du and *au* are not portmanteau

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1 Introduction

1.1 Portmanteau

We are addressing the textbook example of a portmanteau realization, one of the initial examples that inspired Hockett (1947) to identify this kind of phenomenon in his ontology of problems for an Item and Arrangement approach to morphology, coining the term **portmanteau morph** (not *morpheme* as many erroneously call it!). In fact, Hockett called French /o/ «the simplest example of a portmanteau».

(1) French *à le* → /o/:

    a. Je m'adresse   à l'adorable   public.
        I   myself.address to the.wonderful audience

    b. Je m'adresse   au   public
        I   myself.address to.the audience

(2) French *de le* → /dy/:

    a. Je bois   de l'absinthe.
        I   drink of the.absinthe

    b. Il   boit   du   lait.
   He drinks of.the milk

Def: A portmanteau morph is a single morph «which belongs simultaneously to two [...] morphemes» (Hockett 1947:333).

1.2 Portmanteau in DM

- A portmanteau corresponds to the realization of two (or more) syntactic heads by a single Vocabulary item.

- Since Vocabulary insertion targets terminal nodes, this necessitates prior **Fusion** of two syntactic heads (3a) (cf. Halle and Marantz 1993)

- Since Fusion is the union of terminal sister nodes, this necessitates prior **head-head adjunction** through Head-movement or Lowering (3b), or PD-Affixation, a kind of local dislocation (Embick 2010:88).[1]

(3)   a. Fusion (Embick 2010:78)
$$[_X \; \alpha] \; [_Y \; \beta] \rightarrow [_{X/Y} \; \alpha, \beta]$$
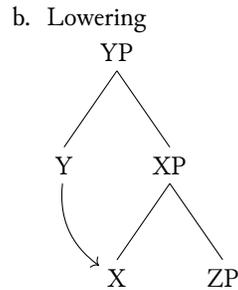
      b. Lowering

Note: Lowering and Fusion precede Vocabulary insertion.

- Since the portmanteau realizations of French *de la* as *du* and *à le* as *au* are restricted to pre-consonantal contexts, that means:

- head-head adjunction of Y and X would have to occur iff the leftmost morpheme in the complement of X, ZP, spells out as a consonant-initial vocabulary item, which means:

- Displacement of P would have to be sensitive to the phonology inside of ZP.

- As P and D are generally assumed to be spelled out in separate phases, the D will (i) have spelled out prior to the spell out cycle of P, bleeding fusion, and (ii) the P should only be potentially sensitive to the phonological properties of D, and not the VI to D's right.

$\rightarrow$ French *du* and *au* ain't portmanteau.

1.3   Why only with *de* 'of' and *à* 'to'?

- *de* and *à* are no ordinary prepositions

- They are also the infinitival complementizers (4), cf. Kayne (1981, 1999).

- They are also dative and genitive Case markers (5).

(4) a. Il commence à   pleuvoir.
        it starts   to rain.INF

      b. J'ai   arrêté de fumer.
          I.have quit   DE smoking.INF

(5) a. Je lui donne un livre [à Marie]
        I   her give   a   book to Mary

      b. Je vois un ami   [de Paul]
          I   see a   friend of Paul's

---

[1]This is equally necessary if the possible target of VI is extended to non-terminal heads instead of Fusion (Radkevich 2010; Bobaljik 2012).

1.4   Proposal in short

- We argue that the observed alternation is **strictly phonological**.

- French *de* and *à* are not prepositions but instances of Case K.

- The VI that realizes the definite article is a floating velar without accompanying syllabic structure, i.e. in search of a V or C position to be pronounced in.

2   In which *de* and *à* are argued to be inside the DP

- Typically, DP is a spell out domain (strong phase), and a selecting P would be outside of that domain.

- Question: do *à/de* and the definite article have to be in the same spell out domain for the hypothesized phonology to occur?

    If 'no', nothing special in the syntax.

    But, there are phonological reasons to assume 'yes', and that leads us to two possible solutions:

A. DP is deficient and not a phase, so there is no spell out domain between the Ps *de/à* and D, cf. (6).

(6)   a. Je vois le   garçon.
          I see   the boy
       b. [ʒœ vwa l gaʁsɔ̃]

B. *de/à*, respectively, are, in fact, part of the left periphery of DP and are thus internal to the spell out domain of DP.

→ We will adopt (B).

2.1   Solution A: DP without a phase head

- The DP that contains /l/ in the cases of au/du is structurally defective: it does not contain the full inventory of left-peripheral functional structure possible in DPs.

