Mid-vowel alternation in Parisian French: An analysis through Verlan

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1. Introduction

The French mid-vowel system, and specifically the apparent alternation in tenseness, is one of the most debated topics in French phonology, with formal analyses dating back to at least the beginning of the 20th century (Fouché, 1935) and the phenomenon present in some fashion since the 16th century (Straka, 1981). Since then, a multiplicity of takes on the issue have been put forward.

Accounts center around the apparent alternation between the tense series (/e/, /ø/, and /o/) and their lax counterparts (/ɛ/, /œ/, and /ɔ/). Words such as [fe] 'fairy', in which the mid-vowel appears in an open syllable, and counterpart [fɛt] 'party', in which it appears in a closed syllable, are examples of the alternation in Modern French. The general assumption is an alternation based on syllable structure, often named *Loi de Position* (*LdP*), in which the position of the vowel triggers the alternation. Here, in an open syllable, the tense mid vowel would be found; whereas, in a closed syllable, the lax version would appear.

However, this *LdP* analysis, or rather the various forms the analysis has taken over the years (Valdman, 1972; Côté, 2008; Lenzen, 2008; Eychenne, 2014, 2016), has been challenged on several occasions, due to its weak predictive power (Morin, 1986, 1988; Montreuil, 1995; Storme, 2017, to cite a few). Indeed, we also find a number of words that do not follow the pattern above (for instance, [vʁɛ] 'true'[1]). Nonetheless, the alternative analyses have also failed to reach consensus, each bringing their own set of issues. Some (Storme, 2017, for instance) only account for a specific variety, others (Morin, 1986, 1998) only explain the origin of the alternation in diachrony without giving an analysis in synchrony, and

[1] https://dictionnaire.lerobert.com/definition/vrai; https://www.larousse.fr/dictionnaires/francais/vrai/82605; https://fr.wiktionary.org/wiki/vrai

still others (Montreuil, 1995) rely on changing the view of other well-accounted-for phenomena in French.

Finally, the francophone world is very diverse, and the multiplicity of varieties of French adds another layer of difficulty to the issue, as the underlying basis of the alternation might not be the same in every dialect. To give a well-known example, Laurentian French has its own *LdP* that applies to high vowels (Côté, 2008), which Parisian French does not have.

Verlan [vɛʀlɑ̃], from *l'envers* /lɑ̃vɛʀ/ 'reverse', is a language game based on the inversion of syllables or segments of a word, which has now become a popular form of slang. It has a specific set of rules that speakers follow when creating *Verlan* words (Bachmann & Basier, 1984), it is still a productive process (Sloutsky & Black, 2008), and native users of *Verlan* have strong intuitions with regard to it, but French speakers who do not use Verlan struggle to understand it (Méla, 1997; Black & Sloutsky, 2010). Additionally, it serves a number of social functions (as detailed in Valdman (2000) and Lekfowitz (1989), among others). Pinpointing the exact conditions of its creation is not the purpose of this present work - although some examples of a *Verlan*-like system can be traced back to Medieval French literature. For instance, in *Tristan et Iseut* (12^{th} century), the main character, *Tristan*, takes the name *Tantris*. However, in the 1970s and 1980s, originally in the *banlieues* (under-privileged suburbs) of Paris, and spreading to other similar communities across France, *Verlan* started gaining ground. It began being used more and more frequently until some words were integrated into everyday speech, mainly by urban adolescents.

Verlan does not constitute its own system impervious to mixing with everyday speech (Méla, 1997; Sloutsky & Black, 2008): *Verlan* words are often incorporated into colloquial French without any marking that would indicate the origin of the word (e.g., a prosodic one showing a kind of codeswitch). This supports the use of *Verlan* words in linguistic analysis, as once a word is created, it seems to be treated like any other word in the language (Méla, 1997). In addition, the use of Verlan in linguistic analysis is not new (Bachmann & Basier, 1984; Méla, 1988, 1991, 1997; Lefkowitz, 1989; Azra & Cheneau, 1994; Plénat, 1995; Valdman, 2000; Sloutsky & Black, 2008; Black & Sloutsky, 2010), and the use of language games in general is well-supported in the literature (Davis, 1993; Itô et al., 1996; Crystal, 2001; Andersson, 2018; Kitaoka & Mackenzie, 2021). Language games have been found to be systematic, productive, and recoverable (Davis, 1993), which makes them predictable, as well as suitable to apply linguistic rules onto.

For the reasons cited above, the use of *Verlan* is ideal for an analysis of the mid-vowel alternation in French: it is a productive mechanism, based on rearranging segments or syllables in a predictable way, that creates new French words for which speakers have strong intuitions. As such, it interacts with the *LdP* analysis of the mid-vowel alternation, and its productivity allows for the creation of new words that can be analyzed.

In this article, I look at the mid-vowel alternation in Parisian French through *Verlan* words. As stated above, *Verlan* is a productive process that regularly creates new words, and focusing on these newly created words might be of use for understanding the alternation, as a process such as the *LdP* should apply to them.

2. The Mid-Vowel Alternation and Traditional Analyses

To begin, let us characterize the mid-vowel alternation and its place in the French vocalic system. The pairs below, bolded, in the Standard French vowel inventory (1) are considered to alternate in tenseness[2] or in openness[3]. Crucially, the alternation encompasses

[2] This is the preferred view for linguists who do not focus solely on Hexagonal French, and this is the one I will follow in this paper. This view has the benefit of keeping the high/low feature a binary opposition, in line with other languages.

[3] This view requires an added level of openness, and it is the preferred view of a number of scholars in France. The choice of one or the other framework is not relevant here, and the same analysis can be made following an openness approach to the mid-vowel pairs.

all oral mid-vowels in French. In Hexagonal French, schwas are underspecified and are pronounced [ø], [œ], or a vowel between the two, depending on the variety (Dell, 1973, 1985; Morin, 1978; Fougeron et al., 2007). This leads to schwas being part of the /ø/ or /œ/ pair for the alternation.

