On English Possessive Pronouns and the Syntax-Morphology Relationship[*]

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1   Introduction

- In this research, I use new facts about possessor extraction in colloquial English to analyze the morpho-syntax of English possession, and explore related consequences about the syntax-morphology relationship.

- In previous work (Davis 2020b, 2021b), I have shown that many native English speakers allow A′-extraction of a possessor which strands the Saxon genitive morpheme [*'s*] and the rest of the possessed DP in a lower clause, as in (1):

(1)   *English possessor extraction* (Davis 2021b, ex. 9)

    a.   *Matrix question*
        Who$_1$ do you think $[[t_1$**'s kid**$]$ ate the most cake]?

    b.   *Embedded question*
        I can't remember [**who**$_1$ I said $[[t_1$**'s friend**$]$ is coming over]].

    c.   *Relative clause*
        This is the student [**who**$_1$ they suspect $[[t_1$**'s answers**$]$ were copied]].

    d.   *Free relative*
        I'll speak to [**whoever**$_1$ you suggest $[[t_1$**'s idea**$]$ is the best]].

    e.   *Cleft*
        It's Michelle [**who**$_1$ we heard $[[t_1$**'s cat**$]$ is the cutest]].

    f.   *Topic / focus movement*
        John's life is certainly boring, but let me tell you about my cousin Jim. Now [**this guy**]$_1$, I think $[[t_1$**'s story**$]$ will entertain you].

- As we see in (1a-e), such extraction can be achieved by all forms of *wh*-movement.

- Many speakers also accept possessor extraction by topic/focus fronting (1f), illustrated in more detail in (2):

(2) *More examples of possessor topic/focus fronting*

    a.   I don't think John's cat is particularly cute, but **Mary**$_1$, I've always said [t_1's cat] is really adorable.

    b.   My dog is always well behaved. But [**that guy**]$_1$, I think [t_1's dumb noisy dog] should get kicked out of the park.

    c.   Your mom is, unfortunately, not a great cook. [**My mom**]$_1$, however, I suspect [t_1's cooking] could win prizes.

- **The puzzle I analyze here:** In contrast to (2), similar fronting is unavailable for possessive pronouns, as (3) shows.[1]

(3) *No extraction of possessive pronouns by topic/focus fronting*[2]

    a.   * Your cooking is, unfortunately, not great. **My**$_1$, however, I suspect [t_1 cooking] could win prizes.

    b.   * I don't think John's cat is particularly cute, but **our/your**$_1$, I've always said [t_1 cat] is really adorable.

    c.   * My dog is always well behaved. But **his/her/their**$_1$, I think [t_1 dumb noisy dog] should get kicked out of the park.

  ▷ The contrast between (2) and (3) above has been confirmed by 14 of 17 speakers whose judgments I have elicited. (The remaining 3 rejected all these examples, but reported the same contrast in cleft sentences, as discussed in footnote 14.)[3]

★ I argue that this fact clarifies the nature of English possessive pronouns.

  ▷ I assume that when a typical DP is a possessor, it sits in the specifier of a possessive D realized as ['s] (Abney 1987; Corver 1992; Chomsky 1995b; Munn 1995):

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[1]All these examples are acceptable if the possessum is pied-piped in the normal way:
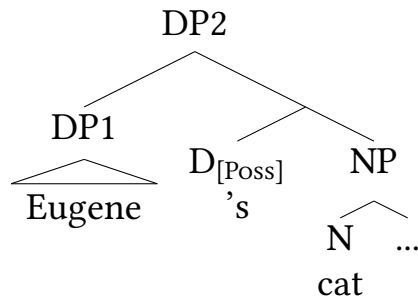
(i)   a.   Your cooking is, unfortunately, not great. [**My cooking**]$_1$, however, I suspect t_1 could win prizes.
    b.   I don't think John's cat is particularly cute, but [**our/your cat**]$_1$, I've always said t_1 is really adorable.
    c.   My dog is always well behaved. But [**his/her/their dumb noisy dog**]$_1$, I think t_1 should get kicked out of the park.

[2]The possessive form *its* has been omitted from this initial example set. See footnote 5.

[3]The data analyzed here was acquired by eliciting judgments, via a questionnaire containing a list of pre-prepared sentences, from a set of 17 speakers who accept the baseline possessor extraction configuration reported in Davis (2020b, 2021b). The 14 speakers mentioned who accept the baseline configuration in (2) report the contrast between in (2) and (3), as well as between (2) and an additional relevant configuration in (26) below, discussed in section 4.

  2 of the 14 speakers who corroborated the core contrast between (2) and (3) rated the configuration in (3) as marginally acceptable, though worse than (2). Since the majority of speakers do not have this judgment, I will not analyze this point of variation in detail here. One possibility is that these 2 speakers allow a parse involving something like non-constituent displacement via *distributed deletion*, as discussed in footnote 18 below.
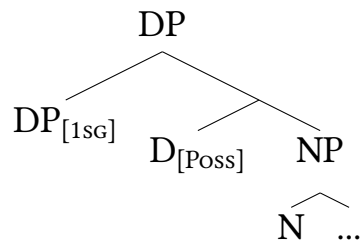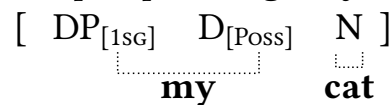
(4)   *Usual possessor DP in specifier of ['s]*

```
                    DP2
              ╱            ╲
          DP1          ╱        ╲
        ╱      ╲   D[Poss]     NP
     Eugene       's        ╱    ╲
                          N    ...
                         cat
```

▷ However, I'll argue that English possessive pronouns are ***portmanteau* morphemes**, which simultaneously express both the possessive D and the possessor in its specifier:

(5)   *Possessive pronoun morpho-syntax*

    a.   *Structure*

```
                       DP
                 ╱            ╲
          DP[1SG]         ╱        ╲
                    D[Poss]      NP
                              ╱    ╲
                            N    ...
```

    b.   *Morpho-phonological form*

[DP[1SG]   D[Poss]   N]

my   **cat**

- Since a DP and a D whose specifier it is in do not form a constituent, if possessive pronouns in fact correspond to such a structure, they should be **immobile**.