- A number of linguists have proposed two D positions in DP:

    -Ihsane and Puskás (2001): def article is merged in DefP, a projection parallel to FinP in Rizzi's left periphery of the clause (Rizzi 1997)

    Definite article can remain low and be interpreted as a non-specific definite or raise to the highest projection D in specific or demonstrative contexts (Ihsane & Puskas op. cit.).

    - Bernstein et al. (2019) → two DP layers where the higher D is a strong article (Schwarz 2013)

- We might thus hypothesize that DP in the complement of *à/de* is deficient and lacks the highest head, with the result the absence of a phase head between P and D.

- The partitive interpretation in examples such as *Je veux du gateau* 'I want (some) cake' is certainly compatible with this; this would correspond to an indefinite in Germanic.

2.2   Problems with solution A

- Structural deficiency of DP implies interpretive deficiency (Déchaine and Wiltschko 2002). However, the DP in the context of *à/de (au/du)* seems to behave just like any other definite DP, with the same range of semantics (specific, or non-specific definite, strong/weak...). (With the exception of partitives, but this is because they are partitives.) E.g.

(7)   a. J'ai vue le garçon. Il était heureux.
         'I saw the boy. He was happy.'
      b. J'ai parlé au garçon. Il était heureux.
         'I talked to the boy. He was happy.'

- To account for this, we would need to make the undesirable hypothesis that the specific interpretation is established pragmatically, in the absence of any corresponding structure.

- Raises the question of what makes the prepositions à and de different in that they would always select a deficient DP; without a good answer this is stipulative.

2.3   Solution B: *à/de* are internal to DP

- The so-called prepositions à and de, respectively, are heads in the left-periphery of the DP, thus internal to the spell out domain of DP.

- Specifically, they head oblique case projections, KPs, and express GEN and DAT, respectively.

- Advantage:

    - Provide a unified analysis of *de* and *à*: they are always of category K, as opposed to traditional assumption of them being sometimes prepositions (2) and sometimes case markers and/or partitive determiners (3-4) (?Tellier 1995).[2]

    - Thus, offer an answer to the question of why *à/de* are different from other Ps.

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[2]And, of course, sometimes complementizers (cf. Tellier 2018). We leave the issue of complementizers aside here.

2.3.1 *à (à la; à l'; au; aux)*

- *à* in canonical dative contexts, e.g. indirect objects, where the verb licenses dative case:

(8) a. Je donne un bec à la fille / à l'animal / au garçon.
     I give a peck to the girl / to the.animal / to.the boy

 b. La mère à la fille / à l'animal / au garçon.
     the mother of the girl / of the.animal / of.the boy

(9) *donner* DP $[_{KP}$ $[_K$ à$_{dat}]$ $[$ D $[_{NP}$ ...$]]]$

- *à* in spatial constructions: *à* occurs with both a stative as with a directional interpretation:

(10) a. Je suis à la bibliothèque / à l'institut / au magasin.
      I am at the library / at the.institute / at.the store

 b. Je vais à la bibliothèque / à l'institut / au magasin.
      I'm going to the library / at the.institute / at.the store

→ The oblique DP is selected by an abstract noun PLACE or PATH, respectively (Noonan 2010:and others)

(11) $[_PP$ LOC $[_{NP}$ PLACE/PATH $[_{KP}$ $[_K$ à$_{dat}$ $]$ $[_{DP}$ D $[_{NP}$ ... $]]]]]$[3]

→ the observation that *à* is translated to both English *at* and *to* (*bei* and *zu* in German) does not require any special treatment; it is simply dative in the context of both spatial constructions (Noonan 2010:and others).

2.3.2 *de (de la; de l'; du; des)*

- *de* in canonical genitive contexts, e.g. possessive constructions:

(12) a. Les yeux de la fille / de l'animal / du garçon.
      the eyes of the girl / of the animal / of the boy
 b. $[_{DP}$ $[_{NP}$ Noun $[_{KP}$ $[_K$ de$_{gen}]$ $[_{DP}$ D $[_{NP}$ ... $]]]]]$

- *de* in spatial contexts (source interpretation):

(13) a. Je sors de la bibliothèque / de l'institut / du magasin.
      I'm coming out of the library / of the institute / of the store
 b. $[_{NP}$ PATH $[_{KP}$ $[_K$ de$_{gen}]$ $[_{DP}$ D $[_{NP}$ ... $]]]]$

- An alternative to the structure above is that such a verb selects an ablative KP, and the *de* exhibits case syncretism for genitive and ablative.[4]

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[3]Note that dative case (à) is not possible in the presence of a pronounced LOC-PLACE: Il est à la gare. Versus *Il est dans/ derrière/sur/sous à la boîte Cf. German, where such adpositions are followed by dative case. We leave this problem for further research.

[4]N.B. this might be problematic with respect to Caha's case hierarchy (Caha 2009). But see Baerman (2008); Assmann (2014).

