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The Principle of Phonology-Free Syntax: four apparent counterexamples in French[1]

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The Principle of Phonology-Free Syntax (PPFS) is a proposed universal principle of grammar that prohibits reference to phonological information in syntactic rules or constraints. Although many linguists have noted phenomena that appear to them to be in conflict with it, the appearances are misleading in all cases we have examined. This paper scrutinizes four instructive cases in French that appear to falsify the PPFS. Section 1 deals with the alleged relevance of syllable count to the description of attributive adjective placement; section 2 addresses the validity of a rule mentioning consonantality in stating the agreement rule for adverbial *tout*; section 3 turns to the issue of preposition choice (e.g. *en* vs. *au*) with geographical proper names; and section 4 takes a look at a purported case of phonological reference in stating the rule for ellipsis of a clitic pronoun and an auxiliary in a coordinate structure. In each case we bring independent evidence to bear on the problem in order to show that the analyses employing phonology-sensitive syntactic statements are in error and the prediction of the PPFS is confirmed.

[1] The authors' names are listed alphabetically; equal shares of credit and responsibility attach to each. French grammaticality judgments where sources are not cited are those of the first-named author, a native speaker. English translations from French sources are also his. We thank Bernard Fradin, Aaron Halpern, Jean-Paul Lang, Marc Plénat, and two anonymous referees for their comments, and we acknowledge the following sources of support: Miller's worked on this paper while he was a Visiting Scholar at Stanford University, where the facilities of the Center for the Study of Language and Information proved most useful (special thanks to Trudy Vizmanos); Pullum's work on the paper began while he was a Fellow at the Center for Advanced Study in the Behavioral Sciences during 1990–1991 and completed during a sabbatical leave provided by the University of California, Santa Cruz in Fall 1995; and Zwicky's work was completed with the assistance of a Distinguished University Professorship grant from The Ohio State University. An earlier discussion of some of this material was previously published in French (Miller, Pullum & Zwicky 1992); this paper supersedes that one, including additional material and incorporating some substantive revisions.

1. Introduction

The project of studying grammar with a view to discovering and explicating universal laws of linguistic structure that commenced (or recommenced) in the 1960s is rightly regarded as having been a fruitful one in terms of finding out about what natural languages are like. But the number of exactly framed and readily comprehensible universal laws that linguists have discovered is in fact not very large. It is quite difficult, in fact, to find an uncontestedly true and genuinely universal law of grammatical structure that has obvious empirical content, in the sense that anyone with a basic understanding of linguistic concepts can see clearly what a language would have to be like in order to refute it.

There is at least one such law, however. Its content is summarizable in terms so elementary that any linguistics student can understand what it claims. Hardly any technical prerequisites are called for, and none that are theory-internal. We regard it as the best and clearest example of a universal of linguistic structure that has been uncovered by modern linguistics. Yet it receives relatively little discussion in current work (perhaps precisely because of its non-theory-internal character; it interacts little with the topics on which current theoretical rivalries center). The law that we are referring to is known as the Principle of Phonology-Free Syntax (henceforth PPFS; see Zwicky 1969, Zwicky & Pullum 1986). It can be stated simply, as in (1).

(1) In the grammar of a natural language, rules of syntax make no reference to phonology.

It is also true, we believe, that syntactic rules do not refer to purely morphological information. This could be referred to as the Principle of Morphology-Free Syntax (PMFS), though it is closely related to what is already known in the literature as Strict Lexicalism. In this paper we will be concerned with the PPFS rather than the PMFS, but in fact we subscribe to both. Note also that when we deal with French traditional grammars we are often looking at rules stated in terms of orthography. We will assume throughout that this is just a surrogate for the phonology, which will be our exclusive concern. However, little would change if we focussed on written French and took orthographic forms as our most superficial representations. Our topic would be the Principle of Orthography-Free Syntax, the point being that syntactic rules in a natural language cannot refer to orthographic facts either.

The inverse of (1) is not a universal law. There is an interesting asymmetry in the relations between phonological and grammatical structure. It is widely agreed among linguists that the rules of pronunciation can refer to grammatical structure. No one, for example, would attempt to state the rules for the strong and weak pronunciations of English auxiliaries, as studied by Selkirk (1972), without making reference to syntax. It is only reference in the

other direction that is banned. This contributes an element of difficulty to the enterprise of showing in detail that the PPFS is true. We have to be able to form a good enough independent idea of the nature of linguistic rules to be able to tell the difference between phonology and morphology being conditioned by syntax (which happens in perhaps every language), syntactic rules being conditioned by phonology or morphology (which is logically possible but which we claim never happens), and facts about grammatical usage being statistically associated with facts about pronunciation in various ways (which certainly occurs, but is generally irrelevant to the PPFS, because grammatical theory does not aim to predict statistical facts about usage).

Taken at face value, (1) may look not so much a striking truth about language but something more like a patent falsehood. It seems flatly incompatible with the contents of various traditional grammars of well-studied languages. And indeed, dozens of linguists have published claims to the effect that in one way or another the PPFS is false.[2] But it is easy to be misled on this score. Many cases of alleged counterevidence to the PPFS (ultimately all, we would claim) melt away under careful analysis. In this paper we illustrate this by considering four such cases that have the property of being clear, interesting and expositorily useful analytical problems drawn from an extremely well-known European language, modern French. Our purpose is to make more vivid the content of the PPFS by exhibiting these simple apparent counterexamples to it, and to clarify the relation between linguistic theory and descriptive practice by showing that in these cases first appearances (and standard reference grammars and descriptive and theoretical works on French) are wrong and the PPFS is right. The cases we consider are those listed in (2).

(2) (a) Standard grammars of French often say (or clearly imply) that the phonological form of an adjective influences its position relative to a noun that it attributively modifies. Roughly, they say that short adjectives can precede the noun but long adjectives must follow. The PPFS says that this is not a possible rule for French or any language.

(b) Many standard grammars of French say (or clearly imply) that the grammatical agreement shown by the adverb *tout* depends in

[2] More than twenty years ago, this journal published an article by Robert Hetzron (1972) arguing against the PPFS. Hetzron discussed half a dozen complex and interesting phenomena that deserve attention, but close study of the phenomena he discusses reveals that none of them involve evidence of a rule of syntax making reference to phonological information. It is significant that Hetzron stated no syntactic rules in his paper. It is clear to us why: in no case was there a syntactic rule he COULD propose – no syntactic rule that would yield the right results provided only it could get access to some specified piece of phonological information. It would take a great deal of space to examine each of the phenomena Hetzron discusses, and we cannot do that here; but see Zwicky & Pullum (1983) for a detailed examination of one of them.

some respects on the phonology of the following word (specifically, whether the following word begins with a consonant or a vowel is relevant). The PPFS states that no syntactic agreement rule can mention consonantality.

