Contrast and Verb Phrase Ellipsis: Triviality, Symmetry, and Competition

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'You're on mute!'

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1 Introduction

1.1 Ellipsis and identity

- ~~Ellipsis~~ might seem to radically undermine form-meaning mapping – missing form, understood meaning:

(1) a. John bought a book, and Mary did ~~buy a book~~, too. *Verb Phrase Ellipsis (VPE)*

b. John bought something, but I don't know what ~~he bought~~. *Sluicing/Tense Phrase Ellipsis (TPE)*

c. John bought one book, while Mary bought four ~~books~~. *Noun Phrase Ellipsis (NPE)*

- Recoverability from an 'identical' antecedent (Hankamer 1971, Sag 1976, Williams 1977, Sag & Hankamer 1984, Dalrymple et al. 1991, Fiengo & May 1994).
- But in what way, and to what extent, 'identical'?
- Superficial mismatches already in (1) – (a) *bought* vs. *buy*, (b) presence vs. absence of *something*, (c) *book* vs. *books*.
- Cf. argument structure mismatches in voice (2) and optional transitivity (3) across VPE (a) and TPE (b):

(2) a. The system can be used by anyone who wants to ~~use it~~. (Merchant 2013)

b. * This system can be used, but I don't know who ~~can use it~~.

(3) a. * John will read, but I forget what he/MARY will ~~read~~. (Overfelt to appear)

b. John will read, but I forget what ~~he will read~~. (Chung et al. 1995)

1.2 Ellipsis and (proper) alternative-hood

- This talk – 'identity' in verb phrase ellipsis (VPE) as 'proper' alternative-hood (4):

  (4) VPE must be contained in a constituent E that has an antecedent A that is a proper alternative to E.

- Alternative-hood[1] (Rooth 1992a) applied to ellipsis (Tancredi 1992, Rooth 1992b, Heim 1997, Fox 1999, Fox 2000, Takahashi & Fox 2005, Drummond 2021, i.a.): 'similar or equal'

  ⇒ equal up to focus; complete equality if no focus

  – unsurprising from the perspective of 'identity'

- Allowing equality permits two independent analyses of (5) (cf. Rooth 1992b: exx. 22, 23; 32):

  (5) John left, and BILL_F did ~~leave~~, too.

		Alt.	PrAlt.
a. Clausal A and E:	leave'(_); j, b	✓	✓
b. VP A and E:	leave' = leave'	✓	✗

- Proper alternative-hood applied to ellipsis (Griffiths 2019, Stockwell 2018, 2020): 'similar but different'

  ⇒ complete equality disallowed, contrast required

  – unsurprising from the perspective of contrastive focus (Repp 2016)

- Requiring contrast continues to make a correct prediction in (5) – viz. (a); but in other cases, contrast is crucial. . .

[1] Under the hood of alternative-hood is focus semantics (Rooth 1992a) – see section 7 for details. Alternative-hood requires that the ordinary meaning of A be a member of the focus value of E, $[\![A]\!] \in F(E)$, where F(E) is calculated by replacing F(ocus)-marked constituents in E with things of the same type and collecting the results into a set. Proper alternative-hood additionally requires contrast, $[\![A]\!] \neq [\![E]\!]$.

1.3 Outline

- Sameness x 3:

§2. Triviality (Stockwell 2018, 2020, minor revisions) – complete identity; equality disallowed, contrast required:

(6) a. If John_j leaves, he_j leaves.
b. * If John_j leaves, he_j does ~~leave~~.

§3. Symmetry (Stockwell 2017, 2020, revised) – semantic rather than syntactic identity, with some contrast failures:

(7) a. John_1 wanted to dance with Mary_2, but she_2 didn't want to dance with him_1.
b. John_1 wanted to dance with Mary_2, but she_2 didn't want to ~~dance with him_1~~.

§4. Competition (Stockwell 2020) – tension between contrast and accounts of 'MaxElide' (Merchant 2008) effects (Schuyler 2001) that crucially allow equality (Takahashi & Fox 2005); prospects for contrast as explanation (Griffiths 2019):

(8) a. John ate something, but I don't know what he ate *t*. *Baseline*
b. John ate something, but I don't know what ~~he ate *t*~~. *Sluicing*
c. * John ate something, but I don't know what he did ~~eat *t*~~. **VPE*

§5. Conclusion §6. Further directions §7. Details

2 Triviality & VPE

- Ellipsis is ungrammatical in tautologous conditionals:

(9) a. If John$_j$ is wrong, then he$_j$ is wrong.

b. * If John$_j$ is wrong, then he$_j$ is ~~wrong~~. $[\![A]\!] = [\![E]\!] = \text{wrong'(j)}$

- Ellipsis is the problem, contrast failure, rather than triviality.[2]
- Triviality as a baseline from which to see what counts for contrast:
- Negation – Yes; positive and negative contrast:

(10) a. John$_1$ is wrong and he$_1$ isn't wrong.

b. John$_1$ is wrong and he$_1$ isn't ~~wrong~~. $[\![A]\!] = \text{wrong'(j)}$ $[\![E]\!] = \neg\text{wrong'(j)}$ $\_\_\text{wrong'(j)}; \emptyset, \neg$

(11) a. Either John$_1$ is wrong, or he$_1$ isn't wrong.

b. Either John$_1$ is wrong, or he$_1$ isn't ~~wrong~~.

- Questions – Yes; questions denote a set of possible answers (Hamblin 1973), contrasting with declaratives:[3]

(12) S: Is John$_1$ wrong? R: If John$_1$ is wrong, then he$_1$ is ~~wrong~~.

[2] E.g., an extended version of Gajewski's (2002, 2009) L(ogical)-triviality.

[3] In focus semantic terms, subsethood, $[\![A]\!] \subseteq F(E)$. See section 6.1 for evidence this is not quite right.