- *de* in partitives:

(14) a. Je mange de la   crème glacée / de l'ananas / du chocolat.
          I eat   (some) ice   cream / pineapple / chocolate
      b. [$_{NP}$ QUANTITY [$_{KP}$ [$_K$ de$_{gen}$] [$_{DP}$ D [$_{NP}$ ...]]]]

In (14a), the oblique DP is selected by an abstract noun of (undefined) quantity; cf. AMOUNT/NUMBER in chpt 1 of (Kayne 2008).

2.4   Interim conclusion

- What is special about *à/de*? → They are Ks (DAT and GEN, respectively), and never prepositions.

- The phonology for the interaction of *à/de* with *l-*, detailed in the next section, occurs internal to a spell out domain.

3   In which 'du/des' and 'au(x)' are phonologically derived

This section lays out a phonological analysis of the alternations between 'à' (15) and 'de' (16) and the masculine determiners in the singular (a,b) and plural (c,d).

(15) a. [alanimal]   (16) a. [dəlanimal]
          à l' animal   de l' animal
          to the animal   of the animal

          'to the animal'   'of the animal'

      b. [ogaʁsɔ̃]   b. [dᶻygaʁsɔ̃]
          au   garçon   du   garçon
          to the boy   of the boy

          'to the boy'   'of the boy'

      c. [ozanimo(z)]   c. [dezanimo(z)]
          aux   animaux   'des   animaux'
          to the.pl animals   of the.pl animals

          'to the animals'   'of the animals

      d. [ogaʁsɔ̃(z)]   d. [degaʁsɔ̃(z)]
          aux   garçons   des   garçons
          to the.pl boys   of the.pl boys

          'to the boys'   'of the boys'

3.1 Background phonological assumptions

- Autosegmental Phonology includes the autonomous existence and behaviour of syllabic structure, association lines, and melodic (segmental) structure. (Goldsmith 1976; Scheer 2004)

  – The syllable structure in the derivations below use Scheer's CVCV Phonology. (CV = σ)

- The internal structure of segments is best captured in Element Theory and Government Phonology 2.0 (Pöchtrager 2015; Pöchtrager and Kaye 2013; Backley 2011).

  – |I| = coronal (|I̲| = palatal), |U| = velar (|U̲| = labial)

  – the Element |A|, associated with aperture in vowels, is not an element, but rather empty melodic structure (à la Feature geometry) (Pöchtrager 2006)

  – Coronal stops in French contain |I| and this Element will spread to a following vowel if it has the *structure* of a high, front vowel.

- The morpheme realized as [l] in [lə] is underlyingly a floating Element |U| (=[labiovelar]) (Collischonn and Costa 2003). (On Substance-free phonology see Chabot (2022).)

- Hiatus resolution in French is the deletion of one of a sequence of two vocalic root nodes (indicated as bullets (= •) in the structures to follow).

  – A root node that is unassociated to melodic structure is weak and will be deleted in hiatus.

  – When two associated vowels are in hiatus within a phase, the second is deleted.

3.2 Underlying Representations

The following representations are what are inserted into the phonological string at Vocabulary Insertion and constitute the input to the phonological derivations.

(17) *UR of 'à'*

```
C   V
    |
    •
    |
    a
    |
   |A|
```

(18) *UR of 'de'*

```
C   V
|   |
•   •
|
d
|
|ʔI|
```

(19) *UR of 'l'*[5]

```
|U|
```

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[5]See Appendix A for a potential revision of this UR.

7

3.3 The derivations

Let us first consider a derivation with the definite article, but without *à* or *de*:
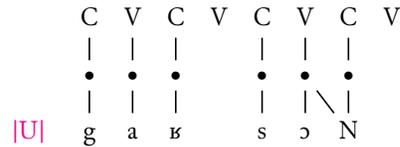
(20) [[lə gaʁsɔ̃]]
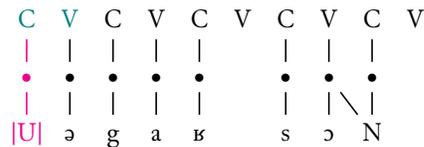
    l   garçon
    def.sg boy

    'the boy'

In *le garçon* the 'l' = |U| cannot syllabify as the onset of the following word, but must syllabify nonetheless (floating melody remains unpronounced). Note, however, that without further assumptions, we cannot explain either the pronunciation of [l] or the insertion of schwa with the structure in (21):

(21) [ləgaʁsɔ̃] (to be revised)

```
        C   V   C   V   C   V   C   V
        |   |   |       |   |   |
        •   •   •       •   •   •
        |   |   |       |   |\  |
   |U|  g   a   ʁ       s   ɔ   N
```