(c) Grammars of French often say (or clearly imply) that certain sequences where the preposition *à* precedes a definite article must be avoided in favour of the one-word 'portmanteau' form *en* in just those cases where the use of *à* would be realized by a two-formative sequence (e.g. *en Iran* 'in Iran' rather than **à l'Iran*, but *au Japon* (= *à le Japon*) 'in Japan', lit. 'in/at the Japan'). Because this generalization refers to phonological shape, the PPFS will not allow any syntactic rule to state it.

(d) Kayne (1975) claims that a syntactic rule of Auxiliary Deletion must be sensitive to whether there is any phonological difference between the two case forms of a clitic pronoun in order to be able to apply appropriately. The PPFS says this cannot be the case.

Take the first of these as an introductory example (we will deal with it in more detail in section 2). It is quite clear that the PPFS would be counterexemplified if we found that some language had the following rule for the syntax of nouns modified by attributive adjectives:

(3) If the adjective has fewer syllables than the noun, the adjective is placed to the left of the noun; if the adjective has more syllables than the noun, the adjective is placed to the right of the noun.

Even from the informal statement given in (1), it is clear that the PPFS would not survive the discovery of a language in which (3) figured in the syntax. The reason we do not propose to give up the PPFS in the face of this example is that we can argue independently that French does not have a syntactic rule anything like (3).

In the following sections, we consider all four of the problems in French grammar listed in (2), and we show that when the full range of facts is considered and confusions are cleared away, the correct descriptions do not conflict with the PPFS, which is to that extent confirmed as a strict universal law of linguistic structure for natural languages.

2. The position of the attributive adjective

Our purpose here is not to present a thorough discussion of one of the most studied topics in French grammar (see, among others, Reiner 1968, Waugh 1977, Forsgren 1978, Wilmet 1980, 1981, 1986). Here we will be examining the role of just one of the factors often invoked to explain the ordering of the attributive adjective: the respective number of syllables of the adjective and of the noun it modifies.

The following quotes from Grevisse (1980, §§846–847) illustrate in a representative way the type of 'rule' which concerns us here. (Note that we are omitting other statements by Grevisse which do not concern phonological properties of the adjective and the noun.)

(4) On place avant le nom
  (a) En général, l'adjectif monosyllabique qualifiant un nom polysyllabique: *Un bel appartement* …
  ['One puts before the noun (a) in general, a monosyllabic adjective modifying a polysyllabic noun: *A beautiful apartment* …']

(5) On place après le nom
  (a) En général, l'adjectif polysyllabique qualifiant un nom monosyllabique: *Un champ stérile* …
  ['One puts after the noun (a) in general, a polysyllabic adjective modifying a monosyllabic noun: *A sterile field* …']

The apparent violation of the PPFS is clear: (4) and (5) claim that the possibility of a syntactic construction (preposed or postposed attributive adjective) depends on a phonological property of the words in question, namely, the number of syllables.

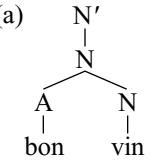
One can find principles similar to (4) and (5) in most prescriptive grammars. And grammars designed for foreigners, even serious university-oriented grammars, tend to make this type of constraint even stronger. Thus, Judge & Healey (1983: 277) strengthen (5), claiming that a polysyllabic adjective MUST follow a monosyllabic noun.[3]

For concreteness at this point, let us consider some specific syntactic structures for nouns in construction with attributive adjectives. Sadler & Arnold (1994) argue convincingly for a clear difference between the prenominal and postnominal cases in English. They show that attempts to analyse the English prenominal attributive adjective in terms of an adjective phrase in construction with a nominal constituent all founder on a number of puzzling facts (notably the failure of those adjective phrases to permit complements: *an inexplicably angry man* but **an angry about something man*), and analyse it instead as a 'small construction' composed of adjoined lexical (zero bar-level) categories. Postnominal adjective phrases in English, on the other hand (and they do occur: *a person happy with her job*, *anyone unpleasant*, *the person responsible*), they analyse in terms of phrasal modification. It is interesting that much of their argumentation seems fully applicable to French. For concreteness, we assume here that their structures are correct (though nothing in our argument will depend on that assumption).

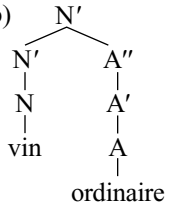
[3] Judge & Healey (1983: 277) also claim that 'if both the noun and the adjective are monosyllabic, the adjective will be postposed … if it ends in a consonant'. This rule, which also violates the PPFS, has no empirical grounds to our knowledge.

In (6) we give the structures that would be assigned under Sadler & Arnold's account to the phrases *bon vin* 'good wine' and *vin ordinaire* 'table wine' (see also the structures proposed in Miller (1992: chapter 6)).

(6) (a)



(b)



It is instructive to consider for a moment what position we would be in if (4) and (5) WERE grammatical constraints in French. How would the fact that *bon* and *vin* happen to be one syllable long be made manifest to the rule that combines A and N to form the upper N constituent in (6a)? How would the polysyllabicity of the adjective *ordinaire* be made available at the level of the A″ phrase node that combines with the left-daughter N′ in (6b)? What mechanism could be proposed that would make the information concerning the syllabic structure of the adjective and of the noun available at such phrase nodes in order to be able to express the relevant ordering constraints? Even assuming current transformational theories, how would a movement transformation subsumed under 'Move α', where α is a variable over syntactic categories, accomplish the syllable count that is (allegedly) needed? It is important to raise such questions, because in those works (such as Hetzron 1972) that suggest phonological considerations can be relevant to syntax, details of this sort are virtually never faced and rules are left unstated. It is not as if abandoning the PPFS would carry with it some instant solution to our descriptive problems here. If we wanted to use the polysyllabicity of *ordinaire* in specifying that the right construction type for that adjective is the one in (6b), it is quite unclear how we would do it.

A straightforward attempt might be based on a postulated feature [±POST], assigned to adjectives lexically (and always to polysyllabic ones) and passed up (by stipulation) through the head nodes of an X-bar projection. Determination of the value of the feature [POST] for a given adjective by reference to the number of syllables in its phonological representation would constitute a lexically mediated violation of the spirit of the PPFS that would permit the statement of many analyses that intuitively the PPFS should block. We are inclined to the view that such rules, even as lexical redundancy rules, do not occur in natural languages: syntactic properties are never assigned on the basis of rules citing phonological properties of words. We therefore expect to find that there is no support for the suggestion that French has the rule now under consideration. And indeed, it becomes clear immediately that if (4) and (5) are to be taken

seriously, this lexical rule solution would not even work; both (4) and (5) require access not only to the syllabic structure of the adjective but also to that of the noun.

