

Argument Ellipsis as External Merge after Transfer

Idan Landau

Department of Foreign Literatures & Linguistics, BGU

Goals

- Establish a novel generalization restricting the range of Argument Ellipsis (AE)
- Show that the generalization, coupled with other known facts about AE, cannot be adequately explained by either one of the two prevalent syntactic approaches to ellipsis
- Develop a strongly derivational account of ellipsis to overcome the limitations of existing accounts

Background: PF deletion vs. LF copying

- (1) Gil nika et ha-šulxan šelo axarey še-Yosi nika ____.
 Gil cleaned ACC the-table his after that-Yosi cleaned
 ‘Gil cleaned his table after Yosi did.’ *(strict or sloppy)*

On both analyses, there must be an antecedent that satisfies the Parallelism Requirement. The difference is in how ellipsis is resolved: By deleting (or failing to pronounce) an existing structure, or by inserting an unpronounced structure that wasn't there to begin with.

(2) PF deletion

S-structure & LF: [TP *Yosi cleaned* [DP *his table*]]

PF: [TP *Yosi cleaned* [DP ~~*his table*~~]]

→ The standard analysis of VP ellipsis, sluicing and stripping: Johnson 2001, Merchant 2001, 2004 Aelbrecht 2010, van Craenenbroeck 2010, Baltin 2012, Aelbrecht and Harwood 2015, Wurmbrand 2017, Vicente 2018.

For AE: Cheng 2013, Maeda 2019, Takahashi 2020

(3) LF copying

S-structure & PF: [TP *Yosi cleaned*]

LF: [TP *Yosi cleaned* [DP *his table*]]

→ The common analysis of AE: Oku 1998, Saito 2007, 2017, Takahashi 2006, 2008, 2013, 2014, Sato 2014, 2015, 2016, 2019.

For VP ellipsis and sluicing: Williams 1977, Fiengo and May 1994, Chung, Ladusaw and McCloskey 1995, Fortin 2011.

The paradox in a nutshell

- AE sites can launch overt subextraction → only compatible with PF deletion
- AE sites must be of a specific semantic type → only compatible with LF copying

The solution in a nutshell

- AE sites start out as a *pro* (deep anaphor), which explains the semantic type restriction.
- Derivationally, *pro* is replaced by a copy of the antecedent (surface anaphor).
- The copy is “overt” (contains spellout instructions), explaining the possibility of subextraction
- But the copy doesn’t surface, because it is introduced into a syntactic phase *after* the phase has been spelled out.

→ The paradox stems from derivational opacity!

Fundamental evidence for AE in Hebrew (Landau 2018)

Although null objects may sometime receive deictic or definite interpretations, which can be explained by Null Complement Anaphora or *pro*, they display a much broader range of readings, which only AE can cover: Disjunctive, “quantificational”, nonspecific, PP.

(4) A: cilamti knesiya o katedrala, ani lo batuax.
 photographed.1SG church or cathedral I not sure
 ‘I photographed a church or a cathedral, I’m not sure.’

B: gam ani cilamti ____.
 also I photographed.1SG
 ‘I also photographed a church or a cathedral.’

B': gam ani cilamti ota.
 also I photographed.1SG it
 ‘I also photographed the one that you did.’

(5) afiti harbe ugiyot. Mixal gam afta ____ /#otan.
 baked.1SG many cookies Mixal also baked.3SG.F them
 ‘I baked many cookies. Mixal did too.’

(6) A: lo niš'ar li kesef.
 not remained to.me money
 'I have no money left.'

B: li niš'ar ___ /*oto.
 to.me remained *it
 'I have some money left.'

(7) A: šalaxti matana la-horim šeli.
 sent.1SG gift to-parents my
 'I sent a gift to my parents.'

B: ani šalaxti praxim ____.
 I sent.1SG flowers
 'I sent them flowers / I sent mine flowers.'

The semantic type of AE sites

(8) *Generalization*

Only arguments of type <e> can be elided.

(9) *Corollary*

Weak definite pronouns are of type <e>.

An argument X resists AE (despite satisfying all other conditions on ellipsis) → X cannot be pronominalized. Evidence – coming up.

Note: AE sites are *not* interpreted as pronouns at LF, see (4)-(7). But both types of “anaphors” are governed by a common constraint. Why is that so?

Variables in natural language

A lingering idea in semantics and typology is that variables in natural language are restricted to type <e>. Variables (here): Simplex pronominal forms and unreconstructed movement traces (Chierchia 1984, Baker 2003, Landman 2006, Poole 2017).

(10) *No Higher-Type Variables Constraint (NHTV)* (Landman 2006)

Variables in the LFs of natural languages are of type <e>.

Apparent exceptions:

a. “Predicative” pro-forms (*so*, *such*).

Landman: *so* ranges over kinds; *such* is not simplex (= *like that*).

b. Higher type traces (e.g., VP-fronting, QR)

Poole: Full reconstruction removes the trace at LF; trace-conversion converts QP-traces to type <e>.

Evidence for the NHTV

- (11) a. Albania's destruction of itself grieved the expatriate community.
b. *The Albanian destruction of itself grieved the expatriate community.
(Kayne 1984:139)
- c. ?? John beat the iron flat and Mary beat the copper so.
d. *I caught a big fish and they caught a so bird.
(Baker 2003:131)
- e. *Erica wanted to become a teacher_i and she became it_i.
f. *A math teacher Erica became t_i / made out of Alex t_i.
(Poole 2017:27-28,31)

(12) Names in naming verbs

Matushansky 2008: Crosslinguistically, they behave like predicates (taking predicative case or particles, resisting articles etc.); denote a set of individuals that bear that name according to some naming convention; type <e,<n,t>>.

