

Out-Sourcing Internal Arguments*

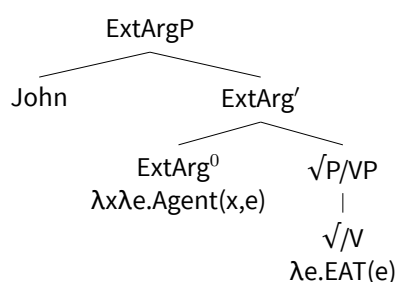
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1. Introduction

- ◆ It's long been argued that external arguments¹ are not introduced by the verb
 - ▶ There is an ever-increasing amount of evidence to this effect
 - Verbal morphology, idioms, adverbial modification, semantic composition, passives, ...
 - (Larson 1988, Marantz 1984, 1997, Hale and Keyser 1993, Chomsky 1995, Kratzer 1996, von Stechow 1996, Pylkkänen 2002, Ahn 2010, Lohndal 2012, Harley 2013...)
 - ▶ This is one aspect of a 'Neo-Davidsonian' approach to the Syntax-Semantics Interface
 - Neo-Davidsonian semantics: a verb names the type of event, but its arguments are introduced by different functions
 - ◇ Taken up in Parsons 1990 and Schein 1993, and many subsequent works; See Lohndal 2012:Ch.3 for an overview
 - If arguments of a verb are introduced by different verb-independent functions **semantically**, a transparent Syntax-Semantics Interface ought to require those functions be associated with independent functional heads **syntactically**
 - ▶ Thus a neo-Davidsonian representation of *John ate* might look like (1a), with a transparent syntactic representation of this in (1b)

(1) a. $\exists e[\text{Agent}([\text{John}],e) \ \& \ \text{EAT}(e)]$

b.

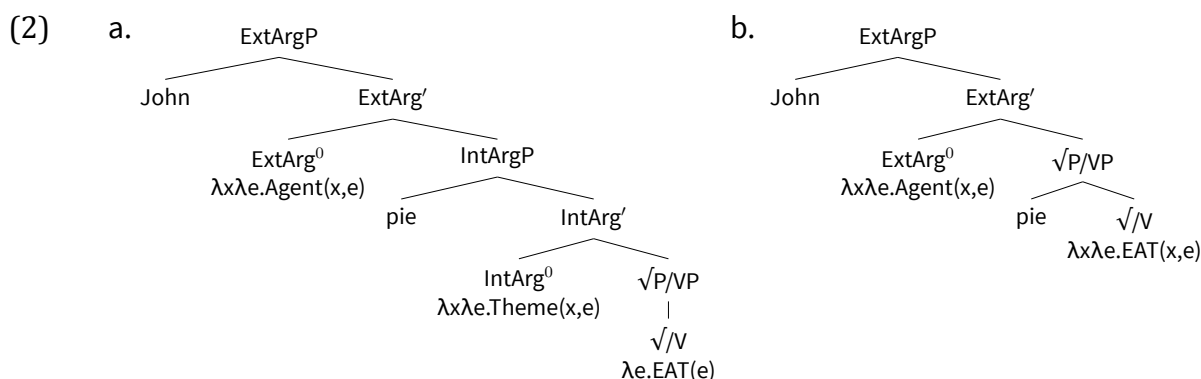


- The external argument is “severed” from the lexical verb
 - Introduced by a functional head (ExtArg/v/Voice/...) outside of the projection of the lexical predicate's root (\sqrt{P}/VP), which is associated with the semantics of the external argument function
- ◆ **Main Question:** Are internal arguments similarly severed from the lexical verb?

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¹To be clear, I use this term to refer to the highest argument in the thematic domain of a predicate.

- ◆ Is the internal argument introduced by the lexical predicate function, or by a different function?
 - ▶ As a specific example, does *John ate pie* resemble (2a) or (2b)?



- ▶ Much more than external arguments, the standard analysis in the field is that internal arguments are introduced **within** $\sqrt{P/VP}$, as in (2b)
 - This is the representation in works like Chomsky 1995 and Kratzer 1996; a position recently defended by Harley (2014a,b) (for at least some internal arguments)
- ▶ While others argue that (at least some) internal arguments are introduced higher, as in (2a)
 - (Borer 2005a,b, Bowers 2010, Lohndal 2012, Alexiadou 2014, Cuervo 2014, ...)
- ◆ **New data:** English *out-* prefixation to be considered in deciding between (2a&b)
 - ▶ Internal arguments, like external arguments, can be “suppressed” by a regular grammatical process: *out-* prefixation

(3) a. The Iron Man sequel grossed *(\$625million).


b. Each Marvel sequel has out-grossed its predecessor. (<http://bit.ly/1BqdPHI>)

c. Each Marvel sequel has out-grossed (*\$625million) its predecessor (*\$625million).

 - Prefixing *out-* requires that the amount-argument of *gross* is obligatorily absent
 - Compare (3a) with (3b-c)
- ◆ **Hypothesis:** *out-* prefixation is morphosyntactically controlled “argument suppression”
 - ▶ Internal arguments of a predicate cannot be syntactically merged when *out-* is merged
 - Following principles of morphosyntax (especially Koontz-Garboden 2007’s Monotonicity Hypothesis), **this hypothesis will implicate (2a)**
 - ▶ Beyond this argument suppression analysis, a range of other data with *out-* prefixation will also support (2a)
- ◆ **Conclusions:**
 - ▶ New evidence that word-building takes place in the syntax
 - And phonological (and orthographic) units like ‘word’ do not need to correspond to syntactic constituents
 - ▶ We have evidence that syntactic/semantic representations are fully neo-Davidsonian
 - Even internal arguments are introduced by a function/head, distinct from the one that identifies the lexical predicate