Fortunately, the problems that would beset someone seeking to build (4) and (5) into a generative grammar of French need not detain us further. A closer look at the syntax of French attributive adjectives reveals that the PPFS can be fully trusted as a guide to syntactic rule systems; (4) and (5) are not rules of French. They are at best statements of statistical tendencies observed in French usage. (This is clearly what Grevisse intends them as; note his use of 'en général'.) For instance, an NP such as *une inimaginable joie* 'an unimaginable joy', with a 5-syllable adjective preceding a monosyllabic noun, is perfectly acceptable; and so is *de la nitroglycérine pure* 'pure nitroglycerine', with a monosyllabic adjective following a 5-syllable noun. (The opposite orderings are also acceptable in each case.)

Glatigny (1967) has published a very useful study of the ordering of attributive adjectives and nouns in Nerval's *Aurelia*. He presents statistical data which are directly relevant for evaluating the status of (4) and (5). Glatigny first considers the case of the ordering preposed adjective followed by a noun and shows that in 56.5% of the cases, the noun has more syllables than the adjective, whereas in 10.3% of the cases, the opposite situation holds (the remaining 33.2% are cases where the number of syllables in the two words is identical). When the cases of NPs with preposed and postposed attributive adjectives are combined, one finds a very similar result. In 58% of the cases, the words are placed in the order of increasing syllabic weight, whereas in 10% of the cases, there is a decreasing syllabic weight ordering.

We believe the correct way to interpret Glatigny's data is as follows. As shown by the extensive studies of French attributive adjective placement mentioned at the beginning of this section, there are a variety of possibly conflicting lexical, semantic and discourse factors that influence the position of the adjective in the NP. Some of these factors correlate statistically with syllable weight. For instance, high frequency of occurrence, which correlates positively with prenominal position, also strongly correlates with monosyllabicity. Others are not correlated with syllable weight. This point is well illustrated by the results of the corpus study reported in Wilmet (1980), based on an exhaustive analysis of 4,000 pages of contemporary French literature. For the six most frequent adjectives in Wilmet's corpus (*grand* 'big', *petit* 'small', *bon* 'good', *jeune* 'young', *beau* 'pretty' and *vieux* 'old'), only 3.3% of the attributive occurrences are postnominal (out of a total of 4,209 occurrences). All of these are monosyllabic, with the exception of the optionally bisyllabic *petit* [p(ə)ti]. But for the seventh most frequent adjective, *blanc* 'white', also monosyllabic, the percentage of postnominal attributive occurrences is 97.4%! And similarly, the monosyllabic adjectives *bas* 'low', *droit* 'straight', *sec* 'dry', *pur* 'pure', and *dur* 'hard' occur postnominally in

80.4% of their combined 488 attributive occurrences. There simply is no syntactic rule placing attributive adjectives according to their syllable count, even though when other factors make no strong claim on a particular order one finds a tendency to sequence things with increasing syllable weight, keeping longer terms for later, perhaps for reasons associated with processing.

We agree, then, with Wilmet (1981: 50), who claims that 'nulle contrainte ne défend *a priori* d'antéposer une épithète qualificative' ('no constraint a priori forbids preposing an attributive adjective'). Leaving aside the non-phonological factors that influence adjective order, which are not relevant for the PPFS, we simply note that although speakers or writers may often choose a given order on the basis of the fact that it sounds better than the alternative (whether it is for rhythmic reasons, or to avoid a clumsy consonant cluster), such choices do not imply the existence of a grammatical constraint. The typical effect of a skilled writer or speaker's choices in a certain context may be to create a tendency for words with heavier syllabic weight to follow words of lighter weight, but that does not mean that there is a grammatical constraint enforcing this ordering. Stylistic considerations of this sort are irrelevant to the syntactic component. Indeed, they have to be. It is only where the grammar leaves options open that stylistic choices are available to the language user.

Thus our first example of an apparent counterexample to the PPFS is one where the alleged rule turns out to be nonexistent; the phenomena represent a usage tendency that the grammar does not mandate. We take it to be uncontroversial that there are such tendencies. Grammars describe the expression types of a language, including those that are semantically equivalent alternatives of other expression types; they do not also provide an account of why, or how often, one alternative is to be chosen over another. Such an account belongs to another domain of the study of language, possibly the one that Culy (1996: 112) refers to as 'a separate component regulating the use of language – a sort of user's manual'.

As a rough sketch of the relevant syntax in this case we could say that French has a prenominal adjectival modification construction and a postnominal one; the postnominal one is the default (and is effectively required for adjectives that are unassimilated loanwords, e.g. *un mec hip* 'a hip guy', **un hip mec*); most adjectives can participate in both constructions; and various lexical, semantic, and discourse properties are relevant to determining which adjectives participate in which. But there is nothing phonological in the lexical facts of relevance, and above all, nothing suggesting that either the prenominal or the postnominal construction has to be given a syntactic definition that mentions phonological information.

3. AGREEMENT OF FRENCH ADVERBIAL *TOUT*

The adverb *tout* 'all' displays agreement in certain contexts. Standard grammars of French state the rule for the agreement of 'adverbial' *tout* in a way that clearly violates the PPFS. Consider the following representative version of the rule from Grevisse (1980: 502).

(7) *Tout*, adverbe, varie en genre et en nombre devant un mot féminin commençant par une consonne ou un *h* aspiré
['Adverbial *tout* agrees in gender and in number if it precedes a feminine word which begins with a consonant or nonsilent *h*']

Such a rule violates the PPFS because it makes the application of a syntactic rule of agreement depend on the phonological form of an adjacent word.

It is important that Grevisse should not in general be dismissed as a prescriptivist writing edicts about a nonexistent language. Grevisse offers a painstaking and careful descriptive account of a specific sociolect of French, with detailed and scrupulous notes on where the usage of the variety under description diverges from traditional prescriptive rules. However, the rule quoted in (7) is rightly categorized as prescriptive. We will argue not only that it is not a rule of French syntax, but in fact that it could not be a rule in ANY natural language. Here the PPFS exposes a prescriptive rule as not just wrong – a rule characterizing some older or more prestigious variety of the language than the one currently spoken – but actually impossible in principle.

First let us review the relevant data, which we present in prescriptive orthographic form with phonetic transcriptions of the actual pronunciation of *tout* and the following word.