The way in which we must account for the fact that 'l' can be pronounced here and that schwa is inserted is to appeal to the exponent of CASE : here an empty CV is the (syncretic) UR of NOM and ACC.
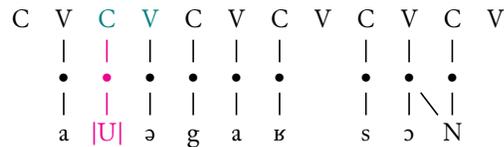
(22) [ləgaʁsɔ̃]

```
        C   V   C   V   C   V   C   V   C   V
        |   |   |   |   |       |   |   |
        •   •   •   •   •       •   •   •
        |   |   |   |   |       |   |\  |
   |U|  ə   g   a   ʁ           s   ɔ   N
```
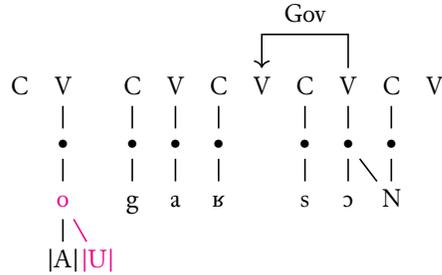
3.4 The à + le derivations

Given the above, we need to explain why the UR *à le garçon* is not realized as *[aləgaʁsɔ̃], as in (23).

(23) *[aləgaʁsɔ̃]

```
    C   V   C   V   C   V   C   V   C   V   C   V
        |   |   |   |   |   |   |       |   |   |
        •   •   •   •   •   •   •       •   •   •
        |   |   |   |   |   |   |       |   |\  |
        a  |U|  ə   g   a   ʁ           s   ɔ   N
```

The answer, following from the discussion in Section 2, is that 'à' is the exponent of GEN case, and as such the CV exponent of NOM/ACC case is not present in the structure, giving (24) instead.
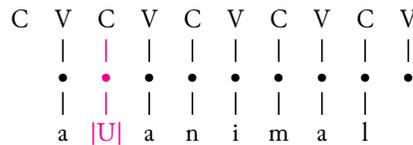
(24) [ogaʁsɔ̃]

```
                                          Gov
                                       ┌──────┐
                                       ↓
   C   V     C   V   C   V   C   V   C   V
       |     |   |   |       |   |       |
       •     •   •   •       •   •       •
       |     |   |   |       |   |\      |
       o     g   a   ʁ       s   ɔ  N
       |\
      |A||U|
```

In (24) the |U| of the definite determiner links to the vocalic structure to its left, as it is a floating feature bundle that may link inside the structure afforded by [a]. The coalescence of the low vowel |A| and the high back vowel |U| results in a back mid vowel |AU| = [o].[6] An element |U| will be interpreted vocalically if its leftmost attachment site is vocalic, and consonantally if its leftmost attachment site is consonantal.

To round out the discussion of the 'à le' derivations, consider the structure of *à l'animal*:

(25) [alanimal]

```
   C   V   C   V   C   V   C   V   C   V
   |   |   |   |   |   |   |   |   |   |
   •   •   •   •   •   •   •   •   •   •
   |   |   |   |   |   |   |   |
   a  |U|  a   n   i   m   a   l
```
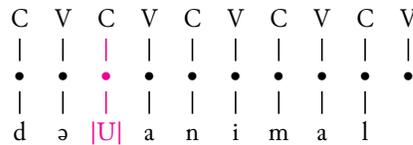
In (25) the 'l' of the definite determiner branches onto the open onset position afforded by *animal*, and is therefore pronounced as a consonant [l].

3.5 The de + le derivations

Now let us consider the derivation of 'de' and 'l'. Before a V-initial word, the following structure is derived:
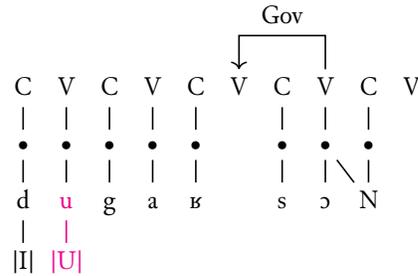
(26) [dəlanimal]

```
   C   V   C   V   C   V   C   V   C   V
   |   |   |   |   |   |   |   |   |   |
   •   •   •   •   •   •   •   •   •   •
   |   |   |   |   |   |   |   |   |
   d   ə  |U|  a   n   i   m   a   l
```

In (26) the definite 'l' links as in (25). A schwa is inserted in the V position following the [d] of *de*.

