# What cumulative asymmetries can tell us about weak readings and vice-versa.

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*every* in object position can give rise to cumulative readings (Schein, 1993; Kratzer, 2000).

(1)  a.   The three cooks opened every oyster.

*every* in object position can give rise to cumulative readings (Schein, 1993; Kratzer, 2000).

(1) a. The three cooks opened every oyster.

    b. The three cooks opened the four oysters. (ordinary cumulative sentences)
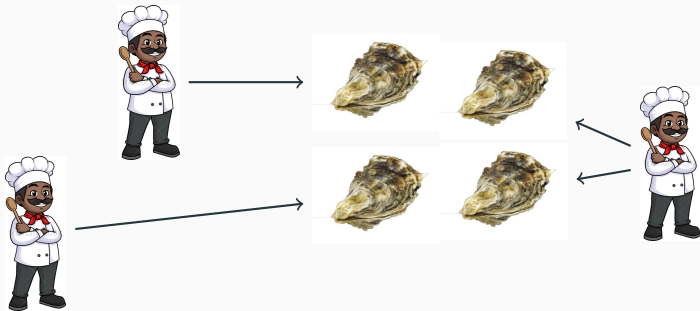
(2)   The three cooks opened every oyster

(3)   **Truth-conditions[1]:**
      *Every cook opened an oyster.*
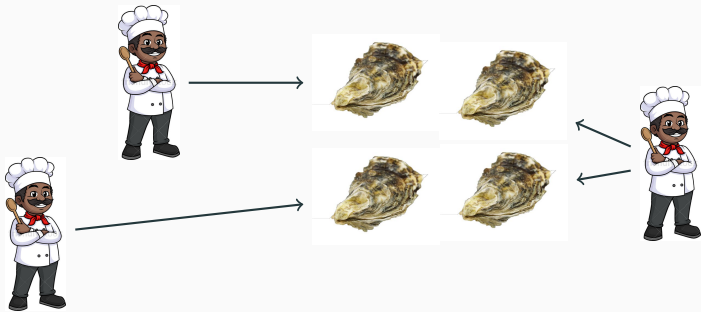      *Every oyster was opened by a cook*

✓ (2a), (2b)



---
[1]For distributive predicates only.

(4) **Predicted TCs:**
$\forall x \in$ oyster, the cooks opened $x$
$\approx$ *every cook opened every oyster*

False in:

**Empirical puzzles**

- Why is a cumulative reading available for *every*?

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- Why is a cumulative reading available for *every*?
- Why isn't it always available? ⤳ *asymmetries*

These readings are only available when *every* occupies the object position in transitive sentences.

(5)  Every cook opened the four oysters.
     ⤳ *every cook opened every oyster*

The nature of this asymmetry is debated:

- Kratzer (2000) : exceptionality of the theme
- Champollion (2010); Haslinger and Schmitt (2018) : plural argument must c-command *every*

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**Theory-internal puzzle**

The leaky reading

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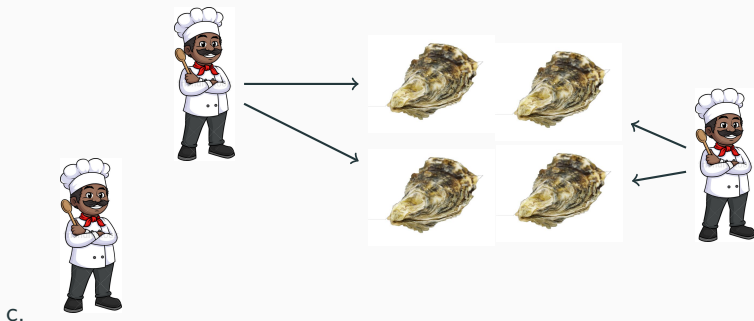
(6) a. **Bayer (2013)'s leaky TCs:**
       *Every oyster was opened by a cook*

   b. **Attested TCs:**
       *Every oyster was opened by a cook*
       *Every cook opened an oyster*

   c.

# Main claims

**Empirical claims**

- The "*leakage*" reading is the underlying reading of cumulative sentences of *every*.

**Account**

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**Account**

- A semantics "*leaky by default*"

- A completely classical denotation for *every*

- Mechanisms for strengthening restricted to upward-entailing environments "*plug the leaks*".

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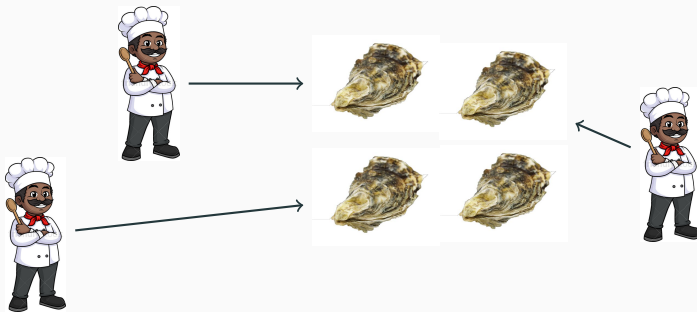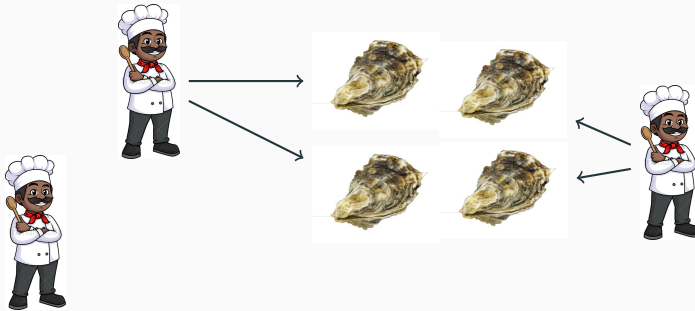
(7)  a.  The cooks opened every oyster

