Topics in the syntax of ellipsis

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Some preliminaries

- You can find the course page here:
  `https://patrickdelliott.com`
  `/egg2018/ellipsisSyntax.html`

- Slides for the first class:
  `https://keybase.pub`
  `/patrl/egg2018/ellipsisSyntax/1-slides.pdf`

- We'll dynamically-update the course page with slides and readings.

- Readings are for AFTER the end of the summer school!

- Email us with with any questions @
  `patrick.d.elliott@gmail.com` and
  `andrew.murphy@uni-leipzig.de`.

Class 1: *guess who*

- Today:
  - Overview of *sluicing*.
  - Problems for strict syntactic identity.
  - Semantic identity
  - Islands and island evasion
- Tomorrow:
  - Problems for semantic identity
  - Form-identity generalisations
  - The remnant condition

- In *elliptical constructions*, linguistic material is left unpronounced, but is nevertheless understood.

- Ellipsis is therefore a classical example of a *form-meaning mismatch*.

- Some canonical examples of ellipsis (some of which we'll be covering in this class).

  (1) *Sluicing*
      Someone stayed out until 7am,
      but I have no idea who stayed out until 7 am.

  (2) *VP ellipsis*
      Elin stayed out until 7am, and Fraser did stay out until 7 am too.

  (3) *Fragment answers*
      Q: Who stayed out until 7am?
      A: Elin stayed out until 7am

- Some other phenomena which have been (controversially) analysed as ellipsis:

  (4) *Comparative deletion*
      Fraser stayed out later than Elin stayed out.

  (5) *Pronouns*
      A woman walked in. [She$_D$ woman] sat down.

  (6) *Conjunction reduction*
      Patrick talked to Elin and Patrick talked to Fraser.

- Ellipsis should be distinguished from other phenomena where linguistic material is missing but nevertheless understood, such as, e.g. implicature.

  (7) Fraser danced with some of the people at the party.
  ⤳ *Fraser danced with some of the people at the party and he didn't dance with all of the people at the party*

- Here, what is *understood* deviates from what we would expect based on the compositional semantics.

- There is little to suggest that there was ever a stage in the derivation at which this linguistic material was present, however.

- Elliptical phenomena display a distinct signature: the syntax betrays that the linguistic material is *missing*, and the missing material must be *recoverable* based on the context of utterance.
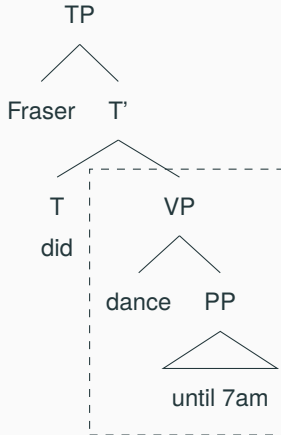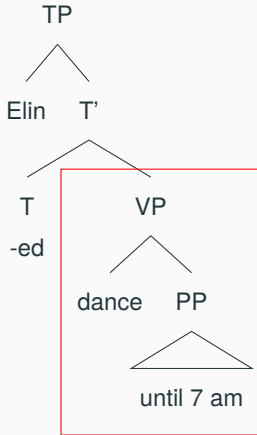
- A(ntecedent)

- E(llipsis) site

Three primary questions

- The *structure* question
- The *identity* question
- The *licensing* question

See Merchant (2018).

(8) In elliptical constructions, is there syntactic structure that is
unpronounced?

- This question is generally answered by looking at *distributional* facts.
  We'll dig into this for sluicing in the next section of the class.

The identity question

(9) What is the relationship between the understood material and its antecedent?

- Answers to this question generally involve positing an *identity relation* between the antecedent and the ellipsis site.

- Research surrounding the identity question focuses on the precise formulation of the identity relation, and the level(s) at which it should hold.

- A particularly acute question is whether the identity relation is *semantic* or *syntactic* in nature.

(10) What heads or structures allow for *ellipsis*, and what are the locality
     conditions on the relation between these structures and ellipsis?

   • I won't talk about this much as regards *sluicing*, but it will be relevant in
     the final class on NP ellipsis.

- Since Ross (1969) *sluicing*, along with *VP ellipsis*, has been the subject of intense research.

  (11) guess who Δ!

  (12) Someone stayed out until 7am, but I'm not sure who Δ.

- Matrix sluicing:

  (13) Q: Elin danced with someone.
        A: Who Δ?

- Why should should we analyse sluicing as *ellipsis*, rather than, e.g., some kind of contextual anaphora.

  (14) Someone^x stayed out until 7am
       …but I'm not sure [$_{CP}$ who Δ].
       …but I'm not sure [$_{DP}$ who$_x$].

    - The first type of analysis is more in-line with a theory of syntax that posits null elements, such as minimalism.

    - The second type of analysis is more in-line with a WYSIWYG approach to syntax (see e.g., Culicover & Jackendoff 2005).

- Even if sluicing distributionally involves an embedded CP, the presence of silent syntactic structure doesn't necessarily follow.

  (15) [Someone stayed out until 7am] , but I'm not sure [$_{CP}$ who *pro*]

- First, let's convince ourselves that sluicing must, at least some of the time, involve *ellipsis*.

- Let's take the transitive verb $know_V$ as an example. $know_V$ is polysemous – the reading it receives depends on the category of its complement.

- If the complement of $know_V$ is an interrogative CP, then x *knows* CP_Q expresses (something like) the following:

    - x knows the true answer to Q (where $Q = \llbracket CP_Q \rrbracket$)

(16) Patrick knows who Elin danced with.

- example (16) is true just in case Patrick knows the true answer to "who did Elin Dance with"? If Elin in fact danced with Fraser, Patrick must know that Elin danced with Fraser in order for (16) to be true.

- If the complement of *know*$_V$ is a DP however, then x *knows DP* expresses (something like) the following:
    - x is familiar with y (where $y = [\![DP]\!]$)

(17) Patrick knows Fraser.

- example (17) is true just in case Patrick *is familiar with* Fraser. Crucially, it doesn't have a 'concealed proposition' reading.

- Going back to a sluicing example, consider the interpretation:

(18) Elin danced with someone, and [$_{EC}$ PATRICK knows who Δ].