---

[6]This, however, will not allow us to account for the irregular plural alternations (e.g., *animal-animaux*) using the same mechanisms as 'à l' ' vs 'aux'. See Appendix A for a discussion of the irregular plural, where we will need to conclude that liaison Cs are underlying geminates.
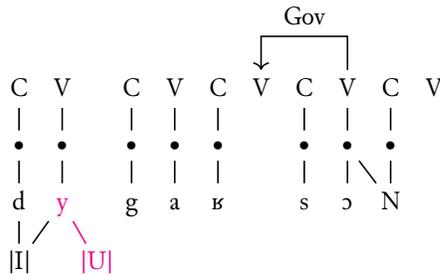
Now let us turn to the derivation of 'du garçon'. If we were we to only link the |U| to the empty V position, we would derive [du], which is not the required output form.

(27) *[dugaʁsɔ̃]

```
                              Gov
                             ┌─→──────┐
                             ↓        
        C   V   C   V   C    V   C   V   C   V
        |   |   |   |   |        |   |   |
        •   •   •   •   •        •   •   •
        |   |   |   |   |        |   |\  |
        d   u   g   a   ʁ        s   ɔ   N
        |   |
       |I| |U|
```

Instead, we need a source for the |I| Element required to combine with |U| to derive [y] = |IU|. The source for this |I|, as proposed in Section 3.1, is the preceding coronal stop. /d/ and /t/ are proposed to contain |I|. If this |I| is shared the structure derived in (27) becomes as below:

(28) [dᶻygaʁsɔ̃]

```
                              Gov
                             ┌─→──────┐
                             ↓        
        C   V     C   V   C   V   C   V   C   V
        |   |     |   |   |       |   |   |
        •   •     •   •   •       •   •   •
        |   |     |   |   |       |   |\  |
        d   y     g   a   ʁ       s   ɔ   N
        | ╱  ╲
       |I|   |U|
```

Explaining why the coronal stop should spread |I| onto the node to which |U| is linked requires an excursus into the internal structure of vowels. The short story is that the linking of |U| results in a phonological structure that is identical to that of a high, front vowel, rather than the structure of a back vowel. It therefore triggers the spreading of |I|. The long story is in the following subsection.

3.5.1 In which |U| os a front vowel

Explaining the front round vowel in the output of *du garçon*, requires a detailed consideration of the internal structure of the segments involved. Remember that in Section 3.1 it was proposed that coronal stops in French contain the element |I|. This element is proposed to be responsible for the assibilation facts in Quebec French, whereby /d/ and /t/ become [dᶻ] and [tˢ] before high, front vowels, as in [tˢy] 'tu' and [dᶻivɛʁ] 'diverse'. We propose that this assibilation is due to coalescence of the |I| elements of the consonants and the structure of the following Vs.

(29) [tˢy]

```
        C     V
        |     |
        •     •
        |     |
        t     y
         \   /
          \ /
          |I|
```
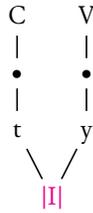
Notably, we also propose that the structure in (29) is derived even in dialects of French without assibilation; in Hexagonal French, for example, the structure in (29) is realized as [ty].

The representation of the definite 'l', being |U|, does not immediately appear to be the type of vowel that should share |I| with a coronal stop: the default phonetic interpretation of |U| is [u], a high, back vowel. In order to explain why the |I| of /d/ may merge with the |U| of the definite determiner there must be a property that is shared between the high, front vowels and |U| that is not shared with [u]. In other words, high, front vowels and |U| must form a natural class. If we examine the structures below from Pöchtrager (2024), we note that vowels contain two types of structural projection: n and N. These structures can be likened to the different levels of structure in a more traditional Feature Geometric representation. Notably, front and back vowels may be distinguished by the types of structures they project.
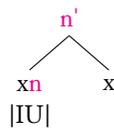
(30) *The structure of [e]*
      xn (schematic)

```
            n'
           /  \
        xn     N'
              /  \
           xN     x
           |I|
```
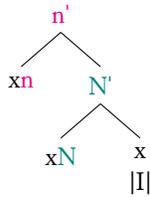
(31) *The structure of [o]*
      xN (schematic)

```
               N''
              /  \
            N'     x
           /  \
        xN     x
        |U|
```
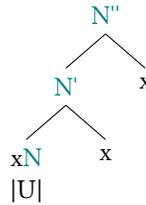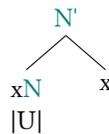
Therefore, the front and back rounded vowels in French, [y] and [u], can be distinguished by their structural projections, as follows:

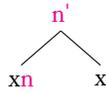(32) *The structure of [y]*
      xn (schematic)

```
            n'
           /  \
        xn     x
        |IU|
```

(33) *The structure of [u]*
      xN (schematic)

```
            N'
           /  \
        xN     x
        |U|
```

Given the above distinction, we can describe the environment of assibilation structurally: Coronal consonants spread |I| to a following V iff this V projects a single xn layer. This captures that coronal Cs assibilate in the presence of high, front Vs.

