

Ellipsis and the phonological prespecification of roots*

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1 Introduction

What mechanism(s) are responsible for silencing ellipsis sites? A worthwhile question:

- Coordinating diverse effects across modules (as ellipsis requires) is **a non-trivial problem** (see Newell & Sailor, yesterday)
- We know that *elliptical silence* arises during the derivation from syntax to phonology:
 - ▶ By now, lots of evidence that ellipsis sites are regular, internally-structured XPs (Ross 1969, Merchant 2001, a.o.)
- But “deletion at PF” has long been ill-defined
 - ▶ ...recent work has shown it to suffer from both theoretical and empirical problems, regardless of implementation
 - ▶ (Typical implementations involve phonological deletion of prosodic constituents; again, see yesterday’s talk!)

An alternative to PF-deletion exploits the Late Insertion architecture from Distributed Morphology (DM: Halle and Marantz 1993, 1994, a.o.):

- Elliptical silence arises because the ellipsis-internal terminals **fail to undergo Vocab Insertion (VI)** (Wilder 1997, Bartos 2001, Kornfeld and Saab 2004, a.o.)
 - No PF-deletion required; rather, phonological features are simply never added:
- (1) **Non-Insertion Hypothesis (NIH)**
The silence of ellipsis arises when VI is instructed to skip the terminals inside an ellipsis site.
- The NIH isn’t new (Wilder 1997, Bartos 2001, Kornfeld and Saab 2004, a.o.), but has gained popularity very recently:
 - ▶ See, among others: Saab (2008), Aelbrecht (2010), Merchant (2015), Saab and Lipták (2016), Griбанова (2017), Mendes and Nevins (to appear), Saab (to appear), and Sailor (to appear).

The goal of this talk **isn’t** to weigh the merits of the NIH vs. alternatives (on this see Sailor, in progress); rather...

- I simply **presuppose** the NIH, and explore its consequences for a seemingly-unrelated debate within the DM literature:
- Namely, the question of whether roots enter the syntactic derivation with their phonological features prespecified (Embick 2000, Borer 2009, 2014, a.o.).

Main claims:

- **If the NIH is correct, then roots cannot be phonologically prespecified.**
 - ▶ Rather, they must acquire their phonological features during VI, as other terminals do.
- In other words, **the right theory of elliptical silence within DM may inform the right theory of roots within DM.**

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2 Background and assumptions

2.1 Modularity

Like Newell & Sailor (yesterday), I adopt a strictly Modular architecture (inc. the *feed-forward Y-model*: Chomsky 1965 et seq.)

- (2) **Some definitional properties of modules** (Chomsky 1965, Fodor 1983, Segal 1996, Jackendoff 1997, Scheer 2012:\$36)
 - a. **Domain Specificity**: each module has its own proprietary alphabet; one module cannot understand the alphabet of another module.
 - b. **Encapsulation**: the computation within a module is bounded by its own input, which is fixed for each iteration; it is blind to the activity and information of other modules (and the central system, i.e. general cognition)
- (3) **Domain Specificity in a linguistic context**
 - a. Proprietary alphabets (vocabularies, symbolic systems, etc.):
 - (i) Syntax: formal features, categories, phrases...
 - (ii) Phonology: distinctive features, segments, x-slots...
 - b. How to violate: a computation which has **simultaneous access to more than one alphabet** (e.g. accessing both syntactic and phonological information within the same module).
- (4) **Encapsulation in a linguistic context**
 - a. Input-boundedness (no external additions mid-computation)
 - (i) Syntax: the Numeration / Lexical Array (from List 1), workspaces...
 - (ii) Phonology: linearized segmental and skeletal information (from List 2)...
 - b. How to violate: a computation which is able to access new information not originally present in its input (i.e. an *Inclusiveness* violation in MP terms).