    b.  **Non-leaky TCs:**
      *Every cook opened an oyster*
      *Every oyster was opened by a cook*

    c.  **Leaky TCs**
      *Every oyster was opened by a cook*

(7)   a.   The cooks *didn't* open every oyster

      b.   **Non-leaky TCs:**
           Either *not every cook opened an oyster*
           or *not every oyster was opened by a cook*

      c.   **Leaky TCs**
           *Not every oyster was opened by a cook*

(7) a. The cooks <span style="color:orange">didn't</span> open every oyster

b. **Non-leaky TCs: true**
Either *not every cook opened an oyster*
or *not every oyster was opened by a cook*

c. **Leaky TCs true**
*Not every oyster was opened by a cook*

(7) a. The cooks didn't open every oyster

b. **Non-leaky TCs: true**
Either *not every cook opened an oyster*
or *not every oyster was opened by a cook*

c. **Leaky TCs false**
*Not every oyster was opened by a cook*

This is the 1$^{st}$ reported difference between ordinary cumulative sentences and cumulative readings of *every*.

(8) a. **Negation of the leaky TCs:** The cooks didn't open every oyster.
   ↜ *not [every oyster was opened by a cook]*

   b. **Negation of a "super-leaky reading"?** The cooks didn't open the oysters.
   ↜ *not [some cooks opened some oysters]*

**Empirical claims**

- Leaky readings surface in negative environments

NPIs are licensed in the restrictor of *every*

NPIs are licensed in the restrictor of *every* even when read cumulatively.

(9) The three inspectors interrogated every person who had any connection to the suspect.

Does the sentence provide a DE environment for an NPI in the restrictor of *every*?

Not if the sentence receives the non-leaky TCs we say it does.

(10)   strong connection $\subset$ connection

    a.   The three inspectors interrogated every person that had
       <u>a connection</u> to the suspect.

    b.   The three inspectors interrogated every person that had
       <u>a strong connection</u> to the suspect.

(11)   Non-leaky cumulative truth-conditions (including $S_{exh}$)

    a.   **Non-leaky TCs of (10a)**
       Every inspector interrogated someone with <u>connection</u> to the
       suspect.
       Every one with some <u>connection</u> to the suspect was
       interrogated by an inspector.

    b.   **Non-leaky TCs of (10b)**
       <span style="color:red">Every inspector interrogated someone with
       <u>a strong connection</u> to the suspect.</span>
       Every one with <u>a strong connection</u> to the suspect was
       interrogated by one of the inspectors.

However, if it received the leaky TCs, the NPI would be licensed:

(12)   Leaky cumulative truth-conditions (including $S_{exh}$)

    a.   **Leaky TCs of (11a)**
        Every one with some <u>connection</u> to the suspect was interrogated by an inspector.

    b.   **Leaky TCs of (11b)**
        Every one with <u>a strong connection</u> to the suspect was interrogated by one of the inspectors.

    c.   (12a) $\Rightarrow$ (12b)

This serves as a suggestion that there is some constituent - not the sentence itself - which receives something like the leaky TCs.

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We can't say much more without assumptions about sub-sentential constituents.

This will be turned as an argument against other approaches

**Empirical claims**

- Leaky readings surface in negative environments
- NPI licensing suggests the presence of leaky readings in positive enviroments

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(13)  a.  The cooks opened every oyster.                    (✓ cumulative)
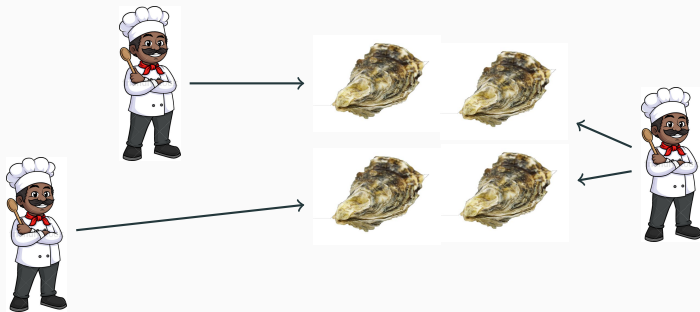
      b.  Every cook opened the oysters.                     (#cumulative)

(14)

$$✓(13a), \#(13b)$$

Two generalizations have been proposed:

- **Kratzer (2000):** a cumulative reading of *every* is possible if the plural argument bears a "*separated*" thematic role
- **Champollion (2010):** a cumulative reading of *every* is possible if the plural argument c-commands *every*.

Previous arguments in favor of Champollion (2010) involved passive constructions.