Nonreconstructing \bar{A} -movements: Noncontrastive topicalization, nonrestrictive RC

- a. What_i did they name him t_i?
b. *Raphael_i, I wouldn't call anybody t_i.
c. He named his daughter Lucille_i but I didn't name mine it_i.
(Postal 1994:164,169)
- (13) a. Helen disliked the nickname_i that Irene always called the cat t_i.
b. *Helen disliked that nickname_i, which Irene always called the cat t_i.
c. A (different) child called every cat Garfield.
d. A (# different) child called the cat every nickname.
(Poole 2017:25,26)

The NHTV restricts AE: Hebrew Data

(14) Chunks of non-decomposable idioms

Idioms may be decomposable or not (with a grey zone in between); see Nunberg, Sag and Wasow (1994), Fadlon et al. 2018.

When part of a non-decomposable idiom, an the idiom chunk is non-denotational
→ unelidable by generalization (8).

- (15) A: xatafti kazot maka še-ra'iti **koxavim**.
 got.1SG such blow that-saw.1SG stars
 'I got hit so hard that I felt dizzy.'
 B: * ani rak nisirateti, az lo raiti ___ / otam.
 I only got-bruised.1SG so not saw.1SG them
 ('I only got bruised so I didn't feel dizzy.')
- (16) A: ma ixpat li ma hem omrim, ani lo dofeket **xešbon**.
 what care to.me what they say.PL I not knock.F.SG account
 'What do I care about what they say, I don't give a damn.'
 B: * OK, aval any ken dofeket ___ / oto.
 OK but I yes knock.F.SG it
 (OK, but I do.)
- (17) a. *Decomposable idiom*
 šavar (le-mišehu) et **ha-lev**
 broke (to-someone) ACC the-heart
 'Break someone's heart'
Causative paraphrase: Cause someone's feelings to turn into great sorrow.
 Metaphorical meaning of the idiom chunk *lev* 'heart': feelings
- b. *Non-decomposable*
 šavar et **ha-roš**
 broke ACC the-head
 'Think very hard'
Intransitive paraphrase: Think so hard that your head breaks.
 Metaphorical meaning of the idiom chunk *roš* 'head': ?
- (18) Expectation: ✓ AE (or pronominalization) *lev* 'heart' in the first idiom;
 *AE (or pronominalization) of *roš* 'head' in the second idiom.
- a. Rina šavra le-Gilj et **ha-levi** lifney šana,
 Rina broke.3F.SG to-Gil ACC the-heart before year
 ve-axšav Maya šavra loj ___ / oto.
 and-now Maya broke.3F.SG to.him it
 'Rina broke Gil's heart a year ago and now Maya did.'
- b. * Rina šavra et **ha-roš** al ha-targil ha-axaron,
 Rina broke.3F.SG ACC the-heart over the-exercise the-last
 ve-axšav Maya šavra ___ / oto.
 and-now Maya broke.3F.SG it
 ('Rina thought very hard about the last exercise and now Maya did.')

Note: Crosslinguistic work on AE of idiom chunks is inconclusive (not enough data), but tends to support this distinction (Ngonyani 1996, Takahashi 2006, Merchant 2018, Sato 2020).

(19) Argumental adverbs

These obligatory adverbs pattern with arguments in VPE.

- a. The first waiter treated us gently and the second one did too.
- b. *The first waiter treated us gently and the second one did rudely.

Hebrew

- c. *Yosi hitnaheg yafe aval axiv lo hitnaheg ____.
 Yosi behaved.3M.SG well but brother.his not behaved.3M.SG
 ('Yosi behaved well but his brother didn't.')

- d. A: tinhag ba-yeled šeli be-adinut.
 treat.FUT.2M.SG in.the-child my in-gentleness
 'Treat my child gently.'

- B: * al tid'ag, ani enhag (bo) ____.
 not worry.FUT.2M.SG I treat.FUT.1SG (in.him)
 ('Don't worry, I will.')

- e. A: ha-žaket šeli mitnake be-kalut.
 the-jacket my cleans.3M.SG in-ease
 'My jacket cleans easily.'

- B: šeli gam mitnake *(be-kalut).
 mine also cleans.3M.SG in-ease
 'Mine does too.'

(20) Argumental measure phrases

- a. A: ani šokel 70 kilo.
 I weigh.M.SG 70 kilo
 'I weigh 70 kilos.'

- B: * ha, ani kvar mi-zman lo šokel ____ / otam!
 huh I already from-time not weigh.M.SG them
 'Huh, I haven't weighed 70 kilos for a long time!'

- b. * ha-ma'araxa ha-rišona nimšexa xaci ša'a,
 the-act the-first lasted.3F.SG half hour
 ve-ha-ma'araxa ha-šniya gam nimšexa ____ / ota.
 and-the-act the-second also lasted.3F.SG it
 'The first act lasted half an hour and the second one did too.'

- c. A: ha-simla ha-kxula ola 220 dolar.
 the-dress the-blue costs.3F.SG 220 dollar
 'The blue dress costs \$220.'
- B: * ve-gam ha-simla ha-aduma ola ___ / otam?
 and-also the-dress the-red costs.3F.SG them
 'And does the red one also cost \$220?'

(21) Question: Aren't degrees in the domain of individuals?

How tall is John? → λd .John is d-tall

Answer: Yes, but measure phrases denote higher types (Schwarzchild 2005, Winter 2005, Scontras 2014), and indeed, pattern with predicates (Adger 1994): They resist pronominalization, cannot be strong quantifiers, and cannot be extracted from weak islands.

- a. * Anson weighed 70 kilos and David weighed them too.
 b. * Their family story spans hundreds of years/*each year.
 c. ? What do you wonder whether Anson saw?
 d. * What do you wonder whether the book cost?