☑ As we saw above, this is the right prediction.

★ **Two general consequences:**

#1 This analysis of English possessive pronouns provides new evidence that a single portmanteau morpheme can simultaneously express multiple syntactic nodes.

▷ I'll argue that the *spanning* hypothesis (Bye and Svenonius 2012; Merchant 2015; Haugen and Siddiqi 2016; Svenonius 2016) straightforwardly allows portmanteau formation in the needed way (but a *fusion* analysis can also work: see Davis 2021a).

#2 This analysis also has implications for *phase theory* (Chomsky 2000, 2001, a.o.) and its relationship to questions about when and how syntactic structures acquire morpho-phonological information.

▷ In specific, I'll argue that DPs are phases (as a number of recent works assume), and that phases completely spell-out all at once (Fox and Pesetsky 2005a,b, a.o.).

1.1 Presentation contents

2 Background on possessor syntax and extraction

- As mentioned above, I hypothesize that a usual possessor DP sits in the specifier of a possessive D realized as [*'s*].

- Under this analysis, the word *whose* is made up of the *wh*-phrase *who*, and the possessive D which it is in the specifier of:

(6)   *The morpho-syntax of "whose"*

DP2
 ┌──────┴──────┐
DP1   ┌──┴──┐
 │ $D_{[Poss]}$ NP
who   's   ┌─┴─┐
                    N ...
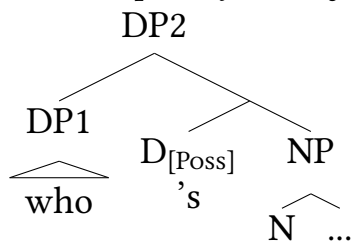
⚠ This account predicts the well-known fact that *whose* cannot be extracted.

  ▷ Why? This word corresponds to two elements (the possessive D and its specifier) that do not form an exclusive constituent. Therefore it is immobile (Corver 1992).

(7)   *No extraction of "whose"*
  a.   * Mary is the author [$_{CP}$ **whose**$_1$ they said [[t_1 **new book**] is good]].
  b.   * **Whose**$_1$ did you say we should buy [t_1 **cookies**]?

  ▷ For the same reason, any other combination of possessor DP and [*'s*] cannot be extracted:

(8)   *No extraction of DP+['s]*
  a.   * [**Which kid's**]$_1$ should we buy [t_1 **cookies**]?
  b.   * **Timmy's**$_1$ we should buy [t_1 **cookies**].

- In contrast, since the possessor in spec-DP is itself a DP constituent, we predict the possibility of extracting the possessor and stranding D below.

▷ We saw above that in the colloquial register of some English speakers, this prediction is verified, as (9) shows again:

(9) *English possessor extraction with stranding of [’s]*
   a. **Who**$_1$ do you think [[t_1**’s kid**] ate the most cake]?
   b. I can’t remember [[**which student**]$_1$ you said [[t_1**‘s homework**] got thrown away]].

▷ In Davis (2020b, 2021b), I show that this is indeed true extraction, and argue that what differentiates English grammars that do and do not allow such extraction is the evaluation timing of a phonological adjacency requirement of the clitic [’s].[4]

▷ In those works, I also describe and analyze the fact that such extraction must cross a clause boundary. I have controlled for this in the test sentences analyzed here.

- As we saw in the introduction, topic/focus fronting can extract a possessor.

⚠ But we also saw that this is not possible for possessive pronouns, as (10) shows again:

(10) *No extraction of possessive pronouns by topic/focus fronting*
   a. * Your cooking is, unfortunately, not great. **My**$_1$, however, I suspect [t_1 cooking] could win prizes.
   b. * I don’t think John’s cat is particularly cute, but **our/your**$_1$, I’ve always said [t_1 cat] is really adorable.
   c. * My dog is always well behaved. But **his/her/their**$_1$, I think [t_1 dumb noisy dog] should get kicked out of the park.

- There would be no puzzle here if English pronouns were generally incapable of topic/focus fronting, but this is not true, as we see in (11):

(11) *Topic/focus fronting usually possible for English pronouns*
   a. I don’t like you, but **him/her/them**$_1$, I like t_1.
   b. I don’t care how you talk to other people, but **me**$_1$, you gotta respect t_1! I’m the boss!
   c. **You**$_1$, I did not think t_1 would study syntax. You seem more like a phonologist.

- In the next section, I provide a morpho-syntactic analysis of why English possessive pronouns are unextractable.

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[4]Various works attribute the typical illicitness of possessor extraction in English to a requirement of PF which rejects movement that separates a possessor from the possessive D (Chomsky 1995b; Radford 1997; Gavruseva 2000; Gavruseva and Thornton 2001, a.o.). Indeed, Gavruseva & Thornton argue that PF adjacency requirements of this variety play an important role in constraining possessor extraction cross-linguistically. Davis (2020b, 2021b) builds on this general idea to account both for the difference between English grammars with and without possessor extraction, as well as various details about when such possessor extraction can occur.

# 3 Possessive pronouns express a non-constituent

- While a full DP possessor is immediately followed by [*'s*], most possessive pronouns clearly occur without this morpheme (though see footnote 5 on *his* and *its*).[5]

  (12)   *English possessive pronouns*
  - a. my cat
  - b. our cat
  - c. your cat
  - d. his cat
  - e. her cat
  - f. its cat
  - g. their cat

- Deal (2006) notes that this pattern could be the result of deletion of [*'s*], or morphological merger of [*'s*] with the pronoun.

  ▷ Below I discuss the predictions of both of these proposals, rephrasing them slightly to be compatible with the proposal that [*'s*] corresponds to possessive D.