2. Out- Prefixation

2.1. Basic Interpretation

- ◆ Let's start by going through some examples of *out-* prefixation
 - ▶ First, let us consider what a canonical example like (4) means
 - (4) Google has outdone itself today (<http://bit.ly/1GY0Np0>)
 - Notably, this does not entail that Google has done itself
 - This expresses that Google did something to a greater/better/more extreme degree, as compared to the other events in which Google (*'themselves'*) has done that thing
 - (In this case, the thing being done is the daily Google doodle)
 - ▶ Here are some more examples of out-PRED
 - (5) a. Michael didn't outdance Paul. (<http://bit.ly/1BMalyM>)
 - b. Neither one outsang the other. (<http://bit.ly/19PZpup>)
 - c. Armageddon outgrossed Deep Impact. (<http://bit.ly/1DZCCZD>)
 - d. Mike clearly has outcooked everyone. (<http://bit.ly/1NngzGH>)
 - e. By 2017, connected devices will outnumber people. (<http://bit.ly/1BqSr4I>)
 - ▶ In general, these can be paraphrased as "SUBJECT participated in a VERBing (of something) to a greater/better degree than OBJECT"
- ◆ This out-PRED construction is highly productive
 - ▶ The predicate in question must be able to be construed as some kind of contest, or as something with a scalar aspect to it
 - (6) a. 78-Year-Old Natator Says He Can Outfloat Rivals  (<http://bit.ly/1FJXJ2w>)
 - b. Kate Moore [...] out-texted more than 250,000 participants (<http://cnn.it/1xhXHfs>)
 - c. Lennon slightly outwrote McCartney for each of the first two albums (<http://bit.ly/18Zpg21>)
 - d. ...business interests outresearched, outspent, and outlobbied poorly funded and loosely organized groups (<http://bit.ly/1CcGIKq>)
- ◆ Whatever theta role the PRED normally assigns its external argument gets assigned to the subject and object of out-PRED
 - ▶ Both arguments receive the same thematic interpretation with regard to PRED²
 - (7) a. Agent: Gorbachev is outmaneuvering his critics. (<http://trib.in/1EGgwq6>)
 - b. Experiencer: And a bear can out-smell even a bloodhound. (<http://bit.ly/1BMPvz3>)
 - c. Theme: This food outlasts even a Twinkie. (<http://bit.ly/1OyYvSw>)
 - (8) a. Agent: He outsells all our other salespeople. (<http://bit.ly/1CqpKJV>)
 - b. Theme: Mustangs outsell Camaros and Firebirds combined. (<http://bit.ly/1GmxKNL>)
 - This is perhaps not surprising, given the comparative-like paraphrase we gave earlier

²There are some out-PREDS which allow their internal argument to be some kind of standard or measure phrase, e.g. *Stock A outperformed the market*. Not every out-PRED allows this, e.g. **John outran the record*. Perhaps this is only possible with out-PREDS that also have under-PRED forms – compare *outperform/underperform* and *out-run/*underrun*.

2.2. Brief Aside: A Different Out-

- ◆ The previous *out-* prefix we looked at is interpreted as a kind of comparative³
 - ▶ In contrast, there is another *out-* morphemes that occurs preverbally – a directional one:
 - (9) a. The financial sector outsources technical services. (<http://bit.ly/1HKvRZC>)
 - b. The program won't output the letter grade. (<http://bit.ly/1ETW6MS>)
 - ▶ Directional *out-* differs semantically, phonologically, and morphologically
 - This *out-* produces a directional interpretation, without any comparative semantics
 - This *out-* bears stress, like the first member of a two-word compound, unlike comparative *out-PRED*
 - This *out-* is rather limited in productivity, especially in the context of verbs
 - ▶ Importantly, directional *out-* does not exhibit the grammatical properties of the comparative *out-* that we will uncover
- ◆ In fact, these two *out-s* can co-occur
 - ▶ In a fixed order: comparative *out-*, directional *out-*, PRED
 - (10) (The financial sector outsources technical services, and so does the retail sector. But...)

The retail sector out-outsources the financial sector.

3. Internal Arguments and Constituency of out-PRED

- ◆ We will now move on to some generalizations on out-PRED's grammatical properties
 - ▶ This will lead up to an analysis of *out-* which indicates that **internal arguments merge outside the lexical verb's projection**
- 3.1. PRED as Active in the Derivation of out-PRED
 - ◆ The first generalization has to do with the PRED-specific properties that persist in out-PRED
 - ▶ In particular, it must not be that verbs of the form out-PRED are simply listemes in the lexicon
 - ◆ They inherit all morphophonological irregularities of the stem to which they attach
 - (11) a. run + -ed = *ran*, **runned*
outrun + -ed = *outran*, **outrunned*
 - b. do + -ed = *did*, **doed*
outdo + -ed = *outdid*, **outdoed*
 - c. do + -s = [dʌz], *[duz]
outdo + -s = *out*[dʌz], **out*[duz]
 - ▶ out-PRED never triggers regularization of PRED, suggesting that PRED is obligatorily active/visible in the morphological derivation
 - ▶ This is unlike other cases, where regularization can take place, as opacity may allow derivations in which the irregular item is inaccessible to morphology

³I do not investigate the comparative semantics or its syntactic source at all here. There are many issues in this domain, which merit their own investigation.

- (12) light + -ed = *lit*
 green-light + -ed = *green-lighted*

- ◆ In addition, the stativity of out-PRED depends on the stativity of PRED
 - ▶ The availability of progressive *-ing* for present tense is constant across PRED and out-PRED

(13) a. *James is weighing 180lbs.
 b. *James is outweighing Josh.

(14) a. ✓Joanna is singing a song.
 b. ✓Joanna is out-singing Louisa.
- ◆ out-PRED **cannot be entirely an separate listeme** in the lexicon (as has been argued before; Keyser and Roeper 1984)
 - ▶ These two properties are **properties of roots**, meaning PRED is derivationally active
 - Given that it is targetable for morphophonological irregularities
 - And given that it determines out-PRED's semantic property of being stative or dynamic
 - ▶ With both PF and LF effects, this indicates that the root morpheme of PRED is active as a root morpheme of out-PRED **in the syntax**
 - ▶ This introduces the question of how much structure is represented for PRED in the syntax

3.2. out-PRED as a Distinct Predicate

- ◆ Though PRED's root-properties persist in out-PRED, **out-PRED behaves as an entirely different predicate** in other ways
 - ▶ First, the range of adjuncts for out-PRED differ from those available to PRED

(15) a. # John ran the race by several minutes.
 b. John out-ran Bill by several minutes.