(22) Names in naming verbs

- a. * Hi kar'a la-xatul šela Geršon lifney
 she called to.the-cat her Gershon before
 še-ani karati la-xatul šeli ___ / oto.
 that-I called to.the-cat my it.M.SG
 ('She called her cat Gershon before I called mine Gershon.')
- b. A: Yosi kina et ha-ca'ad ha-ze ta'ut.
 Yosi dubbed ACC the-measure the-this mistake
 'Yosi dubbed this measure a mistake'
- B: * Od anašim kinu et ha-ca'ad ha-ze ___ / ota.
 more people dubbed ACC the-measure the-this it.F.SG
 ('More people did so.')

(23) Predicate nominals

- a. * hi hafxa le-menahalet axarey še-ha-bat šela
 she turned to-manager after that-the-daughter her
 hafxa ___ / la.
 turned to.her
 'She turned into a manager after her daughter had.'

- b. ba-ma'arav tofsim et Stalin ke-rodan axzari
 in.the-west perceive.3PL ACC Stalin as-despot ruthless
 aval lo tofsim et Putin *(ke-rodan axzari).
 but not perceive ACC Putin as-despot ruthless
 'In the west, people perceive Stalin as a ruthless despot but not Putin.'

(24) A challenge: 'nihya ___' (become)

- a. hi nihyta (le-)menahelet axarey še-ha-bat šela nihyta ____.
 she became(to-)manager after that-the-daughter her became
 'She became a manager after her daughter did.'

What is the source of the difference between (23a) and (24a)?

Observation: *nihya* is morphologically related to the Aux *haya* 'was', which can also mean 'become', when followed by a dative marked predicate.

- b. hi hayta menahelet axarey še-ha-bat šela hayta ____.
 she was manager after that-the-daughter her was
 'She was a manager after her daughter was.'
- c. hi hayta le-menahelet axarey še-ha-bat šela hayta ____.
 she was to-manager after that-the-daughter her was
 'She became a manager after her daughter did.'

→ *nihyta* (in (24a)) is a raised Aux, followed by AuxP-ellipsis;
hafxa (23a)) is a lexical verb, followed by AE.

(25) AE is subject to generalization (8); AuxP/VP ellipsis isn't - it is derived by PF-deletion, there is no variable at the ellipsis site.

a. *PredP ellipsis in (23a)*

* [TP ... [*hafxa*_i-T] [_{VP} t_i [~~[_PredP le menahelet]~~]]]

b. *AuxP ellipsis in (24a)*

✓ [TP ... [*nihyta*_i-T] [_{AuxP} t_i [~~[_PredP le menahelet]~~]]]

c. *AuxP ellipsis in (24b,c)*

✓ [TP ... [*hayta*_i-T] [_{AuxP} t_i [~~[_PredP (le-)menahelet]~~]]]

Question: Why can't vP-ellipsis apply in (25a) to derive (23a)?

Answer: V-stranding VPE is excluded *universally*; Aux-stranding AuxP ellipsis is allowed and common (Landau 2020a,b).

Further evidence against the V-stranding VP ellipsis analysis

VSVPE vs. AE: The debate has been quite intensive but mostly focused on one central phenomenon – the status of adjuncts (Goldberg 2005, Gribanova 2013a, Simpson, Choudhury and Menon 2013, Funakoshi 2016, Oku 2016, Rasekhi 2018, Manetta 2018, 2019, Landau 2018, 2020a,b) and conjoined objects (Gribanova 2013b, Landau 2021).

The five new environments excluding AE provide us with a richer testing ground: *All of them* should be OK for VPE, which involves PF-deletion.

→ If Aux-stranding VPE is possible in these five environments, it would be totally unclear why V-stranding VPE should fail there.

→ A strong argument for AE

(26) ✓ *Chunk of non-decomposable idiom in VPE*

A: hu haya tofes **taxat** (aleynu).
he was.3SG.M grab.PRTC.M.SG ass on-us
'He used to behave so arrogantly (to us).'

B: mi lo haya ___?
who not was.3SG.M
'Who didn't?'/ 'Who wouldn't?'

(27) ✓ *Argumental adverb in VPE*

Yosi haya mitnaheg yafe lu axiv haya ____.
Yosi was.3SG.M behave.PRTC.M.SG well if brother.his was.3SG.M
'Yosi would have behaved well if his brother had.'

(28) ✓ *Measure argument in VPE (cf. (7b))*

A: im ha-scena še-xataxnu, ha-ma'araxa ha-rišoona
with the-scene that-cut.out.1PL the-act the-first
hayta nimšexet xaci ša'a.
was.3SG.F last.PRTC.SG.F half hour
'With the scene we cut out, the first act would have lasted half an hour.'

B: lo, hi lo hayta ____.
 no it not was.3SG.F
 ‘No, it wouldn’t have.’

(29) ✓ *Name arguments of naming verbs in VPE*

A: ba-xayim lo hayiti kore la-xatul šeli Geršon.
 in.the-life not was.1SG call.PRTC.SG.M to.the-cat her Gershon
 ‘Never would I have called my cat Gershon.’

B: ani makir harbe anašim še-hayu ____.
 I know many people that-were.3PL
 ‘I know many people who would have.’

(30) ✓ *Predicate nominals in VPE*

Dana niftera lifney sof ha-doktorat. Beyn im hayta
 Dana passed.away before end the-doctorate between if was.3SG.F
 hofexet le-marca min ha-minyan u-veyn im lo hayta ____,
 turn.PRTC.SG.F to-lecturer from the-order and-between if not was.3SG.F
 barur še-haya cafuy la atid mazhir.
 clear that-was.3SG.M expected to.her future glorious
 ‘Dana passed away before the end of her doctorate studies. Whether she had
 turned into a regular faculty member or not, a bright future would have
 awaited her.’

East Asian languages: Against an <e,t>-restriction

Much of the work on AE focuses on Japanese and Korean. One strand of research within the LF copying camp holds that AE in languages without determiners is really bare NP-ellipsis → restricted to type <e,t> (Tomioka 2003, Bošković 2018). Subsequent semantic operations (Existential Closure and Iota type-shifting) derive all the readings of property-type *pro*.