2.2 A closer look at the Non-Insertion approach to elliptical silence

Ellipsis is typically thought of as “deletion at PF”, so why would we assume the NIH? In a nutshell:

- Actual PF-deletion of the sort in Merchant (2001, 2004, 2008) suffers several drawbacks (Newell & Sailor, yesterday)
 - ▶ **Problem 1**: ellipsis sites can be arbitrarily large (normally mapping to strings of arbitrary length), but phonology isn’t suited to work with objects of such size
 - ▶ **Problem 2**: allowing syntax to tell the phonology how and when to apply phonological rules is anti-Modular (violates at least Domain Specificity)
 - ▶ **Problem 3**: makes the wrong empirical predictions, because elliptical silence would arise too late...
 - ...to repair *morphological ineffability*, contrary to fact (Merchant 2015, Abels 2019, Mendes and Nevins, to appear, a.o.)
 - ...to bear on allomorph selection, contrary to fact (Kornfeld and Saab 2004, Sailor, to appear, a.o.)
 - ▶ **Problem 4**: relies on the Prosodic Hierarchy, an anti-Modular object (Scheer 2008, Newell & Sailor, yesterday)
- Non-insertion has certain advantages:¹
 - ▶ Avoids Problems 1-4 above
 - ▶ Reduction of operations: the NIH mostly exploits independently-needed machinery (Vocab Insertion)

In sum, **there is a natural affinity between the NIH and DM**:

- They work from a shared set of assumptions.
- So it’s worthwhile exploring how the two interact, as this talk does (and see also Saab, to appear for more)

¹It also has its own drawbacks: see Sailor (in progress).

But before moving on, something must be said about the NIH and **cyclicality**:

- At a glance, the NIH looks counter-cyclic.
 - ▶ Ellipsis of a very large (multi-phasal) constituent would seem to require VI to go back into completed cycles to undo and/or overwrite spelled-out List 2 items
- There are various ways of overcoming this; e.g. using a recent proposal in Murphy and Müller (to appear:§3.3.2):
 - ▶ For reasons having nothing to do with VI, they argue that **ellipsis is successive-cyclic** in a striking way:
 - Ellipsis licensing proceeds bottom-up during the derivation. Roughly:
 - The deepest [E]-bearing phase head undergoes Cyclic Agree with the next phase head up, passing [E] up the tree until a proper licensing head is reached.
 - In other words, ellipsis of TP (e.g.) requires independent ellipsis of the VP within it.
 - Thus, the counter-cyclicality problem is avoided under Murphy and Müller’s approach.
- See Saab (to appear: fn. 6) for further discussion.

2.3 The phonological status of roots within DM

In DM, post-syntactic VI furnishes syntactic terminals – bundles of (at least) syntactic features drawn from the pre-syntactic *List 1* – with phonological exponents drawn from *List 2*.

- A question that has persisted throughout the development of DM asks whether the composition of all morphemes is necessarily “distributed” in this way...
 - ▶ ...or whether some might enter the syntactic derivation with additional (i.e., semantic and/or phonological) features prespecified as part of their List 1 entry.
- This is classically framed as a broader question of *individuation*:
 - ▶ The means by which morphemes can be formally distinguished from one another during the syntactic computation.

This was particularly relevant for **roots**, which were all pulled from a single spartan List 1 entry

- Marantz (1995): List 1 items are only specified with what is needed for the syntax.
 - ▶ If roots are syntactically inert (as early DM held), then basically no features are needed...
 - ▶ ...meaning roots all “look” the same within the syntax.
- **This was a problem.**
 - ▶ Vocab Insertion wouldn’t know which List 2 item to insert on such a radically underspecified node.
 - ▶ As such, practically anything would do the trick, leading to crazy results:
 - For insertion on $\sqrt{\text{DOG}}$, /kæt/ would be just as suitable as /dæg/, etc.

A consensus emerged: there had to be a way to distinguish roots within the syntax (see Harley 2014 for an overview)²

- Their representation had to contain some kind of individuating feature(s).

One common solution (Embick 2000, Embick and Halle 2005, Borer 2009, 2014, Embick 2015:§2.3.1, a.o.):

- Some or all roots enter the syntactic derivation with their **phonological features prespecified**
- These features could provide a clear means of distinguishing the roots they bear them.

²This problem is particularly pronounced with roots because of their unremarkable syntax within DM, but see Svenonius (2014) for extension to certain functional morphemes as well.

- This move addressed the individuation problem, but also had knock-on effects:
 - ▶ **If roots come with a phonological prespecification, then they don't undergo VI.**
 - ▶ A List 2 entry for a phonologically-prespecified root would be entirely superfluous;
 - VI would have nothing more to add (by design: see Embick 2015:§2.3.1).³
 - ▶ In fact, this was seen as an advantage, on the assumption that roots don't undergo **suppletion** (but see Harley 2014 for extensive arguments to the contrary):
 - No VI = no competition = no suppletion.