(8)	(a)	un	couloir	tout	petit	[tup(ə)ti]
		a-MASC	corridor	all	little-MASC	
		'a very/completely small corridor'				
	(b)	un couloir tout étroit				[tutetrwa]
		'a very/completely narrow corridor'				
(9)	(a)	des couloirs tout petits				[tup(ə)ti]
		'very/completely narrow corridors'				
	(b)	des couloirs tout étroits				[tutetrwa]
(10)	(a)	une	galerie	toute	petite	[tut(ə)p(ə)tit(ə)]
		a-FEM	gallery	all-FEM	little-FEM	
	(b)	une galerie tout étroite				[tutetrwat(ə)]
(11)	(a)	des galeries toutes petites				[tut(ə)p(ə)tit(ə)]
		'very/completely narrow galleries'				
	(b)	des galeries tout étroites				[tutetrwat(ə)]

The motivations for the prescriptive rule are clear. It is evident for all speakers of French that adverbial *tout*, modifying an adjective, shows some

variation in agreement (that is, it appears either as [tu] or as [tut]). It should be noted in this respect that the native speaker intuitions concerning the pronunciation are absolutely clear.[4] The fact that adjectives and determiners agree both in number and in gender leads to a strongly rooted assumption that if something agrees with the head noun in an NP, then it agrees both in gender and in number. If one simply said that this is the case for adverbial *tout*, one would obtain the variants (9′) and (11′) below for the above examples. The problem is that given the basic rules of the orthography-phonology mapping in French, such spellings would predict that the pronunciations with liaison, as indicated for (9′b) and (11′b), should be acceptable (the monosyllabic modifying adverb + adjective context is an obligatory liaison context according to Delattre (1966: 46); Encrevé (1988: 47–48) classifies this context as an optional liaison context; compare *très amical* [trɛzamikal]; in any case liaison should clearly be possible in this context, and preferred in 'conversation soignée'). Such pronunciations are, however, completely impossible.[5]

(9′)	(a)	des couloirs tous petits	[tup(ə)ti]
	(b)	des couloirs tous étroits	*[tuzetrwa]
(11′)	(a)	des galeries toutes petites	[tut(ə)p(ə)tit(ə)]
	(b)	des galeries toutes étroites	*[tut(ə)zetrwat(ə)]

It is obviously in order to avoid this misleading orthography that the prescriptive rule – the rule with the reference to consonant initials that violates the PPFS – was set up (see Martinon (1927: 177–179), where the same conclusion is drawn).

However, there is a much simpler solution to this problem. It involves dropping a tacit assumption: that if something in an NP agrees with the head it must agree both in number and gender. If we postulate that adverbial *tout* agrees only in gender but not in number, irrespective of the phonology of the following adjective, we obtain the following series of orthographic forms (the corresponding pronunciations are also shown):

(8″)	(a)	un couloir tout petit 'a very/completely small corridor'	[tup(ə)ti]
	(b)	un couloir tout étroit 'a very/completely narrow corridor'	[tutetrwa]

[4] On the other hand, the prescriptive spelling rule is notoriously hard to learn for French speakers, witness the number of exercises concerning it in French school grammar courses, and the number of 'mistakes' found even in literary texts (see Damourette & Pichon, vol. 7: 55 (§2839) for a selection of examples).

[5] Note that the pronunciation given for (11′b) is acceptable in French, but with a different interpretation, which is irrelevant here: it can be interpreted as an example where *tout* is a quantifier and not an adjective modifier. In that case, *tous* is always plural and no longer means *completely*, but *all/each*. One thus obtains the meaning *galleries which are each narrow*.

(9″)	(a)	des couloirs tout petits	[tup(ə)ti]
	(b)	des couloirs tout étroits	[tutetrwa]
(10″)	(a)	une galerie toute petite	[tut(ə)p(ə)tit(ə)]
	(b)	une galerie toute étroite	[tutetrwat(ə)]
(11″)	(a)	des galeries toute petites	[tut(ə)p(ə)tit(ə)]
	(b)	des galeries toute étroites	[tutetrwat(ə)]

These orthographic representations correspond to the correct phonological forms under the standard rules of the orthography-phonology mapping. And the syntax that predicts them does not violate the principle of phonology free syntax.

Remarkably, this solution is two hundred and fifty years old. It was proposed by an 18th century grammarian, the Abbé Girard (see Girard 1747: 398 ff.) and subsequently adopted by Damourette & Pichon (1911–1952; vol. 7: §§2384 ff.), who give credit to Girard. However, it has otherwise been completely ignored by descriptive and prescriptive grammarians of French. For example, it was ignored in the 'arrêté Haby', a ministerial decree of 1976. (French, unlike English, is subject to governmental edicts concerning the rules for its official use.) The purpose of this decree was to simplify a number of cases where prescriptive French orthography is especially counterintuitive. However, the proposals made with respect to the agreement of adverbial *tout* clearly go in the wrong direction. Adverbial *tout* is discussed in section 28c of the *arrêté*. We quote from Grevisse (1980: 1438), where the entire *arrêté* is quoted in an appendix.

(12) 'L'usage veut que *tout*, employé comme adverbe, prenne la marque du genre et du nombre devant un mot féminin commençant par une consonne ou un *h* aspiré et reste invariable dans les autres cas. On admettra qu'il prenne la marque du genre et du nombre devant un nom féminin commençant par une voyelle ou un *h* muet.'
['Usage requires that *tout*, used as an adverb, agree in gender and number before a feminine word which begins with a consonant or an '*h* aspiré' and that it is invariable in other cases. It is henceforth permitted to have *tout* agree in gender and number before feminine nouns beginning with a vowel or a silent *h*.'][6]

Minister Haby's proposed reform leads to (10″b) for (10b) and to (11′b) for (11b) (the earlier examples are repeated here for convenience).

(10)	(b)	une galerie tout étroite	[tutetrwat(ə)]	(prescriptive)
(10″)	(b)	une galerie toute étroite	[tutetrwat(ə)]	(reformed)
(11)	(b)	des galeries tout étroites	[tutetrwat(ə)]	(prescriptive)
(11′)	(b)	des galeries toutes étroites	*[tut(ə)zetrwat(ə)]	(reformed)

[6] There is an obvious error in the text of the *arrêté*: *nom* 'noun' must be replaced by *mot* 'word' in the second sentence of the quotation if the *arrêté* is to apply as obviously intended.

The singular case (10″b) is not a problem. However, the proposed reformed orthography for the plural case (11′b) is obviously completely counter-intuitive to French spellers, since such an orthography predicts possible optional liaison between *toutes* and the following vowel initial word, which, as discussed above, is completely impossible. Furthermore, the proposed reform does not provide a uniform treatment for the masculine and the feminine forms. It is thus clear that the proposed reform can only wreak further havoc in the troubled orthographic performances of French school children.

The solution proposed by Minister Haby, in contrast to the one defended here, will not account for the full range of native speaker intuitions. Interestingly however, the decree does attempt to eliminate the aspect of the prescriptive rule which leads to a violation of the PPFS, namely reference to the sound structure of the following word, which was perhaps felt to be such cruel and unusual grammatical punishment that students would never learn it.