(1) Standard French vowel inventory (based on Lyche, 2010)

	Front		Central	Back	
	Unrounded	Rounded		Unrounded	Rounded
High	i	y			u
Mid-high	**e**	**ø**	ə		**o**
Mid-low	**ɛ**	**œ**			**ɔ**
Low	a			ɑ	

As mentioned above, the *LdP* analysis is the most common explanation of the phenomenon: a syllable structure analysis that has been around since the early 20th century. According to this account, the alternation surfaces with the tense version of the mid-vowel pair in open syllables and the lax version in closed syllables (Fouché, 1935; Straka, 1981). Diachronic sound changes, such as the evolution of the pronunciation of Middle French /mer/ 'sea' and /mɔ/ 'word' to Modern French /mɛr/ and /mo/, have been used to support the *LdP* analysis (as described in Morin, 1986), in addition to common synchronic Modern French alternations like [te] 'tea'[4] and [tɛt] 'head.'[5] Throughout the years, and across many versions of this analysis, different subtleties have been added, centering around how stress, position of

[4] https://www.larousse.fr/dictionnaires/francais/th%C3%A9/77670; https://dictionnaire.lerobert.com/definition/the; https://fr.wiktionary.org/wiki/th%C3%A9
[5] https://www.larousse.fr/dictionnaires/francais/t%C3%AAte/77529; https://dictionnaire.lerobert.com/definition/tete; https://fr.wiktionary.org/wiki/t%C3%AAte

the syllable in the word, and differences between the various mid-vowel pairs affect the alternation (Fouché, 1935; Straka, 1981; Spence, 1988).

Over the same period of time, alternative analyses have surfaced, mainly due to the fact that the syllabic structure analysis alone fails to account for a large part of the variation found both within and between varieties (as described and summarized in Tranel, 1987b, among others). To name a few examples, words like /goʃ/ 'left', /nøtʁ/ 'neutral', and /epɛ/ 'thick' do not follow the strict syllabic structure analysis. First, etymological length has been offered as a possible explanation for the alternation (Morin, 1986, 1988). According to this analysis, the distribution of the French mid-vowel system would originate in the distinction between phonemically short and long vowels in spoken Latin, through Old and Middle French. Here, mid-vowels that were long in spoken Latin would now be tense, whereas those that were short would be lax. Morin's account does match a large portion of the data; however, there are several issues with his analysis. First, it does not solve the main issue of the syllabic analysis, as there are still a significant number of examples that do not fit the analysis, as pointed out by others after him (e.g., Spence, 1988). Second, many of the examples used to support the argument do not match more contemporary pronunciation, nor the synchronic variation found presently. Finally, Morin's explanation is mainly etymological and does not explain the variety found in current dialects of French, nor the productive synchronic alternation.

In the 1990s, interesting constraints on the syllabic analysis were proposed. Building on the idea of vowel length having an effect on the alternation, Montreuil (1995) suggested that the *LdP* analysis only applies to short vowels, with long vowels always showing the tense version of the pair. This work was based on the comparison between "Conservative" and "Regional" French, but did not focus on Contemporary Parisian French, specifically because this variety "has discarded weight distinctions and lost most traces of phonemic length"

(Montreuil, 1995, p. 81). However, Contemporary Parisian French does show the mid-vowel alternation; consequently, Montreuil's analysis does not provide sufficient explanation for the variety discussed here.

Montreuil's length analysis was based on weight, and, in the beginning of the 21st century, moraic analyses of the alternation surfaced, led in part by Côté's (2008) work on the phonology of Laurentian French. Côté's analysis centers on intersegmental cohesion, which attracts consonants and then triggers the alternation due to weight. This analysis resembles the syllabic one for French, as syllable structure is often connected to weight. However, in her analysis, the cause of the alternation is not strictly syllable structure, which has the added advantage of avoiding the potential problem of differing syllabification judgements between speakers. However, this analysis does not completely account for the Parisian French data, as it is mainly focused on Laurentian French which has a different *LdP* (it is found in high vowel pairs, among other differences). Additionally, Côté herself states that her analysis does not account for other varieties of French, citing Midi French as an example. At the same time, other moraic analyses, centered on specific varieties of French, have been put forward. Lenzen (2008) offered an Optimality Theoretic (OT) account of the alternation through weight-based constraints based on data from several dialects of Midi French. In her analysis syllables are ideally bimoraic in this variety, and through the use of several constraints and their ranking, she accounts for a good amount of the data from varieties in the south of France. But again, this variety of French is different from the one this paper focuses on, as it is a variety known for its very strong *LdP*, but it is an important account for explaining the alternation in other varieties.

Finally, some phonetic analyses have also been proposed, importantly one based on the alternation in the central dialect of Clermont-Ferrand (Storme, 2017). Through acoustic analysis, Storme shows that the tense and lax versions of the mid vowels actually have entirely different targets, which suggests that the alternation is, in fact, not an alternation at all. The two segments produced would originate from two different phonemes, which would invalidate the general position-based view on the topic.

Several of the proposed analyses have centered around etymological causes for the alternation in Modern French. These etymological analyses do not explain the productive alternation that is observed in Parisian French, as they focus on diachronic change rather than a synchronic process. Other analyses have looked at the alternation synchronically, focusing on specific varieties of French (e.g., Laurentian French or Midi French) that differ from Parisian French in phonemic inventory and known processes. However, none of them has looked at the synchronic alternation found in Parisian French, which is the topic here.

3. *Verlan*

In this paper, *Verlan* is only a tool through which words are generated, and the focus is on the words themselves, rather than on the processes by which the words are created. As a consequence, the objective here is not to propose a detailed explanation of the productive *Verlan* system. However, it is useful to have an idea of the process, as it is relevant for understanding why *Verlan* would be expected to interact with the *LdP*.