Predictions: (i) Arguments of type <e,t> will easily undergo AE (if anything should);
 (ii) Generalization (8) (AE restricted to type <e>) is not expected to hold.

Sample facts from Korean (Heejeong Ko, p.c.): False!

(31) a. *Chunk of non-decomposable idiom*

A: Cheli-ka ip-ey kemicwul-ul chi-ess-ta.
 Cheli-NOM mouth-in spider.web-ACC spin-PST-DEC
 ‘Cheli spun a spider web in (his) mouth.’ (= ‘Cheli starved.’)

B: * Mina-to ip-ey ___ / kukes chi-ess-ta.
 Mina-too mouth-in it spin-PST-DEC
 (Intended: ‘Mina starved, too.’)

b. *Argumental adverb*

A: ceypal nay atul-eykey *(chincelhi) tayhay-cwu-sey-yo.
 please my son-DAT kindly treat-give-HON-POLITE
 ‘Please treat my son kindly.’

B: kekceng mal-ayo. *Cey-ka tangsin atul-eykey __ tayhal-kkey-yo.
 worry NEG-POLITE I.NOM your son-DAT treat- PROM-POLITE
 (Intended: ‘Don’t worry. I will treat him kindly.’)

c. *Argumental measure phrase*

A: Na-nun mommwukey-ka 70 killo naka.
 I-NOM weight-NOM 70 kilos weigh
 ‘I weigh 70 kilos.’

B: * O! nay-ka mommwukey-ka ___/kukes nakan-ci
 Oh I-NOM weight-NOM it weigh-since
 kkoay toy-ess-ne.
 pretty become-PST-DEC
 (Intended: ‘Oh, it’s been a long time since I did.’)

d. *Name in naming verbs*

*Na-nun ney-ka ney koyangi-lul ___/kuekes(-ulo) pwuluki-ceney
 I-TOP you-NOM your cat-ACC it(-as) call-before
 nay koyangi-lul Alex-lo pwull-ess-e.
 my cat-ACC Alex-as call-PST-DEC
 (Intended: ‘I called my cat Alex before you did.’)

e. *Predicate nominal*

A: Cheli-nun kyosa-lo cal-ass-e.
 Cheli-TOP teacher-as grow PST-DEC
 ‘Cheli grew into a teacher.’

B: * Ku-uy hyeng-to ___/ku-lo cal-ass-e.
 he-GEN brother-too he-as grow-PST-DEC
 (Intended: ‘His brother did to.’)

(32) *Semantic types constrain AE*

	Semantic type	AE
Referential argument	<e>	✓
Chunk of non-decomposable idiom	–	*
Argumental adverb	<<e,t>,<e,t>>	*
Measure argument	<e,t> / <d,t> / <v,t>	*
Name in naming verb	<e,<n,t>>	*
Predicate nominal	<e,t>	*

Against PF deletion

(33) Architecture: Deletion at PF cannot access information of semantic types. Writing the restriction into an [E]-feature would leave unexplained why the [E]-feature on T or D has no trouble deleting predicates (VPE, NPE).

(34) Deaccenting: Ellipsis by PF-deletion is a special, extreme form of deaccenting (Tancredi 1992, Chomsky and Lasnik 1993). When the antecedent is identical to the elided constituent, PF-deletion can produce either result.

- a. Mary washed her car and BILL did [_{VP} ~~washed his car~~] too.
- b. Mary washed her car and BILL [_{VP} washed his car] too.

Not so in AE!

- c. A: ani šokel 70 kilo.
I weigh.M.SG 70 kilo
'I weigh 70 kilos.'
- B: * ha, ani kvar mi-zman lo šokel ___ !
huh I already from-time not weigh.M.SG
'Huh, I haven't weighed 70 kilos for a long time!'
- B': ha, ani kvar mi-zman lo šokel 70 kilo!
huh I already from-time not weigh.M.SG 70 kilo
'Huh, I haven't weighed 70 kilos for a long time!'

Against LF copying

(35) Implementations of LF-copying

- a. *Merge/Substitution*
- (i) The ellipsis site does not exist in the syntax and is only generated at LF (Oku 1998, Saito 2007, 2017, Takahashi 2006, 2008, 2013, 2014, Fortin 2011, Sato 2014, 2015, 2016, 2019).
 - (ii) The ellipsis site is an empty categorial frame in the syntax (Wasow 1972, Williams 1977, Elbourne 2005, Aoun and Li 2008, Chung, Ladusaw and McCloskey 1995).
- b. *pro-replacement*
The ellipsis site hosts *pro* in the syntax.
(Yoshimura 1992, Lobeck 1995, 1999, Giannakidou and Merchant 1997, Sakamoto 2020)

Analyses of type (35a) are ruled out – they cannot capture Generalization (8).

→ ***pro-replacement derives this fundamental restriction*** with a slight revision (in fact, simplification) of the NHTV (namely – not only “at LF”).

(36) *Generalized NHTV*

Variables in natural languages are of type <e>.

→ AE sites are restricted to type <e> (even before LF!)

→ anti-AE sites are antipronominal (*simplex pronouns).

BUT: *pro-replacement* cannot be an LF operation, as in analyses of type (35b). LF copies are devoid of phonological features (or spellout instructions, on a Late Insertion model); no overt material can be extracted out of them.

Hebrew: AE sites can launch overt subextraction.

(37) a. *Subextraction from DP* (very rare; Landau 2018)

[al yemey ha-beynayim]_i avad li [rov ha-xomer t_i],
on days.of the-middle lost to.me most the-material
aval [al ha-renesans]_j adayin nišmar [rov ha-xomer t_j].
but on the-renaissance still kept most the-material
'On the middle ages, most of my material got lost, but on the renaissance,
most of it is still kept.'