Bernard Fradin (personal communication) points out to us that the facts about adverbial *tout* that we have been discussing are true not only of noun phrases but also of the predicative constructions (i) *être tout* A ('to be completely/quite A') and (ii) *être tout* N ('to be completely N'), and to the concessive constructions (iii) *tout* A *que* S ('A though he may be') and (iv) *tout* N *que* S, ('N though he may be'). For the predicative constructions, the analysis proposed above seems directly applicable, as shown by the following examples:[7]

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[7] An anonymous referee has pointed out to us the existence of examples like (i) which show that there is a further complexity involved in the case of predicate nominals which cannot vary in gender (as opposed to the examples chosen in (14)).

(i) Rousseau était tout (/*toute) passion et volonté.
'Rousseau was all passion and will.'

In (i) there is a gender conflict between the subject (masculine) and the predicate nominals (both feminine), which is resolved in favor of the subject. Data of this type are discussed by Grevisse (1980: §987), who basically concludes that anything is possible in these cases: no agreement at all, agreement with the subject, or agreement with the predicate nominal. He gives numerous examples of each type. However, his discussion loses much of its relevance once we notice that he never takes into account whether in cases of orthographic agreement or nonagreement the opposite orthographic choice would have made a phonetic difference. When this issue is taken into account, the situation becomes much clearer.

First, and crucial to our proposal, there is never agreement in number, neither with the subject nor with the predicate nominal. This is shown by the following examples (which are invented, because it is crucial to use only vowel-initial predicate nominals that are phonologically distinct in the singular and the plural in order to be able to elicit grammaticality intuitions). The judgments of our informants on these examples are quite clear:

(ii) (a) Ce coffret est tout [tut] (/*tous [tuz]) émaux et rubis.
'This little chest is entirely [made of] enamels and rubies.'
(b) Ces coffrets sont tout [tut] (/*tous [tuz]) émaux et rubis.
'These little chests…'

(13) (a) Il est tout étroit [tutetrwa]/tout petit [tup(ə)ti]
'It is quite narrow/quite small.'
(b) Elle est toute étroite [tutetrwat(ə)]/toute petite [tut(ə)p(ə)tit(ə)]
(c) Ils sont tout étroits [tutetrwa]/tout petits [tup(ə)ti]
(d) Elles sont toute étroites [tutetrwat(ə)]/toute petites [tut(ə)p(ə)tit(ə)]

(14) (a) Il est tout artiste. [tutartist]/Il est tout musicien. [tumyzisjɛ̃])
'He is an artist (/a musician) from head to toe.'
(b) Elle est toute artiste [tutartist]/toute musicienne. [tut(ə)myzisjɛ̃n]
(c) Ils sont tout artistes [tutartist]/tout musiciens. [tumyzisjɛ̃]
(d) Elles sont toute artistes [tutartist]/toute musiciennes. [tut(ə)myzisjɛn]

For the concessive constructions (iii) and (iv), Grevisse gives the following rule (§986): 'Selon Littré, lorsque l'expression concessive *tout … que* est construite avec un nom féminin commençant par une consonne ou un *h* aspiré, *tout* reste invariable si ce nom est un nom de chose' ['According to Littré, when the concessive expression *tout … que* applies to a feminine noun beginning with a consonant or an '*h* aspiré', *tout* does not agree if the noun is inanimate']. (This rule should probably be understood as an additional clause to the general rule quoted above at the beginning of section 3.) Grevisse cites the following as a relevant example from Henriot: *Mais tout rêverie que soit l'invisible, en existe-t-il moins pour cela?* 'But though the invisible may be but a dream, does it therefore have less existence?'. However, he also notes that the rule does not seem well established ('ne paraît pas très certaine'), and he quotes various counterexamples to it from literary works. It seems in fact that the usual contemporary usage follows the rule that we propose, as shown in the following examples (the b and d examples in (15) and (16) should be contrasted with the e and f cases):

(c) Ces coffrets sont tout [tut] (/*tous [tuz]) émail.
'These little chests are entirely [made of] enamel.'

(iii) (a) Cette bague est tout [tut] (/*tous [tuz]) émaux et rubis.
'This ring is all [made of] enamels and rubies.'
(b) Ces bagues sont tout [tut] (/*tous [tuz] /*toutes [tut(ə)z]) émaux et rubis.
'These rings …'
(c) Ces bagues sont tout(e) [tut] (/*tous [tuz] /*toutes [tut(ə)z]) émail.
'These rings are entirely [made of] enamel.'

Note that examples (ii) and (iii) give us no information on agreement in gender since the pronunciation would be [tut] with or without agreement.

On the other hand, the question of agreement in gender for *tout* in examples like (i), where the subject and predicate nominal conflict in gender, is a more complex matter. Intuitions are often unclear and/or inconsistent. In some cases (such as (i)) there is a clear preference for agreement with the subject. However, Grevisse also cites attested examples where there is phonologically unambiguous agreement in gender with the predicate nominal.

(15) (a) tout petit [tup(ə)ti]/tout étroit [tutetrwa] qu'il soit
'small/narrow though it may be'
(b) toute petite [tut(ə)p(ə)tit(ə)] / toute étroite [tutetrwat(ə)] qu'elle soit
(c) tout petits [tup(ə)ti]/tout étroits [tutetrwa] qu'ils soient
'small / narrow though they may be'
(d) toute petites [tut(ə)p(ə)tit(ə)] / toute étroites [tutetrwat(ə)] qu'elles soient
(e) ??tout petite [tup(ə)tit(ə)] qu'elle soit
(f) ??tout petites [tup(ə)tit(ə)] qu'elles soient

(16) (b) toute musicienne [tut(ə)myzisjɛn] qu'elle soit
'musician though she may be'
(d) toute musiciennes [tut(ə)myzisjɛn] qu'elles soient
'musicians though they may be'
(e) ??tout musicienne [tumyzisjɛn] qu'elle soit
(f) ??tout musiciennes [tumyzisjɛn] qu'elles soient

Before closing this section, we would like to point out that the case of the agreement of adverbial *tout* is not unique. Indeed, as pointed out by prescriptive and descriptive grammarians (Damourette & Pichon vol. 2: §§557 ff. and vol. 7: §§2834 ff.; Chevalier et al. 1964: §290; Grevisse 1980: §§811–812), there is a more general tendency to avoid agreement for adjectives modifying another adjective. However, in the cases other than that of *tout*, there is considerable variability between speakers, and in some cases for individual speakers, in the realization of agreement. There are attested examples exhibiting agreement in gender and in number, agreement neither in gender nor in number, and finally agreement in gender but not in number (as was the case for *tout*). Consider these examples from Grevisse (1980: §§811–812):

(17) (a) Les profondeurs du ciel toutes grandes ouvertes (Hugo)
'the depths of the sky completely wide open'
(b) Le blessé aux yeux grands ouverts (Duhamel)
'the wounded person with wide open eyes'
(c) Des fleurs fraîches écloses (Hermant)
'fresh(ly) opened flowers'
(d) Une feuille de papier fraîche écrite (Flaubert)
'a fresh(ly) written sheet of paper'

(18) (a) Les fenêtres étaient grand ouvertes (Bourget)
'The windows were wide open.'
(b) Il se réveille en sursaut, les yeux grand ouverts (Toulet)
'He wakes up abruptly, eyes wide open.'
(c) Une boîte de croquet frais repeinte (Thérive)
'A fresh(ly) repainted croquet box.'