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$\rightsquigarrow$ *the empirical generalizations have to be restated for the case of movement*

English double object ditransitives (cf similar data for Italian in Flor (2017))

## Ditransitives

(15) AGENT/THEME

    a. The twelve challenges taught Hercules every cardinal virtue. (cumulative)

    b. Every challenge taught Hercules the four cardinal virtues. (#cumulative)

(16) AGENT/GOAL

    a. The ten servers sent every customer an e-mail. (cumulative)

    b. Every server sent the ten customers an e-mail. (#cumulative)

(17) GOAL/THEME

    a. Anya gave the ten charities in Boxborough every penny she had earned. (cumulative)

    b. Anya gave every charity in Boxborough the fifteen checks. (#cumulative)

|  | | DP "*every*" | | |
|---|---|---|---|---|
| | | AGENT | GOAL | THEME |
| **Plural DP** | AGENT | | ✓ | ✓ |
| | GOAL | # | | ✓ |
| | THEME | # | # | |

- **Kratzer (2000):** a cumulative reading of *every* is possible if the plural argument bears a "*separated*" thematic role
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**Empirical claims**

- *The "leakage" reading is the underlying reading of cumulative sentences of every.*
    - *Leaky readings surface in negative environments*
    - *NPI licensing suggests the presence of leaky readings in positive enviroments*
- **Asymmetries in the availability of cumulative readings are differences in c-command.**

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**Account**

- A Neo-Davidsonian event semantics which generates "*leaky*" readings <u>by default</u>.

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- Within this semantics, classical *every* can generate cumulative readings.

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- A Neo-Davidsonian event semantics which generates "*leaky*" readings by default.
- Within this semantics, classical *every* can generate cumulative readings.
- A proposal for strengthening the "*leaky*" reading to the observed readings in positive environments.

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# Event semantics assumptions (Krifka, 1989; Lasersohn, 1998; Kratzer, 2007)

<u>Ontological assumptions</u>

- The domain of events is a plural domain ($\oplus$ as join)
- Meta-language predicates like "be openings" or "be the agent of" are strongly cumulative:

(18)   a.  $x$ is the agent of $e_1$

        b.  $y$ is the agent of $e_2$

        c.  $\Rightarrow x \oplus y$ is the agent of $e_1 \oplus e_2$

$\exists e,$

the cooks AGENT opened

the oysters THEME
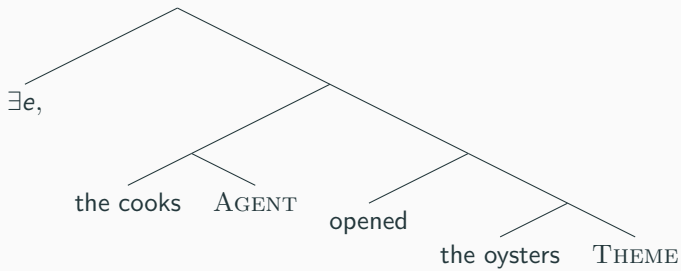
Traditionally:

$[\![\text{AGENT}]\!](x_e)(p_{vt}) = \lambda e_v.\ p(e) \wedge x \text{ is the agent of } e$

$e$

> agents = the cooks
>
> $p(e)$

With leaks:

$[\![\text{AGENT}]\!](x_e)(p_{vt}) = \lambda e_v.\ \exists e' \prec e,\ p(e') \wedge x$ is the agent of $e'$
    $\approx x$ is the agent of a p-sub-event of e



$e$

$e'$
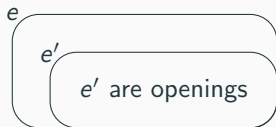
agents $=$ the cooks

$p(e')$
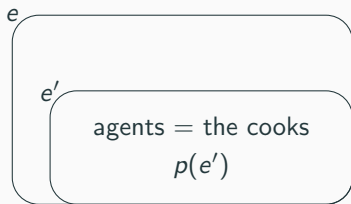
Same thing for all thematic role heads:

(19) a. $\llbracket \textsc{Theme} \rrbracket (x_e)(\lambda p_{vt}) =$
$\lambda e_v. \ \exists e' \prec e, \ p(e') \wedge x$ is the theme of $e'$
$\approx x$ is the theme of a p-sub-event of e

b. $\llbracket \textsc{Goal} \rrbracket (x_e)(p_{vt}) = \lambda e_v. \ \exists e' \prec e, \ p(e') \wedge x$ is the goal of $e'$
$\approx x$ is the goal of a p-sub-event of e

The denotation of the verbs is also assumed to be "*leaky*":

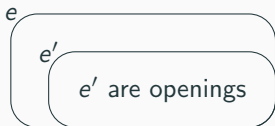$[\![\text{open}]\!] = \lambda e.\ \exists e' \prec e,\ e'$ are events of opening[2]



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[2]Similar to Champollion (2014) replacing sets with event pluralities

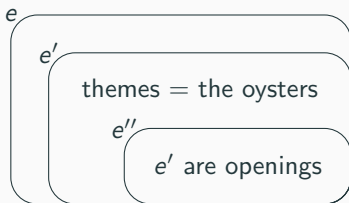[. ∃e, [. [. the cooks AGENT ] [. opened [. the oysters THEME ] ] ] ]

(20)   a.   ⟦open⟧ = λe. ∃e′ ≺ e, e are events of opening

$$e$$
$$e'$$
$$e' \text{ are openings}$$

(20) a. $[\![\text{open}]\!] = \lambda e.\ \exists e' \prec e,\ e$ are events of opening

```
e
  e'
    e' are openings
```

   b. $[\![\text{open [the 4 oysters THEME ]}]\!]$
   $= \lambda e.\ \exists e' \prec e,\ \iota\text{oysters are the themes of e'} \land \exists e'' \prec e',\ e''$ is an opening

```
e
  e'
    themes = the oysters
      e''
        e' are openings
```