(16) a. Katie ate (pizza) with a fork.
 b. #? Katie outate Pete with a fork.
 - ▶ Second, **out-PRED can always be passivized** – even if PRED cannot

(17) a. By mid-September, they numbered 10,000.
 b. *By mid-September, 10,000 were numbered (by them).
 c. By mid-September, they out-numbered us.
 d. By mid-September, we were out-numbered (by them).

(18) a. Titanic 2 didn't run in theaters.
 b. *Theaters weren't run in by Titanic 2.
 c. Titanic 2 didn't outrun Titanic.
 d. Titanic wasn't outrun by Titanic 2.

(19) a. Julie cooked tofu.
 b. Tofu was cooked (by Julie).
 c. Julie out-cooked Lee.
 d. Lee was out-cooked (by Julie).

- ◆ These properties are **not** root properties, determined by PRED
 - ▶ Instead, they are **properties of a larger portion of the derivation**
 - Passivization is determined by a functional head at the edge of the extended verbal domain (Kratzer 1996, Sailor and Ahn 2010, Harley 2013)
 - Certain adjuncts depend on structure higher than the root (e.g., instruments depend on syntactically active agents; Reinhart 2000)
 - ▶ PRED seems to lack an extended projection containing these heads
 - While out-PRED has an extended projection containing them

SO FAR...

- ◆ PRED is syntactically active in the derivation of out-PRED
 - ▶ Contributing root properties like stativity and morphological irregularities
- ◆ The extended projection of out-PRED is distinct from PRED's normal extended projection
 - ▶ Passive voice can always merge in out-PRED
 - ▶ The availability of extended-projection adjuncts differs between out-PRED and PRED

3.3. Severing Internal Arguments from the Predicate

- ◆ We've looked both low and high in the verbal domain
 - ▶ Finding that low, root-properties associate with PRED
 - ▶ And that high, extended-projection-properties associate with out-PRED
- ◆ Let us now turn to internal arguments
 - ▶ Do they pattern with PRED or out-PRED?
 - ▶ **None of PRED's internal argument(s) can surface with out-PRED**
 - ▶ It does not matter if the internal argument is...
 - ...an object of a transitive PRED:
 - (20) a. She thinks about syntax.
 - b. She outthinks (*about syntax) them (*about syntax).
 - (21) a. Google lobbied Congress.
 - b. Google outlobbied (*Congress) Microsoft (*Congress).
 - ...an optional cognate object of an unergative PRED:
 - (22) a. Mike danced (a good dance).
 - b. Mike outdanced (*a good dance) Janet (*a good dance).
 - (23) a. James weighs (a healthy weight).
 - b. James outweighs (*a healthy weight) Josh (*a healthy weight).

- ...either argument of a ditransitive PRED:
 - (24) a. Jackie donated money to museums.
 - b. Jackie outdonated (*money) (*to museums) Lisa (*money) (*to museums).
 - (25) a. Our group gave blood to the Red Cross.⁴
 - b. Our group outgave (*blood) (*to the Red Cross) one of the local hospitals (*blood) (*to the Red Cross).
- ...or an obligatory argument of the PRED:
 - (26) a. Armageddon grossed *(\$349m).
 - b. Armageddon outgrossed (*\$349m) Deep Impact (*\$349m).
 - (27) a. He spent *(his inheritance).
 - b. He outspent (*his inheritance) his siblings (*his inheritance).

♦ **PRED's normal internal argument is suppressed**

- ▶ This may be especially surprising, because we've added this morphology (*out-*)
 - Which may introduce extra syntactic structure, but not destroy it
 - ◇ (The Monotonicity Hypothesis)
- ▶ Instead of destroying structure, **what merging *out-* does is prevent the merging of internal argument licensers**
 - But how? PRED is syntactically active in the derivation of out-PRED.
 - This means that PREDs must not normally introduce their internal argument in their \sqrt{P}/VP ⁵
 - ◇ If it did, we would have no way of having both PRED syntactically present while its internal argument is syntactically absent⁶
- ▶ The idea that (some) internal arguments are introduced outside of \sqrt{P}/VP has been proposed before
 - For internal arguments undergoing a change of state (Change-of-State arguments; CoS arguments)
 - ◇ (Hale and Keyser 1993, Cuervo 2003, Alexiadou and Schäfer 2011)
- ▶ We have seen that **non-CoS internal arguments are suppressed by *out-* prefixation**

MAJOR CONSEQUENCE

Internal arguments, beyond CoS arguments, can be introduced above \sqrt{P}/VP

⁴This example is inspired by a web-hit: *Last year, we outgave one of the local hospitals.* (<http://bit.ly/1NipVst>)

⁵At least, not PREDs that participate in out-PRED. We return to this in the next section.

⁶With certain understandings of the Theta Criterion, suppressing internal arguments would seem to be problematic. For reasons like this, the aspect of the Theta Criterion which says predicates must discharge theta roles to syntactic objects is dependent on the notion lexical items syntactically specify their thematic arguments. That is, there is a premise that theta roles are assigned syntactically, and only to syntactic objects. This is not a necessity. For example, Ahn and Sailor 2014 suggests that implicit arguments may be existentially closed variables assigned theta roles in the semantics. Alternatively, there is no Theta Criterion, per se – see Lohndal 2012.