First, *Verlan* is a language game that has made its way into the daily slang of many speakers. There are examples of *Verlan*-like words as early as the 12th century, but the *Verlan* discussed here started in and around Paris in the 1970s and 1980s (Méla, 1988), before spreading to other urban areas in the following decades. Crucially, it is associated with young people in the *banlieues*, underprivileged suburbs that consist of ethnically, and therefore linguistically, diverse and socio-economically poor communities. Like many other slangs, *Verlan* belongs to these communities, i.e., it was first popularized by poor workers in these areas, and it was an in-group way to communicate, in opposition to the prescriptivism and perceived elitism of "Standard" French (Lodge, 1991). It holds the same functions as many other slangs, including allowing people who were excluded from the prestigious standard language because of a lack of education, a lack of knowledge of the prestige culture, or home situations in which French was not the primary language, to take ownership of their own language. It became so popular in the 1990s that it was gradually included in the daily slang of many young people, until some words became staples of general French slang[6]. However, *Verlan* has three key characteristics: not everyone can create *Verlan* words that are accepted (this ability is reserved for the in-group), new words are often created, and native *Verlan* users tend to always be ahead of the mainstream use. These characteristics create situations in which words are verlanized a second time (*arabe* 'Arab, Arabic' became *beur*, which was then reverlanized in *rebeu*) or a different word is chosen to be verlanized (*noir* 'black' became *renoi*, but later the borrowing *black* became *kebla*) after the first version joins the mainstream.

Not only does *Verlan* have its own productive rules, but its use is very systematic. First, it is never used categorically across a sentence. Speakers cannot produce an entire sentence in *Verlan*: only selected words are integrated into typical colloquial French sentences (Méla, 1988). Second, *Verlan* words are not marked phonologically and are treated the same as non-*Verlan* French words; for instance, they have no prosodic marking (Plénat, 1995; Méla, 1997). This shows that despite having different rules, *Verlan* is not a separate language or dialect. Speakers are not codeswitching between French and *Verlan*; rather, *Verlan* is a set of processes applied to French words which results in French words. In terms of the actual processes, the primary mechanism is the inversion of segments (/fu/ 'crazy' becoming [uf]) or

[6] A striking example would be the "Black-Blanc-Beur" slogan from 1998, when France won the soccer World Cup. This slogan includes a borrowing (*black* 'black'), a standard French word (*blanc* 'white'), and a *Verlan* word (*beur* 'second-generation North African'), and it describes the ethnic diversity in the team. The slogan became a part of the mainstream culture, being used in newspapers and in television shows.

syllables (/bi.zaʁ/ 'bizarre, weird' becoming [zaʁ.bi]). In addition, the insertion and deletion of vowel segments is very common, most often schwa, and *Verlan* words tend to be one or two syllables (Méla, 1988, 1991). Finally, some specific *Verlan* words also display a process of substitution of segments. The plurality of processes used to create a word makes *Verlan* an interesting language game for the study of French phonology. Generally, language games allow four possible mechanisms: insertion, rearrangement, substitution, and deletion (Davis, 1993), and *Verlan* can use all of them. This is typologically uncommon among language games, which usually allow only a subset of the mechanisms (Davis, 1993).

4. Description of the *Verlan* Words Containing Mid-Vowels

Research on the interaction between *Verlan* and *LdP* is absent from the literature, and as a consequence, the data presented here comes from the author's own native-speaker intuitions and pronunciation, verified by three other native speakers of Parisian French. The author is a 27-year-old native speaker of Parisian French and spent the first 20 years of his life in the *banlieue* of Paris. Crucially, the author is also a native user of *Verlan* - it was used around him throughout childhood and adolescence, and he is capable of producing new acceptable words. The author consulted three other native speakers of Parisian French, and native users of *Verlan*, to confirm the data discussed here. The three speakers were 22, 26 and 28 years old at the time of consultation. The *Verlan* words presented here, and outlined in (2), were all accepted without variation by the three speakers consulted with. When a disagreement in the acceptability of a *Verlan* word or its pronunciation occurred, that variation is noted, and both versions are included in the data. Given the small set of speakers in this study, the *Verlan* words, as well as the pronunciation of the mid vowels, should be confirmed with corpus and experimental work based on a larger set of Parisian native speakers in the future.

(2) Summary table of *Verlan* words containing at least one mid vowel

Verlan word type	Number of tokens	Percentage of all words	Notes
Total number of words	248	100%	
Following the *LdP*	237	95.5%	This figure includes both words that show a change in vowel quality and words that do not show a change in vowel quality, both resulting in a *Verlan* word that follows the *LdP*
Two pronunciations: one following the *LdP*, one violating it	6	2.4%	
Verlan words that do not follow the *LdP*	5	2.0%	
Verlan words with a change in vowel quality that follows the *LdP*	135	54.4%	
Verlan words with two syllables or more that follow the *LdP*	187	75.4%	

(2) Summary table of *Verlan* words containing at least one mid vowel, continued

Verlan word type	Number of tokens	Percentage of all words	Notes
Verlan words that follow the *LdP* and have a vowel quality change towards the tense mid vowel	81	32.6%	62.3% (81/130) of the words showing a change in mid-vowel quality change towards the tense mid vowel
Verlan words with the mid-vowel pair /e/ - /ɛ/ that follow the *LdP*	105	42.3%	Some words contain a mid vowel from this pair but also from another pair
Verlan words with the mid-vowel pair /ø/ - /œ/ that follow the *LdP*	109	43.9%	Some words contain a mid vowel from this pair but also from another pair
Verlan words with the mid-vowel pair /o/ - /ɔ/ that follow the *LdP*	47	18.9%	Some words contain a mid vowel from this pair but also from another pair

248 *Verlan* words containing at least one mid vowel were identified for this study and will be discussed here. The first thing to note is that 237 words follow the simplest iteration of the *LdP* (open syllable = tense, closed syllable = lax), with 135 of the total 248 words showing at least one vowel-quality change from their Standard French counterparts. These words will be described extensively below. In addition, six words show variation, with two pronunciations deemed acceptable by native speakers: one following the *LdP* and the other not following it (3). Five out of the six instances of words with two acceptable pronunciations

are instances where a schwa was inserted before verlanization, and all instances of variation found contain the /ø/-/œ/ pair. One, therefore, might ask if the presence of a schwa may be a factor in the variation and if this mid-vowel pair is particularly suited to variation.