- b. *Subextraction from CP – displaying morphosyntactic connectivity.*
 et axiv, ani batuax še-Yosi haya **makke**,
 ACC brother.his I sure that-Yosi was.3SG.M hit.PRTC.SG.M
 aval et/*le- axoto, ani lo batuax ____.
 but ACC/to-sister.his I not sure
 ‘His brother, I’m sure Yosi used to hit, but his sister, I’m not sure he used to.’
- c. le-axiv, ani batuax še-Yosi haya **marbic**,
 to-brother.his I sure that-Yosi was.3SG.M beat.PRTC.SG.M
 aval le-/*et axoto, ani lo batuax ____.
 but to-/*ACC sister.his I not sure
 ‘His brother, I’m sure Yosi used to beat, but his sister, I’m not sure he used to.’

(38) Question: Does AE cover both DP-ellipsis and CP-ellipsis?

Answer: All the crosslinguistic evidence we have suggests they pattern together.

Question: Do clauses denote individuals?

Answer: The domain of individuals already contains abstract entities (times, concepts etc.), and may well contain special individuals whose content is propositional (Chierchia 1984, Potts 2002, Kratzer 2006, Moulton 2020, Moltmann 2013, Liefke and Werning 2018). The grammatical parallels between DPs and CPs are well-known, specifically qua variables.

- a. What do you regret?
 My letter / That I wasn’t kind to them
- b. John said a [nasty word]_i. I was offended by it_i.
- c. John said [that the storm was over]_i. I doubted it_i.

(39) **A derivational paradox**

The AE site must start out as a deep anaphor (*pro*) (semantic type argument); it must end up as a full syntactic structure (non-pronominal interpretations); but this structure cannot be totally silent (subextraction argument).

How can syntactic structure emerge in the derivation without being pronounced?

The proposal: *pro*-replacement after TRANSFER

(40) Overt and covert movement

Early minimalism: Spellout of the high link (“overt”) or low link (“covert”) in a movement chain (Chomsky 1993).

Middle minimalism: Movement and structure-building are unified – Internal Merge (IM) and External Merge (EM), respectively.

Chomsky 2004:111: “Internal Merge can apply either before or after TRANSFER, hence before or after Spell-Out. The former case yields overt movement, the latter case covert movement, with the displaced element spelled out in situ.”

[Note: TRANSFER = “Spellout at PF” and “Interpret at LF”, bundled together cyclically at every phase level. I do *not* adopt cyclic interpretation but still keep to the more recent term TRANSFER).

Late minimalism: Merge is unitary, IM and EM are formally indistinguishable. (Chomsky 2008, 2013, 2019). But then we have a lacuna...

(41) *Merge by TRANSFER combinations*

	Before TRANSFER	After TRANSFER
Internal Merge	Overt movement	Covert movement
External Merge	Overt Predicate-Argument Saturation	?

Proposal: “Covert Predicate-Argument Saturation” = AE

pro-replacement = External Merge after TRANSFER (EMAT).

The argument so merged does not feed PF (too late – its phase has already been spelled out), but it does feed LF (like any copy of covert movement). It is still endowed with spellout instructions (*not* being an LF-copy); these can surface overtly on material extracted to the edge of the phase (as normal movement proceeds, through phase edges).

→ subextraction allowed!

What can undergo EMAT? Only fully recoverable material (Parallelism Requirement).

(42) Consequence: LF-copying does not exist; ellipsis involves either PF-deletion or EMAT. This is a good outcome. LF-copying accesses a subpart of a fully processed sentence, which should no longer be in the “buffer”; it implies a huge workspace. Instead, EMAT accesses the numeration like any derivational step.

AE derivation

- (43) Gil ohev et ha-šxuna šelo, ve-Rina sonet et—ha-šxuna šela.
Gil likes ACC the-neighborhood his and-Rina hates ACC the-neighborhood her
'Gil likes his neighborhood, and Rina hates hers.'

Syntax

- EM {*hates*_{v,pro}} → [_{VP} *hates pro*]
- EM {*v,VP*} → [_{VP} *v* [_{VP} *hates pro*]]
- IM {*v,hates*} → [_{VP} [*hates*_i *v*] [_{VP} *hates*_i *pro*]]
- Construct a DP argument: [_{DP} *her neighborhood*]
- TRANSFER VP → [_{VP} [*hates*_i *v*] [_{VP} ***hates*_i *pro***]]
- Replace *pro* by DP → [_{VP} [*hates*_i *v*] [_{VP} ***hates*_i** [_{DP} *her neighborhood*]]] **EMAT**
- EM {*Rina,vP*} → [_{VP} *Rina* [_v [*hates*_i *v*] [_{VP} ***hates*_i** [_{DP} *her neighborhood*]]]]
- Complete TP:
→ [_{TP} *Rina* [_T *T* [_{VP} ***Rina*** [_v [*hates*_i *v*] [_{VP} ***hates*_i** [_{DP} *her neighborhood*]]]]]]

PF output string: *Rina hates*

LF structure

[_{TP} *Rina* λ_x [_T *T* [_{VP} ***Rina***_x [_v [*hates*_i *v*] [_{VP} ***hates*_i** [_{DP} *her_x neighborhood*]]]]]]
[λ_x.x hates x' neighborhood](Rina)

Semantics: Verify recoverability of a parallelism domain that (reflexively) dominates the AE site.

Final prediction: *AE of strong QPs (type <<e,t>,t>)

Preliminary results are presented here (this is work in progress); the effect of AE on scope relations is complex and nuanced (Takahashi 2008, Tomioka 2014, Sato 2016, Maeda 2019, Kurafuji 2019).

- (44) **Weak QPs** undergo AE in any language tested for it (Japanese, Korean, Chinese, Mongolian, Persian, Turkish, Egyptian Arabic etc.). In Hebrew too.

afiti harbe ugiyot. Mixal gam afta ___ /#otan.
baked.1SG many cookies Mixal also baked.3SG.F them
'I baked many cookies. Mixal did too.'