- Intensionality – Yes; contrast between, e.g., Mary's beliefs and the actual state of affairs:[4]

(13) a. John eats what he eats. redundant free relatives (Horn 1981)

b. * John eats what he does ~~eat~~. $[\![A]\!] = [\![E]\!] = \lambda x.\ eat'(x)(j)$

c. Mary believes that John eats what he eats.

d. Mary believes that John eats what he DOES ~~eat~~.

e. $[_E\ what_i\ he_j$ DOES ~~eat t_i~~ $]_k$ $[_A$ Mary believes $John_j$ eats t_k $]$ $\lambda x.\_\_(eat'(x)(j))$; m-believes', for-sure'

- Tense – No; but Times – Yes:

(14) a. John will eat what he ate.

b. * John will eat what he did ~~eat~~.

(15) a. John will eat (tomorrow) what he ate yesterday.

b. John will eat (tomorrow) what he did ~~eat~~ yesterday.

[4]More precisely, alternative-hood is achieved by taking stress on *DOES* to realise focus on (Hardt & Romero 2004: 405, ex. 97) VERUM (Romero & Han 2004: 627, ex. 43), a conversational epistemic operator meaning roughly 'it is for sure that'. See section 7.

3 Symmetry & VPE

- Participant switching VPE:[5]

  (16) EU referendum: Merkel$_i$ will work with Cameron$_j$ on EU – but will Tories let him$_j$ ~~work with her$_i$~~?[6]

- Syntactic vs. semantic identity in VPE (e.g. Chomsky 1965, Sag 1976, Fiengo & May 1994 vs. Sag & Hankamer 1984, Dalrymple et al. 1991, Hardt 1993, Merchant 2001).

3.1 Syntactic non-identity

- If the participant switch reading is to be syntactically supported, mismatching form is inevitable.
- The ellipsis site cannot be intransitive in (17):

  (17) John$_1$ wanted to work with Mary$_2$, but (as things turned out) she$_2$ never did ~~work with him$_T$~~ / # ~~work~~.
  She$_2$ only ever worked with Bill$_3$.

- The ellipsis site must be transitive in (18):

  (18) Bill$_3$ expected John$_1$ to meet Mary$_2$, and (in the end) she$_2$ DID ~~meet him$_T$~~ / *~~meet~~.

[5]Though as with argument structure mismatches in voice (2), participant switching is not possible with TPE (i):

(i) * John$_1$ wanted to dance with Mary$_2$. Mary$_2$ ~~wanted to dance with him$_T$~~, too.

[6]http://www.theguardian.com/politics/2015/may/09/angela-merkel-cameron-eu-rightwing-tories. Last retrieved 2021-11-12.

3.2 Semantic identity

- Symmetry is crucial:[7]

(19) John$_1$ wanted to dance with Mary$_2$, but she$_2$ didn't want to ~~dance with him$_1$~~.
since dance-with'(j,m) = dance-with'(m,j)

(20) * John$_1$ wanted to criticise Mary$_2$, but she$_2$ didn't want to ~~criticise him$_1$~~.
since criticise'(m)(j) ≠ criticise'(j)(m)

- Obligatory switching – consistency of participants across A and E:

(21) Bill$_3$ expected John$_1$ to work with Mary$_2$, . . .

a. . . . and (as things turned out) she$_2$ DID ~~work with him$_{1/*3}$~~.

b. ?? . . . but (as things turned out) she$_2$ DID ~~work with him$_{??1/*3}$~~.

c. *since* work-with'(j,m) = work-with'(m,j) ≠ work-with'(m,b)

- Transitivity switching VPE:

(22) a. John$_1$ met Mary$_2$, because they$_{1+2}$ wanted to ~~meet~~.

b. John$_1$ and Mary$_2$ met, because she$_2$ wanted to ~~meet him$_1$.~~

[7] Symmetry: For all x, y: R(x,y) ↔ R(y,x).

3.3 How much semantic identity?

- One-way (i), A an alternative to E (Rooth 1992b; Fox 2000).
- Not also (ii), E an alternative to A (Griffiths 2019, cf. Merchant 2001).
- *meet*: John and Mary met ⟷ John met Mary, Mary met John
- *kiss*: John and Mary kissed ⟶ John kissed Mary, Mary kissed John

Winter (2018): plain vs. pseudo reciprocals

- After allowing 'indirect parallelism' (Fox 2000) based on entailment, (i) makes correct predictions:

(23) ?* John$_1$ kissed Mary$_2$, because she$_2$ wanted to ~~kiss him$_1$~~.
kiss'(m)(j) ⇏ kiss'(j)(m) ✗ (i)

(24) ?? John$_1$ kissed Mary$_2$, because they$_{1+2}$ wanted to ~~kiss~~.
kiss'(m)(j) ⇏ kiss'(j+m) ✗ (i)

(25) John$_1$ and Mary$_2$ kissed, because she$_2$ wanted to ~~kiss him$_1$~~.
kiss'(j+m) ⇒ kiss'(j)(m) ✓ (i)
kiss'(m)(j) ⇏ kiss'(j+m) ✗ (ii)

- Adding (ii) incorrectly predicts (25) should be just as bad as (24).

3.4 Periphrastic reciprocals and VPE

- With symmetrical predicates, ellipsis mismatches involving *each other* are assimilate-able to transitivity switching:

  (26) Irv and Martha want to dance with each other, (Webber 1978: 165; Hardt 2004, 2007)
  but Martha can't ~~dance with Irv~~, since her husband is here.

  (27) a. Interviewer: Would you like to see each other again?[8] (Elliott & Murphy 2019: ex. 1)
  b. Interviewee 1: I would $< >$. $< >$ = like to see interviewee 2 again
  c. Interviewee 2: I would $< >$. $< >$ = like to see interviewee 1 again

- '*Other*-ellipsis' analyses (Hardt 2004, 2007; Elliott & Murphy 2019) predict (28) good. . .