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(21) a. [[the 3 cooks AGENT ] open [the 4 oysters THEME ]]
$= \lambda e.\ \exists e' \prec e,\ \iota$cooks are the agents of e' $\wedge\ \exists e'' \prec e'$
$\iota$oysters are the themes of e" $\wedge\ \exists e''' \prec e'',$ e"' is an opening



---

(21) a.



    b. **Predicted TCs:** Some cooks opened some oysters.[3]

    c. **Observed TCs:**
       Every cook opened an oyster.
       Every oyster was opened by a cook

---

[3]This only follows if an assumption of *Event Abstractness* is made: for every individuals $x$ and $y$, there is an event with $x$ as an agent and $y$ as a theme. The event can be as abstract as a state of "*co-existing*". This imposes conditions on the ontology of event which one may find undesirable. In future research, I hope to get rid of this.

Incorrect for positive sentences, completely adequate for negative sentences:

(22)  a.   The cooks didn't open the oysters.

b.   **Predicted TCs:** no cook opened any oysters.

c.   **Attested TCs:** not [some cooks opened some oysters]

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(23)    a.    $\llbracket$every NP$\rrbracket = \lambda p_{et}.\ \forall x, x \in \llbracket NP \rrbracket \rightarrow p(x)$

(23)  a.  $[\![\text{every NP}]\!] = \lambda p_{et}.\ \forall x, x \in [\![\text{NP}]\!] \to p(x)$

b.



The cooks   AGENT   every oyster   *evt*

$\lambda x.$   $\alpha$

opened   $x$   THEME

QR
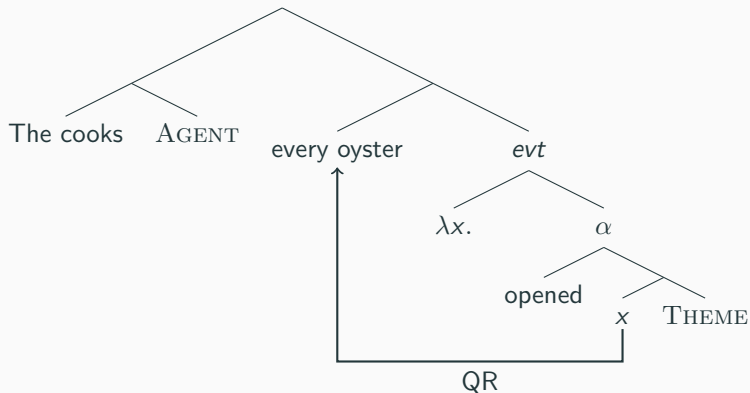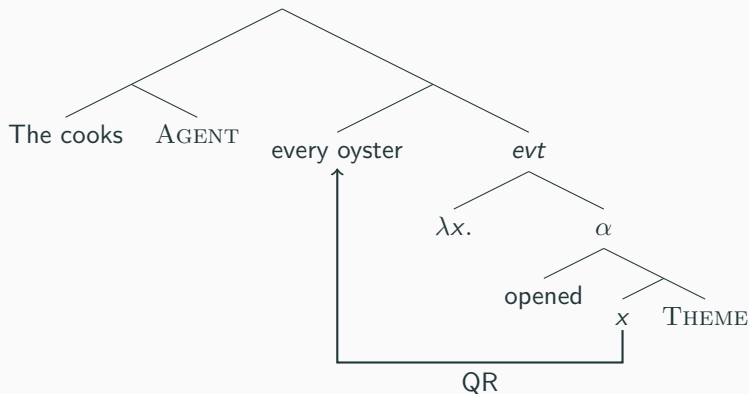
(23) a. $\llbracket$every NP$\rrbracket = \lambda p_{et}.\ \forall x, x \in \llbracket$NP$\rrbracket \rightarrow p(x)$

b.



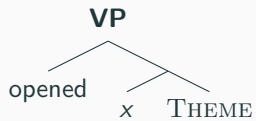c.
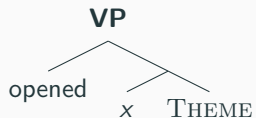$\llbracket\uparrow$every NP$\rrbracket = \lambda p_{evt}.\lambda e_v.\ \forall x, x \in \llbracket$NP$\rrbracket \rightarrow p(x)(e)$

More generally, $\uparrow$ maps types $(ab)b$ to $(acb)cb$

(24)

$$\text{VP}$$

opened $\quad x \quad$ Theme

(24)



$[\![$opened $[x\ \textsc{Theme}\ ]\!]] = \lambda e.\ \exists e' \prec e,\ \textsc{Theme}(e') = x \wedge \exists e'' \prec e',\ \text{opened}(e'')$

(25)
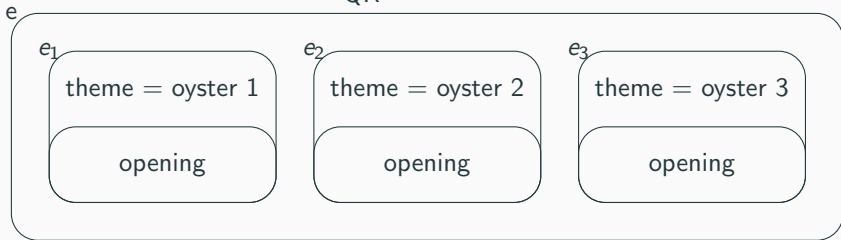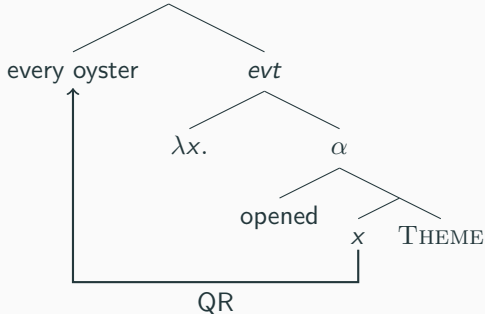