The examples in (17) show that it is possible to have agreement both in number and in gender in such usages (note that Hugo's alexandrine forces liaison between *grandes* and *ouvertes*, showing that, for this example at least, agreement is not only a written mark). On the other hand, the examples in (18) indicate that it is possible to have no agreement at all. In (18c) we see a case where there is unambiguously neither gender nor number agreement. In the cases (18a) and (18b), there is no written agreement, but the pronunciation would be unchanged if one considered these examples as exhibiting phonetic evidence of agreement in gender but not in number, as proposed above for *tout*. Damourette & Pichon (vol. 2: 164) cite oral examples where agreement in gender without agreement in number is clear:

(19) (a) J'ai des roses
Fraîche écloses (*Chanson pour sauter à la corde*)
'I have fresh(ly) opened roses' (*Song for jumping rope*)
(b) Et il y avait là ses lettres grande ouvertes [grãduvert] sur la table
'And his letters were there, wide open on the table.'

It thus appears that the three types of agreement are well attested in this construction for adjectives other than *tout* when used adverbially.

In this section, we have illustrated a second type of apparent counter-example to the PPFS. In this case, there is a rule of syntax involved, specifically a rule of agreement. As classically stated, the rule involves phonological conditioning and thus violates the PPFS. But we have shown that it is possible to formulate this rule of agreement in a way that is superior on independent syntactic grounds. It then turns out that this better analysis has another property: it does not violate the PPFS.

4. THE *à* / *en* ALTERNATION AND THE USE OF THE DEFINITE ARTICLE WITH GEOGRAPHICAL PLACE NAMES

We now turn to an area of French grammar that Cornulier (1972) raised as a problem for simple conceptions of the syntax-phonology interface. The data involves an alternation between *à* and *en* in certain adjunct phrases involving proper geographical place names. (The alternation is also attested, though less productively, in certain time adjunct phrases.) Let us briefly review the relevant data (in (20), C and V stand for consonant-initial and vowel-initial respectively).

(20) Il ira …

Fem.	Sg.	C	en Franc	*à la France
		V	en Amérique	*à l'Amérique
	Pl.	C	*en Philippines	aux Philippines
		V	*en Indes	aux Indes

Masc.	Sg.	C	*en Canada	au Canada
		V	en Iran	*à l'Iran
	Pl.	C	*en Pays-Bas	aux Pays-Bas
		V	*en Etats-Unis	aux Etats-Unis

'He will go … to France, to America, to India, to the Philippines, to Canada, to Iran, to the Netherlands, to the United States.'

(21) Il ira à la plage, à l'église, aux plages, aux églises, au port, à l'étang, aux ports, aux étangs.
'He will go to the beach, to the church, to the beaches, to the churches, to the port, to the pond, to the ports, to the ponds.'

The examples in (20) show that in certain cases the preposition *en* appears, without an article, instead of the sequence *à* + definite article in construction with proper place names that are usually construed with a definite article (that is, roughly, names of places and regions as opposed to names of cities). This behaviour does not appear with common nouns, as indicated by the examples in (21). (For pragmatic reasons that are irrelevant here, the examples in (21) with plural locative complements are bizarre; but they become perfectly natural if the complement is modified, as in, for example, *Il ira aux plages de Boulogne et de Calais*.) Furthermore, these latter examples show that it is the use of *en* in examples (20) which is exceptional. More precisely, according to prescriptive grammars, *en* appears, without the article, in cases where the noun that follows is neither a consonant-initial masculine singular, nor a plural (Chevalier et al. 1964: §341, Grevisse 1980: §628 ff.). Furthermore, the proper name must be treated as a locative PP: the *en* forms do not appear, for instance, in the complements of verbs like *penser* (*Je pense *en/à la France*). It is clear that the conditions on the alternation between the forms with *à* and the definite article and *en*, as formulated in prescriptive grammars, violate the PPFS since the choice of the preposition and the presence of the article depend on the phonological form of the following word.

Cornulier (1972) suggested that the formulation of this rule given in prescriptive grammars misses an important generalization, namely that *en* appears if and only if there is no portmanteau form for the *à* + definite article sequence, that is, in precisely those cases where the noun that follows is neither a consonant-initial masculine singular nor a plural. Since Cornulier was presupposing an analysis of the portmanteau forms in terms of the application of phonological rules, the choice between the two structures depended (under his assumptions) on the later applicability of such rules, leading once more to a violation of the PPFS (in the form of what was then called a 'peeking rule').

We note at this point that neither Cornulier (1972) nor Zwicky (1987) mention a parallel ablative (as opposed to locative) set of data, well known

in descriptive and prescriptive grammars, involving the preposition *de* and the definite article with proper place names, as in the following examples:

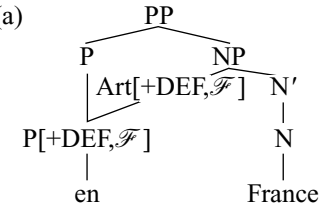
(22) Je reviens …

Fem.	Sg.	C	de France	*de la France
		V	d'Amérique	*de l'Amérique
	Pl.	C	*de Philippines	des Philippines
		V	*d'Indes	des Indes
Masc.	Sg.	C	*de Canada	du Canada
		V	d'Iran	*de l'Iran
	Pl.	C	*de Pays-Bas	des Pays-Bas
		V	*d'Etats-Unis	des Etats-Unis

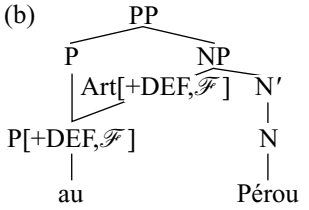
Clearly, this set of data is entirely parallel to the preceding one, except that instead of having *en* appear in place of the sequence *à* + definite article, it is simply *de* here which replaces the sequence *de* + definite article, under the same conditions. In traditional terms, the absence of the article is not accompanied by a change of preposition.

Zwicky (1987) proposes an analysis of the alternation between *en* and *à* which avoids violations of the PPFS. Briefly, Zwicky assigns to *en*, in this construction, a status which is identical to that of the contracted forms *au* and *aux*. It is a portmanteau morph which occupies a double position in the syntactic tree, as shown in the trees in (23). More precisely a P position followed by a position for Art[+DEF,$\mathscr{F}$], where $\mathscr{F}$ represents the agreement features, can correspond to a single position P[+DEF,$\mathscr{F}$] in morpho-syntactic structure.