  (28) % John_1 and Mary_2 criticised each other_{1+2}, even though she_2 didn't want to ~~criticise him_1~~.

- . . . but with strong reciprocal readings only . . . (29)?

  (29) ((?)?) Every week in art class, John_1, Mary_2, Beth_3 and Chris_4 criticise each $\text{other}_{1+2+3+4}$;
  though Beth_2 doesn't like to $< >$.

- Entailments instead?

  – Pair: criticise'(e.o.)(j+m) $\Rightarrow$ criticise'(j)(m) special case: ✓(28) *(29)

  – Group: criticise'(e.o.)(j+m+b+c) $\not\Rightarrow$ criticise'(j+m+c)(b) general case: *(28) *(29)

[8] Even without *each other*, *see* in the sense of *date* is idiomatically symmetrical, as evidenced by participant switching VPE (i):

(i) John_1 wanted to keep seeing Mary_2; but she_2 didn't ~~want to keep seeing him_1~~, so they broke up.

3.5 Contrast in symmetrical VPE

- Embedded similarity by symmetry; but matrix contrast:

(30) John$_1$ wanted to dance with Mary$_2$, and she$_2$ wanted to ~~dance with him$_1$~~, as well.
since dance-with'(j,m) = dance-with'(m,j) want'(dance-with'(m,j))(_); j, m

- Contrast failures in participant switching:

(31) a. John$_1$ wanted to meet Mary$_2$, and for her$_2$ to meet him$_1$.
b. * John$_1$ wanted to meet Mary$_2$, and for her$_2$ to ~~meet him$_1$~~.

(32) a. John$_1$ danced with Mary$_2$, and she$_2$ danced with him$_1$.
b. * John$_1$ danced with Mary$_2$, and she$_2$ did ~~dance with him$_1$~~(, too). $[\![A]\!] = [\![E]\!]$ = dance-with'(j,m)

- Negation usually counts for contrast:

(33) a. John$_1$ wanted to work with Mary$_2$, but she$_2$ didn't ~~want to work with him$_1$~~.
b. John$_1$ wanted (both) to meet Mary$_2$, and for her$_2$ NOT to ~~meet him$_1$~~. __meet'(j,m); $\emptyset$, $\neg$

- Except in contradiction:

(34) a. John$_1$ danced with Mary$_2$, but she$_2$ didn't dance with him$_1$.

b. * John$_1$ danced with Mary$_2$, but she$_2$ didn't ~~dance with him$_1$~~.

- Diffused to disagreement across speakers:

(35) a. S: John$_1$ danced with Mary$_2$. R: No he$_1$ didn't ~~dance with her$_2$~~!

b. S: John$_1$ danced with Mary$_2$. R: *No she$_2$ didn't ~~dance with him$_1$~~!

- Idea: a sentence cannot contradict the route to its own construction.
  - the symmetry presupposed for ellipsis licensing is contradicted by the assertion of the sentence overall:[9]

(36) For ellipsis: dance'(j,m) = dance'(m,j)
Assertion: dance'(j,m) ≠ dance'(m,j)

[9]Cf. voice mismatch, section 6.4 (Stockwell 2021a,b). In (i), but not (ii), accommodation of Gorbachev in A for ellipsis is contradicted by the assertion:

(i) * This information was released, but Gorbachev didn't.
Assumption for ellipsis: ∃e.info-release'(e) = ∃e.info-release'(e) ∧ agent(e,g)
Assertion: ∃e.info-release'(e) ∧ ¬agent(e,g)

(ii) This information should have been released, but Gorbachev didn't.

Tension: contrast, VPE, and MaxElide

- The 'sameyness' of triviality and symmetry reveals the contrast requirement on VPE:

  (4) VPE must be contained in a constituent E that has an antecedent A that is a proper alternative to E.

- Requiring contrast reduces the choice of 'parallelism domain' (PD) for A and E, but usually does not affect predictions; recall (5):

  (37) a. John left, and Bill left, too.
  b. John left, and BILL did ~~leave~~, too.

	Alt	PrAlt	MaxElide (37)
Clausal PD	✓	✓	(b)
VP PD	✓	✗	(b)

- "MaxElide" (Takahashi & Fox 2005, cf. Merchant 2008): Elide the biggest deletable constituent in a PD.

- Predictions still don't differ for (37); but they do for (38):

  (38) a. Mary said John ate cheese. BETH also said John ate cheese.
  b. Mary said John ate cheese. [$_{PD}$ BETH also did ~~say John ate cheese~~].
  c. Mary said John ate cheese. BETH also said [$_{PD}$ he did ~~eat cheese~~].

	Alt	PrAlt	MaxElide (38)	
Main clause PD	✓	✓	(b)	
Embedded clause PD	✓	✗	(c)	⇐ Tension with contrast

- Interrogate MaxElide and evaluate the prospects for contrast to explain the target data (Griffiths 2019).

4 Competition & VPE

- MaxElide effects (Schuyler 2001, Merchant 2008):

(39) a. John ate something, but I don't know what he ate *t*. *Baseline*

b. John ate something, but I don't know what ~~he ate *t*~~. *Sluicing*

c. * John ate something, but I don't know what he did ~~eat *t*~~. **VPE*

- Competition – (c) is ungrammatical for losing to (b).[10]

4.1 Takahashi & Fox (2005)

- With *wh*-movement out of the ellipsis site, PD must be clausal; the meaning is too 'unstable' to satisfy alternative-hood until movement is resolved:[11]

(40) LF of (39): [$_A$ something$_1$ John ate t$_1$] but I don't know [$_E$ what$_2$ he ate t$_2$]

- Maximal elision in clausal PD = sluicing; *VPE

[10]Takahashi & Fox (2005) frame the competition in terms of syntactic size, bigger ellipsis defeating smaller. Hartman (2011) follows Takahashi & Fox (2005). Messick & Thoms (2016) frame the competition in terms of construction, with sluicing defeating VPE; but, like Takahashi & Fox (2005), they crucially allow equality between A and E. Jacobson (2019a,b) frames the competition in terms of semantic size, ellipsis of a lower type defeating ellipsis of a higher type.