This is unsurprising: Weak quantifiers can receive a simple modifier denotation; alternatively, they can be treated as choice functions. Either way, the resulting DP/QP is of type <e>.

- (45) **Universal QPs** appear to undergo AE too; but given the antecedent QP, the elided argument may well be an E-type pronoun.

ani makir kol student ba-kita ha-zot.
 I know every student in.the-class the-this
 Gam ata makir ___ / otam.
 also you know them

‘I know every student in this class. You do too / You know them too.’

→ incontrovertible evidence for AE of strong QPs should target readings that cannot be mimicked by E-type pronouns.

- (46) Rina lo kar’a kol ma’amar ba-rešima. $\neg \gg \forall, \forall \gg \neg$
 Rina not read every article in.the-list
 ‘Rina didn’t read every article on the list.’

- (47) a. Rina kar’a kol ma’amar ba-rešima...
 Rina read every article in.the-list
 ‘Rina read every article on the list...’

- b. Yosi lo, hu kara et rubam. $\neg \gg \forall$
 Yosi not he read ACC most.of-them
 ‘Yosi didn’t, he read most of them.’

- c. # Yosi lo kara ___, hu kara et rubam. $*\neg \gg \forall$
 Yosi not read he read ACC most.of-them
 (‘Yosi didn’t read them, he read most of them.’)

→ The AE site in (47c) is construed as an E-type pronoun, not as a universal QP.
 (See Ahn and Cho 2011 for parallel facts in Korean).

- (48) a. A: ani makir yoter me-xaci me-ha-anašim kan.
 I know more from-half from-the-people here
 ‘I know more than half the people here.’

B: gam ani (makir) ___.
 also I know
 ‘Me too.’

- b. A: ani makir paxot me-xaci me-ha-anašim kan.
 I know less from-half from-the-people here
 ‘I know less than half the people here.’

B: gam ani (*makir) ____.
also I know
'Me too.'

→ The AE site cannot be construed as a downward entailing QP, because choice functions cannot (see Tomioka 2014, Kurafuji 2019 for parallel facts in Japanese).

(49) A minimal format for arguments against V-stranding VP-ellipsis

A striking asymmetry between PF-deletion and EMAT:

- a. PF deletion is sensitive to syntactic heads/features for licensing; it is never sensitive to the semantic type of the elided category.
- b. EMAT is sensitive to the semantic type of the elided category; it is never sensitive to its syntactic features or to those of the environment.

VSVPE is VPE → applies by PF deletion

AE is *pro*-replacement → applies by EMAT

So:

If, in a language L, objects can go missing by ellipsis (and not just by being implicit or *pro*-dropped):

Ellipsis E from [Subj V XP ...] to [Subj V ____ ...] is sensitive in any way to the *semantic* type or features of XP:

⇒ E must be AE

⇒ L has no V-stranding VP-ellipsis

Conclusion

- Main empirical generalization: AE may only target type <e> arguments.
- AE presents a paradox to the dichotomy between PF-deletion and LF copying
- The paradox is resolved by a strongly derivational theory of ellipsis: *pro*-replacement after TRANSFER at the vP phase level
- LF-copying is superfluous – possibly does not exist
- PF-deletion is distinct in two fundamental ways: (i) it is semantically unrestricted (up to Parallelism); (ii) it depends on a licensing functional head (the [E]-feature mechanism).