- **Analysis #1, which I won't adopt:** A morphological rule requires a possessive D to be silent when the possessor in its specifier is a (genitive) pronoun:

  (13)   *Hypothetical possessive pronoun and silent D*

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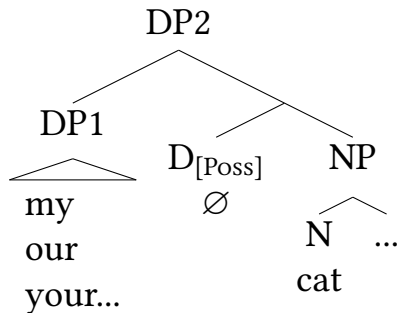
[5]The only possessive pronouns for which the absence of [*'s*] is unclear are *his* and *its*. It is conceivable that we might decompose these into *he + 's* and *it + 's*. If this is the case, then we should be able to extract *he* or *it*, stranding [*'s*] below. As (i) shows, this is in fact impossible:

(i)   a.   * I don't think Mary's cat is particularly cute, but take a look at John's. **He**$_1$, I've always said [t_1 's cat] is really adorable.
       b.   * Your computer is slow, but mine is very fast. **It**, I think [t_1 's processor] costs more than your car.

In the context of the analysis presented here, this fact indicates that *his* and *its* are not synchronically decomposable, but rather are portmanteau forms just like the rest of the possessive pronouns under consideration here.

  Consistent with this analysis is the fact that *his* and *its* cannot be fronted. For the first of these elements, we have seen this fact in (3c) above. For the latter, see (ii):

(ii)   * Your computer is slow, but mine is very fast. **Its**, I think [t_1 processor] costs more than your car.
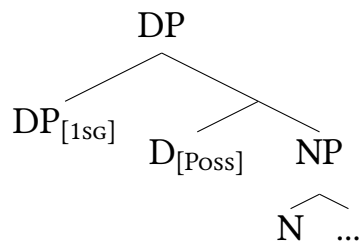
⚠ **Incorrect prediction of analysis #1:**

   ▷ If possessive pronouns simply correspond to DP constituents in the specifier of a coincidentally silent D, nothing should prevent their extraction.

   ▷ However, in reality we have seen that unlike other possessors, these possessive pronouns are immobile.
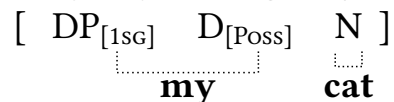
- **Analysis #2:** Possessive pronouns are actually portmanteau morphemes, which simultaneously express D and the pronoun in its specifier:

(14)   *Possessive pronoun portmanteau*

    a.   *Initial structure*

$$
\begin{array}{c}
\text{DP} \\
\diagup \quad \diagdown \\
\text{DP}_{[1\text{SG}]} \quad \begin{array}{c} \diagup \quad \diagdown \\ \text{D}_{[\text{Poss}]} \quad \text{NP} \\ \qquad \diagup \diagdown \\ \qquad \text{N} \quad \ldots \end{array}
\end{array}
$$

    b.   *Morpho-phonological form*
       [DP$_{[1\text{SG}]}$ D$_{[\text{Poss}]}$ N]
          my   **cat**

★ **I argue that analysis #2 makes the right predictions.**[6]

- I implement this analysis using the Distributed Morphology framework (Halle and Marantz 1993; Harley and Noyer 1999, a.o.).

   ▷ According to this theory, syntactic structures begin their life as abstract representations that lack information about word order or morpho-phonological form.

   ▷ Rather, that information is assigned later on, when the structure in question is passed off to the PF component of the grammar.

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[6]Deal (2006) argues that analysis #1 best captures the fact that some speakers permit forms like *your all's / your guys'*, which she suggests involve the pronoun receiving genitive morphology, with the intervening element bleeding the rule that would normally delete ['s]. Deal notes that not all speakers allow such forms, and thus suggests that speakers' vary between analysis #1 and analysis #2. If the extraction ban I focus on here also holds for speakers who are capable of possessor extraction and who allow forms like these, then this would suggest that analysis #2 is universally correct. This would entail that another factor is responsible for the morphological variation Deal observes.

    Another possibility is that the forms Deal notes are exceptions that don't stem from more general principles. As this hypothesis might lead us to predict, in my judgment *your guys'* is marginal, but the use of the possessive pronoun in several other analogous contexts is clearly illicit:

(i)   a.   [We/us/*our students]' rights are being violated.
       b.   [You/*your two]'s cake was the best one at the picnic.
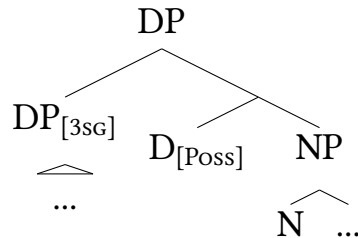
See also the facts in (20) below.

▷ To ensure an explicit implementation, it will also be useful to assume that word order assignment (linearization) precedes the determination of morpho-phonological form (Embick 2010; Arregi and Nevins 2012; Haugen and Siddiqi 2016, a.o.).

- As stated above, I assume that usual possessive DPs sit in the specifier of a D realized by its default form [*'s*], as the derivation in (15) shows again:

(15) *Typical possessive structure*

    a. *Build structure*

$$
\begin{array}{c}
\text{DP} \\
\diagup \quad \diagdown \\
\text{DP}_{[3\text{SG}]} \quad \diagup \quad \diagdown \\
\quad\quad\quad \text{D}_{[\text{Poss}]} \quad \text{NP} \\
\cdots \quad\quad\quad\quad \diagup\diagdown \\
\quad\quad\quad\quad\quad \text{N} \quad \cdots
\end{array}
$$

    b. *Linearize*
       [DP$_{[3\text{SG}]}$ D$_{[\text{Poss}]}$ N]

    c. *Assign form*
       [DP$_{[3\text{SG}]}$ D$_{[\text{Poss}]}$ N]
       John/who   **'s**   **cat**

▷ Since the morphology of these possessors straightforwardly corresponds to a phrase in spec-DP, the extractability of such possessors is accurately predicted.
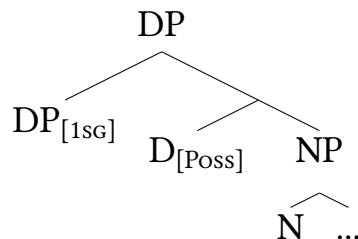
(16) *Extractability of typical possessors*

    a. **Who**$_1$ do you think [t_1's kid] ate the most cake?

    b. **Mary**$_1$, I've always said [t_1's cat] is really adorable.