[11]Due to the combination of unbound traces and 'No Meaningless Coindexing' (Heim 1997).

4.2 Competition doesn't work

- Why doesn't the fully pronounced (a) get to compete?
- Competition: there should be one winner. . .

No winner

- Victor (b) in (41) (Merchant 2008: 142, ex. 33) removed in (42); (c) and (d) still bad:

(41) BETH knows what John will eat *t*, and . . .

a. CAROL also knows what he will eat *t*.

b. CAROL also does ~~know what he will eat *t*~~.

c. ?? CAROL also knows what ~~he will eat *t*~~.

d. ?? CAROL also knows what he will ~~eat *t*~~.

(42) Beth KNOWS what John will eat *t*. In fact, . . .

a. she REPORTED what he will eat *t*.

b. ✗ she did ~~REPORT what he will eat *t*~~.

c. ?? she REPORTED what ~~he will eat *t*~~.

d. ?? she REPORTED what he will ~~eat *t*~~.

- In relative clauses (43), sluicing (b) is impossible, but VPE (c) is still bad:[12]

(43) Sue KNOWS the girl who Joe kissed *t*, but . . .

a. she doesn't RESPECT the girl who he kissed *t*. *Baseline*

b. * she doesn't RESPECT the girl who ~~he kissed *t*~~. **Sluicing*

c. * she doesn't RESPECT the girl who he did ~~kiss *t*~~. **VPE*

[12] Griffiths (2019: 583, ex. 28a); cf. Schuyler (2001: 10f., exx. 67-70).

Too many winners

- Multiple auxiliaries (44) – (b) should beat (c) and (d):

(44) John could have been eating something, but I don't know . . .

a. what SAM could have been eating *t*.

b. what SAM could ~~have been eating *t*~~.

c. what SAM could have ~~been eating *t*~~.

d. what SAM could have been ~~eating *t*~~.

- Focused restrictors (45):[13]

(45) I know which GIRL he kissed, but I don't know . . .

a. which BOY he kissed *t*. *Baseline*

b. which BOY ~~he kissed *t*~~. *Sluicing*

c. which BOY he did ~~kiss *t*~~. *VPE*

[13]Cf. Griffiths (2019: 581, ex. 21a; 588, ex. 45a); Schuyler (2001: ex. 47).

4.3 Contrast might work

- Griffiths (2019): the VPE member of the MaxElide paradigm is ruled out on its own terms as a contrast failure:

(46) * John ate something, but I don't know what he did ~~eat *t*~~.
something [$_A$ John$_1$ ate *t*], but I don't know what [$_E$ he$_1$ did ~~eat *t*~~]. $[\![A]\!] = [\![E]\!] = \lambda x.eat'(x)(j)$

- Promising – focused restrictors (45) and focus below *wh* (47):

(47) a. John should eat something, but I don't know what SAM should ~~eat *t*~~.
b. John will eat something, but I don't know what he SHOULDN'T ~~eat *t*~~.

– cf. competition theories: the phonology of focus blocks sluicing, VPE wins by default

- Problem 1 – focus above *wh* (48):

(48) a. ?? BETH knows what John will eat *t*, and CAROL also knows what he will ~~eat *t*~~.
b. ?? Beth KNOWS what John will eat *t*. In fact, she REPORTED what he will ~~eat *t*~~.

- Griffiths (2019): PD is roofed at the landing site of *wh*-movement; hence contrast must be found within C'.

- Griffiths' attempt to derive this constraint is technically unviable (Charlow 2021)[14] and makes a bad prediction on (49), where the ellipsis site contains *wh*-movement:

  (49) BETH knows what John will eat *t*, and CAROL does ~~know what he will eat *t*~~, too.

- Stipulation here: when there is A-bar movement out of an ellipsis site, PD must be the node immediately above the landing site of movement; i.e. CP.[15]

- Addresses the problem of focus above *wh* (48) and corrects (49) – movement is within, not out of, the ellipsis site.

[14]Griffiths (2019) follows Kotek (2016) in elevating technical difficulties regarding the compatibility of alternative semantics and A-bar λ-binding (Rooth 1985; Shan 2004) into a constraint with empirical bite. To maintain alternative-hood without λ-binding, Griffiths (2019) calculates it modulo ∃-closure. Yet, as Charlow (2021) explains, any binding, whether by λ or ∃, is incompatible with standard alternative semantics for the same reason; and a fix, proceeding from the assumption meanings are functions from assignments to values (Rooth 1985 et seq.), applies equally to λ and ∃.

[15]Perhaps due to (insurmountable) pressure for PD to be the same as the filler-gap domain? This stipulation also avoids other questionable assumptions made by Griffiths (2019): focused traces (Sauerland 1998) for (45); non-movement of *wh*-subjects and -adjuncts in (50); and contrast between indefinites and *wh*-words, e.g. ⟦what⟧ ≠ ⟦something⟧.

Further to the first point, while lower copies of restrictors can be interpreted in their base positions, quantifiers themselves cannot be. Griffiths (2019) therefore predicts that only focused restrictors (45), and not focused quantifiers, should alleviate MaxElide effects, per (i) (Griffiths 2019: 582, ex. 25b). However, (i) might suffer from zeugmaticity on *like*. Schuyler (2001: ex. 48), meanwhile, does not so much mind (ii):

(i) * I know WHO John likes *t*, but not WHAT he does ~~like *t*~~.

