

Prosody Can Outrank Syntax

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1. Introduction

I am certainly not the first to claim that prosody can influence syntax – not even within these proceedings (see Anttila's paper). The literature on the focus-syntax interface (Zubizarreta 1998; Szendrői 2001; Samek-Lodovici 2005) and the literature on clitics (Zec and Inkelas 1990; Inkelas and Zec 1995) are the most common places to find such claims. But I may be alone in claiming that constraints governing prosody at such a low level as syllable structure can influence syntactic form. Specifically, I argue that in a non-standard variety of French, the constraint ONSET outranks a syntactic economy constraint (which I will call *PROJECT), influencing the selection of a syntactic structure from a set of semantically equivalent competitors.

The analysis demands a framework in which syntax, morphology and phonology are evaluated in parallel. I do so within Optimality Theory (Prince and Smolensky 1993/2004), and label the more specific framework Strongly Parallel Optimality Theory (SPOT). SPOT has some precedents in the literature. For instance, Samek-Lodovici (2005) presents an OT analysis in which intonational constraints partially determine the linearization of syntactic constituents. Similarly, Golston (1995) argues that phonology can decide between equivalent syntactic structures, although he goes on to claim that all syntactic constraints universally outrank all phonological constraints, a claim which I explicitly deny here.

2. Portmanteaux and coordinate structures

The crucial pieces of evidence for the proposed SPOT analysis come from a non-standard variety of French, which is distinguished from Standard French principally by greater tolerance of prepositions taking wide scope over coordinate structures. Standard French is known to be fairly resolute in requiring prepositions to take narrow scope in coordinate structures (Miller 1992). The non-standard data were first noticed by Miller (1992), and are also discussed in Abeillé et al. (2003) and Tseng (2005). This variety of French is not known to be associated with a particular geographical region, but is probably associated with particular social strata.

In French, portmanteaux – lexical items which fuse the features of two syntactic nodes, in this case preposition and determiner nodes – require less hierarchical structure than their periphrastic equivalents, and thus portmanteaux typically block periphrastics. This I take as evidence for a syntactic economy constraint. In non-standard French, vowel-final portmanteaux are blocked in pre-vocalic context, suggesting that ONSET plays a role in the choice of syntactic structure – in this case, a less economical structure.

2.1. Portmanteaux

In all dialects of French, the prepositions DE 'of, from' and À¹ 'to' fuse with the determiners LE (masc. sing. def.) and LES (pl. def.), yielding the four portmanteaux *du*, *au*, *des* and *aux*. In general,

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¹ Capital letters refer to the associated syntactic feature bundle; phonological realization varies.

these portmanteaux block their periphrastic equivalents (cf. Kiparsky 2005).

- (1) a. (du/ *de le) père
(of.the(m)/ *of the(m)) father
'of the father'
- b. (au/ *à le) père
(to.the(m)/ *to the(m)) father
'to the father'
- c. (des/ *de les) États-Unis
(of.the(pl)/ *of the(pl)) States-United
'of the United States'
- d. (aux/ *à les) États-Unis
(to.the(pl)/ *to the(pl)) States-United
'to the United States'

However, portmanteaux are systematically unavailable for \dot{A} + LE and DE + LE when a vowel follows. In this case, the periphrastic construction is selected, with the determiner appearing in reduced form.

- (2) a. (*au/ à l') autre garçon
(to.the/ to the) other boy
'to the other boy'
- b. (*du/ de l') autre garçon
(of.the/ of the) other boy
'of the other boy'

At this point, one might be tempted to claim that the choice between *à l'* vs. *au* is simply phonologically conditioned allomorphy (see, for instance, Carstairs 1989, Mascaró 1996, Ito and Mester 2004), with the syntax remaining constant. But as I will show in the next subsection, coordinate structure facts suggest otherwise: *à l'* is associated with two syntactic nodes, while *au* is associated with one.

Portmanteaux are also unavailable for any preposition-determiner pair when a quantifier takes scope over the DP.