References

- Adger, David. 1994. *Functional Heads and Interpretation*. PhD dissertation, University of Edinburgh.
- Aelbrecht, Lobke. 2010. *The Syntactic Licensing of Ellipsis*. Amsterdam: John Benjamins.
- Aelbrecht, Lobke, and William Harwood. 2015. To be or not to be elided: VP Ellipsis Revisited. *Lingua* 153, 66-97.
- Ahn, Hee-Don, and Sungeun Cho. 2011. Notes on Apparent DP ellipsis: A Reply to Lee & Kim (2010). *Korean Journal of Linguistics* 36, 457-471.
- Aoun, Joseph, and Yen-hui Audrey Li. 2008. Ellipsis and Missing Objects. In *Foundational Issues in Generative Grammar*, ed. by Robert Freidin, Carlos Peregrín Otero and Maria Luisa Zubizarreta, 251-274. Cambridge, MA: MIT Press.
- Baker, Mark. 2003. *Lexical Categories: Verbs, Nouns and Adjectives*. Cambridge: Cambridge University Press.
- Baltin, Mark. 2012. Deletion Versus Pro-Forms: An Overly Simple Dichotomy? *Natural Language & Linguistic Theory* 30, 381-423.
- Bošković, Željko. 2018. On Pronouns, Clitic Doubling, and Argument Ellipsis: Argument Ellipsis as Predicate Ellipsis. *English Linguistics* 35, 1-37.
- Cheng, Hsu-Te. 2013. *Argument Ellipsis, Classifier Phrases, and the DP Parameter*. PhD dissertation, UCONN.
- Chierchia, Gennaro. 1984. *Topics in the Syntax and Semantics of Infinitives and Gerunds*. PhD dissertation, UMASS, Amherst.
- Chomsky, Noam. 1993. A Minimalist Program for Linguistic Theory. In *The View From Building 20: Essays in Linguistics in Honor of Sylvain Bromberger*, ed. by Ken Hale and Samuel Jay Keyser, 1-52. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2004. Beyond Explanatory Adequacy. In *Structures and Beyond: The Cartography of Syntactic Structures (Vol. 3)*, ed. by Adriana Belletti, 104 – 131. Oxford: Oxford University Press.
- Chomsky, Noam. 2008. On Phases. In *In Foundational Issues in Linguistic Theory: Essays in Honor of Jean-Roger Vergnaud*, ed. by Robert Freidin, Carlos Peregrín Otero and Maria Luisa Zubizarreta, 133–166. Cambridge, MA: MIT Press.
- Chomsky, Noam. 2013. Problems of Projection. *Lingua* 130, 33-49.
- Chomsky, Noam. 2019. Some Puzzling Foundational Issues: The Reading Program. *Catalan Journal of Linguistics* Special Issue: Generative Syntax. Questions, Crossroads, and Challenges, 263-285.
- Chomsky, Noam, and Howard Lasnik. 1993. The Theory of Principles and Parameters. In *Syntax: An International Handbook of Contemporary Research*, ed. by Joachim Jacobs, Arnim von Stechow, Wolfgang Sternefeld and Theo Vennemann, 506-569. Berlin: Mouton de Gruyter.
- Chung, Sandra, William A. Ladusaw, and James McCloskey. 1995. Sluicing and Logical Form. *Natural Language Semantics* 3, 239-282.
- Elbourne, Paul. 2005. The Semantics of Ellipsis. *Structure* 3, 63-109.
- Fadlon, Julie, Julia Horvath, Tal Siloni, and Ken Wexler. 2018. The Acquisition of Hebrew Idioms: Stages, Internal Composition, and Implications for Storage. *Glossa* 3(1), 99.
- Fiengo, Robert, and Robert May. 1994. *Indices and Identity*. Cambridge, MA: MIT Press.
- Fortin, Catherine R. 2011. We Need LF-copying: A Few Good Reasons Why. In *Proceedings WCCFL 28*, ed. by Mary B. Washburn, Katherine McKinney-Bock, Erika Varis, Ann Sawyer and Barbara Tomaszewicz, 87–95 Somerville, MA: Cascadilla Proceedings Project.
- Funakoshi, Kenshi. 2016. Verb-stranding Verb Phrase Ellipsis in Japanese. *Journal of East Asian Linguistics* 25, 113-142.
- Giannakidou, Anastasia, and Jason Merchant. 1997. On the Interpretation of Null Indefinite Objects in Greek. *Studies in Greek Linguistics* 17, 141-155.
- Goldberg, Lotus M. 2005. *Verb-stranding VP Ellipsis: A Cross-linguistic Study*. PhD dissertation, McGill University.
- Gribanova, Vera. 2013a. Verb-stranding Verb Phrase Ellipsis and the Structure of the Russian Verbal Complex. *Natural Language & Linguistic Theory* 31, 91-136.
- Gribanova, Vera. 2013b. A New Argument for Verb-stranding Verb Phrase Ellipsis *Linguistic Inquiry* 44, 145-157.
- Johnson, Kyle. 2001. What VP-ellipsis Can Do, and What It Can't, But Not Why. In *The Handbook of Contemporary Syntactic Theory*, ed. by Mark Baltin and Chris Collins, 439-479. Oxford: Blackwell Publishing.
- Kayne, Richard S. 1984. *Connectedness and Binary Branching*. Dordrecht: Foris.

- Kratzer, Angelika. 2006. Decomposing Attitude Verbs. Handout of a talk honoring Anita Mittwoch, The Hebrew University of Jerusalem.
- Kurafuji, Takeo. 2019. A Choice Function Approach to Null Arguments. *Linguistics and Philosophy* 42, 3-44.
- Landau, Idan. 2018. Missing Objects in Hebrew: Argument Ellipsis, not VP Ellipsis. *Glossa* 3(1), 76, 1-37.
- Landau, Idan. 2020a. Constraining Head-Stranding Ellipsis. *Linguistic Inquiry* 51, 281-318.
- Landau, Idan. 2020b. On the Non-existence of Verb-stranding VP-ellipsis. *Linguistic Inquiry* 51, 341-365.
- Landau, Idan. 2021. Ellipsis with a Coordinated Antecedent: An Alternative to V-stranding VP-ellipsis. *Studia Linguistica* 75, 1-23.
- Landman, Meredith. 2006. *Variables in Natural Language*. PhD dissertation, UMASS.
- Liefke, Kristina, and Markus Werning. 2018. Evidence for Single-Type Semantics - An Alternative To *e/t*-Based Dual-Type Semantics. *Journal of Semantics* 35, 639-685.
- Lobeck, Anne. 1995. *Ellipsis: Functional Heads, Licensing, and Identification*. New York, NY: Oxford University Press.
- Lobeck, Anne. 1999. VP Ellipsis and the Minimalist Program: Some Speculations and Proposals. In *Fragments: Studies in Ellipsis and Gapping*, ed. by Shalom Lappin and Elabbas Benmamoun, 98-123. New York: Oxford University Press.
- Maeda, Masako. 2019. Argument Ellipsis and Scope Economy in Japanese. *Syntax* 22, 419-437.
- Manetta, Emili. 2019. Verb-phrase ellipsis and complex predicates in Hindi-Urdu. *Natural Language & Linguistic Theory* 37, 915-953.
- Manetta, Emily. 2018. Reading Carefully: Adverbs, Negation and Verb Movement in a Verb-final Language. Paper presented in FASAL 8, Wichita State University, KS.
- Matushansky, Ora. 2008. On the Linguistic Complexity of Proper Names. *Linguistics and Philosophy* 21, 573-627.
- Merchant, Jason. 2001. *The Syntax of Silence: Sluicing, Islands and the Theory of Ellipsis*. Oxford: Oxford University Press.
- Merchant, Jason. 2004. Fragments and Ellipsis. *Linguistics and Philosophy* 27, 661-738.
- Merchant, Jason. 2018. Verb-stranding Predicate Ellipsis in Greek, Implicit Arguments, and Ellipsis-internal Focus. In *A Reasonable Way to Proceed: Essays in Honor of Jim McCloskey*, ed. by Jason Merchant, Line Mikkelsen, Deniz Rudin and Kelsei Sasaki, 229-270. Santa Cruz, CA: University of Santa Cruz.
- Moltmann, Friedrike. 2013. *Abstract Objects and the Semantics of Natural Language*. Oxford: Oxford University Press.
- Moulton, Keir. 2020. Remarks on Propositional Nominalization. In *Nominalizations: 50 Years on from Chomsky's Remarks*, ed. by Hagit Borer and Artemis Alexiadou, 255-276. Oxford: Oxford University Press.
- Ngonyani, Deo. 1996. VP Ellipsis in Ndendeule and Swahili Applicatives. In *Syntax at Sunset (UCLA Working Papers in Linguistics)*, ed. by Edward Garrett and Felicia Lee, 109-128. Los Angeles, CA: UCLA.
- Nunberg, Geoffrey, Ivan Sag, and Thomas Wasow. 1994. Idioms. *Language* 70, 491-538.
- Oku, Satoshi. 1998. *A Theory of Selection and Reconstruction in the Minimalist Perspective*. PhD dissertation, UCONN.
- Oku, Satoshi. 2016. A Note on Ellipsis-Resistant Constituents. *Nanzan Linguistics: Research Results and Activities* 11, 57-70.
- Poole, Ethan. 2017. *Movement and the Semantic Type of Traces*. PhD dissertation, UMASS.
- Postal, Paul. 1994. Contrasting Extraction Types. *Journal of Linguistics* 30, 159-186.
- Potts, Christopher. 2002. The Lexical Semantics of Parenthetical-*as* and Appositive-*which*. *Syntax* 5, 55-88.
- Rasekhi, Vahideh. 2018. *Ellipsis and Information Structure: Evidence from Persian*. PhD dissertation, Stony Brook University.
- Saito, Mamoru. 2007. Notes on East Asian Argument Ellipsis. *Language Research* 43, 203-227.
- Saito, Mamoru. 2017. Ellipsis. In *Handbook of Japanese Syntax*, ed. by Masayoshi Shibatani, Shigeru Miyagawa and Hisashi Noda, 701-750. Berlin: De Gruyter Mouton.
- Sakamoto, Yuta. 2020. *Silently Structured Silent Argument*. Amsterdam: John Benjamins.
- Sato, Yosuke. 2014. Argument Ellipsis in Colloquial Singapore English and the Anti-Agreement Hypothesis. *Journal of Linguistics* 50, 365-401.
- Sato, Yosuke. 2015. Argument Ellipsis in Javanese and Voice Agreement. *Studia Linguistica* 69, 58-85.