$[\![$every oyster $\lambda x.$ opened $[x \text{ THEME}]]\!]$
$= \lambda e. \ \forall x \in \text{oyster}, \ \exists e' \prec e, \ \text{THEME}(e') = x \land \exists e'' \prec e', \text{opened}(e'')$

(26)  a.
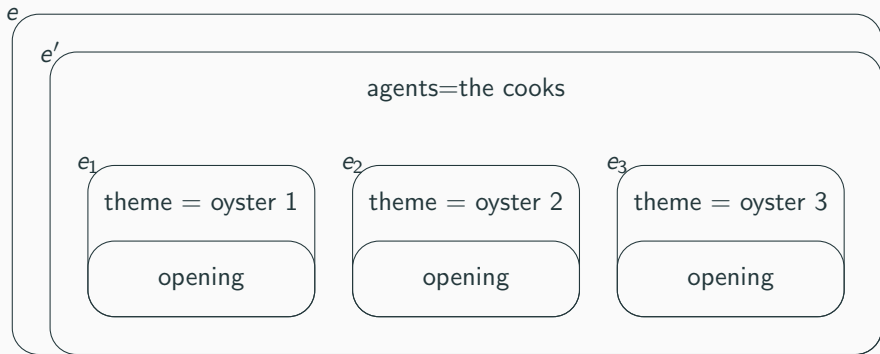


b. **Predicted TCs:**
   *Every oyster was opened by a cook.*

We predict the leak TCs! But note that while leaky, these TCs are stronger than the TCs of ordinary cumulative sentences.

(27) a. **Predicted "leaky" truth-condtions for cumulative "every" sentence:**
    *Every oyster was opened by a cook.*

 b. **Predicted "leaky" truth-condtions for ordinary cumulative sentence:**
    *Some cooks opened some oysters.*

Under negation, the two sentences do come apart, as observed earlier.

(28)    a.   The cooks didn't open every oyster.
              ⟿ *not [every oyster was opened by a cook]*

       b.   The cooks didn't open the oysters.
              ⟿ *not [some cooks opened some oysters]*

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(29) a. **"Leaky" denotation:**
$[\![\text{opened}]\!]$ $= \lambda e.\ \exists e' \prec e,\ e'$ are events of opening
$\approx \lambda e.\ e$ *contains openings*

b. **Traditional Neo-Davidsonian denotation:**
$[\![\text{opened}]\!]$ $= \lambda e.\ e$ are events of opening
$\approx \lambda e.\ e$ **only** *contains openings*

(29)  a.  **"Leaky" denotation:**
         $[\![\text{opened}]\!]$ $= \lambda e.\ \exists e' \prec e,\ e'$ are events of opening
         $\approx \lambda e.\ e$ *contains openings*

      b.  **Traditional Neo-Davidsonian denotation:**
         $[\![\text{opened}]\!]$ $= \lambda e.\ e$ are events of opening
         $\approx \lambda e.\ e$ **only** *contains openings*

(30)  ＿ What does the event $e$ contain?
       ＿ $e$ contains openings.

Formally, we would like to use EXH (Fox, 2007). EXH is also traditionally assumed to distinguish between positive and negative environments

(31)   $\textsc{Exh}\,(\exists e' \prec e, \mathsf{open}(e'), \{e_0 \prec e \mid e_0\})$

Formally, we would like to use EXH (Fox, 2007). EXH is also traditionally assumed to distinguish between positive and negative environments

(31)  $\text{EXH} \left( \exists e' \prec e, \text{open}(e'), \{ e_0 \prec e \mid e_0 \} \right)$

But EXH does not capture association with indefinites, independently of our puzzle.

(32)  – What does the event $e$ contain?
       – $e$ contains openings.

Formally, we would like to use EXH (Fox, 2007). EXH is also traditionally assumed to distinguish between positive and negative environments

(31)   $\text{EXH}\left(\exists e' \prec e, \text{open}(e'), \{e_0 \prec e \mid e_0\}\right)$

But EXH does not capture association with indefinites, independently of our puzzle.

(32)   _ What does the event $e$ contain?
       _ $e$ contains openings.

In the appendix of the hand-out, I propose a fix, which is only valid for our case.