- In contrast, under my analysis pronominal possessor morphology is the simultaneous realization of the possessor pronoun and D, with one portmanteau morpheme.

(17) *Possessive portmanteau derivation*

    a. *Build structure*

$$
\begin{array}{c}
\text{DP} \\
\diagup \quad \diagdown \\
\text{DP}_{[1\text{SG}]} \quad \diagup \quad \diagdown \\
\quad\quad\quad \text{D}_{[\text{Poss}]} \quad \text{NP} \\
\quad\quad\quad\quad\quad \diagup\diagdown \\
\quad\quad\quad\quad\quad \text{N} \quad \cdots
\end{array}
$$

    b. *Linearize*
       [DP$_{[1\text{SG}]}$ D$_{[\text{Poss}]}$ N]

c. *Assign form*

$$[\ DP_{[1SG]} \quad D_{[Poss]} \quad N \ ]$$

my   **cat**

☑ This analysis captures the fact that such possessive forms cannot be extracted: morphemes like *my* do not correspond to a syntactic constituent, and thus are immobile.

(18)   *No extraction of possessive pronouns by topic/focus fronting*
      * Your cooking is, unfortunately, not great. **My**$_1$, however, I suspect [t_1 cooking] could win prizes.

☑ This analysis also predicts the fact that the morpheme [*'s*] is absent from these possessive forms (though see footnote 5 above about *his* and *its*).

    ▷ If a given syntactic node can only be morphologically expressed once (Halle and Marantz 1993; Bobaljik 2000; Arregi and Nevins 2012; Coon and Keine 2020), when a portmanteau possessive form is used, D will not be expressed independently.

3.1   Specifics about portmanteau formation and pronoun structure

- In Distributed Morphology, it is hypothesized that each morpheme corresponds to one syntactic terminal node, never a non-terminal node or a non-constituent unit.

⚠ My analysis for English possessive pronouns contradicts both of these hypotheses, since I argue that these morphemes "stretch" across multiple syntactic elements, one of which is a head (D$_{[Poss]}$) and one of which is a phrase (the possessor).

    ▷ The hypothesis that morpho-phonological form can only be assigned to individual terminal nodes has been challenged in recent years.

    ▷ See for instance work in the *Nanosyntax* framework (Caha 2009; Starke 2009; De Clercq and Wyngaerd 2017, a.o.), though this approach relies on very different assumptions.[7]

☑ It will suffice to add to Distributed Morphology the hypothesis that one morpheme can express multiple adjacent nodes via *spanning* (Bye and Svenonius 2012; Merchant 2015; Haugen and Siddiqi 2016; Svenonius 2016), thus creating a "portmanteau".

- As usually defined, spanning can only target adjacent **terminal nodes** (with intervening specifiers/adjuncts ignored).

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[7]This analysis of English possessive pronouns is actually incompatible with the Nanosyntax framework. For Nanosyntax, it is possible to assign morpho-phonological information to non-terminal nodes, and this is how this framework derives contexts where a single morpheme corresponds to the features of multiple terminals. In Nanosyntax, such morphemes always correspond to constituents: this framework does not have a mechanism that will allow a single morpheme to "stretch" across multiple terminals in the way that spanning allows. Thus this analysis supports the correctness of a mechanism like spanning for the formation of portmanteau morphemes rather than a Nanosyntactic strategy.

- ▷ Thus if pronouns are fully-projected DPs, we might not expect it to be possible for a portmanteau to *span* across the possessive D and a pronoun in its specifier.

- However, since pronouns are a closed class of functional elements that plausibly lack a lexical core (NP), it may be that (English) pronouns are usually non-projecting determiners (following Postal 1969; Abney 1987; Baltin 2012).[8]

- If this is so, spanning should indeed be capable of expressing both a possessor pronoun and the adjacent possessive D via a single portmanteau morpheme.

★ This is what I will assume here, which (19) illustrates once more:

(19)   *Possessive portmanteau derivation: Revised*
    a. *Build structure*

                      DP1

      D2$_{[1\text{SG}]}$

            D1$_{[\text{Poss}]}$ NP

                    N ...
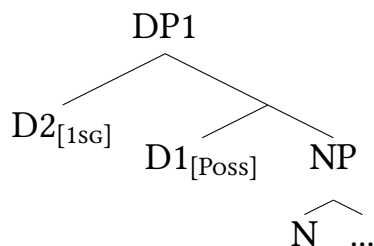
    b. *Linearize*
      [D2$_{[1\text{SG}]}$ D1$_{[\text{Poss}]}$ N]

    c. *Insert portmanteau via spanning*
      [D2$_{[1\text{SG}]}$ D1$_{[\text{Poss}]}$ N]
              my   **cat**

- The literature on spanning generally assumes that the elements expressed together by a portmanteau morpheme must be structurally adjacent.

- ▷ This hypothesis accurately predicts the fact that a pronoun which is linearly adjacent to a possessive D, but separated from it by additional structure, cannot trigger use of a portmanteau possessive form:

(20)   *Linear adjacency is not sufficient for use of a possessive portmanteau*
    a. The picture of [?]**them's/*their** frame is really ugly.
    b. You don't seem like yourself today. The real [?]**you's/*your** baking skills are much better.
    c. Won't you submit little old [?]**me's/*my** cake to the baking contest?

★ This concludes the core analysis.

- In the next section, I argue that this analysis has significant consequences for the timing of morpho-phonological assignment, and thus the syntax-morphology relationship more generally.

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[8]However, there is likely variation in the structural properties of pronouns (Déchaine and Wiltschko 2002).

4   DPs as phases and the timing of spell-out

- Following Chomsky (2000, 2001) and much related work, a great deal of research has pursued the hypothesis that syntactic structures are evaluated by the morpho-phonological (and semantic) components of the grammar **chunk-by-chunk**.[9]

- In Chomsky's terms, these chunks are *phases*. Current research adopting phase theory most commonly assumes that vP and CP are phases.