- The (only) interpretation of EC is the following:
  - ⟦EC⟧ is true iff Patrick knows the true answer to
    ⟦who did Elin dance with⟧?
- it doesn't have the following interpretation:
  - ⟦EC⟧ is true iff Patrick is familiar with the person that Elin danced with.

(19) [$_{EC}$ Patrick knows [$_{CP-Q}$ who Δ]] ✓

(20) [$_{EC}$ Patrick knows [$_{DP}$ who]] ✗

- We can make this argument in an even simpler way. Consider the interrogative embedding verbs *wonder*$_V$ and *investigate*$_V$.

- *interrogate*$_V$ does, and *wonder*$_V$ doesn't license an animate DP argument.

  (21) Raymond investigated/wondered [$_{CP}$ who stole the jewel].

  (22) Raymond investigated/*wondered [$_{DP}$ the suspected thief].

- Sluicing is licensed however under both *investigate*$_V$ and *wonder*$_V$.

  (23) Someone stole the jewel.
       Raymond investigated/wondered [$_{CP}$ who Δ].

- If sluicing involved a DP, then this would be unexpected.
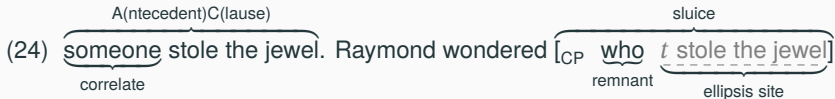
(1)   ...[*nach* DP/*CP]...

    a.   die Frage   nach der   Identität des   Täters
        the question about the.DAT identity the.GEN perpetrator
        "the question about the identity of the perpetrator"

    b. *die Frage   nach wer der Täter   ist
        the question about who the perpetrator is

    c. *die Frage   nach wer
        the question about who.NOM
        "the question about who"

(2)   ...[*danach* *DP/CP]...

    a. *die Frage   danach   der   Identität des   Täters
       the question there-about the.ᴅᴀᴛ identity the.ɢᴇɴ perpetrator
       "the question about the identity of the perpetrator"

    b. die Frage   danach   wer   der Täter   ist
       the question there-about who.ɴᴏᴍ the perpetrator is
       "the question about who the perpetrator is"

    c. die Frage   danach   wer
       the question there-about who.ɴᴏᴍ
       "the question about who"

(24) someone stole the jewel. Raymond wondered [$_{CP}$ who *t* stole the jewel]

A(ntecedent)C(lause)

correlate

sluice

remnant

ellipsis site

- The *ellipsis site* is recovered under identity with the *Antecedent Clause* (AC).

- The *correlate* (sometimes referred to as the *inner antecedent*) *corresponds* to the *remnant wh*-expression.

  - We'll dig into the relation between the correlate and the remnant tomorrow.

- The *wh*-expression together with the ellipsis site is the Elliptical Clause (EC), otherwise known as the *sluice*.

(25) Elin danced with someone^x

Merger-type sluice:

…but I don't know <u>who</u> she danced with t.

Sprouting:

…but I don't know <u>where</u> she danced with them$_x$.

(26) *Contrastive sluice*:

Elin danced with Fraser,

but I don't know who ELSE she danced with t.

(27) *Multiple sluicing*:

A teacher asked for something strong,

but I don't remember WHICH teacher for WHAT exactly t asked t

Silent Structure

The identity question

- What is the *identity relation* that must hold between the ellipsis site and the antecedent for sluicing to be possible?

- If we provisionally suppose that sluicing involves silent syntactic structure, then there are three main answers:

  - *syntactic identity*
  - *semantic identity*
  - *hybrid syntactic/semantic identity*

- We can take as a null hypothesis the following identity relation, since it's the most restrictive.

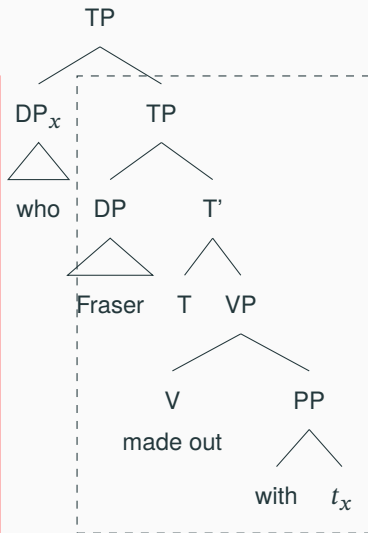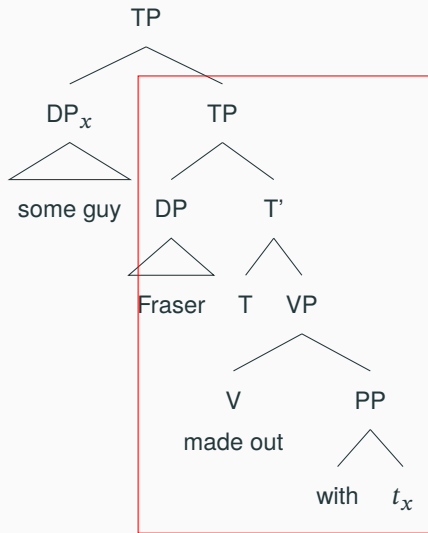 (28) *Strict syntactic isomorphims*
       The sluice and its antecedent are *identical* iff the sluice and its antecedent are isomorphic syntactic structures involving identical phrase markers.

- Strict syntactic isomorphism *already* has issues with even the most basic cases:

  (29) Fraser made out with some guy,
       but I don't remember who$_x$ ~~Fraser made out with t_x~~.

- If we adopt a *trace-theoretic* approach to movement, we can resolve this apparent mismatch by QR-ing *some guy* out of the antecedent clause, leaving behind a trace.

- If we adopt a *copy-theoretic* approach to movement however (more in vogue in current minimalism), we still have a problem.

(30) AC: ⟨some guy⟩ Fraser made out with ⟨some guy⟩
      EC: ⟨who⟩ Fraser made out with ⟨who⟩

Strict syntactic isomorphism v

- Here's a sketch of an analysis consistent with strict syntactic isomorphism and the copy theory of movement.

- wh-expressions and indefinites are in fact identical in the narrow syntax. Let's call them *indeterminates*.

    - Indeterminates that move to the spec of a quantification-related head in the left periphery - let's call it A - are spelled out as indefinites at PF.
    - Indeterminates that move to the spec of the interrogative complementiser are spelled out as *wh*-expressions at PF.