SIDEBAR: RECOVERABILITY

- ◆ Though out-PRED is productive, it appears to be constrained by recoverability of the internal argument(s)
 - ▶ Recoverability is a necessary condition on out-PRED, but it is not recoverability that *causes* the suppression
 - ▶ The argument is equally salient in the following PRED and out-PRED examples, but is obligatory in PRED and impossible in out-PRED
- (28) a. Speaking of red wine, France produces *(red wine).
 b. ...in terms of red wine, France usually out-produces Italy.
 (<http://bit.ly/1BMLive>)
- (29) a. Speaking of car engines, this radiator cools *(car engines).
 b. (*CONTEXT: discussion of various radiators' abilities to cool car engines*)
 ...it outcools my stock radiator significantly (<http://bit.ly/1FVRSpF>)

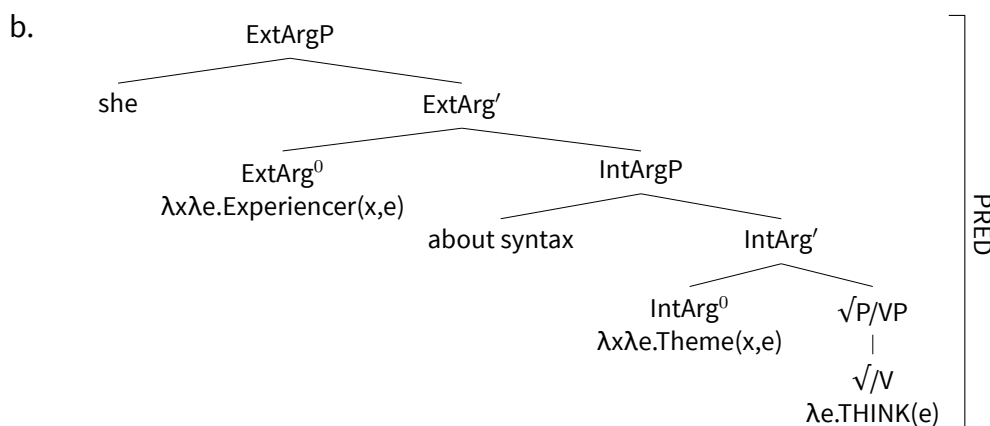
- ◆ Moreover, **out-PRED obligatorily licenses an internal argument** even when PRED does not
 - ▶ Consider some unaccusative⁷ PREDs below:
- (30) a. This student shines, when it comes to math.
 b. This student outshines *(everyone else), when it comes to math.
- (31) a. That candidate polls well.
 b. That candidate outpolls *(everyone else).
- ▶ Since *out-* merges outside of \sqrt{P}/VP , the internal argument of out-PRED is also merged outside of \sqrt{P}/VP

3.4. A Derivation of out-PRED

- ◆ Any internal argument(s) of PRED that get suppressed in out-PRED must be severed from the predicate

- ▶ This means (32a) has a structure like (32b)

(32) a. She thinks about syntax



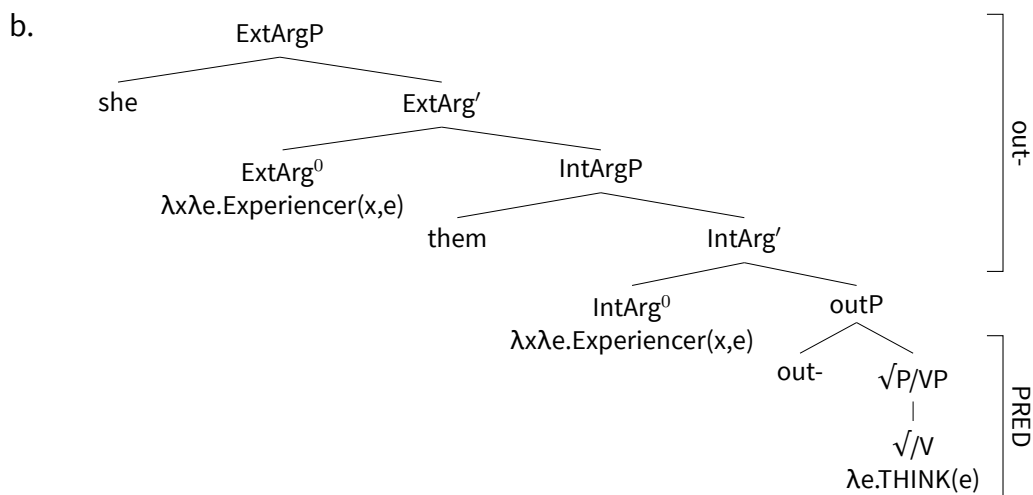
⁷By 'unaccusative', I simply mean that an internal argument ends up as the external argument. In this way, it is a cover-term, encompassing middles, anticausatives, ergatives, etc.

- Here, *think* is the lexical predicate, identifying the event, which projects the extended verbal domains that includes all of its arguments
 - ◊ In addition, *think* determines what kinds of theta roles ExtArg^0 and IntArg^0 assign to each of their specifiers
 - ▷ The influence of *think* on the thematic roles is not syntactically local, and instead should fall out from normal interpretive principles
 - ▷ (For a similar non-local treatment of theta assignment, refer to Harley 2013:§8)

◆ At the same time, out-PRED introduces its own internal argument

▶ Internal arguments can be merged above $\sqrt{\text{P/VP}}$

(33) a. She outthinks them



- Here, *think* is a bare predicate, whose purpose is to identify what kind of events are being compared
 - ◊ The internal argument of *think*, specifying the theme argument, normally merges outside of the $\sqrt{\text{P/VP}}$
 - ◊ But *out-* selects only a $\sqrt{\text{P/VP}}$ complement, meaning *think*'s internal argument cannot merge – **all arguments are out-PRED's**
 - ◊ In addition, as in (32), *think* determines what kinds of theta roles ExtArg^0 and IntArg^0 assign to each of their specifiers in (33)
 - ▷ Differently: *out-* maps the same theta role to both

▶ This structure is consistent with all we have said so far:

- PRED is syntactically active
- out-PRED is a distinct predicate, projecting its own extended verbal domain
 - ◊ out-PRED can always be passivized because it is always the same extended verbal domain
- Internal arguments of PRED that are suppressed in out-PRED are introduced outside of the $\sqrt{\text{P/VP}}$ that *out-* selects as its complement
 - ◊ **We now have evidence that non-CoS internal arguments may be severed from the predicate**