  ▷ Many works take DP to be a phase as well (Heck and Zimmermann 2004; Bošković 2005, 2014, 2016; Newell 2008; Newell and Piggott 2014; Syed and Simpson 2017; Simpson and Park 2019).

- ★ I argue that the English facts under examination indicate that DPs are phases, and also tell us something about the nature of phases more generally.

- In phase theories, when a phasal constituent is completed, some part of it is *spelled-out* and consequently assigned morpho-phonological form.

  ▷ Let's consider two variants of this theory, assuming that DP is a phase.

- **Phase theory #1:** For Chomsky, when spell-out applies to a given phasal phrase, only its complement is spelled-out.

- Therefore for this theory, when a DP is built, only NP is subject to spell-out:

(21)   *Phase theory #1: When DP is built, only NP spells-out*
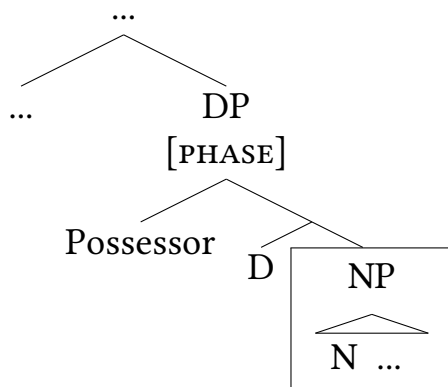
  ▷ The rest of the material in DP will not be spelled-out until the next highest phase (vP, CP) spells-out.

- **Phase theory #2:** Another strand of research initiated by Fox and Pesetsky (2005a,b)[10] argues that when a phase is built, it is entirely spelled-out at once:

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[9]See Citko (2014) for an overview of many of the developments in phase theory.

[10]For additional background on and arguments for this theory of phase spell-out, see Ko (2007, 2011, 2014); Sabbagh (2007); Fanselow and Lenertová (2011); Overfelt (2015); Erlewine (2017); Davis (2020a,b, 2021b).

(22)   *Phase theory #2: Simultaneous spell-out of the entire DP*

...

... DP
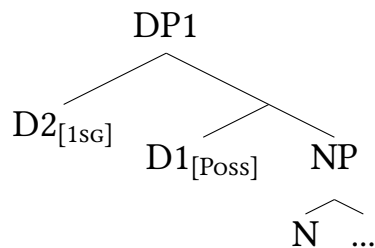[PHASE]

Possessor
D   NP

N ...
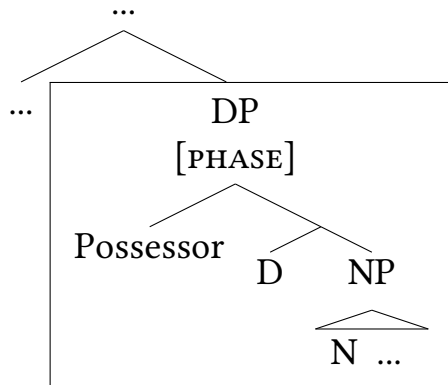
★ My analysis of the immobility of possessive pronouns in English provides a way of adjudicating between these two phase theories.
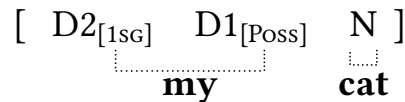
- I have proposed that the possessive pronominal forms under discussion are portmanteau morphemes which express both a possessor pronoun and possessive D, as (23) shows again:

(23)   *Possessive pronoun portmanteau*
  a.   *Initial structure*

  DP1

  D2$_{[1\text{SG}]}$
  D1$_{[\text{Poss}]}$ NP

  N   ...

  b.   *Morpho-phonological form*
  [D2$_{[1\text{SG}]}$ D1$_{[\text{Poss}]}$ N]
          my   **cat**

  ▹ In phase theory, and Distributed Morphology more generally, it is argued that morpho-phonological form is not assigned to syntactic material until it spells-out.

  ▹ This means that the portmanteau morphology that expresses D and the possessive pronoun will not be assigned until the time that spell-out applies to them.

- Recall that under the first version of phase theory described above, when a DP is built, only NP spells out, as in (24):

(24) *Phase theory #1: When DP is built, only NP spells-out*

```
              ...
           /      \
        ...         DP
                 [PHASE]
                 /      \
          Possessor      \
                      D  [ NP ]
                         [ /\ ]
                         [ N  ... ]
```
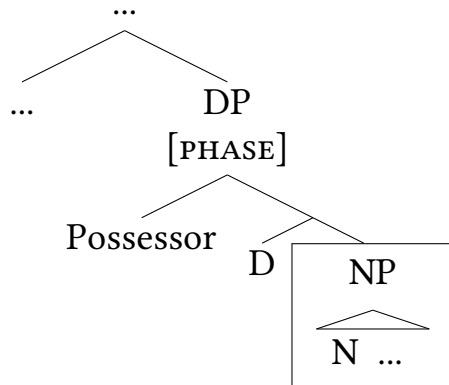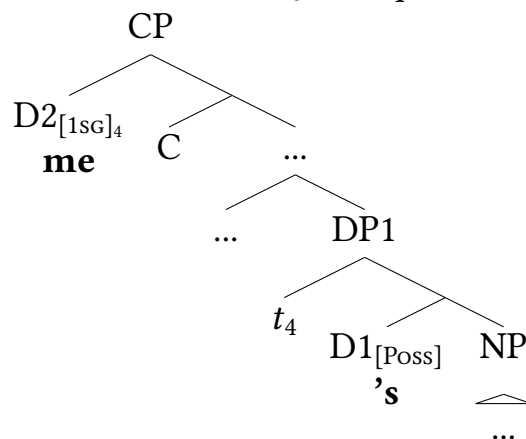
> ▷ If this is so, D and its specifier will remain un-spelled-out until the completion of a higher phase (vP, CP).

- **Prediction:** Under this analysis, we expect the possibility of extracting the possessive pronoun before portmanteau morphology is assigned.

- If movement separates the possessive D and possessor before they spell-out, we would expect them to both be realized with alternative morphology—presumably their default forms.

  > ▷ For the possessive D, this would be [*'s*].