(23) (a)



(b)



Zwicky proposes a morphosyntactic 'rule of referral', which refers forms of the type [+DEF, MASC, SG] to the forms [+DEF, FEM, SG] when the following word begins with a vowel (see Zwicky (1985) for more general justification of the existence of such rules referring one form to another).[8] Under these hypotheses, it is sufficient to assign the following lexical entries to *au* and *en* in order to obtain the desired results:

(24) A[+DEF, MASC, SG]: /o/
(25) A[+DEF, FEM, SG] : /ã/

[8] Referral rules do not violate the PPFS. They are not syntactic but morphological – their task is stating phonological realizations of words, not defining sentence structures.

Zwicky's solution has a number of problems, however. First, in the general case, elision has priority over contraction: *Je pense à l'homme* vs. **Je pense au homme* ('I'm thinking about man'). But in the case of *en* the opposite would have to be true: contraction would have to have priority over elision, as shown by **Je vais à l'Iran* vs. *Je vais en Iran* ('I'm going to Iran'), and Zwicky's original analysis in fact made incorrect predictions for such cases. This observation reduces the plausibility of assimilating *en* to the amalgams of type *au*, *aux*. Furthermore, if one takes into account the parallel data concerning the alternation between *de* + definite article and *de* without an article, one would have to maintain that *de* without an article is the realization of a contracted form in order to keep the parallelism with the alternation between *à* and *en*.

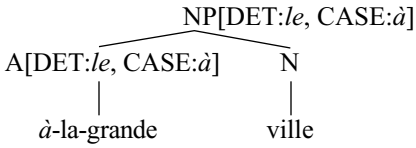
The generality of the morphosyntactic rule referring masculine singular forms to feminine forms when the following word begins with a vowel is also doubtful, since the opposite effect appears with possessive and demonstrative determiners (compare *mon mari* 'my husband' (masc.) vs. *mon ami* 'my friend' (masc.) and *ma femme* 'my wife' (fem.) vs. *mon amie* 'my friend' (fem.)).

Finally, Zwicky's analysis has no way to account for the variability in usage attested in descriptive grammars, nor for the complexity of the factors that are relevant to the selection of the nouns in front of which the alternation occurs. Grevisse (1980: §§627 ff.) notes that *Danemark*, *Portugal* and *Luxembourg* (consonant-initial masculines) take either *en* or *au*, and *de* or *du* (*Il est allé en/au Danemark* 'He went to Denmark'; *Il revient de/du Danemark* 'He came back from Denmark'). It is true that the use of *en* has a somewhat archaic flavour, but there is a clear contrast between the status of these examples and the unacceptability of **Il est allé en Japon/en Maroc*/etc. Similarly, names of old provinces can be preceded by *en*, even when they are consonant-initial masculines: *en Limousin*, *en Berry*, etc. It should be noted that these facts give further arguments against the rule proposed by Cornulier (1972). The existence of lexical exceptions to such phonological constraints requires the introduction of morphological or syntactic constraints on phonological constraints on syntax, which is not only too baroque to be plausible but also undercuts the claim that there is any phonological constraint.

We wish to suggest an alternative approach which overcomes the problems that have just been sketched while avoiding any violation of the PPFS. Following Miller (1992), we claim that French determiners and the prepositions *à*, *de* and *en* must not be analyzed as syntactic words but as phrasal inflections which are lexically realized on the first word of the NP. Miller (1992) gives numerous syntactic, morphological and phonological arguments in favour of this analysis and proposes a general syntactic mechanism, the Edge Feature Principle, to account for the realization of inflectional morphemes relating to a whole phrase on the first element of that

phrase.[9] According to this analysis, an NP like *à la grande ville* 'to the big town' has the following structure (we simplify the analysis, omitting numerous details which are not relevant to the present discussion).

(26)



The features DET[10] and CASE appearing on the NP are subject to the Edge Feature Principle as well as to LP statements which force their instantiation on a descending path to the first terminal node in the phrase, in this case the A node.

This analysis of the status of the determiners and of the prepositions *à*, *de* and *en* has as a consequence that the question of the alternation between *au*/*en* and *du*/*de* discussed above becomes entirely a problem of morphology. If this is true, the whole set of characteristics of the phenomena discussed above becomes perfectly ordinary. The alternation between *en* and *à* is reduced to allomorphic variation depending on the phonological form of the stem to which they attach. Specifically, it is a case of phonologically conditioned prefix suppletion, exactly analogous to the case of the Seri passive prefix, which has the form *p-* before vowel-initial roots and *a*: *ʔ-* before consonant-initial roots (Marlett & Stemberger 1983). The absence of the article in certain cases is simply a situation where a morphological feature has no phonetic correlate, as in any case where some morphological distinction has phonological effects in some forms but not in others. The exceptions and usage variations also boil down to situations which are familiar in morphology, where lexical exceptions and arbitrary morphological classes are commonplace. Once it is appreciated that forms like phonetic [opeʀu] 'in Peru' and [ɑniʀɑ̃)] 'in Iran' have locative prefixes with suppletive shapes, nothing about this situation suggests that some syntactic rule needs to examine phonological forms in order to derive the right forms.

Thus the case of the alternation between *en* and *à* and the absence of the definite article in front of proper place names illustrates a third way in which a purported counterexample to the PPFS may reveal that it is only apparent: sometimes the rule that requires access to phonological information is not a rule of syntax at all, but a rule of another component which has legitimate access to such information (in the present case, the component is morphology, but in other cases it could be phonology).

[9] The fact that arbitrary ellipsis of articles does not occur after other locative prepositions (*dans*, etc.) constitutes a further argument in favour of the distinction proposed in Miller (1992) between the status of the prepositions *à*, *de* and *en*, analyzed as affixes, and the status of the other prepositions.

[10] The value *le* of the DET feature is an abbreviation for a feature matrix characterizing the definite article.

As we mentioned in the introduction to this paper, in addition to the PPFS we defend a morphological analog of it. In the modular view of grammar we assume here (sketched in Pullum & Zwicky 1988), syntax is blind to the details of morphological structure as well as to phonological properties. Thus the possibility that phonological properties of morphemes might condition the application of morphological rules to those morphemes still provides no way for phonology to constrain syntax indirectly. There is no morphological escape hatch for the PPFS.