(ii) ? Some guests wondered WHAT Jan would eat *t*, and other guests wondered HOW MUCH she would ~~eat *t*~~.

- Problem 2 – no MaxElide effects with subjects and adjuncts (50):

(50) a. * John ate something, but I don't know what he did ~~eat *t*~~. *object*

b. Someone ate cheese, but I don't know who *t* did ~~eat cheese~~. *subject*

c. John ate cheese, but I don't know when he did ~~eat cheese~~ *t*. *adjunct*

- Indefinites are non-proper alternatives to *wh*-words, i.e. equal; e.g. ⟦what⟧ = ⟦something⟧ – cf. sluicing based on identity (AnderBois 2011; Barros 2014)

- Unembedded A can be an alternative to biclausal E; cf. the 'double-*wh*' cases in (51):[16]

(51) a. * Beth knows what John ate *t*. CAROL knows [$_{PD}$ what he did ~~eat *t*~~], too.

b. Beth knows who *t* ate. [$_{PD}$ CAROL knows who *t* did ~~eat~~], too.

c. Beth knows when John ate *t*. [$_{PD}$ CAROL knows when he did ~~eat~~ *t*], too.

  - A-bar movement out of the ellipsis site roofs PD at CP in (a)
  - PD free to extend into the higher clause to find contrast in (b) and (c)

[16] Quite apart from the issue of MaxElide effects, something along these lines is necessary for ellipsis to respect contrast in a case like (i) and (ii):

(i) Sue expected John$_1$ to win, and he$_1$ DID ~~win~~. (Hardt & Romero 2004: 406, ex. 98)

(ii) John$_1$ eats cheese, because Mary tells him$_1$ to ~~eat cheese~~.

4.4 Pseudogapping

- Pseudogapping (Stump 1977) is 'about' the contrastive object remnant (Jayaseelan 1990, Gengel 2013, Winkler 2005)
- Yet (52) 'core contrast' on the subject (a) or auxiliary (b) is still required (c):

(52) a. John ate CHEESE, while MARY did ~~eat *t*~~ CHOCOLATE.
b. ? John ate CHEESE, but he DIDN'T ~~eat *t*~~ CHOCOLATE.
c. * John ate CHEESE, while he did ~~eat *t*~~ CHOCOLATE.

- A-bar movement out of VP (Jayaseelan 2002, Gengel 2013, Thoms 2016) makes for a tantalising parallelism between MaxElide effects (53) and pseudogapping (54); focus helps (a), until it doesn't (b):

(53) a. Kate_k knows what John_j will eat, and she_k knows [$_{PD}$ what BILL will ~~eat *t*~~], too.
b. ?? Kate_k knows what John_j will eat, and CAROL knows [$_{PD}$ what he_j will ~~eat *t*~~], too.

(54) a. Kate_k thinks John_j will eat cheese, and she_k thinks [$_{PD}$ BILL will ~~eat *t*~~ CHOCOLATE].
b. ?? Kate_k thinks John_j will eat cheese, and CAROL thinks [$_{PD}$ he_j will ~~eat *t*~~ CHOCOLATE].

- High focus is fine with adjuncts, which don't have to evacuate VP (55):

(55) a. Kate thinks John_j will eat at McDonald's. [$_{PD}$ CAROL thinks he_j will ~~eat~~ at BURGER KING].
b. ? Kate thinks John_j will eat at McDonald's. [$_{PD}$ CAROL also thinks he_j will ~~eat~~ at McDonald's].

5 Conclusion

- Ellipsis as proper alternative-hood:

  (4) VPE must be contained in a constituent E that has an antecedent A that is a proper alternative to E.

- Triviality – complete identity, contrast required; what counts for contrast.
- Symmetry – semantic over syntactic identity; alternative-hood one-way only; *each other*; contrast and negation.
- Competition – tension with contrast; failure of competition; prospects for contrast; connection to pseudogapping.
- Further delimiting and applying (4): questions, NPE, voice and existentials, *only*.

6 Further directions

- What other aspects of ellipsis are sensitive to contrast? Stockwell (2020: ch.5):

1. Questions – ??

    - In section 2: "questions denote a set of possible answers (Hamblin 1973), contrasting with declaratives"; in focus semantic terms, subsethood, $[\![A]\!] \subseteq F(E)$.
    - Questions about auxiliary or subject – VPE good:

    (56) A: Is John wrong? B: He IS ~~wrong~~.

    (57) A: Who left? B: JOHN did ~~leave~~.

    - But questions about objects, adjuncts, or alternatives – VPE bad (Kuno 1975; Levin 1979):

    (58) A: What did John eat *t*? B: * He did ~~eat *t*~~ CHEESE.

    (59) A: Where did John eat *t*? B: * He did ~~eat~~ at McDONALD'S.

    (60) A: Did John recommend Mary or Beth? B: * He did ~~recommend *t*~~ Beth.

    - Requirement for 'core contrast' in TP? Cf. pseudogapping; though no movement out of VP in (59).

- VPE good with implied follow-ups; mutual licensing, elliptical antecedents:

  (61) A: What did John eat *t*?
  B: He DID ~~eat *t*~~ CHEESE, but he DIDN'T ~~eat *t*~~ CHOCOLATE.

  (62) A: Where did John eat *t*?
  B: He DID ~~eat~~ at McDONALD'S; he DIDN'T ~~eat~~ at KFC.

  (63) A: Did John recommend Mary or Beth?
  B: He DID ~~recommend *t*~~ BETH; he DIDN'T ~~recommend *t*~~ MARY.

- Focus above *wh* helps with adjunct but not object; movement out of VP roofs PD:

  (64) A: What did John eat *t*?
  B: * Bill says [$_{PD}$ he did ~~eat *t*~~ CHEESE].

  (65) A: Where did John eat *t*?
  B: ? [$_{PD}$ Bill says he did ~~eat~~ at McDONALD'S].