Now consider the status of a floating Element. Such an Element, like |U|, does not contain any segmental structure in its underlying representation. Therefore, when this floating bundle does link to available syllable structure this process must be mediated by epenthetic segmental structure. The epenthetic vowel in French is schwa, which has the least marked segmental structure, as in (34). If we link the floating |U| to this structure, the result is the structure of a high, front vowel which happens to not contain |I|: (35). It is this xn structure that triggers spreading of the |I| in coronal stops, leading to assibilation in the presence of a vowel whose Element suggests 'backness'. Given that French permits high, round vowels, |U| itself cannot be limited to 'back' vowels and will not block assibilation.

(34) *The structure of [ə]*

(35) *The structure of [vocalic l]*
      cf. (33)
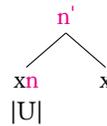
The conclusion of this discussion is that the structure of the underspecified |U|, unlike French phonemic [u] (which has the structure in (33)), will trigger spreading of |I| from the [d] of the GEN marker, leading to the fronting of |U| to |IU| = [y], as in (28), and to the assibilation of [d] in Quebec French.

3.6 The plural derivations

We can now turn to the derivations of 'aux' and 'des'. The UR of the plural morpheme contains, in addition to a liaison C [z], the vowel [e]. This [e] must be an exponent of a separate morpheme from the plural (see e.g., Tremblay and Dufresne (2018)). It appears not only in *des* but also in the possessive pronouns *mes, tes, ses* and the plural determiner *les* (a sub-component of 'de + les' = 'des'). In the derivations to follow we will abstract away from this, but will assume that the plural morpheme in the determiners is as in (36) while the non-determiner plural is just the liaison C as in (37).

(36) *UR of [ez]*
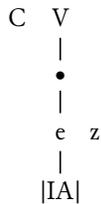
(37) *UR of [z]*

We can now consider the derivation of 'aux' and 'des'.[7] In (38), before linking of |U|, there are two vocalic root nodes in hiatus: those associated with [a] and [e]. Hiatus of two full vocalic root nodes in French within a cycle is resolved by deleting the second. In CVCV phonology, this deletion will result in removal of the preceding C as well: all syllabic sequences must be CV and therefore a C position cannot be 'orphaned'. Deleted content is grayed out.

(38)   [o(z)]

```
C    V        C    V
     |             |
     •             •
     |             |
     o             e    z
     |\            |
    |A||U|        |IA|
```
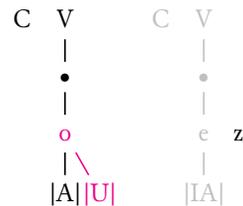
In the derivation of 'des', in comparison to the derivation of 'aux', there is no segmental structure in the root V position associated with the GEN vocabulary item. Therefore, under hiatus, before linking of the definite |U|, this hiatus is resolved by deletion of the empty V node, and of the following unlinked C node (in gray) (following Gussmann and Kaye (1993)).

(39)   [de(z)]

```
C    V        C    V
|    |             |
•    •             •
|    |             |
d                  e    z
|                  |
|I|       |U|     |IA|
```
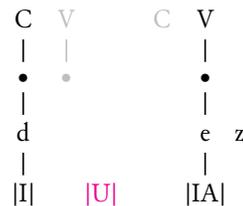
In (39) the definite |U| has no node to link to and therefore remains unpronounced. One might wonder now why the |U| does not merge with the [e] of 'des'. The short answer is that coalescence we saw in (24) is only be possible with certain vowels; vowels that do not contain any Elements.

### 3.6.1   In which floating |U| only merges with empty vowels

Following (Pöchtrager 2006) and subsequent work, the vowel that we have been referring to with the Element structure |A| is in reality a vowel whose structure is devoid of Elements. Aperture in Government Phonology 2.0 is represented by structure, as in (40). We can compare the structure of [a] with the structure of [e] in (41), a vowel that hosts the Element |I| within its structure.

---

[7]The pronunciation of the [z] of the plurals is dependent on the following word. For details see Appendix A.

(40) *The structure of [a]*
    No Elements
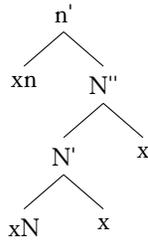
(41) *The structure of [e]*
    Contains an Element
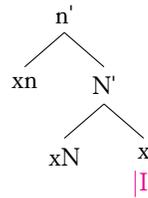
|U| may link to |A| (empty structure) (and to /ə/, as in (34)), but cannot merge with the vowel [e] in 'des'.