- (3) a. à tous les garçons
to all the(pl) boys
'to all the boys'
- b. (*aux tous/*tous aux) garçons
(*to.the(pl) all/*all to.the(pl)) boys

2.2. Coordinate structures

As mentioned, the variety of French in question allows prepositions to take wide scope over coordinate structures. This is subject to the semantic restriction that the conjuncts must be interpretable as a collective or unit. As shown in the following examples, adapted from Tseng (2005:8), \dot{A} can take wide scope (4a), but is blocked from doing so if any conjunct is headed by LE or LES (4b). In this case, portmanteaux are selected; and, most importantly, wide scope is impossible (4c). The portmanteau is obligatory and every conjunct must have its own preposition (4d). The facts are comparable for DE.

- (4) a. à la mère et la fille
to the mother and the daughter
'to the mother and the daughter'

- b. *à le père et la mère
to the father and the mother
- c. *au père et la mère
to.the father and the mother
- d. au père et à la mère
to.the father and to the mother
'to the father and the mother'

Strikingly, the preposition and determiner need not be adjacent for a portmanteau to block its periphrastic counterpart, as shown in (5a) and (5b).

- (5) a. à la fille et (au/*le) fils
to the daughter and (to.the/*the) son
'to the daughter and the son'
- b. à la fille et (aux/*les) fils
to the daughter and (to.the(pl)/*the(pl)) sons
'to the daughter and the sons'

When portmanteaux are blocked, such as when *LE* precedes a vowel, or when a quantifier intervenes between the preposition and determiner, wide scope is again possible.

- (6) a. à la fille et l'autre fils
to the daughter and the'other son
'to the daughter and the other son'
- b. à la fille et tous les fils
to the daughter and all the(pl) sons
'to the daughter and all the sons'

By comparison of examples like (6a) and (5a), we know that the competition between *à l'* and *au* is not simple phonologically conditioned allomorphy. If this were so, and the syntax of each form was identical, then (6a) should be ungrammatical, replaced in all instances by (7).

- (7) à la fille et à l'autre fils
to the daughter and to the'other son
'to the daughter and the other son'

In other words, *à l'* and *au* are not morphosyntactic equivalents, because the former but not the latter is compatible with wide scope of the preposition.

According to Miller (1992), who first noticed that wide scope was possible for some speakers under the conditions just outlined,

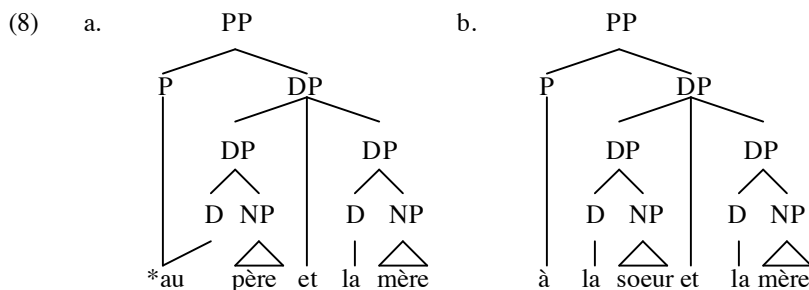
“there is much variation between informers as to the strength of this effect (my own intuitions on this have completely disappeared). I have chosen to ignore this problem in this study, for lack of any solid data. Note that if a substantive difference could be found between cases [where wide scope is acceptable and those in which it is not – DT] such data would be problematic for any modular theory of grammar, since the possibility of not repeating the preposition would depend not only on whether it would contract with the following article, but also on whether it would have contracted with the article of the second conjunct if it had been repeated (i.e. *a priori* a transderivational constraint).” (Miller 1992:161-162)

Because some speakers do accept *À* and *DE* with wide scope as fully grammatical (see the Appendix for Google attestations), the analysis suggested by Miller is in fact motivated, although it is not necessarily transderivational. In SPOT, where there are no derivations in the intended sense,

transderivationality is not a worry.