  > ▷ For the extracted pronoun, this would likely be accusative morphology, which has been argued to be the default form that English pronouns take when no other form is available (Marantz 1991; Schütze 2001; Preminger 2014).

- We see a schema for this predicted configuration in (25):

(25) *Prediction: Non-adjacent pronoun and D will receive default morphology*

```
                    CP
                 /      \
         D2[1SG]4        \
            me       C     ...
                        /      \
                     ...         DP1
                             /        \
                           t4          \
                              D1[Poss]   NP
                                's       /\
                                         ...
```

> ! **Fact:** 12 of 14 speakers who accept extraction of full DP possessors (2) report that sentences matching the structure in (25) are unacceptable, as shown in (26) below.[11]

---

[11] Above, I adopted the proposal that pronouns are non-projecting determiners, as diagrammed again in (25) above, where the pronoun moves. As I've shown, such movement is unacceptable in reality. If movement of heads is usually strictly local

(26)   *An alternative attempt at possessor pronoun fronting*

    a.   * Your cooking is, unfortunately, not great. **Me**$_1$, however, I suspect [t_1 ('s) cooking] could win prizes.

    b.   * I don't think John's cat is particularly cute, but **us/you**$_1$, I've always said [t_1 ('s) cat] is really adorable.

    c.   * My dog is always well behaved. But **him/her/them**$_1$, I think [t_1 ('s) dumb noisy dog] should get kicked out of the park.

- Recall once more that typical possessive pronouns are immobile, as (27) shows again.

(27)   *No extraction of possessive pronouns by topic/focus fronting*

    a.   * Your cooking is, unfortunately, not great. **My**$_1$, however, I suspect [t_1 ('s) cooking] could win prizes.

    b.   * I don't think John's cat is particularly cute, but **our/your**$_1$, I've always said [t_1 ('s) cat] is really adorable.

    c.   * My dog is always well behaved. But **his/her/their**$_1$, I think [t_1 ('s) dumb noisy dog] should get kicked out of the park.

▷ Several speakers note that the configuration in (26) is slightly less degraded than that in (27), though still overall unacceptable.[12] [13]

▷ While the sentences in (27) should indeed be illicit due to involving impossible non-constituent movement, this issue should not apply to the sentences in (26). [14]

★ I argue that the sentences in (26) are unacceptable because of a **morphological timing problem**.

([Travis 1984](#)), then we might expect the movement in (25) to be independently ruled out. However, if pronouns are in general bare D heads, this cannot be correct: We've seen in (11) above that English pronouns are usually mobile. Under a *bare phrase structure* approach to labeling ([Chomsky 1995a](#),[b](#), a.o.) a non-projecting head is its own maximal projection, and thus should be capable of phrasal movement. I assume that for this reason pronouns are in general capable of phrasal movement, and argue that the configuration in (25) is illicit due to a morphological problem, not a syntactic one, as described in this section.

[12]In both (26) and (27), ['s] is placed in parentheses to show for the sake of completeness that such sentences remain unacceptable whether this morpheme is included, or omitted.

[13]While 12 of 14 relevant speakers rate the sentences in (26) as unacceptable, 6 of those 12 suggested that the violation in (26) is slightly less severe than that in the examples of (27). The remaining 2 of those 12 speakers judged that the examples in (26) are marginally acceptable. See footnote 15 below for further discussion.
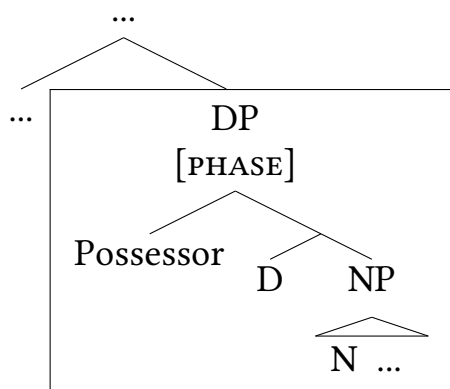
[14]Gary Thoms (p.c.) points out that though for him possessor topic/focus fronting is somewhat degraded in the first place, possessor extraction via clefting is not (ia). He also points out that while clefting a full DP possessor as in (ia) is not degraded, it is impossible to cleft either a possessive pronoun (1b) or possessor pronoun in the accusative case (1c):

(i)   a.   It's [my MOTHER]$_1$ that I suspect[[t_1's cooking] could win prizes].
          b.   * It's MY$_1$ that I suspect[[t_1('s) cooking] could win prizes].
          c.   * It's ME$_1$ that I suspect[[t_1('s) cooking] could win prizes].

Of the 3 speakers mentioned in the introduction who do not accept topic/focus fronting for full DP possessors, 2 of them share the set of contrasts shown in (i) above, while the third accepts the contrast between (ia) and (ib), but states that (ic) is potentially acceptable. This speaker thus patterns like the 2 speakers mentioned in footnote 13 above who marginally accept extraction of the form in (26). This general pattern of judgments for possessor extraction in clefts has the same distribution as the judgments for sentences involving non-clefting topic/focus extraction. These clefting facts can therefore be taken as additional evidence for the proposals laid out in this section.

- Recall that, under the second version of phase theory mentioned above, when a DP is constructed it is immediately and entirely spelled-out:

(28)   *Phase theory #2: Simultaneous spell-out of the entire DP*

```
              ...
            /    \
           /      ┌──────────────────────────┐
     ...   │            DP                    │
           │         [PHASE]                  │
           │          /    \                  │
           │  Possessor     \                 │
           │             D    NP              │
           │                  /\              │
           │                 N  ...           │
           └──────────────────────────┘
```

⚠ I argue that this phase theory makes the right prediction.

  ▷ Under this theory, we predict that there will be no chance for the possessor pronoun to extract alone into a higher part of the clause before being spelled-out.

  ▷ Rather, the possessor pronoun and possessive D will be assigned their combined portmanteau form **immediately**, before any movement from DP can occur.

- Since after spell-out the possessive pronoun does not correspond to an independent free morpheme, there is no morpho-phonologically legal way to extract it.