The effect of Exh is to remove leaks:

$[\![\text{Exh open}]\!] = \lambda e.\ e$ are events of opening

The effect of Exh is to remove leaks:

(33)  ⟦Exh [Theme the oysters] Exh opened ⟧

   =

   $\text{Exh}\,(\lambda e.\ \exists e' \prec e, e'$ are events of opening $\wedge\ \text{Theme}(e') = \iota\text{oysters})$

   $\approx \text{Exh}\,(\lambda e.\ e$ contains an opening of the oysters$)$

   $\approx \lambda e.\ e$ **only** contains an opening of the oysters

   $= \lambda e.\ e$ are events of opening $\wedge\ \text{Theme}(e) = \iota\text{oysters}$
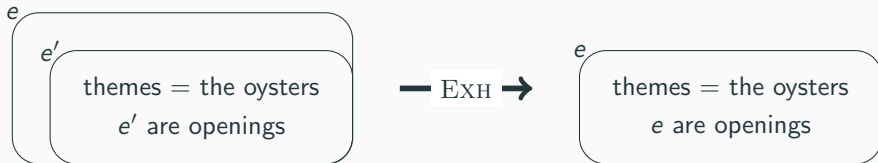
The effect of Exh is to remove leaks:
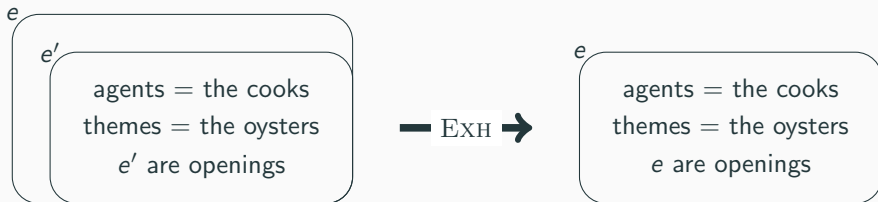
To plug the leaks, we need one Exh per leaky element (thematic role head + verb)
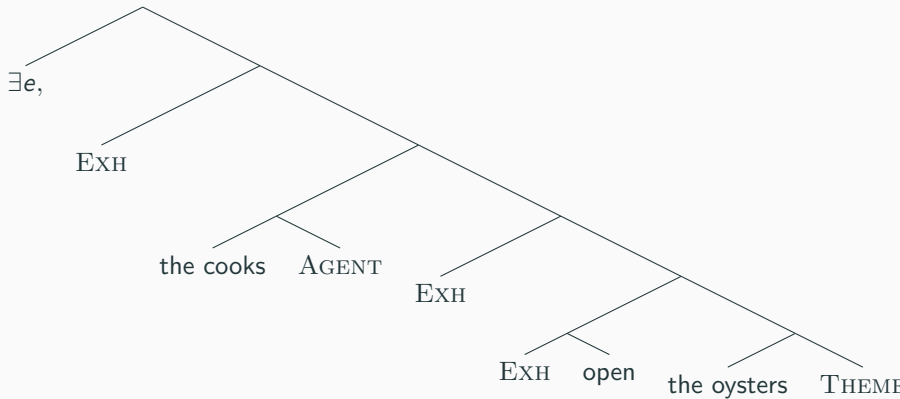
The same EXH operator can be used to plug the leaks in the case of cumulative reading of *every*

$[\![$EXH every oyster $\lambda x.$ EXH open $[x$ THEME $]]\!]$
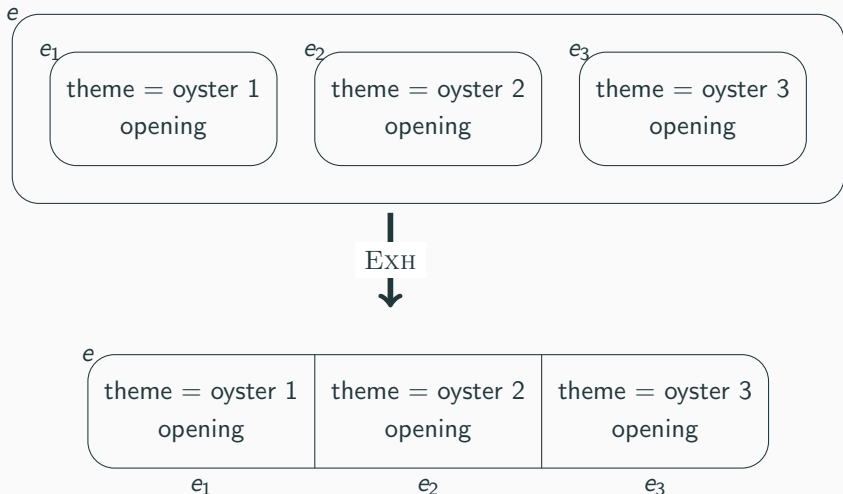
When AGENT combines, the resulting denotation implies that all cooks have contributed:
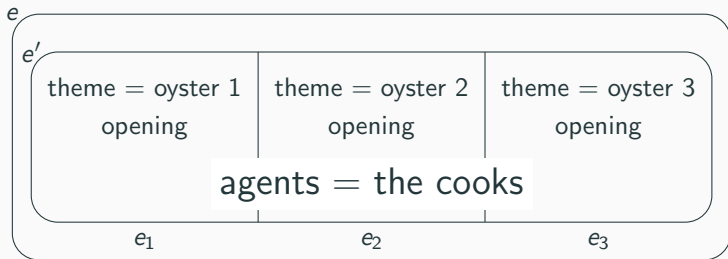
## Summary

**Summary**

- *"Leaky"* readings are desirable ; they can be evidenced in negative sentences.

- They provide a path to simple compositional solution to the puzzle of cumulative reading of *every*

- The *"leaky"* semantics needs to be strengthened in positive environments ; we use exhaustification against a set of alternatives.

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Recall that the cumulative reading is not available if *every* occupies the subject position:

(34)  a.  Every cook opened the four oysters.

      b.  The cooks opened every oyster.

This is predicted by the account. When the definite plural falls within the distributive scope of *every*, a doubly-distributive reading is generated.