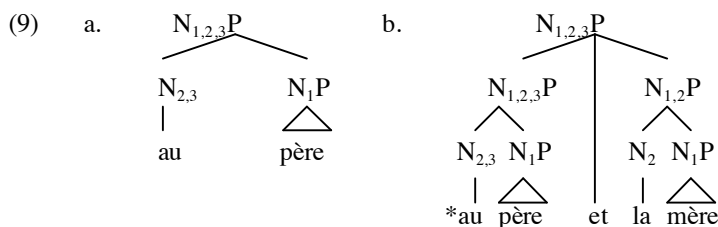
3. Syntactic assumptions

The coordinate structure facts suggest a structural analysis in which portmanteaux represent syntactic constituents, contra numerous lexical sharing analyses that have been proposed, such as Zwicky (1987), Sadock (1991), and Stump (2001). The structure in (8a) is representative of these lexical sharing analyses, and is inconsistent with desired predictions, for while (8a) is ungrammatical, it is syntactically parallel to the grammatical (8b). If the two strings were truly syntactically parallel, then there would be no explanation for the difference in grammaticality.



However, if each portmanteau is a syntactic constituent, corresponding to a single syntactic node rather than two, then (8a) is obviously not a possible structure.

The structures I assume follow the theory of extended maximal projections (Grimshaw 1997, 2005). Each portmanteau has the category N (as an extension of the nominal extended projection). What differentiates them from simpler lexical items is that they unite two F-values, i.e., values that determine the syntactic scope of a given head within an extended projection. If we say that determiners would normally have an F-value of 2, and prepositions an F-value of 3, then French portmanteaux have F-values 2 and 3 combined. Here I label the portmanteau node $N_{2,3}$, but for the sake of exposition I will generally just label it P, which reflects its highest F-value.



The structure in (9b) is ungrammatical simply because it conjoins phrases of different F-values – essentially, a prepositional phrase and a determiner phrase, which is not possible in any language, to the best of my knowledge.

A possible alternative structural analysis should be mentioned: Miller (1992) assumes that in Standard French \grave{A} and DE are not associated with syntactic nodes of their own, but are morphological case affixes realized on the first constituent of an NP; determiners, likewise, are only prefixes. If adopted for the variety of French under consideration here, this morphological approach would make it difficult to explain the difference between coordinate structures with only feminine articles, where wide scope is possible, and those with masculine or plural definite articles, where wide scope is not possible. The morphology would have to arbitrarily allow for optionality between \grave{A} + *la* and *la* in the expression of \grave{A} + LA, but allow only *au* in the expression of \grave{A} + LE. My analysis, I hope, provides a deeper explanation of this dichotomy.

4. Strongly Parallel OT analysis

4.1. Syntax: anti-projection

Under my syntactic assumptions, portmanteaux require less hierarchical structure and are therefore syntactically more economical. This is the motivation for the constraint *PROJECT. EXPRESSIVITY is essentially a faithfulness constraint, requiring that any semantic input have a morphosyntactic reflex. The definition is left intentionally vague by Kiparsky, and I follow him in this, since a more formal definition would rest on a very precise characterization of the units of semantic input.

- (10) a. *PROJECT: For every lexical head, count a violation for every node projected above it.
 b. EXPRESSIVITY (Kiparsky 2005): “Express meaning”.

When a portmanteau is available, it is selected, because it corresponds to a more economical structure. In (11), this portmanteau form is selected by the constraint *PROJECT, since there is only one extra node projected above the NP, rather than two.

- (11) *du gibet* 'from the gallows'

	From(the(gallows))	EXPRESS	*PROJECT
☞ a.	[_{PP} du [_{NP} gibet]]		*(NP)*(PP)
b.	[_{PP} de [_{DP} le [_{NP} gibet]]]		*(NP)*(DP)*(PP)!

When a portmanteau is unavailable, the more economical structure is also unavailable, as shown in (12).

- (12) *de la prison* 'from the prison'

	From(the(prison))	EXPRESS	*PROJECT
a.	[_{DP} la [_{NP} prison]]	*!	**
☞ b.	[_{PP} de [_{DP} la [_{NP} prison]]]		***

In coordinate structures, the portmanteau is also correctly selected.

- (13) *de la prison et du gibet* 'from the prison and the gallows'

	From(the(prison) \wedge the(gallows))	EXPRESS	*PROJECT
a.	[_{PP} de [_{DP} [_{DP} la [_{NP} prison]] et [_{DP} le [_{NP} gibet]]]]		****,****!
☞ b.	[_{PP} [_{PP} de [_{DP} la [_{NP} prison]]] et [_{PP} du [_{NP} gibet]]]		****,***

In (13a), there are four nodes projected above each lexical head, *prison* and *gibet*. Notice that two of these nodes – the PP node and the highest DP node – are counted twice. Structure (b) may only be said to be more economical than (a) in the sense that the lexical head *gibet* is dominated by less hierarchical structure in (b) than in (a): the word count and syntactic node count are identical, hence the need for counting nodes separately for each lexical head.