(3) *Verlan* words with two acceptable pronunciations: one following the *LdP* and one not

Standard French	*Verlan*	Gloss
[ʒɑ̃b]	[bœʒ] OR [bøʒ]	‘leg, legs’
[sɛk]	[kœs] OR [køs]	‘dry, thin’
[disk]	[skœd] OR [skød]	‘record’
[ʃø.vø]	[vœʃ] OR [vøʃ]	‘hair’
[vjø]	[jœv] OR [jøv]	‘old’
[sak]	[kœs] OR [køs]	'bag'

Finally, only five words did not strictly follow the *LdP* (4). All of them are produced with the tense version of the vowel pair, where the *LdP* would predict the lax variant, and all favor fidelity to the Standard French vowel quality. All five words have fricative codas, which are considered to be lengthening consonants in French: /ʃ/, /f/, /ʒ/, /s/, or /z/. Among these five words, three are monosyllabic and only have two phonemes ([oʃ], [øf], and [øʒ]), and one can theorize that changing the tenseness of these vowels might create issues of linking to the original word. The word /ma.tos/ is a truncation of the French word for 'material', and it is the truncation that is being used as the basis for the *Verlan*. As for the last of these five words, the coda consonant in [le.jøz] is actually the *liaison* consonant being integrated into the *Verlan* word, which is also the only time such a situation occurs in the data.

(4) *Verlan* words that do not follow the *LdP*

Standard French	*Verlan*	Gloss
[ʃo]	[oʃ]	‘hot, tricky’
[fø]	[øf]	'fire'
[ʒø]	[øʒ]	'game'
[ma.tos]	[tos.ma]	'material, drugs'
[le.zjø]	[le.jøz]	'the eyes'

Turning to the words that do follow the alternation based on syllable structure (*LdP*), 102 have no change in vowel quality from the standard French word. These words did not show any change in syllable structure that would have an influence on the mid vowel or did not show any change in syllable structure at all. However, they still follow the *LdP*.

(5) Examples of 2-syllable and 3-syllable words with no change in mid-vowel quality, following the *LdP*

	Standard French	*Verlan*	Gloss
2-syllable	[di.lœʁ]	[lœʁ.di]	‘(drug) dealer’
	[pø.ti]	[ti.pø]	'little, small'
	[pu.bɛl]	[bɛl.pu]	‘trash’
	[ku.pe]	[pe.ku]	'to cut, cut'
	[da.ʁɔn]	[ʁɔn.da]	'mother' (slang)
	[po.lis]	[lis.po]	‘police'

3-syllable	[si.ga.ʁɛt]	[ga.ʁɛt.si]	'cigarette'
	[de.di.kas]	[kas.de.di]	'signature, shout-out'
	[de.fɔ̃.se]	[fɔ̃s.de]	'high, drunk'

Of the 135 words with a change in vowel quality from the original word, some showed what can be called a "simple" change. In other words, the mid-vowel that was originally present in the Standard French word changed tenseness as the syllable changed structure. In the examples in (6) vowel deletion after verlanization triggered resyllabification and therefore the change in vowel quality ([ʒø.te] -> [te.ʒø] -> [teʒ] -> [tɛʒ]). There is also one example of a process of reduplication after verlanization.

(6) Examples of a 'simple' change in vowel quality based on syllable structure

Standard French	*Verlan*	Gloss
[ʒø.te]	[tɛʒ]	‘to throw away’
[ɔʁ]	[ʁo.ʁo]	‘gold’
[ka.ʁo.te]	[ʁɔt.ka]	‘to steal’

Often, *Verlan* words have schwa insertion to facilitate verlanization, but the question of schwa is a complicated one in French. The schwa is generally considered to be part of the French phonemic inventory (Dell, 1973; Tranel, 1987a), and it interacts with the *LdP* (Eychenne, 2014), as it is realized as [ø], [œ], or a mid-vowel somewhere between the two (Dell, 1973, 1985; Morin, 1978; Fougeron et al., 2007). Different varieties of French appear to treat schwa in different ways (Armstrong & Unworth, 1999; Durand et al., 2009), and one of the central debates surrounding it is whether schwa is underlying, and thus French has a deletion rule, or whether schwa is not underlying, and French has an insertion rule (Fougeron & Steriade, 1997; Barnes & Kavitskaya, 2002; Bürki et al., 2011; Smith & Pater, 2020; among others). This article does not make claims regarding the status of schwa or the processes that involve it, and the decision to follow a schwa insertion or schwa deletion approach is not crucial to the analysis in this work. Throughout the description of this data, schwa insertion, rather than schwa deletion, is the assumed process. The reason for this choice is that, in this data, schwas appear in words that do not have an orthographic <e> (which is usually the source of etymological schwas), in borrowings (which would be unlikely to have a phonemic French schwa), and in *Verlan* words after verlanization (which would also be unlikely to have a phonemic schwa and favor insertion).

In (7-9) there are a number of words that have undergone schwa insertion before being verlanized. We find words that were one-syllable words in Standard French verlanized to closed monosyllabic words, but with a different vowel (for example: [bit] -> [tœb]). This is likely the result of schwa insertion at the end of the word, followed by verlanization, final vowel deletion, and resyllabification. This process accounts for the vowel changes between the Standard French words (for instance, [mɔʃ] and [bit]) and their *Verlan* counterparts ([ʃœm] and [tœb]). There is a similar process with disyllabic words with an open first syllable (8), which undergo final schwa insertion and verlanization, but no final deletion. Finally, there is one trisyllabic word (9) which is reduced to two syllables with an open first syllable, through schwa insertion, verlanization, final vowel deletion, and resyllabification.

