã	Ã

However, if the situation in Tableau (41) obtained, then huit would behave exactly like /peti(t)/; there would therefore be no reason in the first place to have two lexical phonological representations for huit; a single one with a floating consonant would be sufficient and called for: /hui(t)/. Consequently, the competition would be as depicted in Tableau (42) rather than Tableau (41), with the ranking of ALIGN-PP irrelevant and the outcome correctly decided by ALIGN-X (as in Tableau (38) for petit // above).

Tableau (42): hypothetical re-ranking NOCODA È ALIGN-PP (continued)

hui(t) //		PARSE-X	M-RT	ONSET ~ ALIGN-X		M-X ~ NOCODA		ALIGN-PP	PARSE-RT
a. hui //		Ã	Ã	Ã	Ã	Ã	Ã	*	*
b. hui(t) //	ð	Ã	Ã	Ã	*!	*	*	*	Ã

The difference between Tableaux (41) and (42) is that, because of the changes in inputs, the faithful candidate (b) in Tableau (41) has been replaced by a non-faithful candidate in Tableau (42), one with an 'inserted' x-slot over the floating /t/ resulting in a fatal ALIGN-X violation.

The required ranking ALIGN-PP È NOCODA in Tableau (40) would thus seem inextricably tied to the existence of suppletion in the lexicon. If there is no independent evidence in the language for this particular ranking, then our model exhibits an awkward circularity: the ranking ALIGN-PP È NOCODA can only exist if there is suppletion and suppletion can only be present in the lexicon if ALIGN-PP È NOCODA. This situation seriously compromises the claim that the behavior of Set C words is independently governed by the Constraint Hierarchy. CHAP, however, provides an interesting solution to this problem. As already observed, ALIGN-PP has apparently no upper bound in the Constraint Hierarchy for French, i.e. there is no evidence that it must be dominated. Given CHAP, ALIGN-PP should thus automatically stay among the highest ranking constraints in the language, and it will therefore be ranked higher than NOCODA, since independent evidence exists within French that NOCODA is a demoted constraint (see Tableau (25) above showing that PARSE-X, M-RT È NOCODA). In this light, the ranking ALIGN-PP È NOCODA and the existence of free suppletion can be viewed as independent factors, a welcome result for the account of Set C words at the pause.

2. Conclusion

The behavior of Set C words can be handled through free suppletion, with the Constraint Hierarchy supplying an independent selection process for the distribution of their multiple phonological representations. The behavior of Set C words can thus meaningfully be said to conform to the spirit of the language's grammar, which accounts for their limited departure from the behavior of regular items like the words in Sets A and B. In order to attain our goal fully, two satellite hypotheses have been proposed which deserve further scrutiny: one is that variably ranked constraints are ranked alike with respect to other constraints (the RCC) and the other is that a constraint is assumed by the language learner to be dominating unless there is positive evidence for its demotion (CHAP). Finally, if on the right track, this explanatory and restrictive approach to exceptions provides strong support for Optimality Theory, since its implementation crucially relies on OT's core concept of universal but violable constraint.

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