4.2. Prosody-syntax interaction

The crucial facts requiring strong parallelism involve the selection of the periphrastic, and hence the more elaborate syntactic structure, in pre-vocalic context. The periphrastic sequences *de l'* and *à l'* are selected pre-vocalically in order to satisfy ONSET, and at the expense of *PROJECT. Here I assume LE to have a pre-vocalic allomorph, /l/, but a vowel deletion analysis would also be possible. Candidate (15b) fails by virtue of an ONSET violation, despite better satisfying *PROJECT. There is also

an argument that DEP-C, another phonological constraint, must outrank *PROJECT. While epenthetic [t] is available as a hiatus resolver in certain morphological contexts in French, it is not invoked here as a means of satisfying ONSET and thereby saving the portmanteau structure (as in candidate (15c)).

- (14) a. ONSET: Count a violation for any syllable which has no onset.
 b. DEP-C (McCarthy and Prince 1995): Count a violation for any epenthesized consonant.

(15) *de l'asile* 'from the asylum'

	From(the(asylum))	DEP-C	ONSET	*PROJECT
☞	a. [_{PP} de [_{DP} l' [_{NP} asile]]] /dœ/ /l/ /azil/ → [.dœ.la.zil.]			***
	b. [_{PP} du [_{NP} asile]] /dy/ /azil/ → [.dy.a.zil.]		*!	**
	c. [_{PP} du [_{NP} asile]] /dy/ /azil/ → [.dy.ta.zil.]	*!		**

Because this constraint interaction requires evaluation of structures in different modules, it cannot be made to work in a theory where syntax precedes or is otherwise blind to phonology.

5. Serial OT

For example, a serial version of OT fails to produce the correct results. Here, constraints governing syntactic well-formedness do not interact with constraints on phonology. Again, the choice between *du* and *de l'* is not simply a matter of phonologically conditioned allomorphy, since the competing forms are associated with different syntactic structures.

(16) Serial OT, step 1: Semantics → Morphosyntax

	From(the(asylum))	*PROJECT
☞	a. [_{PP} du [_{NP} asile]] /dy/ /azil/	**
☞	b. [_{PP} de [_{DP} l' [_{NP} asile]]] /dœ/ /l/ /azil/	***!

(17) Serial OT, step 2: Phonology

	/dy/ /azil/	ONSET	DEP-C	IDENT-V
☞	a. [.dœ.la.zil.]		*	*!
☞	b. [.dy.ta.zil.]		*	
	c. [.dy.a.zil.]	*!		

Since the syntactic evaluation will settle for whichever lexical items afford the greatest structural economy, it wrongly decides on the structure associated with the portmanteau before ONSET is ever given a chance to evaluate the competitors.

6. Alignment analysis

Another competing analysis, that of Grimshaw (2001, 2005), involves an edge-alignment view of syntactic economy, rather than a hierarchical measure of economy. Structures with more constituents violate more alignment constraints, such as COMPLEFT and HEADLEFT.

- (18) a. ALIGN(COMP, L, XP, L) (COMPLEFT)
Count a violation for any complement of X not aligned with the left edge of XP.
b. ALIGN(HEAD, L, XP, L) (HEADLEFT)
Count a violation for any head X not aligned with the left edge of XP.

In the case of simple prepositional phrases, COMPLEFT does select the correct candidate, since the portmanteau structure allows for fewer complements to be out of alignment.

- (19) *du gibet* 'from the gallows'

	From(the(gallows))	EXPRESS	COMPLEFT
☞ a.	[_{PP} du [_{NP} gibet]]		*(NP)
b.	[_{PP} de [_{DP} le [_{NP} gibet]]]		*(NP)*(DP)!