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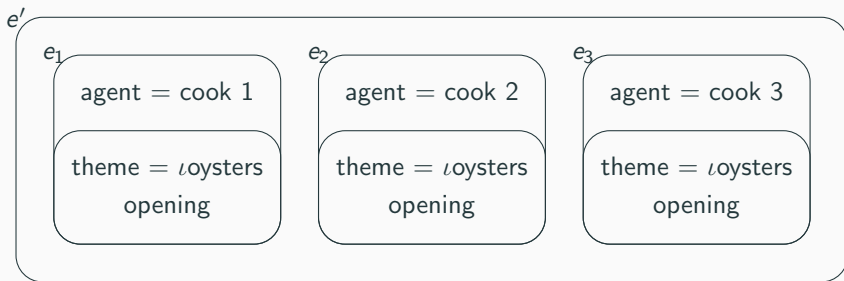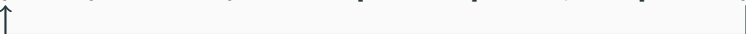
      b.

If the cumulative reading of *every* just a matter of c-command, can we create the missing reading by scoping?

the oysters $\lambda y$. EXH every cook $\lambda x$. [AGENT $x$] EXH opened [THEME y]

If the cumulative reading of *every* just a matter of c-command, can we create the missing reading by scoping?

the oysters $\lambda y$. Exh every cook $\lambda x$. [Agent $x$] Exh opened [Theme $y$]

⤳ *type e element: vacuous*

To generate the missing reading, we need to bring the leak along with "*the oysters*".

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"*the oysters*".

But this results in type mismatches.
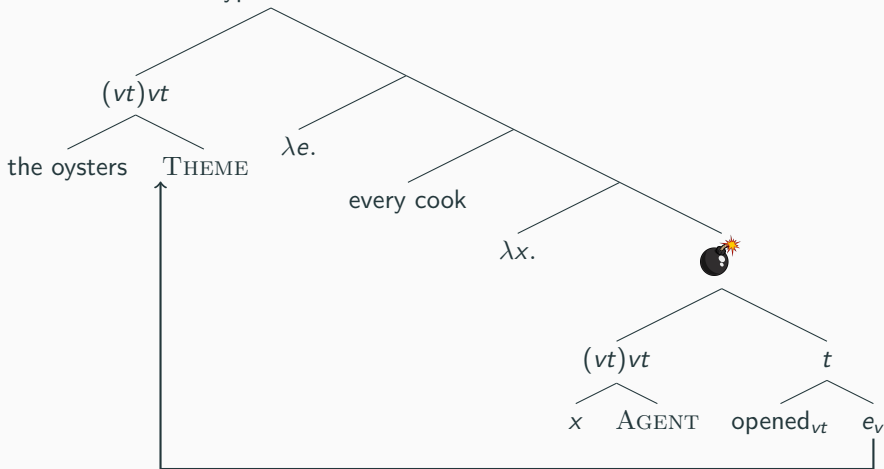
**Prediction**

Overt movement will not generate the missing cumulative reading for *every* either.

## English wh-movement

(36)   a.   Which 25 oysters did every cook open?

      b.   $\not\Leftrightarrow$ *Which 25 oysters did the cooks open?*

      c.               $S_{every}$   V   $O_{plural}$    (#cumulative)

             $O_{plural,\ +wh}$   $S_{every}$   V   $t$        (#cumulative)

## English wh-movement

Even though *wh*-movement <u>can</u> give rise to new ordinary cumulative reading Sauerland (2001).

(37)　The reviewers said a student of theirs had written the ten papers. (#cumulative)

(38)　a.　Which 10 papers did the reviewers say a student of theirs had written? (✓ cumulative)

　　b.　**TCs:**
　　　　Which 10 papers $X$ are such that:
　　　　for every one of them, one of the reviewer said that a student of theirs has written it
　　　　for every reviewer, there is some paper that the reviewer said a student of them has written

Russian scrambling has scopal effects (Ionin, 2001; Stoops and Ionin, 2013; Antonyuk, 2006)[4] I used the quantifier *kazhdyj* (*every, each*)

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[4] Judgments in the cited literature vary as to whether Russian scrambling *necessarily* gives rise to scopal effects (i.e. whether scrambled sentences are scopally ambiguous).
[5] My judgments were confirmed by 3 speakers.

Russian non-scrambled sentences behave just like their English counterparts

(39)      $S_{every}$   V   $O_{plural}$   (#cumulative)
          $S_{plural}$   V   $O_{every}$   (✓cumulative)

(40) **Background knowledge:** *opening an oyster is a one-person-job. An opened oyster may not be closed again*

    a.   *Kazhdyj povar            otrkyl       ustricy*
        every    cook.NOM.M.SG open.**Perf** oyster.PL.ACC

        "*Every cook opened the oysters*" (#background)

    b.   *Povara          otrkyli    kazhduju ustricu*
        cook.NOM.PL open.**Perf** every      oyster.SG.F.ACC

        "*The cooks opened every oyster*" (✓ background)

Russian non-scrambled sentences behave just like their English counterparts

(41)　　　　　　$S_{every}$　　V　$O_{plural}$　　(#cumulative)

　　　$O_{plural}$　　$S_{every}$　　V　$t$　　　　(#cumulative)

　　　　　　　　$S_{plural}$　　V　$O_{every}$　　(✓cumulative)