4. More Evidence that PRED Lacks Internal Arguments

- ◆ Let's be sure that PRED's internal arguments are missing
 - ▶ By looking at places where internal arguments are necessary
 - ▶ And showing they cannot undergo *out-* prefixation
- ◆ There are three such domains in which out-PRED is blocked
 - ▶ Three cases we will investigate:
 - idioms (e.g., *shoot the breeze*/[#]*outshoot*)
 - the verb *have* (e.g., *have cars*/^{*}*outhave*)
 - CoS Unaccusative Verbs (e.g., *dishes dry*/^{*}*outdry*)
 - ▶ This is a heterogeneous class, syntactically
 - **Common property:** The internal argument and PRED must be interpreted together
- ◆ Critically, this relies on the notion that there are syntactically-defined domains of interpretation
 - ▶ This has been claimed for idioms for some time (Marantz 1984, Kratzer 1996)
 - ▶ Beyond idioms, there are syntactic domains of idiosyncratic interpretation (e.g., Borer 2013, Harley 2014b)

4.1. Idioms

- ◆ Let us turn to the behavior of idioms in out-PRED contexts
 - ▶ Consider some idioms – in (34a-c), the verb and the internal argument form the idiom together, while in (34d), the idiom is the verb alone.

(34) a. Julie cooked the books.
= Julie falsified financial records

b. Eddie passed the hat around his neighborhood.
= Eddie solicited contributions around his neighborhood

c. We shot the breeze with them.
= We had a casual conversation with them.

d. A local student shines in a national competition.
= A local student does exceptionally well, in a national competition
- ◆ Let us now establish that idioms are syntactically complex
 - ▶ Chunks can move around, and some idioms can be passivized (Fraser 1970, Richards 2001 among many others)

(35) a. The books have been cooked.

b. The hat has been passed.

c. [#]The breeze has been shot.

d. ^{*}A national competition has been shined in by a student.
- ◆ However, all pieces of the idiom must be syntactically present in the relevant domain of interpretation for the idiomatic meaning to emerge (cf. [#]*Julie cooked the ledgers*)

- Myler’s careful analysis shows that *have*’s semantics in all of these cases is essentially vacuous
 - ◊ “Because *have* itself is semantically vacuous, all of the thematic content of such sentences comes from *have*’s [internal argument].” (Myler 2014:387)

◆ Turning now to *out*- prefixation with *have*

- ▶ We expect that, if *have*’s internal argument (the source of thematic content) is suppressed, the result should be ill-formed

- (39) a. *In terms of game consoles, John out-has Bill. [Relational *have*]
 b. *In terms of nearby pubs, the stadium out-has the library. [Locational *have*]
 c. *In terms of wonderful experiences, John out-had Bill. [Experiencer *have*]
 d. *In terms of butlers shaving one’s cows, I’m out-having you. [Engineer *have*]
 e. *In terms of belongings strewn across the field, the wind out-had the earthquake. [Causer *have*]
 f. *In terms of conversation, we out-had them. [Light Verb *have*]

- ▶ **Because *have*’s internal argument is not formally represented in the syntax, the clause never receives a proper interpretation**

- Like idioms, *have* data suggests that PRED’s internal arguments are **not syntactically projected** in out-PRED

4.3. CoS Unaccusative Verbs

◆ Let us now turn to Change-of-State (CoS) unaccusative verbs

- ▶ As we said in §3.3, CoS internal arguments are introduced higher than $\sqrt{P/VP}$
 - This makes them a prime candidate to be suppressible

- ▶ And they are; consider CoS transitive clauses:

- (40) a. Pine Sol cleans the floor better than Mop-n-Glo, in a product-test.
 b. Pine Sol out-cleans Mop-n-Glo.

- (41) a. Scott dried dishes better than Anna, in a dish-drying competition.
 b. Scott out-dried Anna.

◆ What’s interesting is what happens when the CoS verb is unaccusative

- ▶ In this case, the CoS predicate cannot undergo *out*- prefixation

- (42) a. Hardwood cleans better than tile, in a Pine-Sol’s product-test.
 b. #Hardwood out-cleans tile.

- (43) a. The glassware dried better than the silverware, in a dish-drying competition.
 b. #The glassware out-dried the silverware.

◆ The unacceptability of (42) and (43) is not a function of unaccusativity

- ▶ We’ve already seen two examples of unaccusative predicates allowing *out*- prefixation – those are repeated below, with two new ones

- (30) a. This student shines, when it comes to math.
 b. This student outshines* (everyone else), when it comes to math.

- (31) a. That candidate polls well.
 b. That candidate outpolls * (everyone else).
- (44) a. We bounced the basketball.
 b. The basketball bounced.
 c. The basketball out-bounced the baseball. (Keyser and Roeper 1984)
- (45) a. The doctor weighed James.
 b. James weighed 180lbs.
 c. James out-weighed Josh.

◆ Instead this has to do with the way CoS internal arguments get interpreted

- ▶ **Interpretive Constraint:** Properly interpreting a CoS object as a result of PRED **requires that the object is interpreted together with the PRED**

- ▶ This interpretive constraint dictates that the following underlined segments must be interpreted together

- (46) a. Scott dried dishes better than Anna.
 b. Scott out-dried Anna.

- The argument undergoing a CoS in (46a) must be interpreted with the PRED, *dry*
- In (46b), however, there is no argument undergoing a CoS



- (47) a. The glassware dried better than the silverware.
 b. *The glassware out-dried the silverware.

- The argument undergoing a CoS in (47a) must be interpreted with the PRED, *dry*
- In (47b), both the subject and object of out-PRED undergo a CoS, and would need to be interpreted with PRED – impossible by our interpretive constraint

- ▶ More formally: CoS objects are introduced in a position for resultatives, and resultatives are restricted in their distribution

- Resultative small clauses only occur when selected as internal arguments of a predicate⁸

- ▶ Treating CoS objects and resultative clauses alike is supported by the fact that **resultative small clauses are ruled out** in out-PRED as well:

- (48) a. My book club can **out-drink** your book club.  (<http://bit.ly/1HUmVUP>)
 b. My book club can drink **your book club under the table**.  (<http://etsy.me/1OFsJ6s>)
 c. *My book club can **out-drink your book club under the table**.