- Sato, Yosuke. 2016. Remarks on the Parameters of Argument Ellipsis: A New Perspective from Colloquial Singapore English. *Syntax* 19, 392-411.
- Sato, Yosuke. 2019. Comparative Syntax of Argument Ellipsis in Languages without Agreement: A Case Study with Mandarin Chinese. *Journal of Linguistics* 55, 643 - 669.
- Sato, Yosuke. 2020. Idioms, Argument Ellipsis and LF-copy. *Journal of East Asian Linguistics* 29, 259-278.
- Schwarzchild, Roger. 2005. Measure Phrases as Modifiers of Adjectives. *Recherches linguistiques de Vincennes* 34, 207-228.
- Scontras, Gregory. 2014. *The Semantics of Measurement*. PhD dissertation, Harvard University.
- Simpson, Andrew, Arumina Choudhury, and Mythili Menon. 2013. Argument Ellipsis and the Licensing of Covert Nominals in Bangla, Hindi and Malayalam. *Lingua* 134, 103–128.
- Takahashi, Daiko. 2006. Apparent Parasitic Gaps and Null Arguments in Japanese. *Journal of East Asian Linguistics* 15, 1-35.
- Takahashi, Daiko. 2008. Quantificational Null Objects and Argument Ellipsis. *Linguistic Inquiry* 39, 307-326.
- Takahashi, Daiko. 2013. Argument ellipsis in Japanese and Malayalam. *Nanzan Linguistics* 9, 173–192.
- Takahashi, Daiko. 2014. Argument Ellipsis, Anti-Agreement and Scrambling. In *Japanese Syntax in Comparative Perspective*, ed. by Mamuro Saito, 88–116. Oxford: Oxford University Press
- Takahashi, Daiko. 2020. Derivational Argument Ellipsis. *The Linguistic Review* 37, 47-74.
- Tancredi, Christopher. 1992. *Deletion, Deaccenting and Presupposition*. PhD dissertation, MIT.
- Tomioka, Satoshi. 2003. The Semantics of Japanese Null Pronouns and its Cross-linguistic Implications. In *The interfaces: Deriving and Interpreting Omitted Structures*, ed. by Kerstin Schwabe and Susanne Winkler, 321-339. Amsterdam: John Benjamins.
- Tomioka, Satoshi. 2014. Remarks on Missing Arguments in Japanese. In *Proceedings of FAJL 7*, ed. by Shigeto Kawahara and Mika Igarashi, 251-264. Cambridge, MA: MITWPL.
- van Craenenbroeck, Jeroen. 2010. *The Syntax of Ellipsis: Evidence from Dutch Dialects*. New York: Oxford University Press.
- Vicente, Luis. 2018. Sluicing and Its Subtypes. In *The Oxford Handbook of Ellipsis*, ed. by Jeroen van Craenenbroeck and Tanja Temmerman, 479-503. Oxford: Oxford University Press.
- Wasow, Thomas. 1972. *Anaphoric Relations in English*. PhD dissertation, MIT.
- Williams, Edwin. 1977. Discourse and Logical Form. *Linguistic Inquiry* 8, 101-139.
- Winter, Yoad. 2005. Cross-Categorial Restrictions on Measure Phrase Modification. *Linguistics and Philosophy* 28, 233–267.
- Wurmbrand, Susi. 2017. Stripping and Topless Complements. *Linguistic Inquiry* 48, 341-366.
- Yoshimura, Noriko. 1992. *Scrambling and Anaphora in Japanese*. PhD dissertation, USC.