- According to a standard semantics for *wh*-question, *wh*-expressions are contribute *existential quantification* (Karttunen 1977), so this poses no problems at LF.

- Support for this kind of analysis comes from languages such as
  Japanese, in which we observe indeterminates in the morphosyntax.

(3)   [DP dare-ka   ] -ga   hashitta.
        [DP who-KA] -NOM ran.
        'Someone ran'

(4)   [CP dare-ga   hashitta-ka] oshiete.
        [CP who-NOM ran-KA   ] tell.
        'tell me who ran'

- I don't want to endorse this analysis, the point here is that strict syntactic isomorphism forces us to make non-trivial decisions about the narrow syntax.

- In that sense, it is mor restrictive than other identity conditions, but the risk is that the analyses end up looking somewhat *ad hoc*.

Strict syntactic isomorphism viii

- In fact, I think this kind of reasoning is bound to run into an insuperable obstacle sooner or later.

- Consider, e.g., the following contrast sluicing example:

  (31) I know ⟨which PROFESSOR⟩ Elin danced with ⟨which PROFESSOR⟩.
        I wonder ⟨which STUDENT⟩ Elin danced with ⟨which STUDENT⟩

- Under a copy-theoretic approach to ellipsis, it's extremely difficult to explain why this kind of lexical mismatch is tolerated.

- A trace-theoretic approach to movement seems to fare better here, but we have independent reasons to want to maintain a copy-theoretic analysis (binding reconstruction, theoretical parsimony, etc.).

- There are even more straightforward challenges for strict syntactic isomorphism (Merchant 2001 is the locus classicus for this).

(32) I'll fix the car, if you tell me…

…how to fix the car t. ✓ …how I'll fix the car t. ✗

(33) Nathan has a new boyfriend, but I don't know…

… who he is t ✓ …who Nathan has t ✗

- There are perhaps involved stories one could tell in order to resolve this apparent mismatch in the syntax, but it's definitely not going to be easy.

- It's not usually framed this way, but the primary argument against strict syntactic isomorphism comes from *islands*.

- A little background first:

  - One of the most important discoveries of generative syntax is that *wh-* and other varities of overt movement are systematically blocked out of certain environments, which we call *islands* (Ross 1967).

    (34) * […XP_i… [$_{island}$ …t_i…] …]

    N.b. that I'm using *movement* here as a placeholder for whatever theory encodes the dependency between *fillers* and *gaps*. Even if your favourite theory of syntax doesn't have *movement*, it still needs a theory of *islands* otherwise it's dead in the water.

Sluicing and *wh*-movement

- There independent evidence that sluicing involves genuine
  wh-movement out of elided syntactic structure, schematised below:

(35) Elin danced with someone, but I'm not sure who$_i$ ~~Elin danced with t_i~~

- For example, sluicing tracks independent restrictions on pied-piping in
  wh-movement:

(36)   a. I don't know whom you found [$_{DP}$ pictures of t DP] on the internet.
       b. ?I don't know of whom you found [$_{DP}$ pictures t PP] on the internet.
       c. *I don't know pictures of whom you found t DP on the internet.

(37)   John found pictures of someone on the internet…

       a. …but I don't know whom ~~you found pictures of t on the internet~~.
       b. ?…but I don't know of whom ~~you found pictures t on the internet~~.
       c. *…but I don't know pictures of whom ~~you found t~~.

- If sluicing involves a *movement + deletion* derivation, then we make a straightforward prediction.

- The following configuration should be ungrammatical:

(38) * [$_{antecedent}$ ⋯ [$_{island}$ ⋯ correlate ⋯] ⋯]
⋯ [$_{sluice}$ ⋯ remnant$_i$ ⋯ ⋯ [$_{island}$ ⋯ t_i ⋯]]

(39) *Wh-island Condition*

No wh-phrase may cross a CP with a [+wh] element in [Spec, CP] or C^0
(Chomsky 1973).

(40) a. When did the boy say t_{when} [that he had hurt himself]?
   b. When did the boy say t_{when} [how he had hurt himself t_{how}]?
   c. When did the boy say [that he had hurt himself t_{when}]?
   d. *When did the boy say [how he had hurt himself t_{how} t_{when}]?

(41) a. ??Whose car were you wondering how to fix $t_{whose\ car}$?
   b. ?*Whose car were you wondering how you should fix $t_{whose\ car}$?

- Not all wh-expressions are affected equally by wh-islands. Movement of a so-called *d-linked* wh-expression, such as *which boy*, is more acceptable (see Pesetsky 1982).

  (42) ??Which boy are you trying to decide whether to kiss $t_{\text{which boy}}$?

(43) *The Complex NP Constraint (CNPC)*

No element contained in a sentence dominated by a noun phrase […]
may be moved out of that noun phrase. (Ross 1967)

- In more contemporary terms: $[_{DP} … [_{CP} …]]$ is an island.

- *Relative Clause*

    (44) You know $[_{DP}$ a man $[_{CP}$ who photographed the pyramids]].

    (45) *What do you know $[_{DP}$ a man $[_{CP}$ who photographed *t*]]?

- *Nominal Complement*

    (46) You believed $[_{DP}$ the claim $[_{CP}$ that we had seen Steely Dan]].

    (47) Which band did you believe $[_{DP} [_{CP}$ the claim that we had seen *t*]]?

- Compare the examples to simple extraction from DPs:

    (48) Which band did you write [$_{DP}$ an article about *t*]?

    (49) ??Which band did you write [$_{DP}$ that article about *t*]?

    (50) *Which band did you read [$_{DP}$ Joe's article about *t*]?

- Extraction from DPs can be allowed, as long as the DP is not definite/specific

The subject condition

(51) *The subject condition*

No element may be moved out of a subject. (Ross 1967,Chomsky 1973)

(52) *DP obj. extraction*

Which actor did Van Gogh paint [$_{DP}$ a close friend of t]?

(53) *DP subj. extraction*

*Which actor did [$_{DP}$ a close friend of t] paint van Gogh?

(54) *CP obj. extraction*

What does Frank believe [$_{CP}$ that he stole t from the library]?

(55) *CP subj. extraction*

*What is [$_{CP}$ that Frank stole t from the library] widely believed?