- Extraction of an entire portmanteau possessive form would be morpho-phonologically legal, since these are free morphemes. However, they do not correspond to an exclusive constituent, so the syntax cannot extract them.

✓ Thus we accurately predict that the attempts at possessive pronoun fronting in (26) and (27) above both fail. There is simply no way for such extraction to succeed.[15]

★ **The point:** If phases fully spell-out immediately, and DP is a phase, the portmanteau expressing both D and the possessor pronoun in English is assigned before extraction can occur. Thus English possessive pronouns are immobile.[16]

---

[15]Recall that, as stated in footnote 13 above, 2 of 14 relevant speakers find the extraction configuration in (26) to be marginally acceptable. The fact that this configuration is less severely degraded for many speakers, and accepted by 2 of them, suggests that the morphological problem in (26) is less severe than the constituency problem in (27). The movement in (27) should be genuinely impossible due to the nature of Merge, which unavoidably operates only on constituents. However, the sentences in (26) could be generated by choosing a sub-optimal morphological derivation—either by suspending the usual portmanteau insertion, or by overriding the portmanteau form with default morphology after extraction occurs. Either of these strategies would involve an exceptional morphological process, which the majority of speakers do not permit.

[16]In the phase theory initiated by Chomsky, once spell-out applies to the complement of a phase, the content of that complement is inaccessible for any later syntactic operations like movement (as defined by the Phase Impenetrability Condition). For this reason, it is argued, material exiting a phase must pass through its edge (=specifier) in successive-cyclic fashion, thereby avoiding the trapping effect of spell-out. In contrast, since for the Cyclic Linearization theory of phases spell-out applies to the entire phase once built, this theory cannot posit a Phase Impenetrability Condition: in the context of this theory, such a condition would predict the total impossibility of movement from phases. In the absence of such a condi-

5 Conclusion

- ✓ **Fact:** English possessive pronouns, most of which clearly do not co-occur with [*'s*], cannot be extracted. Full DP possessors show precisely the opposite properties.

- ✓ **Explanation:** We predict these syntactic and morphological facts by positing that these possessive forms are portmanteau morphemes expressing the possessor pronoun as well as D. These do not form a constituent, so such forms are immobile.

- **General consequences:**

  - ✓ This analysis provides new evidence that one morpheme can express multiple adjacent syntactic nodes, via a mechanism like *spanning*.

  - ✓ The impossibility of bleeding portmanteau formation by possessive pronoun extraction (presumably resulting in default non-portmanteau morphology) provides evidence that phases spell-out all at once, and that DPs are phases.[17]

- ★ These facts from a non-standard variety of English provide a unique window into the grammar, which enriches our view of the theory of morpho-syntax in a way that would be impossible if we were to focus only on standard English.

- This analysis also raises further questions about the morpho-syntax of possession in English, which the appendices discuss. See also Davis (2021a) for more detail about everything I have said here.[18]

---

tion, Cyclic Linearization derives effects like successive-cyclic movement from considerations of word order assignment and preservation, as Fox and Pesetsky (2005a,b) and following works argue in detail.

Importantly, note that since Cyclic Linearization lacks a Phase Impenetrability Condition, it does not by itself ban extraction of a possessive pronoun in a configuration like (25-26) above. This is why, even in a Cyclic Linearization context, it is necessary to identify another reason for the illicitness of such extraction. The reasoning argued for in this presentation fills this gap.

[17]The analysis of English possessor extraction in Davis (2021b) argues against the phasehood of DP. Davis (2020b) criticizes this proposal, and attempts to revise that account to allow for DP phasehood. The analysis of possessive pronoun immobility that I have proposed here works straightforwardly if we assume that DPs are phases. However, Stanislao Zompì (p.c.) points out that the PF adjacency constraint on [*'s*] posited in Davis (2021b), combined with full-phase spell-out in the vP (which Davis 2021b also argues for), should derive the right results as well. I believe that this observation is correct, but showing this concretely will require some further work.

[18]This analysis also has implications for the nature of English possessor extraction. Possessor extraction is a particular instance of *left branch extraction* from the nominal domain (Ross 1967)—something which is totally banned in some languages, but very productive in others. There is debate in the literature about how exactly left branch extraction is derived, and it is likely that different languages achieve it in different ways. Davis (2020b, 2021b) argues that English possessor extraction is genuine sub-extraction. A variety of works on left branch extraction in other languages adopt this view (Ross 1967; Borsley and Jaworska 1998; Corver 1990, 1992; Stjepanović 2010; Bošković 2005, 2016, a.o.). A challenge for this analysis is that in some languages such as Russian (Pereltsvaig 2008), left branch extraction can extract units that are likely not syntactic constituents. There are two other analyses of left branch extraction proposed in the literature which straightforwardly rule in such non-constituent displacement. One is the *remnant movement* approach (Franks and Progovac 1994; Kayne 2002; Bašic 2008; Abels 2003, 2012), for which left branch extraction is derived by movement of a remnant phrase that has been previously evacuated by everything but the relevant left branch material. The other is the *distributed deletion* approach (Faneslow and Ćavar 2002; Bošković 2001, 2015; Fanselow and Féry 2013; Bondarenko and Davis To appear), for which LBE is formed by movement of an entire nominal phrase, but part of that nominal phrase continues to be pronounced in its origination position, thus creating the appearance of sub-extraction. Since in neither of these two analyses is the displaced left branch material actually extracted, there is no need for that material to be a constituent. Importantly, my analysis of the English facts shown here indicates that possessor extraction in English is indeed sensitive to syntactic constituency, since if this were not the case,

6 Further questions about English possession

6.1 Appendix A: Coordinated possessors and adjacency

- I have argued in section 3.1 that structural adjacency between a pronoun and D is necessary for them to be expressed by a portmanteau possessive form.

- Since embedding a possessor pronoun in a coordinate structure will disrupt structural adjacency between it and the possessive D, we expect usual possessive morphology to be absent in such contexts.