Taking stock, **what matters for present purposes is the following:**

- (a) there is a live debate in the DM literature about whether roots are generally subject to VI, and
- (b) until now, this debate has pivoted around the empirical status of root suppletion.

Looming large: a new DM-internal argument against the phonological prespecification of roots...

- ...one that is entirely independent of root suppletion.

3 A theory-internal argument against the phonological prespecification of roots

The problem is straightforward:

- If roots have phonological prespecification, they do not undergo VI;
- But if roots bypass VI with their phonological prespecification intact...
 - ▶ **...then the NIH predicts that ellipsis can have no silencing effect on roots.**
- In other words, prespecification predicts a clear functional/lexical divide:
 - ▶ Ellipsis should only render **functional** categories silent, but...
 - ▶ ...It should leave **lexical** categories' inherent phonological features intact.

This is **obviously false**.

- Straightforwardly disconfirmed by various ellipsis phenomena—predicate ellipsis, clausal ellipsis (e.g. sluicing), etc.:
- (5) Jessica was saying that Tom tried to buy something, but I don't know... *Sluicing*
- a. ...what [_{CP} Jessica was saying that Tom tried to buy t_i].
 - b. *...what [_{CP} Jessica was say(ing) that Tom tri(ed) to buy t_i]
- In sum, **the NIH requires that roots not be phonologically prespecified:**
 - ▶ They need to lack phonological features as a matter of course...
 - ▶ ...so that failing to undergo VI in an ellipsis site actually has an effect, leaving them silent.

³As an anonymous BCGL reviewer points out, phonological *individuation* can principally be distinguished from *prespecification*: in a system like that of Borer (2013), roots are nothing more than a “phonological index” whose actual surface form is determined post-syntactically. On this account, a phonological index failing to undergo VI (by the NIH) may remain silent in an ellipsis site, as desired. However, this aspect of Borer's system is incompatible with my starting assumptions—in particular, with Strict Modularity, which precludes Merge from working with a purely phonological object (which “roots” seem to be on her account, despite being items Merge can draw from the Lexical Array: *ibid*: 27; 386-7). That being said, Borer also suggests (29n30; 397n25) that such phonological indices might in fact be inserted late (somehow), which could mitigate the Modularity problem (but at the cost of making this view of root individuation indistinguishable from that of e.g. Harley's with respect to the NIH).

- This argument has bite precisely because the NIH is the going theory of elliptical silence within DM.
 - ▶ Since these two DM-internal positions are in conflict, **one of them has to go.**
 - ▶ Given Harley's (2014) existing arguments against phonological prespecification from root suppletion...
 - ...this observation from ellipsis provides another argument going in the same direction.

4 Extensions

4.1 No extra deletion process

We could of course maintain **both** positions by stipulating a bespoke deletion operation:

- This operation would strip a root of its phonological prespecification just in case it arises in an ellipsis site (whose non-root terminals would still be silenced by failing to undergo VI, as usual)

But this would just stipulate a solution to a problem that shouldn't exist.

- In addition to non-insertion, we'd also need actual phonological deletion—the worst of all possible worlds.
- And we'd still expect to see a lexical/functional divide in the domain of ellipsis (albeit a subtler one than above):
 - ▶ This would arise at the stage(s) of the derivation between VI and whenever this extra deletion process took effect.
 - ▶ Without any evidence of such an effect, parsimony rules this extra deletion process out.

4.2 On Gribanova (2017)

Gribanova (2017) reaches the same conclusion – roots undergo VI – also on the basis of ellipsis.

- Because of the similarity of our conclusions, I briefly review her arguments here.
 - ▶ It will turn out that Gribanova's arguments are excluded on grounds of Modularity.
 - ▶ This is a crucial premise (again see Newell & Sailor, yesterday), so our positions are incompatible.

Summary of Gribanova (2017):

- **PREMISES:**
 - a. *The Verbal Identity Requirement:* When V moves out of a VP-ellipsis site, *identity* is required between the parts of the V-complex originating inside the ellipsis site and their counterparts in the antecedent. (Goldberg 2005)
 - b. *Isomorphism:* Identity is assessed at LF (*ibid.*:8)
- **OBSERVATION:** In Irish, distinct suppletive forms of a given verbal root can nevertheless satisfy *identity* by (a).
- **CONCLUSIONS:**
 - i. Roots must undergo VI...
 - ii. ...because **if they were phonologically prespecified, the OBSERVATION would count as non-identical** under (a).