- The Subject Condition is sometimes subsumed under the Freezing Principle (Ross 1967), which prohibits movement from a moved constituent, on the assumption that subjects undergo obligatory movement from a VP internal position. Under this analysis, subjects are often grouped together with topics as *Derived Position Islands*:

  (56) *Topic Island*

      a. She said that [$_{DP}$ a book about Trotsky], she refused to read *t*.

      b. *Which communist did she say that [a book about *t*], she refused to read.

(57) *The Co-ordinate Structure Constraint (CSC)*
In a coordinate structure, no conjunct may be moved, nor may any element contained in a conjunct be moved out of that conjunct.

(58) *Williams unified rule* (Williams 1977) If a rule applies into a coordinate structure, then it must affect all conjuncts of that structure.

   (59) I eat French fries with ketchup.
      What do you eat [$_{NP}$ French fries [$_{PP}$ with t]]?

   (60) I eat French fries and ketchup.
      *What do you eat [$_{andP}$ French fries and t]?

   (61) I think Mary bought a book and Frank sold a CD.
      *What do you think [$_{andP}$ Mary bought t and Frank sold a CD].

   (62) *What do you think Mary bought a book and Frank sold t?.
      What do you think [$_{andP}$ Mary bought t and Frank sold t]?

- It has been noted that there are some apparently systematic exceptions to the CSC (see Kehler 2002 for a contemporary discussion).

- When the two conjuncts stand in a particular kind of semantic relationship, extraction from one of the conjuncts may be possible:

(63) What did John [$_{andP}$ go to the shops and buy t]?

(64) How much can you [$_{andP}$ drink t and still stay sober]?

(65) *The Left Branch Condition (LBC)*

Extraction of α is banned in the following configuration, where X is any non-null material: [$_{DP}$ α X]

(Ross 1967,Corver 1990)

(66) a. *Whose did you play [$_{DP}$ *t* favorite guitar]?
   b. * Whose friend's did you play [$_{DP}$ *t* favorite guitar]?
   c. * Whose friend did you play [$_{DP}$ *t*'s favorite guitar]?

(67) a. *How did Mary marry [$_{DP}$ a *t* tall man].
   b. *How tall did Mary marry [$_{DP}$ a *t* man].

- A process called pied-piping by Ross (named after the Pied Piper of Hamelin) rescues such sentences:

(68) Whose favorite guitar did you play t?

(69) Whose friend's favorite guitar did you play t?

(70) How tall a man did Mary marry?

The LBC and cross-linguistic variation

- Unlike most of the other island conditions we've looked at, the LBC is subject to substantial cross-linguistic variation.

  (5) Kakuyu   ty kupil   knigu?
      which.acc.fem you bought.masc book.acc.fem
      Which did you buy *t*?
      (Russian)

  (6) Combien   as -tu lu   de livres?
      How many have -you read of books
      How many have you read *t* books?
      (French)

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Adjunct condition

(71) *The Adunct condition*

No element may be moved out of an adjunct.

(72) a. John went home [after he had talked to Sally].
    b. *Who did John go home [after he had talked to *t* who]?

(73) a. John is angry [because Mary bought a computer].
    b. *What is John angry [because Mary bought *t* what]?

(74) a. Friederike listens to music [while she does her homework].
    b. *What does Frierike listen to music [while she does *t* what]?

Locality theory

- Many attempts have been made to come up with a unified theory of locality - although note, on the basis of certain systematic exceptions which seem semantic in nature, such an enterprise seems unlikely to succeed.

    - Subjacency/Strict Cycle (Chomsky 1973): X-movement lands in all and only the landing sites designated for X-movement along the path; overwriting traces/returning to a lower cycle is disallowed.
    - Barriers (Chomsky 1986): By default phrases are opaque to movement relations and must be unlocked by the twin mechanism of intermediate movement to the edge and the phrase being a complement (of a functional or lexical head).
    - Phase Theory (Chomsky 2001): particular heads (usually v and C) are identified as phase heads. The complement of a phase head is spelled-out over the course of the derivation. Movement may only proceed via the phase-edge.
        - Find out more about this in Andy's class next week!

- If sluicing involves *wh*-movement out of silent (isomorphic) syntactic structure, we make a straightforward prediction: sluicing should exhibit sensitivity to island effects.

- In other words, the following configuration should be ungrammatical:

(75) * [$_{antecedent}$ … [$_{island}$ … correlate …] …]
    … [$_{sluice}$ … remnant$_i$ … … [$_{island}$ … t_i …]]

- Infamously, this prediction goes spectacularly wrong.

(76) *Complex NP Constraint (relative clause)*

    a. They want to hire [$_{island}$ someone who speaks a Balkan language],
       but I don't remember which Δ.

    b. *I don't remember
       which (Balkan language) they want to hire [$_{island}$ someone who speaks *t*].

- Prediction:

   which they want to hire [$_{island}$ someone who speaks *t*] ✗

(77) *Left-Branch Condition (attributive adjective case)*

    a. She bought a big car, but I don't know how big Δ.

    b. *I don't know how big she bought [a *t* car].

- Prediction:

   how big ~~she bought a~~ *t* ~~car~~ ✗

(78) *Derived Position Island (subjects, topics)*

    a. [$_{island}$ A biography of one of the Marx brothers] is going to be published this year — guess which Δ!

    b. *Guess which (Marx brother) [$_{island}$ a biography of t] is going to be published this year.

- Prediction:
  which Marx brother [$_{island}$ a biography of t] is going to be published this year

- *Coordinate Structure Constraint:*

(79) a. They persuaded Kennedy and some other Senator to jointly sponsor the legislation, but I can't remember which one.

   b. *…but I can't remember which one they persuaded [Kennedy and *t*] to jointly sponsor the legislation.

- Prediction:

   which one they persuaded [$_{island}$ Kennedy and *t*] to jointly sponsor the legislation ✗

(80) c. Bob ate dinner and saw a movie that night, but he didn't say which movie.

   d. *…but he didn't say which movie he ate dinner and [saw *t* that night].

- Prediction:

   which move he ate dinner and [$_{island}$ saw *t* that night] ✗

(81) a. Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.

   b. * Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which (of the teachers) Ben will be mad [if she talks to t].

- Prediction:

   which he will be mad [$_{island}$ if she talks to t] ✗

(82) a. Ben left the party because one of the guests insulted him, but he wouldn't tell me which.

   b. *…but he wouldn't tell me which (of the guests) Ben left the party [because t insulted him].