2. Noun phrase ellipsis – Yes

(66) a. John bought five books and Bill bought three ~~books~~.
b. * John bought five books and Bill bought five ~~books~~.
c. John bought five books and Bill bought five ~~books~~, too.

3. Implicit existentials – No (cf. Overfelt to appear); Explicit indefinites – Yes (Stockwell 2021a,b)

(67) a. ? This information should have been released, but Gorbachev DIDN'T.
b. * This information was released, but Gorbachev didn't.
c. ? This information was released by someone, but GORBACHEV DIDN'T.
d. ? This information was released by Dmitry, so GORBACHEV DIDN'T.

- Voice mismatch; 'non-actuality implicatures' (Grant et al. 2012), semantifiable as focus on VERUM[17]

4. *Only* – focus and ellipsis beyond proper alternative-hood

- Ellipsis of 'live' foci is bad (Han & Romero 2004; Büring 2015; Beaver & Clark 2008)
- (d) shows *eat cheese* is available as an elidable VP, so (b) is not bad for that reason:

(68) a. John only eats CHEESE. BILL only eats cheese_{F}, too.
b. * John only eats CHEESE. BILL only does ~~eat cheese_{F}~~, too.
c. John only eats CHEESE. BILL does ~~only eat cheese_{F}~~, too.
d. John only eats CHEESE. BILL does ~~eat cheese~~, too.

[17] Repeating note 9, in (b), but not (a), accommodation of Gorbachev in A for ellipsis is contradicted by the assertion:

(i) Assumption for ellipsis: $\exists e.\text{info-release'}(e) = \exists e.\text{info-release'}(e) \wedge \text{agent}(e,g)$
Assertion: $\exists e.\text{info-release'}(e) \wedge \neg\text{agent}(e,g)$

7 Details

- Focus-based (Rooth 1992a) condition on ellipsis as proper alternativehood (69):

(69) Ellipsis must be contained in a phrase E that has an antecedent A such that:

i. $[\![A]\!] \in F(E)$ – A is an alternative to E; (Rooth 1992b, Heim 1997, Fox 2000, Takahashi & Fox 2005)
the ordinary meaning of A is a member of the focus semantic value of E, calculated by replacing F(ocus)-marked constituents in E with things of the same type and collecting the results into a set; and

ii. $[\![A]\!] \neq [\![E]\!]$ – the ordinary meanings of A and E contrast (Griffiths 2019, Stockwell 2018, 2020)

- Contrasting individuals (70):[18]

(70) [$_A$ John left] before [$_E$ BILL$_F$ did ~~leave~~]. ε = leave
E = BILL$_F$ left $[\![E]\!]$ = leave'(b) $F(E) = \{ \text{leave'}(x) \mid x \in D_e \}$
A = John left $[\![A]\!]$ = leave'(j) $[\![A]\!] \in F(E)$ and $[\![A]\!] \neq [\![E]\!]$

- Contrasting polarity (even in contradictions) (71):

(71) [$_A$ It's raining] and [$_E$ it ISN'T$_F$ ~~raining~~]. ε = raining
E = It ISN'T$_F$ raining $[\![E]\!]$ = not-rain' $F(E) = \{$ rain', not-rain' $\}$
A = It is raining $[\![A]\!]$ = rain' $[\![A]\!] \in F(E)$ and $[\![A]\!] \neq [\![E]\!]$

[18] Apostrophes indicate metalanguage expressions. The type of leave' is $\langle e, \langle s, t \rangle \rangle$.

- Contrasting intensionality, e.g. Sue's expectations vs. the actual state of affairs (72):

(72) Sue_4 expected $John_1$ to win, and he_1 DID ~~win~~. ε = win
A = Sue expected John to win $[\![A]\!] = \lambda w.\ expect'_w(\lambda w'.\ win'_{w'}(j))(s)$
E = $VERUM_F$ John win $[\![E]\!] = \lambda w.\ for\text{-}sure'_w(\lambda w'.\ win'_{w'}(j))$
F(E) = {it is for sure true that John won, it is possible that John won, ...,
Mary wanted that John won, Sue expected that John won, ... }
$[\![A]\!] \in F(E)$ and $[\![A]\!] \neq [\![E]\!]$ (Hardt & Romero 2004: 406, ex. 98)

- VERUM (i) is a conversational epistemic operator which asserts that the speaker is certain that p should be added to the Common Ground (Romero & Han 2004: 627, ex. 43)[19]

- Modal functions introducing quantification over possible worlds form a natural class of alternatives to VERUM, as sketched in (73) (Hardt & Romero 2004: 405, ex. 97):

(73) $F(VERUM_F\ p)$ = {it is for sure true that p, it is possible that p, it is hoped that p, it is doubted that p, it is wanted that p, it is expected that p, ..., John expects that p, John hopes that p, Sam expects that p, ..., it is for sure true that ¬p, it is possible that ¬p, it is hoped that ¬p, it is doubted that ¬p, it is wanted that ¬p, it is expected that ¬p, ..., John expects that ¬p, John hopes that ¬p, Sam expects that ¬p, ... }

[19] In (i), x is a free variable whose value is contextually identified with the addressee (or the individual sum of the addressee and the speaker); $Epi_x(w)$ is the set of worlds that conform to x's knowledge in w; $Conv_x(w')$ is the set of worlds where all the conversational goals of x in w' are fulfilled (e.g., attain maximal information while preserving truth); $CG_{w"}$ is the Common Ground, or set of propositions that the speakers assume in w" to be true (Stalnaker 1978):

(i) $[\![VERUM_i]\!]^{g x/i} = [\![really_i]\!]^{g x/i} = \lambda p_{st}\ \lambda w.\forall w' \in Epi_x(w)\ [\forall w" \in Conv_x(w')\ [\ p \in CG_{w"}\ ]\ ]$