While we share CONCLUSION (i), we differ with respect to how we arrive at it, and with CONCLUSION (ii)

- Granting PREMISE (b), that identity is determined at LF..
- ...the OBSERVATION does not actually sustain the CONCLUSIONS:
 - ▶ Modularity prohibits LF from seeing and/or understanding phonological features (by *Domain Specificity*).
 - In brief: **semantics is phonology-blind.**

- Thus, LF couldn't use phonological information to determine (non-)identity **even if such information were present**.⁴

► In other words, the OBSERVATION could follow **even if roots were phonologically prespecified**.

- ...so CONCLUSION (ii) isn't upheld, meaning (i) isn't either.

So while we share the position that roots undergo VI...

- ...we differ on the sort of argument that could license this conclusion.

5 Conclusion

The two DM-internal positions described here are incompatible. **Either:**

(i) the silence of ellipsis is **not** the result of non-insertion (i.e., the NIH is wrong); or,

(ii) **no terminal can enter the syntactic derivation already bearing phonological features**, lest it be an “unelidable” terminal, contrary to fact

If (i) holds, then ellipsis has no particular relevance to the question of prespecification.

- However, a preponderance of DM-based work in ellipsis indicates a clear consensus forming around the NIH
 - (Again see Wilder 1997, Bartos 2001, Kornfeld and Saab 2004, Saab 2008, Aelbrecht 2010, Merchant 2015, Saab and Lipták 2016, Gribanova 2017, Mendes and Nevins to appear, Saab, to appear, and Sailor to appear).
- Combined with unrelated empirical arguments for (ii) in the DM literature (Harley 2014)...
 - ...we now have an additional, DM-internal argument for (ii) from the theory of ellipsis.

⁴To rescue the CONCLUSIONS, we might consider alternatives to PREMISE (b). Is identity assessed in phonology? Clearly it can't be, given the OBSERVATION—the roots would be counted as non-identical whether their forms were prespecified or late-inserted, contrary to fact. Then is it assessed in syntax? This wouldn't solve the problem with the CONCLUSIONS either: like semantics, syntax is phonology-blind, so the same problem arises as with LF identity. Thus, the problem isn't with (b), but with (ii). In essence, these facts don't tell us anything about prespecification (beyond what root suppletion itself tells us). However, this raises a much broader question: given that syntax is phonology-blind, how would phonological prespecifications help roots be individuated *within the syntax*, on a strictly Modular view? In fact it seems that they can't; however, as noted above, the individuation problem (i.e., making sure roots aren't a problem for VI) is mooted by the fact that prespecified roots don't undergo VI at all.