- Prediction:

   which he left the party [$_{island}$ because t insulted him] ✗

(83) a. Sandy was trying to work out [$_{island}$ which students would be able to solve a certain problem], but she wouldn't tell us which one Δ.

   b. *…but she wouldn't tell us which one$_i$ she was trying to work out [$_{island}$ which students would be able to solve t_i].

- Prediction:

  which one she was trying to work out [$_{island}$ which students would be able to solve t] ✗

- The hypothesis that sluicing involves *wh*-movement from a syntactically identical structure makes a major prediction: sluicing should be island sensitive. It follows that whenever the correlate is embedded in an island, the sluice must be ungrammatical. This is emphatically not the case, so something's got to give.

- In the literature, many simply took this to be a powerful argument that sluicing does not involve movement at all. This has been a popular approach in the literature. See e.g. Chung, Ladusaw & McCloskey (1995) for an approach which combines a structured ellipsis site with base-generation of the remnant in its surface position.

- There is, however, good evidence from e.g. constraints on pied-piping and, as we will see later, preposition-stranding and case-matching.

- We end up with a tension:
  - On the one hand, we have evidence that sluicing involves *movement* and *silent syntactic structure*.
  - On the other hand, evidence from islands seems to contradict this analysis.
- However, the *prediction* that sluicing repairs island effects relies on a crucial premise – the elided syntactic structure is *syntactically isomorphic* with the structure of the antecedent.

- The idea I'd like to explore here - originally developed by Merchant (2001) – is that sluicing *does* involve movement and deletion, but the elided structure can be *distinct* from the antecedent structure – our identity condition should allow for some syntactic deviation.

- I'll call this approach to islands under ellipsis *island evasion*, following Barros, Elliott & Thoms (2014).

- Here's an example of what I have in mind:

  (84) She bought a big car, but I don't know how big [it$_x$ was t]

- To get this idea off the ground, we're going to need an *identity condition* that allows the syntax of the ellipsis site to deviate from the syntax of the antecedent.

- In order to do this, we're going to need a *semantic* identity condition. In the following slides, I'll outline Merchant's e-GIVENness condition.

(85) *Focus closure*

F-clo(XP) is the result of replacing F(ocus)-marked expressions in XP with *variables*, and existentially closing the result, modulo $\exists$-type-shifting.

(86) *e-GIVENness*

A constituent XP_E counts as *e-GIVEN* iff XP_E has a salient antecedent XP_A, and…

a. XP_A entails F-clo(XP_E).
b. XP_E entails F-clo(XP_A)

(87) [$_\text{antecedent}$ Elin hugged someone],

but I don't know [$_\text{sluice}$ who$_i$ Elin hugged t_i].

- The antecedent has no focused material, so: $\text{F-clo}(\text{XP}_\text{A}) = [\![\text{XP}_\text{A}]\!]$

  $\exists x[\text{hugged}(\text{Elin}, x)]$

- In the elided constituent, the trace of *wh*-movement, gets $\exists$−closed via $\exists$−type-shifting. It doesn't contain any focused material so:

  $\text{F-clo}(\text{XP}_\text{E}) = [\![\text{XP}_\text{E}]\!]$

  $\exists x[\text{hugged}(\text{Elin}, x)]$

  - Trivially, then XP_A entails $\text{F-clo}(\text{XP}_E)$, and vice versa.

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- e-GIVENness isn't just intended as a construction-specific condition imposed on sluicing, but rather as a general identity condition constraining ellipsis.

  (88) Elin -ed [$_{antecedent}$ stay out until 7 am],
         and Fraser did <u>stay out until 7am</u> too.

- The antecedent and the ellipsis site are semantically, identical, so the ellipsis site trivially counts as e-GIVEN.

- Why did we make our semantic identity condition sensitive to focused material?

- This is necessary in order to account for *contrastive sluicing*.

(89) Elin danced with Fraser, but I don't know who ELSE ~~Elin danced with t~~.

- $\text{F-clo}(\text{XP}_E) = \exists x[\text{dancedWith}(\text{Elin}, x)]$
- $\text{F-clo}(\text{XP}_A) = \exists x[\text{dancedWith}(\text{Elin}, x)]$

- Vehicle change under VP ellipsis

(90) Henning -s [$_{\text{antecedent}}$ t_H admire Madison$_1$],

    a. …and she$_1$ said that NATHAN does t_N <u>admire her</u>$_1$ too.

    b. *…and she$_1$ said that NATHAN does admire Madison$_i$ too.

- $\text{F-clo}(\text{XP}_A) = \exists x[\text{admire}(x, \text{Madison})$

- $\text{F-clo}(\text{XP}_E) = \exists x[\text{admire}(x, g_1)]$

- In a context where $g_1 = \text{Madison}$, bi-directional entailment goes through!

- As a proof of concept, let's see how semantic identity, with a minor modification, allows for the island evasion source we suggested for the putative LBC violation.

  (91) Andy has a huge suitcase,
    but Patrick didn't say exactly нow huge [the suitcase that Andy has] is t.

    - $\text{F-clo}(\text{XP}_A) = \exists d[\text{Andy has a huge}_d \text{ suitcase}]$

    - $\text{F-clo}(\text{XP}_E) = \exists d[\iota x[x \text{ a suitcase of Andy's}] \text{ is huge}_d]$

    - XP_E *presupposes* that there is a unique suitcase.

    - As long as we take it for granted that the presupposition of XP_E is satisfied, then $\text{F-clo}(\text{XP}_A)$ entails $\text{F-clo}(\text{XP}_E)$, and vice versa.

- We can ensure that the evasion source counts as identical if we make a minor modification to e-GIVENness.

  (92) *e-GIVENness*
      A constituent XP_E counts as *e-GIVEN* iff XP_E has a salient antecedent XP_A, and…

    a. XP_A *Strawson* entails $\text{F-clo}(XP_E)$.
    b. XP_E entails $\text{F-clo}(XP_A)$

- Informally, α strawson entails β, if where β's presuppositions are satisfied, α entails β.

- Broadly, there are three kinds of evasion source we (arguably) need to consider in order to account for the full range of cases.
  - short sources
  - cleft sources
  - predicational sources

Short sources

(93) They hired [someone who speaks a Balkan language] - guess which!
    a. which he$_x$ speaks! ✓
    b. which they hired someone who speaks! ✗

- We call this a *short source*.