◆ This interpretive constraint ought to fall out from the derivation and the definition of interpretive domains

- ▶ The derivation may be such that the \sqrt{P}/VP complement of *out-* is such a domain
- ▶ It may be slightly bigger too, but must be smaller than ExtArgP, as I show in the next subsections

⁸Unlike depictive small clauses, which are freer in distribution.

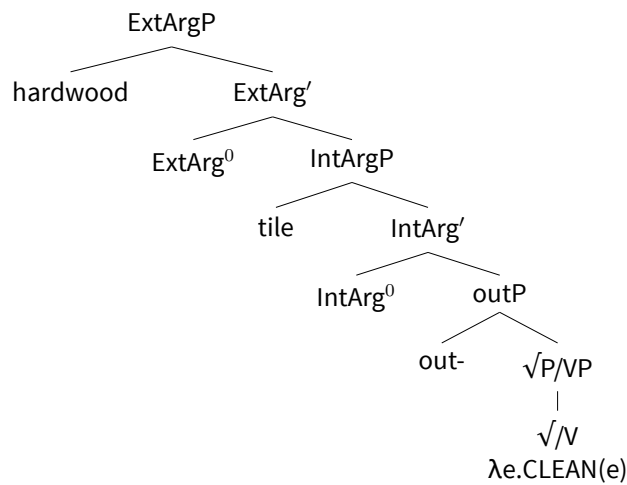
4.3.1. Derivations of out-PRED and CoS Verbs

- ◆ Now consider the syntax of out-PRED as it applies to CoS verbs

- ▶ First, unaccusative CoS clauses

(49) a. *Hardwood out-cleans tile

b. *

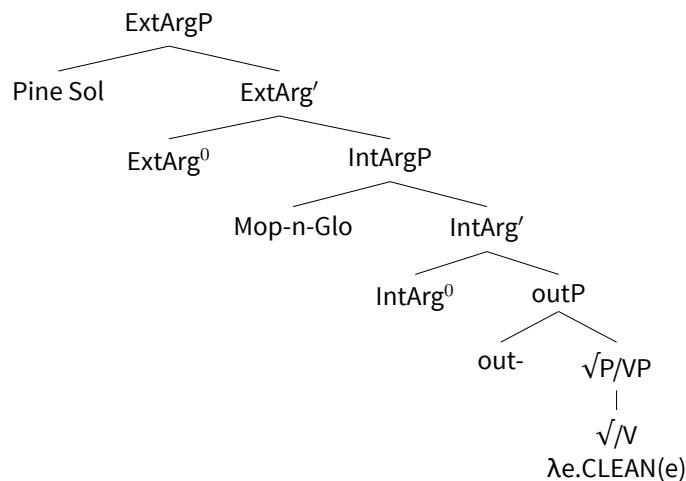


- ▶ Here the CoS internal argument *hardwood* (and perhaps *tile* as well) is too far from the CoS PRED to be interpreted with it⁹
 - This causes the derivation to fail

- ▶ On the other hand, there is no such interpretive constraint on transitive structures

(50) a. Pine Sol out-cleans Mop-n-Glo

b.



- In fact, there are no syntactic CoS internal arguments at all in this structure¹⁰
 - ◇ This suggests that it is a constraint either on derivations with CoS internal arguments, or on CoS internal arguments themselves. But not on CoS verbs.

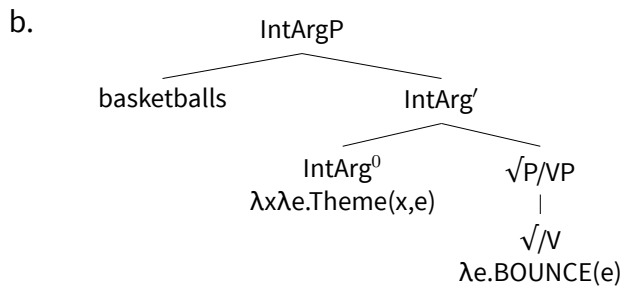
⁹Alternatively, CoS predicates are complex, containing a resultative head, which is higher than $\sqrt{P/VP}$. Since *out-* takes $\sqrt{P/VP}$ complements, the PRED will never be a CoS predicate.

¹⁰It may be that the meaning of () is similar to an 'objectless' clause, as in: *Mop-n-Glo cleans*.

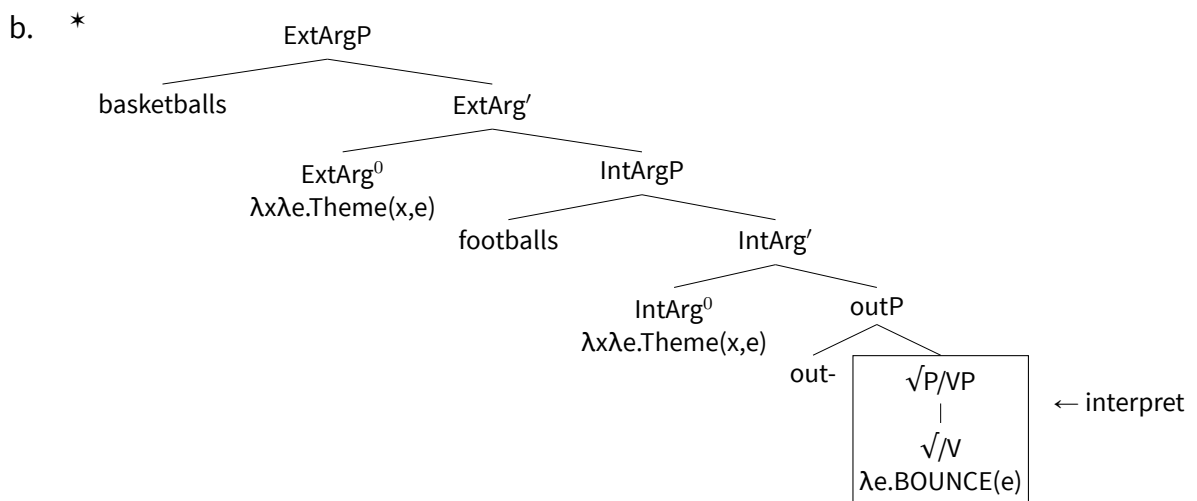
4.3.2. Derivations of out-PRED with Other Unaccusatives

- ◆ On the other hand, consider an unaccusative PRED whose internal argument **does not** undergo a change of state, such as *bounce*

(51) a. Basketballs bounce.