References

- Abels, Klaus. 2019. On “sluicing” with apparent massive pied-piping. *Natural Language & Linguistic Theory* 37:1205–1271.
- Aelbrecht, Lobke. 2010. *The syntactic licensing of ellipsis*. Amsterdam/New York: John Benjamins.
- Bartos, Huba. 2001. Sound-form non-insertion and the direction of ellipsis. *Acta Linguistica Hungarica* 48:3–24.
- Borer, Hagit. 2009. Roots and categories. Talk given at the 19th Colloquium on Generative Grammar, University of the Basque Country.
- Borer, Hagit. 2013. *Taking form*, volume III of *Structuring Sense*. Oxford University Press.
- Borer, Hagit. 2014. Wherefore roots? *Theoretical Linguistics* 40:343–359.
- Chomsky, Noam. 1965. *Aspects of the theory of syntax*. MIT Press.
- Embick, David. 2000. Features, syntax, and categories in the Latin perfect. *Linguistic Inquiry* 31:185–230.
- Embick, David. 2015. *The morpheme: A theoretical introduction*. Walter de Gruyter.
- Embick, David, and Morris Halle. 2005. On the status of *stems* in morphological theory. In *Romance languages and linguistic theory 2003*, ed. Twan Geerts, Ivo van Ginneken, and Haike Jacobs, 37–62. John Benjamins.
- Fodor, Jerry A. 1983. *The modularity of mind*. MIT Press.
- Goldberg, Lotus. 2005. Verb-stranding VP ellipsis: A cross-linguistic study. Doctoral Dissertation, McGill University.
- Gribanova, Vera. 2017. Roots and ellipsis and multidominance. In *Asking the right questions: essays in honor of Sandra Chung*, ed. Jason Ostrove, Ruth Kramer, and Joseph Sabbagh, 1–16. Linguistics Research Center, University of California Santa Cruz. Available at <https://escholarship.org/uc/item/8255v8sc>.
- Halle, Morris, and Alec Marantz. 1993. Distributed morphology and the pieces of inflection. In *The view from Building 20*, ed. Ken Hale and Samuel Jay Keyser, 111–176. MIT Press.
- Halle, Morris, and Alec Marantz. 1994. Some key features of Distributed Morphology. In *Papers on phonology and morphology*, ed. Andrew Carnie, Heidi Harley, and Tony Bures, volume 21 of *MIT Working Papers in Linguistics*, 275–288. MIT.
- Harley, Heidi. 2014. On the identity of roots. *Theoretical Linguistics* 40:225–276.
- Jackendoff, Ray. 1997. *The architecture of the language faculty*. MIT Press.
- Kornfeld, Laura, and Andrés Saab. 2004. Nominal ellipsis and morphological structure in Spanish. In *Romance languages and linguistic theory 2002*, ed. Reineke Bok-Bennema, Bart Hollebrandse, Brigitte Campers-Manhe, and Petra Sleeman, 183–198. John Benjamins.
- Marantz, Alec. 1995. “Cat” as a phrasal idiom: Consequences of late insertion in Distributed Morphology. Ms., MIT.
- Mendes, Gesoel, and Andrew Nevins. To appear. When ellipsis can save defectiveness and when it can’t. *Linguistic Inquiry*.
- Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford University Press.
- Merchant, Jason. 2004. Fragments and ellipsis. *Linguistics and Philosophy* 27:661–738.
- Merchant, Jason. 2008. Variable island repair under ellipsis. In *Topics in ellipsis*, 132–153. Cambridge University Press.
- Merchant, Jason. 2015. On ineffable predicates: Bilingual Greek-English code-switching under ellipsis. *Lingua* 166:199–213.
- Murphy, Andrew, and Gereon Müller. To appear. Derivational ellipsis and Vehicle Change. In *The derivational timing of ellipsis*, ed. Anikó Lipták and Güliz Güneş. Oxford University Press.
- Ross, John R. 1969. Guess who? In *Papers from the 5th regional meeting of the Chicago Linguistic Society*, ed. Robert Binnick, Alice Davison, Georgia Green, and Jerry Morgan, 252–286. University of Chicago.
- Saab, Andrés. 2008. Hacia una teoría de identidad parcial en la elipsis. Doctoral Dissertation, Universidad de Buenos Aires.
- Saab, Andrés. To appear. Ellipsis: its way from syntax to morphology. In *The derivational timing of ellipsis*, ed. Anikó Lipták and Güliz Güneş. Oxford University Press. Available online at: lingbuzz/004522.
- Saab, Andrés, and Anikó Lipták. 2016. Movement and deletion after syntax: Licensing by inflection reconsidered. *Studia Linguistica* 70:66–108.
- Sailor, Craig. In progress. Ellipsis in a modular perspective. Ms., University of Edinburgh.
- Sailor, Craig. To appear. The morphophonology of ellipsis: evidence for Segregated Transfer. In *The derivational timing of ellipsis*, ed. Anikó Lipták and Güliz Güneş. Oxford University Press.
- Scheer, Tobias. 2008. Why the prosodic hierarchy is a diacritic and why the interface must be direct. In *Sounds of silence: empty elements in syntax and phonology*, ed. Jutta M. Hartmann, Veronika Hegedűs, and Henk van Riemsdijk, chapter 5, 145–192. Elsevier.
- Scheer, Tobias. 2012. *Direct interface and one-channel translation: A non-diacritic theory of the morphosyntax-phonology interface*, volume 68.2 of *Studies in Generative Grammar*. De Gruyter Mouton.
- Segal, Gabriel. 1996. The modularity of theory of mind. In *Theories of theories of mind*, ed. Peter Carruthers and Peter K. Smith, chapter 9, 141–157. Cambridge University Press.
- Svenonius, Peter. 2014. Generalized applicatives: Reassessing the lexical-functional divide. *Theoretical Linguistics* 40:439–446.
- Wilder, Chris. 1997. Some properties of ellipsis in coordination. In *Studies on universal grammar and typological variation*, ed. Artemis Alexiadou and Tracy Hall, 59–107. John Benjamins.