- Merchant (2001) proposes that short sources are employed to evade *propositional islands* that is, islands which correspond to propositional domains (e.g., relative clauses, adjunct clauses, CP-complements to head nouns, and coordinated propositional structures).

- They satisfy ellipsis identity by taking the clausal island, not the larger structure containing it, as an antecedent.

- But Merchant notes these would satisfy his semantic identity condition just like regular sluices if the pronoun is coindexed with the DP that binds the gap position, on what he identifies as an E-type construal.

- It is often the case that ellipsis allows for construals where the targeted antecedent is a small, non-isomorphic subpart of a larger structure, as is required for short source interpretations.

(94) a. John seems to me [$_{antecedent}$ t to be lying about something], but I don't know what he is lying about.
  b. I remember [$_{antecedent}$ PRO meeting him], but I don't remember when I met him.

- This is the species of copular clause which is used in cleft constructions, where the subject is an expletive-like pronoun like *it* and the postcopular XP is the *pivot* of the cleft relative which modifies it and which is is missing in so-called *truncated* clefts.

  (95) They hired someone who speaks a Balkan language
     - guess which it was *t*!

- Cleft sources can be considered to be an additional evasion strategy if we assume with Mikkelsen and others that so-called *truncated clefts* are not necessarily derived by eliding the relative clause that follows the pivot in the non-truncated counterparts, but rather that they can be simple copular constructions in which the pivot is base-generated in its surface position

Evidence for clefts: P-or-Q sluices

- See Barros (2014)

  (96) Either something's on fire, or Sally's baking a cake,
       but I don't know which Δ.

  (97) Either something's on fire, or Sally's baking a cake,
       but I don't know which it is.

- As Barros shows, the cleft-based analysis of disjunction sluices
  receives strong support from the fact that they are only possible in
  languages that allow cleft continuations, such as English, German,
  Spanish and Portuguese.

- in languages like Russian and Polish, on the other hand, both the disjunction sluice and the cleft continuation are ungrammatical.

(7)　　*ili Sally opjat' pechet tort ili chto-to   gorit, no ya ne znayu
　　　　or Sally again bake cake or something burns, but I   not know
　　　　{chto/ kakoy/ kakoe iz   dvuh/ kakoe kotoraja} immeno (eto).
　　　　what which which of.the two   which situation exactly it

- The cleft source analysis is further supported by the fact that in languages with morphological case like German, the sluicing remnant shows up in nominative case, the same case which is assigned to cleft pivots.

(8) Entweder es brennt wo   oder die Susi backt wieder
    Either   it burns (some)where or   the Susi bakes again
    Kuchen, aber ich weiß nicht, welches   von beiden (es ist).
    cake,   but I   know not,   which.nom of.the two   (it is)
    "Either something is on fire or Susi is baking a cake again, but I don't know which."

Cleft sources and P-stranding

- Other arguments in favour of allowing ellipsis sites to contain cleft structures come from Vicente (2008) and others, who posit cleft sources to account for apparent P-stranding violations under sluicing in non-P-stranding languages.

- Potsdam (2007), who shows that Malagasy sluicing is based on a pseudocleft structure, which would require broadly similar departures from isomorphism in satisfying ellipsis identity.

- I'll come back to P-stranding later.

Predicational sources

- The second copular source which we consider here is called the *predicational source*, in which the remnant originates as the pivot of a predicational copular sentence.

- The subject of a predicational source is an E-type pronoun which covaries with an argument in the antecedent, and the postcopular XP is a predicate which is predicated of the subject.

(98) Andy brought a huge suitcase, just wait until you see exactly how huge <u>it was</u>.

- Predicational sources are generally non-isomorphic with their antecedent and so we need to motivate the proposal that this kind of non-isomorphism is tolerated. Fortunately there are independent reasons to believe that predicational sources must be possible under sluicing.

- *Unconditional sluicing* (see Elliott & Murphy 2016)

    (99) John will kiss anyone after the first date, it doesn't matter who
        a …who they are *t* b. #… who John will kiss/kisses *t* after the first date

    (100) John will fight any man, no matter how tall
        a.… how tall he is *t*
        b.#/*… how tall John will fight a t man/fights a *t* man
        c.#… how tall a man John will fight *t*

- *Non-intersective adjectives* (see Barros, Elliott & Thoms 2014)

  (101) #The worker is hard. ✗*non-intersective*/✗*intersective*

  (102) The problem is hard. ✓*intersective*

  (103) The library hired a hard worker. ✓*non-intersective*/✗*intersective*

  (104) How hard a worker did the library hire? ✓*non-intersective*/✗*intersective*

  (105) The library hired a very hard worker. ✓*non-intersective*/✗*intersective*

- We will say that *hard* is non-predicative under its non-intersective reading, since the non-intersective reading disappears when *hard* is used as a predicate.

Predicational sources iv

- non-intersective reading is unavailable when *hard* is used as a predicate. Consequently, if a predicational source underlies adjectival left-branch sluices in English, we make the prediction that a non-intersective reading should be unavailable, tracking the unavailability of a non-intersective reading with an overt predicational continuation

(106) #The library hired a hard worker,
       but I don't know exactly how hard the worker was *t*.
       ✗non-intersective/*✗intersective*

(107) #The library hired a hard worker, but I don't know exactly how hard.
       ✗non-intersective/*✗intersective*

(108) The library hired a hard worker, but I don't know exactly how hard a
       worker the library hired t.
       non-intersective/*✗intersective*

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- The experiment just conducted for English can be replicated even more cleanly with Romance, as in these languages whether or not nouns receive the non-intersective reading depends on whether they appear post- or pre-nominally.

- *vecchio* ('old') in Italian:
    - when it appears post-nominally it receives an intersective reading, ascribing to the friend in question the property of being old.
    - when it appears pre-nominally on the other hand, it receives a non-intersective reading, where, *old* modifies the length of the friendship.

(9)   un amico vecchio.
       a   friend old.
       "an old friend"   *intersective/*non-intersective*

(10)   un vecchio amico.
       an old   friend.
       "an old friend"   **intersective/non-intersective*

(11)   L'amico   è vecchio.
       the.friend is old.
       "the friend is old"   *intersective/*non-intersective*

(12) *[Quanto costosa]$_i$ ha comprato una macchina t_i, Gianni?
[How   expensive] has bought   a   car t, John?
"How expensive a car did John buy?"