(7) Examples of schwa insertion: 1-syllable words -> 1-syllable words

Standard French	*Verlan*	Gloss
[mɔʃ] <moche>	[ʃœm]	‘ugly’
[pɛʁ] <père>	[ʁœp]	‘father, dad’
[bit] <bite>	[tœb]	‘male genitalia’

(8) Examples of schwa insertion: 1-syllable words -> 2-syllable words

Standard French	*Verlan*	Gloss
[ʁap] <rap>	[pø.ʁa]	‘rap’
[baʁb] <barbe>	[bø.baʁ]	‘beard’
[riʃ] <riche>	[ʃø.ri]	‘rich’
[dʁɔg] <drogue>	[gø.dʁo]	‘drugs’
[ʒœn] <jeune>	[nø.ʒø]	‘young’
[bɛt] <bête>	[tø.be]	‘stupid’

(9) Trisyllabic word with schwa insertion

Standard French word	*Verlan* word	Gloss
[ka.li.bʁ] <calibre>	[bʁø.lik]	‘caliber, gun’

The above were all examples of simple processes, but there are a number of more complex examples in the data. First, there are several words which have two possible *Verlan* words for one Standard French word, where both *Verlan* words follow the *LdP* (10). The possibility of two *Verlan* words is generally due to one of them undergoing final deletion, which causes a change in syllable structure and thus a change in vowel quality; however, this is not always the case. The final two words in (10), /o.zɛj/ and /ɛs.ki.ve/, are of particular interest because they show two possible syllabifications without insertion or deletion. Here different syllabifications trigger a change in vowel quality.

(10) 1 Standard French word -> 2 *Verlan* words

Standard French	*Verlan*	Gloss
[si.te]	[te.ci] OR [tɛs]	‘estate, projects, inner-city’
[ko.te]	[te.ko] OR [tɛk]	‘side’
[pudʁ]	[drø.pu] OR [drœp]	‘powder, cocaine’
[ʒɥif]	[fø.ʒø] OR [fœʒ]	’Jewish’
[ʁɛgl]	[glø.ʁe] OR [glœʁ]	‘menstruation’
[ni.ke]	[ke.ni] OR [kɛn]	‘to have sex’
[mɛk]	[kø.me] OR [kœm]	‘man, guy, dude’
[fʁɛʁ]	[ʁø.fʁe] OR [ʁœf]	‘brother’
[sœʁ]	[ʁø.sø] OR [ʁœs]	‘sister’
[di.skʁɛ]	[skʁe.di] OR [skʁɛd]	‘discreet, sly’
[ʃit]	[tø.ʃi] OR [tœʃ]	‘hash, cannabis’
[ʃat]	[tø.ʃa] OR [tœʃ]	‘cat, female genitalia’
[pyt]	[tø.py] OR [tœp]	‘prostitute’
[kaʁ.tje]	[tje.kaʁ] OR [tjɛks]	‘neighborhood, hood’
[me.tʁo]	[tʁo.me] OR [tʁɔm]	‘metro’
[stʁiŋ]	[gø.stʁi] OR [gœs]	‘thong’

[foto]	[to.fo] OR [tɔf]	'photograph, picture'
[pi.se]	[se.pi] OR [sɛp]	'to pee'
[stil]	[lø.sti] OR [lœst]	'style'
[ɛs.ki.ve]	[vɛs.ki] OR [ve.ski]	'to avoid, avoided'
[o.zɛj]	[zɛj.o] OR [ze.jo]	'money'

Verlan words derived from Standard French are not the only ones that show this alternation. There are also *Verlan* words formed from English borrowings that follow the same pattern, often through schwa insertion. In addition, some of them also have two possible *Verlan* counterparts (following the same processes as above).

(11) *Verlan* words formed from English borrowings

Standard French	*Verlan*	Gloss
[blak]	[kø.bla]	'black'
[skin]	[nø.ski]	'skinhead'
[ʃit]	[tø.ʃi] OR [tœʃ]	'hash, cannabis'
[spid]	[dø.spi] OR [dø.dø]	'fast, quickly'
[stʁiŋg]	[gø.stʁi] OR [gœs]	'thong'
[staʁ]	[ʁø.sta]	'star, celebrity'
[pœnk]	[kø.pɔ̃]	'punk'
[fut]	[tø.fu]	'soccer'

There are also several additional interesting examples of processes in the data for the formation of *Verlan* words. First, some Standard French minimal pairs can be compared to one another because they both have a *Verlan* counterpart. The minimal pairs in (12) help us understand the *Verlan* word-creation mechanism. For instance, *France* 'France' [fʁɑ̃s] ends with a consonant and requires the insertion of a schwa at the end of the word before verlanization to create [sø.fʁɑ̃]. Schwa here surfaces as the tense variant [ø] which is consistent with the *LdP*. On the other hand, *français* 'French' [fʁɑ̃.sɛ] ends with the mid-vowel [ɛ], no schwa insertion is necessary, and, after verlanization, [ɛ] tenses to surface as [e] in the *Verlan* word, following the *LdP* as well.

(12) *Verlan* words formed from Standard French minimal pairs

	Standard French	*Verlan*	Gloss
1.	[fʁɑ̃s]	[sø.fʁɑ̃]	'France'
	[fʁɑ̃.sɛ]	[se.fʁɑ̃]	'French'
2.	[kʁɔk]	[kø.kʁo]	'bite (present form), a bite'
	[kʁo.ke]	[ke.kʁo]	'to bite, bitten'
3.	[muʃ]	[ʃø.mu]	'blow, snub'
	[mu.ʃe]	[ʃe.mu]	'to blow, to snub'
4.	[baʁb]	[bø.baʁ]	'beard'
	[baʁ.be]	[be.baʁ]	'to bore'
5.	[kam]	[mø.ka]	'drugs'
	[ka.me]	[me.ka]	'drug addict'

6.	[sap]	[pø.sa]	'clothes'
	[sa.pe]	[pe.sa]	'to dress'
7.	[tiz]	[zø.ti]	'alcohol, drink'
	[ti.ze]	[ze.ti]	'to drink'
8.	[bɛz]	[zɛb]	'have sex'
	[bɛ.ze]	[ze.be]	'to have sex'

As previously stated, some words have been verlanized twice, with the first *Verlan* word the base of the second *Verlan* word. These words are particularly interesting as most undergo two successive processes of schwa insertion and still follow the *LdP*.