4 Conclusion: *du* and *au* are not portmanteau

In this talk we presented arguments that the surface forms [dᶻy], [de(z)], [o], and [o(z)] are not realizations of portmanteau morphs, but rather are derived in the synchronic phonology of French. This offers a phonological solution to the morphological problems raised when attempting to derive these forms as portmanteau. The central claims supporting these arguments are as follows:

- 'de' and 'à' are not true prepositions, but are rather the exponents of KASE.

- KASE morphemes are spelled out in the same phase as the definite determiner.

- The phonological derivation within a spell out cycle allows for a synchronic phonological derivation in which the UR of 'l', |U| is realized either as a C or as (part of) a V depending on the normal workings of autosegmental phonology.

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Appendix A

Let us consider here what we would need to say in order to derive the irregular plural morpheme [o] 'aux' in the synchronic phonology of French. The irregular plural derivation is historically linked to the process of l-vocalization (Pope 1942[8]). Therefore, if the definite article is synchronically alternating between [l] and [o], we should seriously consider that the irregular plural formation is synchronically active as well.

For this to be true, we must accept that French has two distinct structures that may spell out as [l]. The first is what we might consider a 'Regular' /l/, and in (42). This /l/ is fully specified as a consonant and linked to its underlying syllabic position. The second 'Floating l', as in (43), is as discussed in the talk above.

(42) *Regular l*

    C V
    |
    •
    |
    l

(43) *Floating l*
    (preliminary)

    |U|

The 'Regular l' does not alternate. It is the [l] found in final position in (44a). The 'Floating l' does alternate, as in (44b).

(44) a.   festival(s)   [fɛstival(z)]
        b.   animal-animaux   [animal]-[animo]

The reason that the [l] in (44a) does not alternate is that it is not floating. It is a simplex, non-liaison C. In the plural, the floating [z] is merged, and as it cannot link to a C position it is not pronounced.

---

[8]Pope, Mildred Katharine. 1952. From Latin to modern French. London: Butler & Tanner.

(45)   [fɛstival(z)]

```
                  Gov
              ┌──────┐
              ↓      |
  C   V   C   V   C   V   C   V   C   V
  |   |   |       |   |   |   |   |
  •   •   •       •   •   •   •   •
  |   |   |       |   |   |   |   |
  f   ɛ   s       t   i   v   a   l       z
```
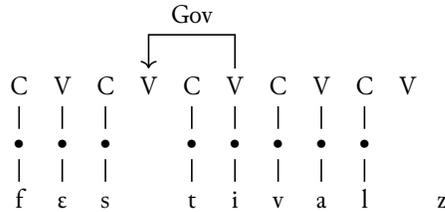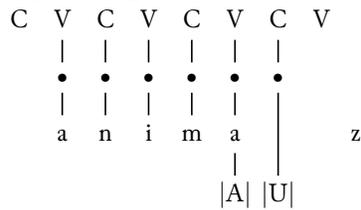
In the case of (44b), we run into problems with our derivation. First, the [l] in 'animal' is pronounced, even when not followed by a vowel. This tells us that the [l] must be linked to a C position in the singular 'animal'. It is unclear how a floating [z] could affect the realization of a linked [l].

(46)   ??*[animo(z)]

```
  C   V   C   V   C   V   C   V
      |   |   |   |   |   |
      •   •   •   •   •   •
      |   |   |   |   |
      a   n   i   m   a           z
                          |
                         |A| |U|
```

One type of solution to this problem is afforded by Government / CVCV Phonology: virtual gemination. If we were to propose that floating Cs in French were specified as geminates, the presence of [z] could impact the realization of 'Floating l', as it would be impacted by the government of the V position between |U| and [z]. This entails that both |U| and [z] are specified to branch on two positions, and are only pronounced if they are successful.

(47)   *UR of 'l'*

```
    C   V



      ⁝ ⁄
     |U|
```

(48)   *UR of 'z'*

```
    C   V



      ⁝ ⁄
      z
```
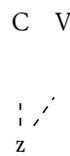
To begin, the structure of the singular 'animal' would be as follows:

(49)   [animal]

```
  C   V   C   V   C   V   C   V
      |   |   |   |   |   |   |
      •   •   •   •   •   •   •
      |   |   |   |   |   ⁝ ⁄
      a   n   i   m   a   ⁝ ⁄
                      |   ⁝⁄
                     |A| |U|
```

17
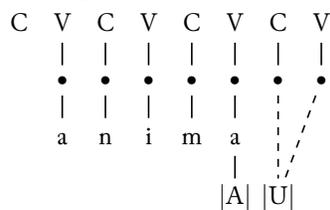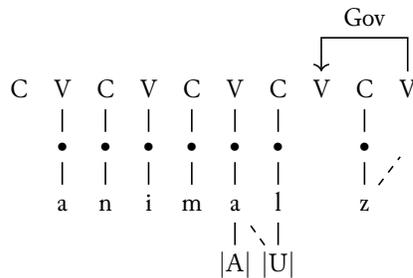
The 'floating l' here is a virtual syllabic sonorant. It links to the final CV and is therefore pronounced. As its leftmost position is a C, it is realized phonetically as [l].