(52) a. *Basketballs out-bounce footballs.



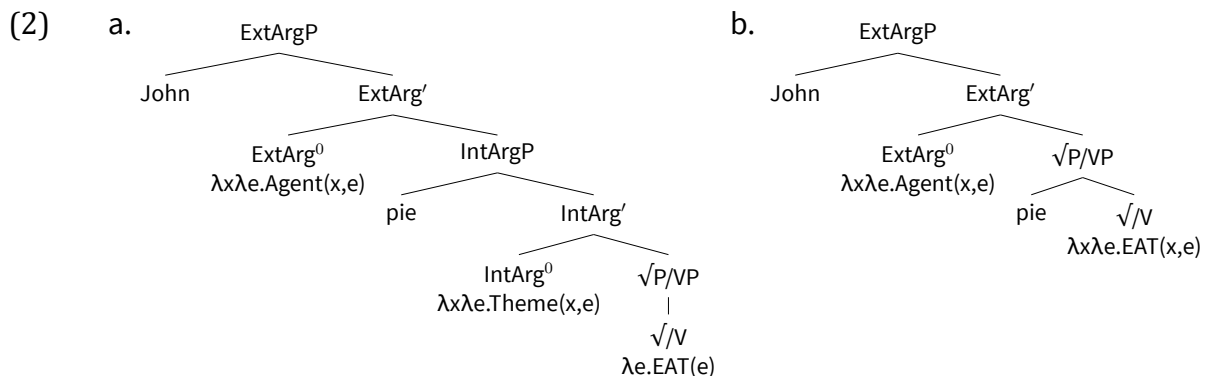
- ▶ Basketballs is not undergo a CoS, and so it is interpretable while separated from PRED
- ▶ Again, there is no constraint on non-CoS arguments
 - So what rules out (a subset of) unaccusatives with *out-* must not be unaccusativity, but rather the properties of a derivation with a CoS internal argument

5. Conclusion

- ◆ Some of our main findings in our investigation of the properties of out-PRED
 - ① PRED is syntactically active
 - Contributing idiosyncrasies to both PF and LF
 - ② compared to PRED's typical extended verbal projection, out-PRED has an entirely distinct one
 - With its own argument structure, adjuncts, and ability to passivize
 - ③ out-PRED selects a PRED complement, which contains no internal arguments
 - Meaning internal arguments are severed from the PRED
 - Even non-change-of-state internal arguments
 - ④ If a PRED and its internal argument must be interpreted together, out-PRED is impossible
 - Ruling out out-PRED with certain idioms, *have*, and change-of-state unaccusatives

◆ Let us return to our original question

- ▶ Main Question: Are internal arguments similarly severed from the lexical verb?
- ▶ Does *John ate pie* resemble (2a) or (2b)?



- ▶ The formal properties of out-PRED uncover that (2a) is necessary
 - This means that syntax may transparently corresponds to a fully neo-davidsonian semantics
 - **All arguments separated from the lexical predicate, each introduced by unique semantic functions, which correspond with unique syntactic positions**
- ▶ At least for predicates that allow out-PRED
 - Parsimony would have us believe that derivations always proceed in this way
 - But it is still an open question, for the case where out-PRED is impossible
 - (Though we have seen how this analysis rules out out-PRED with several cases)
- ▶ This means that dependencies between internal arguments and the PRED that used to be dealt with via strict syntactic locality must be re-evaluated
 - This may include restrictions on thematic interpretation, restrictions on semantic number,¹¹ grammatical animacy,¹² etc.

¹¹Restrictions on number are semantic: {The committee / #The bird} gathered.

¹²Restrictions on animacy are grammatical in nature, and do not refer to animacy in a strictly defined sense: machines are often grammatically treated as animate. (See e.g., Ahn 2010.)

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A. Appendix

A.1. Out- as a Verbalizer?

- ◆ What is the nature of *out-* and its complement?
 - ▶ We haven't labeled its category
 - ▶ And we've been calling its complement \sqrt{P}/VP
- ◆ But *out-* looks like a P
 - ▶ There are other P^0 prefixes which select verbal(ized) stems
 - (53) a. de-human-ize
 - b. de-cert-ify
 - c. en-live-n
 - d. over-do
 - e. under-achieve
 - f. con-cede
 - ▶ There are other predicates with a P^0 prefix whose verbal(ized) sister is not an independently existing verb
 - (54) a. con-ceive
 - b. in-duct
 - c. con-duct
 - d. de-horn
 - e. en-capsul-ate
 - f. en-large
 - g. em-bold-en
 - ▶ This latter point is especially relevant considering other *out-* forms
 - (55) a. out-[_A smart]
 - b. out-[_N wit]
 - c. out-[_N fox]
 - d. out-[_N Chomsky]
 - (56) a. out-[_N gun]
 - b. out-[_N muscle]
 - Each of these only has a stage-level interpretation, from the verbalizer
 - ◇ The examples in (55) have a subject agentively acting (like) the sister of *out-*
 - ▷ Silent agentive v^0 ?
 - ◇ The examples in (56) have a subject at which the sister of *out-* is located
 - ▷ Silent locative-have v^0/P^0 ?
- ◆ Thus it may be a better conclusion to say that *out-* has a verbalized complement (vP in DM terms, perhaps VP in theory-neutral terms)
 - ▶ And this verbalized complement – larger than \sqrt{P} – is what lacks internal arguments

A.2. Lower Adjuncts and out-PRED

- ◆ More than just core arguments being suppressed, even some adjuncts are ruled out from out-PRED
 - ▶ We saw this rather high adjuncts in section 3.2
 - Let's look at other, lower adjuncts
 - ▶ For example, benefactives are ruled out as adjuncts of PRED¹³

(57) a. Joanna sang a song for us better than Louisa sang a song for us.
 b. Joanna out-sang (*for us) Louisa (#for us).
 - ▶ In a similar way, *again* cannot adjoin to just PRED:

(58) a. Joanna sang before, and then Joanna sang again better than Louisa.
 b. Joanna sang before, and then Joanna (#again) out-sang Louisa (#again).
- ◆ This suggests that PRED is not big enough to host these adjuncts
 - ▶ Let us look closely at *again* and what is in its scope in normal predicates

(59) John read once this morning...
 a. # and then he again read a book this evening.
 b. # and then he read a book again this evening.