(13) Reverlanization

Standard French	First *Verlan*	Second *Verlan*	Gloss
[a.ʁab]	[bœʁ]	[rø.bø]	‘Arab, Arabic’
[flik]	[kœf]	[fø.kø]	‘police’
[fam]	[mœf]	[fø.mø] or [fœm]	‘woman’
[de.gi.ze]	[kis.de]	[de.kis]	'disguised, police'

Finally, some *Verlan* words are influenced by orthography, and in the data discussed here, there is one such word, and it interacts with vowel quality changes.

(14) The influence of orthography in verlanization

Standard French	*Verlan*	Gloss
[ne] <nez>	[zɛn]	‘nose’

5. Existing Theories in Light of *Verlan*

5.1. Length and Phonetic Analyses

Morin's (1986, 1988) etymological length analysis does not match the *Verlan* data. Specifically, there are a number of examples that do not match an analysis in which each mid-vowel has tenseness determined by length. For instance, the word *côté* /ko.te/ has two *Verlan* forms [te.ko] and [tɛk]. If we consider the final /e/ in *côté* to be tense, as it stems from a long vowel, following Morin, the vowel should not become lax, as in [tɛk]. Morin's analysis loses all predictive power here: many *Verlan* words created in the past 50 years were productively assigned a tense that does not match the etymological length of the Standard French vowel. As a consequence, his analysis can, at best, explain how the productive rule was created but not how it works synchronically.

Storme's (2017) phonetic analysis based on different target vowels does not account for the data either. His analysis relies on the idea that the tense and lax versions of the mid-vowel pairs have two different phonetic targets, which does not explain the alternation we find with the data here. If each word has a specific phonetic target, it should not alternate based on phonological environment. Following his analysis, a single word like *côté* that has a defined target [e] should not be able to show two *Verlan* forms with either [e] or [ɛ], unless there is a process of alternation that remains to be defined. In addition, the successive verlanizations of *arabe* into [bœʁ] and then into [rø.bø] should also have one target for the schwa; otherwise, the predictive power of the analysis is lost (if there are two possible targets for the schwa, it still does not inform us on what governs the choice). Storme's analysis falls short for the same reasons as Morin's did: one predetermined value for the mid vowel does not explain the alternation in the data, only a phonological rule can.

Montreuil's (1995) analysis of the *LdP* applying to short vowels only is not as problematic when accounting for the data as Morin's and Storme's analyses. However, the data shows that the *LdP* applies to all mid vowels here, which means that, unless all vowels are short, Montreuil's analysis is incorrect for this dialect. In addition, Contemporary Parisian French has lost phonemic length and weight distinctions, according to Montreuil's own work, which discredits this analysis as well. Finally, there are several examples of lengthening consonants present in the data (/z/, /ʁ/, /ʒ/), which would also prevent the *LdP* from applying if it were restricted to short vowels only.

In Morin's (1986, 1988), Storme's (2017), and Montreuil's (1995) analyses, having one input value (either two phonemes from etymological length, or two different synchronic targets) determining the tenseness of the mid-vowel in the output cannot explain the synchronic alternation found in the data.

5.2. Syllabic and Moraic Analyses

The analyses that show the most promise for accounting for the data at hand are syllabic and moraic analyses. The data do not provide conclusive evidence to support one analysis over the other, and in French, it seems that weight and syllable structure are in close relationship (Hyman, 1985). Côté's (2008) analysis, although not directly applicable here because it is meant to capture Laurentian French data, not Parisian French data, may still be useful for understanding the basis of the alternation.

Lenzen's (2008) OT analysis of Midi French may be another useful analysis in accounting for the *Verlan* data. Lenzen's work includes a comprehensive OT analysis of three varieties of French spoken in the South of France regarding the mid vowels. Following Durand and Lyche (2002), her analysis includes a constraint based on morae to describe the alternation (BIMORE[7]), and proposes a few rankings for the different varieties included. Other constraints, such as MAX, DEP, HIE-SON[8], NOYAU[9], CODACOND[10], NOCODA[11], and IDENT(μ)[12], are included in the analysis. Her analysis correctly predicts the alternation in these varieties, and she shows how different constraint rankings work in the different varieties. A few examples of her analysis are shown in (15), from least detailed to more detailed.

(15) Tableaux showing the constraint rankings of Lenzen (2008)

a. analysis of 'bête' (p. 116, Tableau 63)

/bEt/	MAX	DEP	BIMORE
a)☞ bɛt.			
b) bet.			*!
c) be.tə		*!	
d) bɛ.	*!		*

[7] BIMORE: a syllable has two morae (Lenzen, 2008)
[8] HIE-SON: the elements of the onset and coda of a syllable respect the hierarchy of sonority (Lenzen, 2008)
[9] NOYAU: a syllable with no nucleus is illicit (Lenzen, 2008)
[10] CODACOND: if present, dental fricatives have to be in the onset of a syllable (Lenzen, 2008)
[11] NOCODA: a syllable does not have a coda (Lenzen, 2008)
[12] IDENT(μ): every mora in the base form has to be kept in the surface form (Lenzen, 2008)

b. analysis of 'porte' (p. 117, Tableau 64)

/pOʁt/	HIE-SON	BIMORE	NOYAU	NOCODA
a) pɔʁt.		*!		**
b)☞ pɔʁ.t			*	*
c) pɔ.ʁt	*!	*	*	
d) poʁt		*!*		**
e) poʁ.t		*!	*	*
f) po.ʁt	*!		*	

c. Tableaux illustrating the constraint hierarchy (p. xii, Appendix D)

/bEt/	MAX	DEP	HIE-SON	BIMORE	NOYAU	CODACOND	NOCODA	IDENT(μ)
a) be.t					*!			
b) bet				*!			*	
c) ☞ bɛt.							*	
d) bɛ.t				*!	*			
e) be.ti		*!						
f) be	*!							