(13) *Quanto$_i$ ha comprato una macchina t_i costosa,   Gianni?
How   has bought   a   car t expensive, John?
"How expensive a car did John buy?"

(14) Quanto é costosa   la macchina?
How   is expensive the car?
"How expensive is the car?"

(15) Ho   incontrato un amico vecchissimo di Gianni ma non so   quanto.
Have met   a friend old.very   of John   but not know how.
"I met a very old friend of John's, but I don't know how old."
intersective/*non-intersective

(16) *Ho incontrato un vecchissimo amico di Gianni, ma non so   quanto.
Have met   a old.very   friend of John, but not know how.
"I met a very old friend of John's, but I don't know how old."
*intersective/*non-intersective

(17) Ho   incontrato un amico vecchissimo di Gianni ma non so   quanto è
Have met   a friend old.very   of John   but not know how   is
vecchio l'amico.
old   the.friend.
"I met a very old friend of John's, but I don't know how old the friend is."

intersective/*non-intersective

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Multiple sluicing and repair

- Multiple sluicing gives us another way to control for evasion sources.

(109)   Someone was talking about something, but I don't know who about what.

- Cleft sources are incompatible with multiple sluicing because an underlying shallow cleft (a copular clause without the cleft relative) only makes available one argument which can be a *wh*-phrase and thus become a sluicing remnant, namely the postverbal argument.

(110)   … who it was *t*

- Predicational sources are similarly inappropriate, since they only make available one argument except on an equative reading, which ought to be easily teased apart from other target readings.

Multiple sluicing and short sources

- As for short sources, these can be controlled for by careful selection of our correlates: if one is inside the island and one outside of it, we should remove the short source analysis for the sluice, since the short source wouldn't provide an extraction site for the island-external correlate.

(19)   [[correlate 1] ... [island ... [correlate 2] ...]]   antecedent
       *[wh_1 wh_2 ... t_1 ... [island ... t_2 ...]]   sluice

- apparent repair should resurface if *both* correlates are in the island, since the short source could provide both remnants without ever requiring island extraction

(20)   [... [island   ... [correlate 1] ... [correlate 2] ...]   antecedent
           [wh_1 wh_2 ... t_1 ... t_2 ...]   sluice

Multiple sluicing and short sources iii

- The following examples show that the predictions of the evasion approach are borne out for English.

(21)   *One of the panel members wants to hire someone who works on a Balkan language, but I don't know which panel member on which language.

(22)   *One of the students brought a book to talk to one of the professors about, but I don't know which student to which professor.

Multiple sluicing and short sources iv

- The other prediction, that apparent repair should be attested when a short source would be possible, is demonstrated below.

(23)   a.   They hired someone who teaches an infamous course every year at a famous university, but I forget which course at which university.

        b.   ...but I forget [which course]$_i$ ~~she teaches t_i every year t_j~~ [at which university]$_j$.

Contrastive sluicing and island repair

- As observed by Merchant (2008) and others, island effects re-emerge in contrastive sluicing, providing strong evidence for isomorphic elided syntactic structure.

(111) Abby wants to hire someone who speaks GREEK,
but I'm not sure which OTHER language Abby wants to hire someone who speaks.

- Griffiths and Liptak (2014) aim to account for the different between contrastive and non-contrastive sluicing in terms of *scopal parallelism* syntactic identity.

  (112) *Scopal parallelism in ellipsis*
  Variables in the antecedent and elided clause are bound from parallel positions.

- Like Merchant (2008), Griffiths and Liptak assume that island violations inside of ellipsis sites are *repaired*.

- They note that scopal parallelism is easily satisfied in ordinary (non-contrastive instances of sluicing).

  (113) They want to hire someone who speaks a Balkan language
        but I'm not sure which ~~they want to hire someone who speaks~~ t

  (114) [a Balkan language] λx they want to hire someone who speaks t.

  (115) which λx ~~they want to hire someone who speaks~~ t

- Griffiths and Liptak claim that this is unproblematic, since specific indefinites such as *a Balkan language* can take exceptional scope out of islands.

(116) Each boy will be upset [$_{antecedent}$ if a certain aunt dies young].

- This has a reading according to which *a certain aunt* takes scope above *each boy*, which requires *a certain aunt* to take scope out of the island.

- Griffiths and Liptak assume that this leads to a variable binding configuration in which *a certain aunt* scopes out of the island and binds a variable inside of the island (although this is not unproblematic – see Charlow 2014).

- Turning back to contrastive sluicing, *scopal parallelism* forces the following configuration:

(117) They want to hire someone who speaks Greek,
 but I'm not sure which other language.

(118) *Greek λx they want to hire someone who speaks x.

(119) which other language λx they want to hire someone who speaks x.

- On the basis of evidence from Hungarian, Griffiths and Liptak claim that focus-driven A'-movement cannot violate islands.

- One way for an island-internal focus to take wide scope is to pied-pipe the entire island *overtly*.

(24) János (csak) AZT A FÉRFIT [$_{island}$ akit   JULI csodál] mutatta   be
      Janos only   that.A the man.A [$_{island}$ REL.who.A Juli admires] introduced PV
      Zsuzsának *t*
      Zsuzsa.DAT *t*
      Janos only introduced the man who JULI admires to Zsuzsa.

Hungarian focus movement

- A focus cannot undergo movement from inside of an island, rather a
  dummy demonstrative must be inserted.

(25) János (csak) AZT A FÉRFIT mutatta be Zsuzsának, [island akit   JULI
      Janos only   that A the   man   PV Zsuzsa.DAT [island REL.who.A Juli
      csodál].
      admired]
      Janos only introduced the man who JULI admires to Zsuszana.

(26) *János (csak) JULI mutatta   be Zsuzsásnak AZT   A   FÉRFIT [island akit
      Janos only   Julu introduced PV Zsuzsa.DAT that.A the man.A [island REL.who.A
      t csodál].
      t admires]
      Janos only introduced the man who JULI admires to Zsuzsa

- Hungarian therefore constitutes the overt correlate of Griffiths and
  Lipták's analysis of English.