- Tautologous conditionals fail contrast:

(74) * If John$_1$ is wrong, then he$_1$ is$_F$ ~~wrong~~. ε = wrong
E = he$_1$ is$_F$ wrong A = John$_1$ is wrong
$[\![E]\!]$= wrong'(j) $[\![A]\!]$ = wrong'(j)
F(E) = { wrong'(j), not-wrong'(j) } $[\![A]\!] \in F(E)$, **but** $[\![A]\!] = [\![E]\!]$

- Symmetry maintains alternative-hood, while John's and Mary's desires contrast:

(75) John$_1$ wanted to dance with Mary$_2$. She$_2$ did ~~want to dance with him$_1$~~, too.
E = MARY$_F$ want PRO$_m$ dance-with John $[\![E]\!]$ = want'(dance-with'(m,j))(m)
A = John want PRO$_j$ dance-with Mary $[\![A]\!]$ = want'(dance-with'(j,m))(j)
dance-with'(m,j) =$_{by\ symmetry}$ dance-with'(j,m) F(E) = { want'(dance-with'(m,j))(x) | x $\in D_e$ }
$[\![A]\!] \in F(E)$ and $[\![A]\!] \neq [\![E]\!]$

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References

AnderBois, Scott. 2011. *Issues and alternatives*. Santa Cruz, CA: University of California, Santa Cruz dissertation.

Barros, Matthew. 2014. *Sluicing and identity in ellipsis*. New Brunswick, NJ: Rutgers University dissertation.

Beaver, David & Brady Clark. 2008. *Sense and sensitivity: How focus determines meaning*. Oxford: Blackwell.

Büring, Daniel. 2015. A theory of second occurrence focus. *Language, Cognition and Neuroscience* 30(1-2). 73–87.

Charlow, Simon. 2021. ∃-closure and alternatives. *Linguistic Inquiry* 52(1). 143–152.

Chomsky, Noam. 1965. *Aspects of the theory of syntax*. Cambridge, MA: MIT Press.

Chung, Sandra, William Ladusaw & James McCloskey. 1995. Sluicing and logical form. *Natural Language Semantics* 3(3). 239–282.

Dalrymple, Mary, Stuart Shieber & Fernando Pereira. 1991. Ellipsis and higher-order unification. *Linguistics and Philosophy* 14(4). 399–452.

Drummond, Alex. 2021. Remarks on Rule H. *Glossa* 6(1). 13.

Elliott, Patrick D. & Andrew Murphy. 2019. The *other* reading of reciprocals in elliptical contexts. Unpublished Ms., ZAS and Leipzig.

Fiengo, Robert & Robert May. 1994. *Indices and identity*. Cambridge, MA: MIT Press.

Fox, Danny. 1999. Focus, parallelism and accommodation. In *Proceedings of SALT IX*, 70–90. Ithaca, NY: CLC Publications.

Fox, Danny. 2000. *Economy and Semantic Interpretation*. Cambridge, MA: MIT press.

Gajewski, Jon. 2002. L-analyticity and natural language. Ms., MIT.

Gajewski, Jon. 2009. L-triviality and grammar. Handout of a talk at University of Connecticut Logic Group, 27 February.

Gengel, Kirsten. 2013. *Pseudogapping and ellipsis*. Oxford: Oxford University Press.

Grant, Margaret, Charles Clifton Jr. & Lyn Frazier. 2012. The role of non-actuality implicatures in processing elided constituents. *Journal of Memory and Language* 66. 326–343.

Griffiths, James. 2019. Beyond MaxElide: An investigation of A'-movement from elided phrases. *Linguistic Inquiry* 50(3). 571–607.

Hamblin, Charles L. 1973. Questions in Montague English. *Foundations of Language* 10. 41–53.

Han, Chung-hye & Maribel Romero. 2004. Disjunction, focus, and scope. *Linguistic Inquiry* 35(2). 179–217.

Hankamer, Jorge. 1971. *Constraints on deletion in syntax*. New Haven, Connecticut: Yale University dissertation.

Hardt, Daniel. 1993. *Verb phrase ellipsis: Form, meaning, and processing*. Philadelphia, PA: University of Pennsylvania dissertation.

Hardt, Daniel. 2004. Ellipsis resolution and inference. *Acta Linguistica Hafniensia: International Journal of Linguistics* 36. 65–77.

Hardt, Daniel. 2007. Inference, ellipsis and deaccenting. In *Copenhagen studies in language*, 67–73. Denmark: Samfundslitteratur.

Hardt, Daniel & Maribel Romero. 2004. Ellipsis and the structure of discourse. *Journal of Semantics* 21(4). 375–414.

Hartman, Jeremy. 2011. The semantic uniformity of traces: Evidence from ellipsis parallelism. *Linguistic Inquiry* 42. 367–388.

Heim, Irene. 1997. Predicates or formulas? Evidence from ellipsis. In Aaron Lawson & Eun Cho (eds.), *Proceedings of SALT VII*, 197–221. Ithaca, New York: CLC Publications.

Horn, Laurence. 1981. A pragmatic approach to certain ambiguities. *Linguistics and Philosophy* 4(3). 321–358.

Jacobson, Pauline. 2019a. Against grammatical competition: The case of MaxElide. In K. Kojima, M. Sakamoto, K. Mineshima & K. Satoh (eds.), *New frontiers in artificial intelligence.* Lecture Notes in Computer Science, vol 11717, 225–239. Cham: Springer.

Jacobson, Pauline. 2019b. Why we still don't need/want variables: Two SALTy case studies. In *Proceedings of SALT 29*, 609–635.

Jayaseelan, K. A. 1990. Incomplete VP deletion and gapping. *Linguistic Analysis* 20. 64–81.

Jayaseelan, K.A. 2002. Ip-internal topic and focus phrases. *Studia Linguistica* 55. 39–75.