/ʁwanɛz/	MAX	DEP	HIE-SON	BIMORE	NOYAU	CODACOND	NOCODA	IDENT(μ)
a) ʁwa.nez				*!		*	*	
b) ʁwa.ne.z					*!			
c) ☞ ʁwa.nɛz						*	*	
d) ʁwa.nɛ.z				*!	*			
e) ʁwa.ne.zi		*!						
f) ʁwa.ne	*!							

/ʁwanE/	MAX	DEP	HIE-SON	BIMORE	NOYAU	CODACOND	NOCODA	IDENT(μ)
a)☞ ʁwa.ne								
b) ʁwa.nɛ				*!				
c) ʁwa.nɛz		*!				*		
d) ʁwan	*!						*	

The variety discussed in this paper is different from the ones in Lenzen's work, but one could follow the logic laid out by Durand and Lyche (2002) and Lenzen (2008) and consider the *LdP* to be a constraint, or combination of constraints, based on weight. Figuring out the constraint rankings that apply to the *Verlan* words formed from Parisian French would then help to understand the alternation here.

6. Possible Analyses

6.1. *Verlan* Words are Special and do not Behave Like Other Words

A first attempt to capture why this mid-vowel alternation is so clear in *Verlan* words references their intrinsic properties. *Verlan* words are created by using Standard French words and take the Standard French surface representation as their basis. As such, when a new *Verlan* word is created, the word does not have an UF; instead, words go directly from the Standard French SF to the *Verlan* SF when the word is created. This is crucial, considering faithfulness constraints are UF-to-SF constraints. As *Verlan* words follow a SF-to-SF logic, no faithfulness constraint could be violated here. This analysis would create a situation favorable to the emergence of the unmarked, where the *LdP* constraint we posited becomes the highest-ranking (applicable) constraint. It would also explain why almost all the words in the data follow the *LdP*. In this analysis, faithfulness constraints are higher ranked than *LdP* constraints, but this ranking would not matter. A consequence of this analysis is the prediction that there is no *LdP* application to non-*Verlan* words in this dialect, as faithfulness constraints would apply to them. In other words, the mechanism that reveals the alternation in the data at hand is the fact that the words are *Verlan* words, and any non-*Verlan* word would not show such an alternation.

(16) Tableau showing competing *Verlan* words: one in which the *LdP* applies, and one in which it does not

IDENT-tense: tense in the UF is preserved in the SF

BIMORE: a syllable has two morae

ʒø.te	IDENT-tense	BIMORE
teʒ		*!
=> tɛʒ		

In (16), there are a few points to clarify. The Standard French word [ʒø.te] is used as the basis of the *Verlan* word, but does not represent the UF of the *Verlan* word. The *Verlan* word is created in a SF-to-SF process. As a consequence, the candidate tɛʒ does not violate the IDENT-tense constraint, as it does not have an UF in the first place. Additionally, the BIMORE constraint is used here to represent the *LdP* mechanism, in the manner of Lenzen (2008); however, other constraints could be devised. The important aspect of this tableau is the ordering of the faithfulness constraint and the *LdP* constraint.

6.2. Different Sociolects, Different Grammars

Another analysis is possible in which the sociolinguistics associated with *Verlan* reveal the *LdP* constraint. Here, contrary to the analysis above, it is not the fact that *Verlan* words are *Verlan* that matters; rather, it is characteristics that come from the users of *Verlan*. *Verlan* being slang, its use is restricted to informal registers. The near-categorical application of the *LdP* in *Verlan* could suggest that the *LdP* constraint is highly ranked in informal registers (concomitant to the use of slang) and, crucially, outranks faithfulness constraints.

The phenomenon would be seen as different registers having different grammars, and therefore, an almost diglossic linguistic situation, where Standard Parisian French and Informal Parisian French are two sociolects spoken by the community, is created[13]. In this analysis, the constraints would be ranked differently in the two sociolects. *Verlan* words necessarily belong to the Informal Parisian French variety, and, as such, they would follow the grammar in which the *LdP* constraint is highly ranked. In opposition, in Standard Parisian French the constraint would be ranked lower. Using the word *vrai*, the ordering of constraints for Standard French, in which the faithfulness constraint IDENT-tense is ranked higher than the BIMORE constraint, shown in (17), reveals the *LdP*. However, in (18), the ordering of constraints for Informal Parisian French matches the expected pronunciation for the *Verlan* word. If this analysis were to be correct, one would expect to find cases, like the one in (19), in which the non-*Verlan vrai* would be pronounced [vʁe] in Informal Parisian French. This gradual loss of the phonemic contrast, and as such the possibility for the alternation to follow the *LdP*, is noted by Berit Hansen in her review of young Parisian speech (Berit Hansen, 2012). Finally, Parisian French and Informal Parisian French could be considered to have different phonemic inventories but the same grammar. Here, both varieties would have the same ranking of constraints, but Informal Parisian French could have merged or underspecified mid vowels for which the *LdP* would apply categorically. Parisian French, on the other hand, would maintain a phonemic contrast, and faithfulness constraint would block the *LdP*.

[13] The same outcome could be achieved without requiring two separate grammars, but rather one grammar with weighted or floating constraints.

(17) Tableau showing the ordering of constraints for Standard French

/vʁɛ/	IDENT-tense	BIMORE
=> vʁɛ		!
vʁe	*!	

(18) Tableau showing the ordering of constraints for Informal Parisian French with a *Verlan* example

/ʒø.te/	BIMORE	IDENT-tense
=> tɛʒ		!
teʒ	*!	

(19) Tableau showing the ordering of constraints for Informal Parisian French with a non-*Verlan* example

/vʁɛ/	BIMORE	IDENT-tense
vʁɛ	*!	
=> vʁe		!