Unfortunately, this ranking isn't decisive in coordinate structures (even in Standard French), since the same number of complements is out of alignment regardless of whether the portmanteau or the periphrastic is selected. In each of the candidates below, three complements are out of alignment within their containing XPs, and thus neither structure is preferred over the other.

- (20) *de la prison et du gibet* 'from the prison and the gallows'

	From(the(prison) \wedge the(gallows))	EXPRESS	COMPLEFT
a.	[_{PP} de [_{DP1} [_{DP2} la [_{NP1} prison]]] et [_{DP3} le [_{NP2} gibet]]]]		*(NP1)*(NP2) *(DP1)
☞ b.	[_{PP1} [_{PP2} de [_{DP} la [_{NP1} prison]]] et [_{PP3} du [_{NP2} gibet]]]]		*(NP1)*(NP2) *(DP)

Because of this indecision, the edge-alignment analysis must be rejected in favor of a hierarchical measure of syntactic economy, such as that rendered by *PROJECT.

7. Conclusion

I have shown that a non-standard variety of French motivates strongly parallel constraint evaluation: the prosodic constraint ONSET outranks *PROJECT, which militates for syntactic economy. A serial analysis in OT has been shown unable to account for the facts. Likewise, an edge-alignment-as-economy analysis (Grimshaw 2001) has been shown unable to account for portmanteau selection in coordinate structures, either for the variety of French discussed here or for Standard French.

The theory proposed here, SPOT, is at least indirectly opposed to the well-known Principle of Phonology-Free Syntax (Zwicky and Pullum 1986; Pullum and Zwicky 1988), which states that syntactic rules may not make reference to phonological information. Since I do believe this principle to be *mostly* correct, it will be necessary to somehow exclude those phonology-syntax interactions which are truly impossible without simply stipulating fixed rankings or derivational modularity. I suggest that this exclusion should be based on the perceptual costliness of competing repairs (following Steriade 2002): phonological repairs are likely to be less costly than syntactic ones in most cases. For example, A'-movement in satisfaction of ONSET, which presumably never happens, should have a huge perceptual cost relative to consonant epenthesis or vowel deletion. The question then is how to formalize this selection of repairs, since Steriade's P-Map imposes a fixed ranking on faithfulness constraints, whereas A'-movement is not necessarily subject to faithfulness constraints. I leave it to future work.

8. Appendix: Google attestations

Translations refer only to the italicized portions. Italics are mine.

- “La présente Convention s'applique aux politiques et aux mesures adoptées par les Parties relatives à *la protection et la promotion* [‘to the protection and the promotion’] de la diversité des expressions culturelles”
– <http://unesdoc.unesco.org/images/0014/001429/142919f.pdf>
- “En Angleterre, le contenu des émissions diffusées à *la télévision et la radio* [‘on the television and the radio’] est contrôlé par le Broadcasting Standard Commission (BSC)”
– <http://www.culture.gouv.fr/culture/actualites/communiqu/aillagon/rapportBK.pdf>
- “La Plateforme estime nécessaire de soutenir et de prolonger en France l'action de mouvements de la société civile palestinienne et de la société civile israélienne en faveur des droits des Palestiniens, *de la justice et la paix* [‘of justice and peace’] ainsi que le dialogue entre eux”
– <http://www.france-palestine.org/article6115.html>
- “Tableau d'affichage *de la musique ancienne et la musique baroque* [‘of ancient music and baroque music’]”
– <http://www.goldbergweb.com/fr/magazine/30930.php>
- “...*de la rénovation urbaine et la promotion du travail manuel* [‘of urban renovation and the promotion of manual labor’]”
– <http://www.iledefrance.fr/les-dossiers/logement/des-logements-etudiants-tout-confort/>
- “Les cultivateurs *de la côte équatorienne et la forêt* [‘of the equatorial coast and the forest’]”
– <http://www.tela-botanica.org/actu/article1299.html>
- “La Fable *de la Cigale et la Fourmi* [‘of the grasshopper and the ant’]”
– <http://www.lafontaine.net/lesFables/afficheFable.php?id=1>
- “ceci permettra aux conquérants des cîmes d'observer la biodiversité et la variété *de la faune et la flore* [‘of the fauna and the flora’] afin d'en révéler tous les secrets”
– http://www.temoignages.re/article.php3?id_article=21867

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