  ▷ This topic is empirically complex. I am not aware of any thorough research on possessor coordination in English, only scattered discussion.[19]

- With two full DP possessors, in my judgment it is acceptable for [*'s*] to suffix onto the entire coordination, or onto each of the possessors:

  (29) *Non-pronominal possessor coordination*
       a.   [John and Mary]'s cat is cute.
       b.   [John's and Mary's] cat is cute.

- With two pronouns, every option is awkward, but I suspect that the best choice is to either use the possessive form of both, or to use two accusative pronouns and suffix [*'s*] onto the entire coordination:

  (30) *Possessor pronoun coordination*
       a.   ?? [My and your] cat is cute.
       b.   ?? [Me and you]'s cat is cute.
       c.   * [My and you]'s cat is cute.
       d.   * [Me and your] cat is cute.

- When the first conjunct is a pronoun and the second is a full DP, use of an accusative pronoun is best, but use of a possessive pronoun seems acceptable as well:

  (31) *Pronoun + DP coordination*
       a.   *Accusative pronoun*
            ? Me/us/you/him/them and Mary's cat is cute
       b.   *Possessive pronoun*
            ?? My/our/your/his/their and Mary's cat is cute

---

possessive pronoun fronting would be acceptable. Thus this analysis further supports the proposal of Davis (2020b, 2021b) that English possessor extraction is indeed true extraction.

[19]See Huddleston and Pullum (2002) and https://languagelog.ldc.upenn.edu/nll/?p=706, for instance.

- When the first conjunct is a full DP and the second is a pronoun, use of an accusative pronoun is perhaps the best choice. Marking the first conjunct with [*'s*] and having a possessive pronoun as the right conjunct also seems tolerable:

  (32)   *DP + Pronoun coordination*
  - a.   *Accusative pronoun, [*'s*] preserved*
        ?? Mary and me/us/you/him/them's cat is cute
  - b.   *Possessive pronoun, [*'s*] preserved*
        * Mary and my/our/your/his/their]'s cat is cute
  - c.   *Possessive pronoun, [*'s*] absent*
        * Mary and my/our/your/his/their cat is cute
  - d.   *Possessive pronoun, [*'s*] on first conjunct*
        ?? Mary's and my/our/your/his/their cat is cute

|!| There are clearly several factors interacting here.

- I suspect that using default accusative marking for coordinated possessive pronouns is always in principle acceptable, though accusative pronouns linearly adjacent to [*'s*] are somewhat awkward.[20]

- Additionally, the analysis I have proposed above does not straightforwardly make sense of examples like (29b).

- If I'm right that [*'s*] is D, then (29b) looks like non-constituent coordination of two units consisting of a pronoun and a D, as in [[DP D & DP D] NP].

- Interestingly, this looks exactly like *Right Node Raising*, which can create structures where a single complement appears to be shared by two heads:

  (33)   *Right Node Raising of an object DP* (V & V DP)
        I both **adore and despise oysters**. They taste good, but look gross.

- I suggest that examples like (29b) involve DP-internal Right Node Raising, where a single possessum NP is "shared" by two separate D heads.[21]

  - ▷ If the possessor happens to be a pronoun in such a structure, we expect any possessor + D sequence to be compressed into a portmanteau form. This accurately predicts the possibility of examples like (30a), (31b), and (32d).

- In sum, my own judgments are consistent in a coherent way. However, there is quite a bit of fuzz in the data, and I expect to find considerable inter-speaker variation.

---

[20]Perhaps this is because use of the portmanteau form requires both linear and structural adjacency of the pronoun and D, so when the two are linearly but not structurally adjacent, there is pressure to use the (inapplicable) portmanteau form.

[21]If Right Node Raising is created by successive applications of External Merge to a single phrase (see Citko and Gračanin-Yuksek (2021) for recent discussion), nothing should prevent Right Node Raising from occurring in the DP, or anywhere else.

6.2 Appendix B: Postnominal [*'s*]

- One of the main points of my core analysis is that [*'s*] disappears from possessive pronominal forms because it is compressed into a portmanteau along with the possessor pronoun.

- However, there is another construction where we see the same possessive forms co-occurring with [*'s*], except in the 1st person singular:

(34) *The re-emergence of [*'s*]*[22]
    a. A cat of mine
    b. A cat of our's
    c. A cat of your's
    d. A cat of his'
    e. A cat of her's
    f. A cat of their's

- If I am correct that the possessive D is expressed with the pronoun as a portmanteau in forms like *my, our, your* and so on, what allows [*'s*] to occur in (34)?

- Furthermore, what exactly is *mine*? We might decompose this into *my-n*, but this still leaves us with the question of what this *-n* is.

- It is possible that the forms in (34) do not actually contain a genuine possessive [*'s*], since the same forms must be used in contexts arguably involving possessor-stranding NP ellipsis (35):

(35) *Emergence of [*'s*] with possessor-stranding NP ellipsis*
    Q: Have you seen any cats recently?
    A: Yes, I just saw mine/our's/your's/his'/her's/their's sitting on the fence.
    (* Yes, I just saw my/our/your/his/her/their sitting on the fence.)

- Thus perhaps both (34) and (35) are ellipsis contexts which, for reasons that remain to be explained, involve suffixation of a distinct element /-s/ (excluding the 1st person singular, where this element is evidently realized as /-n/.)

  ▷ Alternatively, perhaps this element *-s/-n* is an NP proform which cliticizes to the possessor, and ellipsis per se is not occurring in either of these contexts.

- It is not easy to tell what is going on here. I will leave this puzzle for future work.[23]

---

[22]Regular phonological reduction will block the form *his's* by reducing the final sibilant cluster to a single [s], which English orthography encodes as <-s'>, as in *students', kids'*, and so on.

[23]One speaker reports that pronominal possessor extraction improves if that pronoun takes on one of the forms seen in (34-35), provided that the possessive D is realized as [*'s*] as in (i):

(i)   %:? **Ours**$_1$ I've always said [t_1's cat] is really adorable.

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If the forms in (34-35) are assigned to a possessive pronoun that is not left-adjacent to a possessum NP (for reasons which would require an explanation), then the judgment in (i) would indeed be predicted. Since the status of these possessive forms remains very unclear, I will set this possibility aside for now.

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