Now consider (50). The addition of the PL [z] and its concomitant CV structure leads to an important modification. The properties of Final Empty Nuclei (FEN) are cross-linguistically parametrized to be those of full (ungoverned) or of empty (governed) vowels. In French, the FEN is full, and therefore is a licit branching site for the liaison 'l' in (49). However, when the [z] is merged, its own FEN will govern the preceding unlinked V position, rendering it weak. This proposal would include a restriction on 'Floating l' such that it could not link to a governed V position, a restriction that is standard in the literature on floating vowels. Given the proposal that |U| must geminate, and given that it can no longer link to its right, it must link to its left, coalescing with [a] to form [o]. The [z] itself remains unpronounced. This requires a proposal that obstruents in French cannot link to V positions (again, not a cross-linguistically abnormal pattern). As there is no second C position available for the gemination of [z], it is not phonetically realized. This proposal mirrors the account in (Ségéral and Scheer 2001) of English [h].
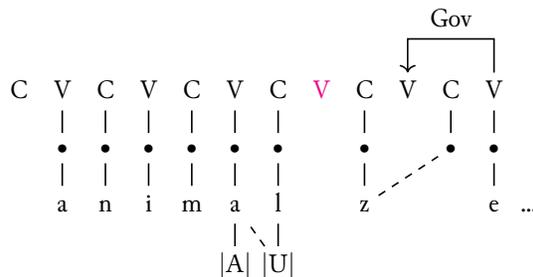
(50)   [animo(z)]

```
                                    Gov
                                 ┌──┐
                                 ↓  │
        C   V   C   V   C   V   C   V   C   V
        |   |   |   |   |   |       |
        •   •   •   •   •   •       •
        |   |   |   |   |   |       | ,'
        a   n   i   m   a   l       z
                        | \ |
                        |A| |U|
```

Although the above derivations capture the irregular plural in French, there are some potential problems with this analysis. Keep in mind that this analysis is very preliminary.

First, the motivation for the maintenance of [o] when the liaison [z] is pronounced is not immediately clear. Consider the following structure. In (51) the V in magenta is empty and ungoverned; an illicit structure.

(51)   *[animoze] (e.g., animaux étranges)

```
                                        Gov
                                     ┌──┐
                                     ↓  │
        C   V   C   V   C   V   C   V   C   V   C   V
        |   |   |   |   |   |       |       |   |
        •   •   •   •   •   •       •   •   •
        |   |   |   |   |   |       | ⟋     |
        a   n   i   m   a   l       z       e   ...
                        | \ |
                        |A| |U|
```

18

In order to 'save' the above structure, we might appeal to cyclic derivation to explain the maintenance of [o]. As the liaison here is optional, we can easily argue that 'animaux' and 'étrange' undergo spell out separately before being linearized in sequence. This prior computation might be successfully appealed to to explain why [o] does not revert to [l]. There is evidence from French (as well as cross-linguistically) that this is a reasonable proposal. Consider the distinctions between the examples in (52):

(52) a. [bɔnami] 'good friend'

 b. [sɔ̃nami] '3sɢ.ᴘᴏss friend'

In [bɔnami] the morphemes [bɔn] and [ami] undergo spell out in a single cycle. As such, the nasal C is syllabified in the onset of [ami] and never branches onto the preceding vowel. In [[sɔ̃n][ami]] there are three cycles of spell out: one for [sɔ̃n], one for [ami] and one wherein they are linearized. Even though the [n] is pronounced, and therefore syllabifies with the following word, its link to the preceding V is not removed, maintaining nasalization. In the case of [animoze...] we can simply propose that laterals that are already doubly linked, unlike nasals, either (i) do not undergo liaison, or (ii) do undergo liaison, but that the triply-linked output structure maintains the phonetic realization of 'l' as [o].

A second potential problem with the synchronic analysis of the irregular plural is the derivation of [o]-final irregular plurals where the vowel that precedes |U| is not /a/. For example in *bel-beau, travail-travaux...* the combination of [ɛ]/[aj], containing |A| and |I|, with |U| might be expected to be [œ] = |A̲IU|. This expected alternation is what we do find in *vieil* [vjɛj]-*vieux* [vjø]. Further investigation is required.