 - (59) indicates that, minimally, *again* always has any internal argument in its scope
 - ▶ Returning to out-PRED, (57) and (58) indicate that *again* cannot have only VP/ \sqrt{P} in its scope
 - We predict this:
 - ◇ We said PRED is VP/ \sqrt{P} , without any of its internal arguments
 - ◇ If *again* always scopes over out-PRED's internal arguments, *again* should not be able to adjoin to PRED in out-PRED
 - ◇ Suggesting that PRED is a very small constituent in out-PRED – excluding any position where *again* could adjoin
- ◆ (Similar logic should account for the *for*-benefactives, though it is less easy to test what is in the scope of the benefactive)

A.3. A More Metered Conclusion

- ◆ This paper has pursued a solution in which it is syntactic introduction (i.e. external merge) of the internal argument that takes place outside of the \sqrt{P}/VP
 - ▶ At least those which obligatorily go missing with a licit addition of *out-* to a predicate
 - ▶ But perhaps what *out-* does is prevent the merging of some other head that is required to license the internal argument
 - For example, perhaps merging *out-* causes the only available Case feature to be assigned to the internal argument of *out-*, thereby leaving any internal argument of PRED as Case-less

¹³These *for*-benefactives are a case of Grimshaw 1990's argument-adjuncts. By calling this benefactive an 'adjunct', I mean that there is a phrasal constituent containing the verb and excluding the *for*-PP.

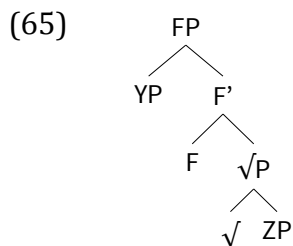
- ▶ Thus the most conservative conclusion is not about the position of external-merge for internal arguments...
 - ...but about the position(s) which must be available for all necessary licensers of internal arguments

A.4. Against Marantz 2009's Analysis

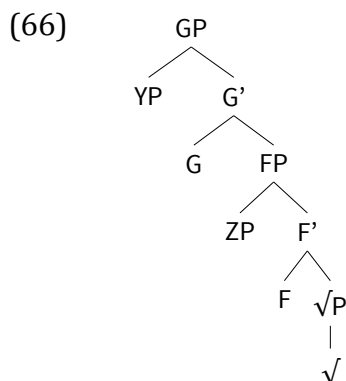
- ◆ Marantz (2009) makes an argument that *re-* selects a DP sister – the apparent complement of the verb
 - ▶ He argues briefly that *out-* parallels *re-* in this way, giving a structure like (60) for '*John outran Mary*'
 - (60) [John [ran [out Mary]]]
 - The constituent [*out- Mary*] is a kind of resultative
 - Here the resultative phrase means *exceeding Mary's end-state*, "along some dimension computed from what it means to verb (and what makes sense for the DP)"
 - ▶ Some benefits of this resultative-constituent analysis
 - Explains why PRED's internal arguments disappear and a new one appears for out-PRED
 - ◇ It's the same reason that internal arguments of a PRED are absent in any contexts where PRED has a resultative complement
(As in They will drink beer vs. They will drink (*beer) us under the table (*beer))
 - Explains why out-PRED is incompatible with a resultative complement (as noted in section 4.3)
 - ◇ It's because the resultative position is taken up by [*out- DP*]
- ◆ However, this problem has some shortcomings, with regard to argument structure
 - ▶ Unlike *out-*, *re-* does not impact the argument structure of the PRED
 - When PRED is unpassivizable, re-PRED is also unpassivizable – unlike out-PRED
 - (61) Data based on Marantz 2009:(50)
 - a. Sue married Mary
≠ Mary was married by Sue
 - b. Sue re-married Mary
≠ Mary was re-married by Sue
 - (62) a. They numbered 10,000
b. *10,000 were/was numbered by them.
c. They out-numbered us.
d. We were out-numbered by them.
 - When PRED allows a cognate object, re-PRED does also – unlike out-PRED
 - (63) a. Mike danced a dance
b. Mike re-danced a dance
 - (64) a. Mike danced a dance
b. *Mike out-danced a dance

A.5. Harley 2014's Internal Arguments as $\sqrt{\quad}$ Complements

- ◆ Harley investigates three phenomena which she argues implicates that the \sqrt{P} introduces the internal argument as a complement
 - ▶ one-replacement
 - ▶ root competition in certain locally-triggered configurations
 - ▶ idioms
- ◆ For each of these, Harley says is there is a locality condition such that these effects only arise if the internal argument of PRED is the complement of $\sqrt{\quad}$
 - ▶ She argues a phrase ZP will only participate in the effects she described if it is in the following local configuration with the root
 - ▶ i.e., YP is not local enough



- ◆ But as Cuervo 2014 points out, though Harley uses a definition of locality that strictly head-complement, it need not be this kind of locality
 - ▶ Harley's analyses would work with a different structure, provided a slight less narrow definition of locality as sisterhood were implemented
 - ▶ i.e., they could be rewritten such that ZP is close enough but YP is not even in (66):



- ◆ In fact, what we have done here is bring to bear evidence that suggests that a structure like the latter is necessary to account for the observed patterns with out-PRED