5. PHONOLOGICAL RESOLUTION OF SYNTACTIC FEATURE CONFLICT

Finally, we turn to a fourth set of data explicitly claimed by Kayne (1975) to be a counterexample to the PPFS. These data concern the possibility of ellipsis of a pronominal clitic and an auxiliary in coordinate structures (our use of the term 'ellipsis' here is intended to be neutral with respect to the possible analysis of such cases of coordination as base generated or as the result of a deletion transformation). The facts are discussed in Pullum & Zwicky (1986) and in Miller (1992), but we review them briefly here because they illustrate, from the same language as the previous three cases, a fourth way in which purported counterexamples to the PPFS may fail. As shown in (27), in coordinate structures French permits ellipsis of an auxiliary verb together with a clitic attached to it. However, examples like (28) are ungrammatical because the two participles require objects in the accusative and dative cases respectively. ((27) is from Kayne; see Sandfeld (1928: 30–31) for literary examples.)

(27) (a) Paul l'a frappé et {l'a/∅} mis à la porte.
Paul him-has struck and him-has put to the door
'Paul struck him and threw him out.'

(b) Marie les a beaucoup regardés et {les a/∅}
Marie them-has much looked-at and them-has
peu écoutés.
little listened-to
'Marie looked at them a lot and listened to them little.'

(28) (a) Paul l'a frappé et {lui a/*∅} donné des
Paul him-has struck and to-him-has given some
coups de pieds.
blows of foot
'Paul hit him and kicked him.'

(b) Marie leur a beaucoup parlé et {les a /*∅}
Marie to-them-has much spoken and them-has
peu écoutés.
little listened-to
'Marie spoke to them a lot and listened to them little.'

However, if the third person clitics in (28) are replaced by a first or second person clitic (*me*, *te*, *nous*, *vous*), or a third person reflexive (*se*), the variants with ellipsis becomes acceptable (at least for many speakers; some find these cases unacceptable):

(29) (a) Paul nous a frappés et {nous a/∅} donné des coups
Paul us-has struck and to-us-has given some blows
de pieds.
of foot
'Paul hit us and kicked us.'

(b) Marie m'a beaucoup parlé et {m'a/∅} peu
Marie to-me-has much spoken and me-has little
écouté.
listened-to
'Marie spoke to me a lot and listened to me little.'

Kayne (1975: 100–102) claimed that these data involve phonological conditioning on a rule of Auxiliary Deletion. According to Kayne, 'this syntactic rule must be sensitive to whether there is any difference in phonological representation between the two case forms of the pronoun in question. This means that linguistic theory must countenance syntactic rules having the power to refer to phonological information' (102). In the terminology of Pullum & Zwicky (1986), Kayne is claiming that this is a case of phonological resolution of syntactic feature conflict. But the data in (30), first discussed in Miller (1992: 216), show that this explanation cannot be correct. If phonological identity was the relevant factor, then we would expect (30) to be perfectly acceptable, contrary to fact.

(30) *Pierre en a acheté deux et {en a/*∅}
Pierre of-them-has bought two and {of-them-has/*∅}
lu la fin.
read the end
'Pierre bought two of them and read the end of them.'

In this example, the first occurrence of *en* is an instance of quantitative *en*, but the second is a case of genitive *en*. These two clitics have the same phonology, but their phonological identity is insufficient to allow phonological resolution, and ellipsis is impossible. Why then should the examples in (29) be different? The necessary syntactic (and semantic) distinction between quantitative and genitive *en* is the key to this apparent paradox. As proposed in Pullum & Zwicky (1986: 75–78), the first and second person clitic forms *me*, *te*, *nous*, *vous* are not ambiguous between accusative and dative case, but rather neutral; *me*, for example, is the 1sg. non-nominative clitic, it is not a pair of clitics of distinct case that just happen to be pronounced the same. This neutrality is a systematic part of the clitic system; it is seen again with *te*, and so on. The occurrence of such neutral forms does

not lead to a syntactic feature conflict at all; and if there is no conflict, neither is there phonological resolution.[11] Cases like (30) are different: there is conflict between two syntactically and semantically distinct items, and when that is the case, phonological resolution is not possible, and so the construction in which one is omitted under identity with the other is disallowed.

Notice that Pullum & Zwicky (1986) hold that phonological resolution of syntactic feature conflict is possible, and they cite examples of it in English and Xhosa. However, they claim that it is licensed by a principle of universal grammar, not by a parochial (nonuniversal) rule. They claim that phonological resolution is possible only in cases of what they call 'syntactically imposed' feature specifications, whose values are determined by syntactic facts about the context (like agreement on English verbs) rather than freely selected from among grammatically permissible alternatives (like tense on English verbs). Phonological resolution, although it involves conditioning of syntax by phonological form, does not constitute a violation of the PPFS because it is not an instance of the mention of phonological information in a parochial syntactic statement. What the PPFS entails is that grammar cannot DIFFER in phonological conditions on syntax. If Pullum & Zwicky (1986) are right, phonological identity can compensate for derived morphosyntactic nonidentity in a way that is the same for all languages; but this possibility happens to be irrelevant to the French examples about which Kayne made his claim.

6. CONCLUSION

We have considered four phenomena of French that might at first glance seem to counterexemplify the PPFS. In the first case, attributive adjective position, we concluded that there there is no rule of grammar at all, but instead a usage tendency. In the second case, agreement of adverbial *tout*, we concluded that there is a rule of grammar, indeed of syntax, but that when properly formulated, as agreement only in gender but not in number, it makes no mention of phonological properties of the adjective modified by *tout*. In the third case, the alternation between *à* and *en* in adjunct phrases involving proper place names, we concluded that there is a rule of grammar

[11] Actually, Miller (1992: 216) shows that the situation is slightly more complex than indicated in the text. Indeed, there are certain minor differences in the distribution of the first and second person clitics depending on whether they are accusative or dative, at least for some speakers of French. Miller demonstrates that the pronominal clitics are in fact lexically attached inflectional affixes and proposes that the dative clitics are marked for dative case, but that the accusative first and second person clitics are unspecified for case. Under these assumptions examples like (29) are grammatical because the requirements on the clitic in the factor are satisfied if it is marked as dative.

and that it is sensitive to the phonological make-up of the place name, but that it is a rule of morphology rather than syntax. Finally, in the last case, the ellipsis of clitic + auxiliary groups in coordinate structures, we concluded that when the morphology of the pronominal clitics is correctly analysed neither the rules governing ellipsis in coordinate structure nor any other relevant grammatical rules make reference to phonological properties of the clitics. It may be possible, where accidentally (rather than systematically) identical forms are concerned, to show that reference to phonological properties is made in a universal principle dictating certain aspects of syntactic structure, but French happens not to provide evidence of this kind as far as we have yet discovered.

In none of these cases, then, do we have a rule of French syntax with phonological conditions or constraints on it. Indeed, French provides a useful illustration of four ways in which a language can offer apparent counterexamples to the PPFS that are in fact spurious.

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