　　　$O_{every}$　　$S_{plural}$　　V　$t$　　　　(✓cumulative)
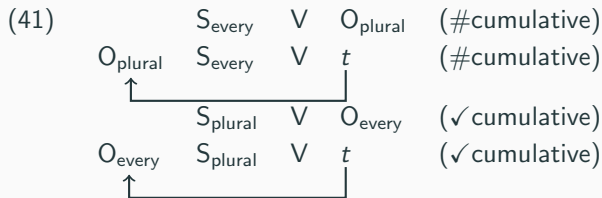
(42) **Scrambled sentences**[6] no new reading is generated by scrambling the arguments.

 a. *Ustricy         kazhdyj  povar            otrkyl*
    oyster.Pl.Acc  every    cook.Nom.M.Sg  open.**Perf**

    "*Every cook opened the oysters*" (#background)

 b. *Kazhduju  ustricu           povara         otrkyli*
    every     oyster.Sg.F.Acc  cook.Nom.Pl  open.**Perf**

    "*The cooks opened every oyster*" (✓ background)

---

[6]One speaker preferred OVS word order for scrambled sentences. The judgments they gave were the same as the judgment of the two other speakers on the corresponding OSV sentences.

## English passives

(43)          $S_{every}$    V   $O_{plural}$   (#cumulative)

        $O_{plural}$   by $S_{every}$   V   $t$      (?cumulative)

## English passives

(43)  $\quad$ S$_{every}$  $\quad$ V  O$_{plural}$  (#cumulative)
$\qquad$ O$_{plural}$  by S$_{every}$  V  $t$  $\qquad$ (?cumulative)

There are conflicting reports in the literature. Three main data points are reported on this from the literature

(44)  *every* bears AGENT role

a.  Three mistakes were caught by every copy-editor.  (# cumulative, Kratzer (2000))

b.  The ten oysters were opened by every cook.  (#, collected K.C.)

c.  *Gone with the Wind* was written by every screenwriter in Hollywood  (✓, Bayer (2013))

Bayer's examples involves a mereologically complex object instead of a plural. Could that be the source of the discrepancies?

### Improved c-command generalization

A cumulative reading between *every* and plural DPs is only licensed if *every* takes scope below the thematic role head that hosts the plural DP. The DP's scope is irrelevant.

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**Points of comparison**

- whether the account predicts the improved c-command generalization

(45) Which 25 fish did every bear eat?

- whether the account predicts licensing of NPIs in the restrictor of *every*

(46) The three inspectors interrogated every person that had any connection to the suspect.

- whether the account makes a distinction between the negation of ordinary cumulative readings and cumulative readings of *every*

(47) a. The cooks didn't open every oyster.
     b. The cooks didn't open the oysters.

**Points of comparison**

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|  | Licensing conditions | NPI licensed | difference cumulative sentences |
|---|---|---|---|
| Haslinger and Schmitt (2018) | ? | X | X |
| Champollion (2016) | ✓ | X | X |

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## Summary

- "*Leaky*" readings are attested and need to be accounted for.
- With a "*leaky*" semantics, a simple denotation for *every* in cumulative sentences is possible, which accounts for the main puzzle in cumulative sentences of *every*.
- I proposed a way to strengthen leaky readings to non-leaky readings. But some clarification of this mechanisms is missing: where it applies, what some restrictions on its availability are, etc.

Antonyuk, S. (2006). The scope of quantifier phrases in Russian: A QR analysis. *Linguistics in the Big Apple*.

Bayer, S. L. (2013). *Confessions of a Lapsed Neo-Davidsonian: Events and Arguments in Compositional Semantics*. Routledge.

Champollion, L. (2010). Cumulative readings of every do not provide evidence for events and thematic roles. In *Logic, Language and Meaning*, pp. 213–222. Springer.

Champollion, L. (2014). Integrating Montague semantics and event semantics.

Champollion, L. (2016). Overt distributivity in algebraic event semantics. *Semantics and Pragmatics 9*, 1–65.

Flor, E. (2017). *The Italian Determiner Ogni and Its Cumulative Readings*. Ph. D. thesis.

Fox, D. (2007). Free choice and the theory of scalar implicatures. In *Presupposition and Implicature in Compositional Semantics*, pp. 71–120. Springer.

Haslinger, N. and V. Schmitt (2018). Scope-related cumulativity asymmetries and cumulative composition. In *SALT 28*.

Ionin, T. (2001). The one girl who was kissed by every boy: Scope, scrambling and discourse function in Russian. *Proceedings of ConSole X*, 65–80.

Kratzer, A. (2000). Schein's argument. In *The Event Argument*.

Kratzer, A. (2007). On the plurality of verbs. *Event structures in linguistic form and interpretation 269*, 300.

Krifka, M. (1989). Nominal reference, temporal constitution and quantification in event semantics. *Semantics and contextual expression 75*, 115–115.

Lasersohn, P. (1998). Events in the semantics of collectivizing adverbials. In *Events and Grammar*, pp. 273–292. Springer.

Sauerland, U. (2001). Intermediate cumulation. *Snippets 4*, 10–11.

Schein, B. (1993). *Plurals and Events*, Volume 23. Mit Press.

Stoops, A. and T. Ionin (2013). Quantifier scope and scrambling in Russian: An experimental study. In *Proceedings of the Annual Workshop on Formal Approaches to Slavic Linguistics: The Bloomington Meeting*.