6.3. Why has Better Evidence not been Found in the Past?

Both analyses above could explain why past studies have struggled to find data supporting the *LdP*. In the first, there is the formation of *Verlan* words, which is not shared by other French words. Standard French words usually do have an UF, and as such faithfulness constraints apply to them. Non-*Verlan* French words may also have *LdP* constraints, but they are blocked by higher-ranking faithfulness constraints. This analysis would explain why words, such as *vrai* [vʁɛ], *côte* [kot], or *français* [fʁɑ̃sɛ], do not follow the *LdP*.

The second analysis, if correct, would also help explain why more conclusive and categorical evidence for the *LdP* has not been found. If the *LdP* is a constraint that varies in ranking based on register, one would need to control for register to understand the alternation. *Verlan* words are generally restricted to informal speech, but non-*Verlan* French words, which have been used in examining the alternation in the past, do not have such a restriction: most can be used in any register. One can then easily imagine how the variation in the data could arise: without controlling for formality, one speaker might use more informal speech in which the *LdP* applies, whereas another might use more formal speech, where the *LdP* is blocked. Alternatively, speakers could have some words encoded as more informal than others.

This second analysis is similar to the one made by Itô et al. (1996) for the Japanese jazz language game which also rearranges syllables. They explain that the change in phonological material triggers prosodic changes that can be explained through an OT analysis. The set of constraints proposed in their analysis allows for the emergence of the unmarked and of an optimal prosodic form. As such, *Verlan*, just like any language game, would show what Itô et al. call "minimal distortion" (p. 281), which would essentially be the optimal form from a specific ordering of a set of constraints. This type of analysis is also part of the analysis of *sakasa kotoba* put forward by Kitaoka and Mackenzie (2021).

6.4. Implications for the Phonemic Inventory of French

The locus of the mid-vowel alternation gives rise to considerations for the phonology of French. A common analysis of different varieties of French considers them to have different phonemic inventories. One difference is whether the mid-vowel pairs are phonemic or allophonic. The common view is that in Standard French the mid-vowel alternation is phonemic because a large part of the alternation is unpredictable. On the other hand, in Midi French, for instance, the *LdP* applies almost categorically, and the mid-vowel pairs are often considered allophones.

If correct, the analyses developed in this paper would have implications for this question. First, if *Verlan* words do not have an UF, this would suggest that faithfulness constraints are higher ranked than *LdP* constraints, both in Parisian French and varieties like Midi French. Again, Parisian French would have higher-ranked faithfulness constraints that simply do not apply to *Verlan* words but apply to the rest of the language. Midi French would have no phonemic distinction between the mid-vowel pairs (and simply allophonic alternations), and consequently faithfulness constraints would not be violated. This would explain why the *LdP* applies almost categorically in this variety.

However, there could also be different grammars for different registers of Parisian French. In this case, Parisian French would have a phonemic distinction in tenseness, but in the informal and formal varieties different mid vowels would surface due to different rankings of constraints. Faithfulness constraints in the formal variety would preserve a mid vowel that violates the *LdP*, but in informal French the higher ranking of the BIMORE constraint reveals the *LdP*.

Finally, one could also consider the two sociolects of Parisian French to have different phonemic inventories. Here, a phonemic alternation in tenseness for the mid vowels would exist in Standard Parisian French, but it would have disappeared in Informal Parisian French, giving way to an allophonic alternation. As such, Informal Parisian French would be closer to Midi French regarding the phonemic status of mid vowels, and both would follow the *LdP* almost categorically.

To confirm any of the above analyses, one would need to look at other informal speech data from the Paris area. To start, focusing on non-*Verlan* words specific to informal speech, such as slang, could help determine whether the *LdP* applies universally across Informal Parisian French. For example, words like *boloss* 'loser', *daronne* 'mother', *clope* 'cigarette' are all informal, but they were not created through verlanization. Alternatively, examining Standard French words, such as *vrai* 'true' or *épais* 'thick', when used in informal speech could also lead to a better understanding of the phenomenon.

7. Conclusion

In this paper, I have shown that *Verlan* words behave differently than Standard Parisian French words with regard to the mid-vowel alternation. They almost categorically follow a very simple iteration of the *LdP*, and with the continuous creation of new *Verlan* words, the *LdP* appears to be productive in Informal Parisian French. The difference between *Verlan* and Standard French words could be specific to *Verlan* words themselves, or it might be due to register, as *Verlan* can only be used informally. This latter analysis would support the conclusion that different registers of French behave differently when it comes to constraint rankings, or that they may have different grammars entirely. If this view is correct, it could also help explain why the data show a lot of variation when it comes to mid vowels: different grammars would have different ways of handling the contrast.

In terms of the theoretical analysis, the phenomenon can be examined through OT. The *LdP* would be one constraint that ranks differently from one grammar (or one sociolect) to the next. This constraint could be syllabic, or it could be the result of weight restrictions. It could even be based on etymological length from a diachronic perspective, as suggested by Morin. The exact incarnation of the mid-vowel constraint and of other constraints in the grammar would vary between dialects, but this is left to future work. One other analysis, though, is that *Verlan* words behave differently than Standard French words. Here, through the absence of the application of faithfulness constraints, the emergence of the unmarked occurs, which creates an almost categorical *LdP*.

In addition, this question could inform a variety of different theoretical topics in French. For instance, it could suggest that the phonemic status of the alternation differs not only from one geographical variety of French to the next, but also from one sociolect to another. More generally, *Verlan* words could give insights on the status of glides, schwa, and syllabification in French.

Empirical work remains to be conducted, but it comes with challenges. First, if we aim at controlling formality, experimental work becomes more complicated since experiments tend to favor more formal, controlled speech, and as such the data could be biased. As for existing data, although *Verlan* is used regularly by some communities, existing corpora do not have enough data to examine patterns more extensively. In the short term, acceptability judgement data might be the best avenue. This data would allow the *Verlan* judgements and pronunciation discussed here to be confirmed. Finally, furthering the OT analysis is necessary. In order to do so, a complete OT analysis of *Verlan* itself would need to be devised before matching it to the mid-vowel data.

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