Kotek, Hadas. 2016. Movement and alternatives don't mix: A new look at wh-intervention effects. Talk given at the 47th annual meeting of the North East Linguistic Society (NELS 47), University of Massachusetts, Amherst, 14-16 October.

Kuno, Susumu. 1975. Conditions for verb phrase deletion. *Foundations of Language* 13. 161–175.

Levin, Nancy Sue. 1979. *Main-verb ellipsis in spoken English*. Columbus, OH: The Ohio State University dissertation.

Merchant, Jason. 2001. *The syntax of silence: Sluicing, islands, and the theory of ellipsis*. Oxford: Oxford University Press.

Merchant, Jason. 2008. Variable island repair under ellipsis. In Kyle Johnson (ed.), *Topics in Ellipsis*, 132–153. Cambridge: Cambridge University Press.

Merchant, Jason. 2013. Voice and ellipsis. *Linguistic Inquiry* 44(1). 77–108.

Messick, Troy & Gary Thoms. 2016. Ellipsis, economy, and the (non)uniformity of traces. *Linguistic Inquiry* 47. 306–332.

Overfelt, Jason. to appear. Having space to sprout: Failed sprouting in sub-clausal ellipsis. In Ryan Walter Smith (ed.), *Proceedings of the 39th West Coast Conference on Formal Linguistics*, Somerville, MA: Cascadilla Proceedings Project.

Repp, Sophie. 2016. Contrast: Dissecting an elusive information-structural notion and its role in grammar. In Caroline Féry & Shinichiro Ishihara (eds.), *Oxford handbook of information structure*, 270–289. Oxford: Oxford University Press.

Romero, Maribel & Chung-Hye Han. 2004. On negative yes/no questions. *Linguistics and Philosophy* 27(5). 609–658.

Rooth, Mats. 1985. *Association with focus*. Amherst, MA: University of Massachusetts, Amherst dissertation.

Rooth, Mats. 1992a. A theory of focus interpretation. *Natural Language Semantics* 1. 75–116.

Rooth, Mats. 1992b. Ellipsis redundancy and reduction redundancy. In Berman & Hestvik (eds.), *The Stuttgart Ellipsis Workshop*, SFB 340.

Sag, Ivan. 1976. *Deletion and logical form*. Cambridge, MA: MIT dissertation.

Sag, Ivan & Jorge Hankamer. 1984. Toward a theory of anaphoric processing. *Linguistics and Philosophy* 7. 325–345.

Sauerland, Uli. 1998. *The meaning of chains*. Cambridge, MA: MIT dissertation.

Schuyler, Tamara. 2001. Wh-movement out of the site of VP-ellipsis. In Seamas Mac Bhloscaidh (ed.), *Syntax and semantics at Santa Cruz 3*, 1–20. University of California, Santa Cruz, Linguistics Research Center.

Shan, Chung-chieh. 2004. Binding alongside Hamblin alternatives calls for variable-free semantics. In Kazuha Watanabe & Robert B. Young (eds.), *Proceedings of Semantics and Linguistic Theory 14*, 289–304. Ithaca, NY: Cornell University.

Stalnaker, Robert. 1978. Assertion. In P. Cole (ed.), *Pragmatics,* Vol. 9 of Syntax and Semantics, 315–322. New York: Academic Press.

Stockwell, Richard. 2017. VP ellipsis with symmetrical predicates. In Andrew Lamont & Katerina Tetzlof (eds.), *Forty-seventh annual meeting of the North East Linguistic Society (NELS 47), volume 3*, 141–154. GLSA.

Stockwell, Richard. 2018. Ellipsis in tautologous conditionals: the contrast condition on ellipsis. In Sireemas Maspong, Brynhildur Stefánsdóttir, Katherine Blake & Forrest Davis (eds.), *Proceedings of SALT 28*, 584–603.

Stockwell, Richard. 2020. *Contrast and verb phrase ellipsis: Triviality, symmetry, and competition*. Los Angeles, CA: University of California, Los Angeles dissertation.

Stockwell, Richard. 2021a. Contradiction and ellipsis licensing with voice mismatch and symmetry. Talk given at Sinn und Bedeutung 26 (SuB26), University of Cologne (online), 8-10 September.

Stockwell, Richard. 2021b. Contradiction and ellipsis: voice mismatch and symmetry. Talk given at the 2021 Annual Meeting of the Linguistics Association of Great Britain (LAGB 2021), online, 6-9 September.

Stockwell, Richard. minor revisions. Contrast and verb phrase ellipsis: the case of tautologous conditionals. *Natural Language Semantics*.

Stockwell, Richard. revised. Symmetrical predicates in verb phrase ellipsis. For resubmission to *Linguistic Inquiry*.

Stump, Gregory. 1977. Pseudogapping. Ms., Ohio State University.

Takahashi, Shoichi & Danny Fox. 2005. MaxElide and the re-binding problem. In Efthymia Georgala & Jonathan Howell (eds.), *Semantics and Linguistic Theory 15 (SALT 15)*, 223–240.

Tancredi, Christopher. 1992. *Deletion, deaccenting and presupposition*. Cambridge, MA: MIT dissertation.

Thoms, Gary. 2016. Pseudogapping, parallelism, and the scope of focus. *Syntax* 19(3). 286–307.

Webber, Bonnie L. 1978. *A formal approach to discourse anaphora*. Cambridge, MA: Harvard University dissertation. Published 1979 by Garland Publishing, New York.

Williams, Edwin. 1977. Discourse and logical form. *Linguistic Inquiry* 8. 101–139.

Winkler, Susanne. 2005. *Ellipsis and focus*. Berlin: Mouton de Gruyter.

Winter, Yoad. 2018. Symmetric predicates and the semantics of reciprocal alternations. *Semantics & Pragmatics* 11(1). 1–47.