- According to Griffiths and Liptak, the availability of exceptionally-scoping of focus is English is illusory - it in fact involves covert pied-piping.

  (120) They only want to hire someone who speaks Greek.

  (121) only [someone who speaks Greek] λx they want to hire x

- Such a derivation is not available for contrastive sluicing, as it would violate scopal parallelism.

- The following satisfies scopal parallelism but violates independent constraints on pied-piping.

  (122) *They want to hire someone who speakers Greek
         but I don't remember
         [someone who speaks which other language] they want to hire t

Syntactic constraints on sluicing

(27) Er will jemandem schmeicheln, aber sie wissen nicht,
      he wants someone.DAT flatter,   but they know not
      {*wer | *wen | wem}
      {*who.NOM | *who.ACC | who.DAT}
      He wants to flatter someone, but they don't know who.

(28) Er will jemanden   loben, aber sie wissen nicht, {*wer
      he wants someone.ACC praise but they know not {who.NOM
      | wen | *wem}
      | who.ACC | who.DAT}
      He wants to flatter someone, but they don't know who.

(29) Sie   wissen nicht, {*wer | *wen | wem}   er
      They know not   {*who.NOM | *who.ACC | who.DAT} he
      schmeicheln will.
      flatter   wants.
      They don't know who he wants to flatter.

(30) Sie   wissen nicht, {*wer | wen | *wem}   er loben
      They know not   {who.NOM | who.ACC | who.DAT} he praise
      will.
      wants.
      They don't know who he wants to praise.

- Other languages in which case-matching has been found to hold robustly:
  - Greek
  - Dutch
  - Finnish
  - Hungarian
  - Russian
  - Polish
  - Czech
  - Slovene
  - Hindi
  - Basque
  - Turkish
  - Korean

Case-matching iv

- Needless to say, case-matching is an extremely robust cross-linguistic generalization.

(123) *Merchant's case-matching generalisation*
In *sluicing*, the *remnant wh*-phrase must bear the case that its correlate bears.

- Notice that this follows *immediately* from a strict syntactic identity condition:
  - If the correlate is assigned case in the antecedent, it follows from syntactic identity that the remnant will be assigned case by a parallel case-assigner.
- Case-matching *does not* follow from semantic identity – if the ellipsis site can deviate from the antecedent syntactically, we can't guarantee that there is a parallel case-assigner in the ellipsis site.

(124) Peter was talking with someone, but I don't know (with) who.

(125) Who was he talking with t?

P-stranding ii

- Swedish

(31) Peter har talat   med nagon; jag vet   inte (med) vem.
      Peter has talked with someone I   know not with   who.

(32) Vem har Peter talat   med?
      Who has Peter talked with?

- Danish

(33) Peter har snakket med en   eller anden, men jeg ved
      Peter has spoken with someone but I   know not with
      ikke (med) hvem.
      who.

(34) Hvem har Peter snakket med?

P-stranding iii

- Greek

(35)   I   Anna milise me kapjon, alla dhe ksero *(me) pjon.
       the Anna spoke with someone but not I.know with who.

(36)   *Pjon milise me?
       Who spoke with?

- German

(37)   Anna hat mit jemandem gesprochen, aber ich weiß nicht,
       Anna has with someone   spoken,   but I   know not,
       *(mit) wem.
       with   whom.

(38)   *Wem hat sie mit gesprochen?

- Russian

(39) Anja govorila s   kem-to,   no ne znaju *(s) kem.
      Anja spoke   with someone, but not I.know with who.

(40) *Kem ona govorila s?
      Who she spoke   with?

- Bulgarian

(41) Anna e   govorila s   njakoj, no na znam *(s) koj.
      Anna AUX spoken with someone but not I.know with who.

(42) *Koj e   govorila Anna s?
      Who AUX spoken   Anna with?

(126) *Preposition stranding generalisation*

A language L will allow preposition stranding under sluicing iff L allows preposition stranding under regular *wh*-movement.

(43)   Sie   haben jemanden angestellt der [einen deutschen Dialekt] spricht, aber
They have   someone hired   that [a   German   dialect]$_{ACC}$ speaks, but
ich weiß nicht mehr [welchen deutschen Dialekt]/*[welcher deutscher
i   know not   more [which   German   dialect]$_{ACC}$/[which German
Dialekt]
dialect]$_{NOM}$
"They hired someone who speaks a German dialect, but i don't remember which
German dialect."

(44)   ...[welchen deutschen Dialekt]   er spricht.
...[which   German   dialect]$_{ACC}$ he speaks.

(45)   ...[welcher deutsche Dialekt]   das war.
...[which   German   dialect]$_{NOM}$ that was.

(46) I remember someone complaining, but I don't remember who.

    a. ... *I don't remember who ~~*t* complaining~~.

    b. ... I don't remember who ~~*t* complained~~.

    c. ... I don't remember who ~~it was *t*~~.

    d. ... #I don't remember who ~~I remember complaining *t*~~.

- We saw evidence that semantic identity and non-isomorphism is necessary:
  - form mismatches
  - insensitivity to locality
- We saw evidence that strict syntactic identity is necessary
  - case-matching
  - preposition stranding
- BUT we saw evidence from English that case-matching is about overt morphological case rather than abstract case. This does NOT follow from strict syntactic identity.

(127) *Stubborn case matching*:

In sluicing, given a correlate C and a remnant R, if C is a case-bearing category, then R and C must have the same case morphology.

- The spray/load alternation:

  (128) She loaded the truck with the hay. (goal, theme)

  (129) She loaded hay onto the truck (theme, goal)

  (130) *She loaded something with hay, but I don't know onto what she loaded hay *t*

  (131) *She loaded something onto the truck, but I don't know with what she loaded the truck *t*

- Voice mismatches

  (132) *Jack was mugged, but we don't know who *t* mugged Jack

  (133) Jack was muggeed, but we don't know by whom Jack was mugged *t*

  (134) *Someone mugged Jack, but we don't know by whom Jack was mugged *t*

  (135) Someone mugged Jack, but we don't know who *t* mugged Jack

- There are *at least* three components to the identity condition on sluicing:

  1. semantic identity
  2. stubborn case-matching
  3. identical argument structure

- What kinds of relations are (2) and (3)? can we reduce these apparently disparate conditions to something more basic?

- Are the same identity conditions imposed on other elliptical constructions, or are they contstruction specific?

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