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Islands and form-identity in sluicing

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Introduction: *The problem of islands and form-identity under sluicing*

Fact 1: Sluicing (with certain kinds of correlates) is insensitive to syntactic islands
Fact 2: Sluicing is 'form-sensitive': Case and P-stranding constraints must be respected

Approaches:
1. PF deletion, islands are 'trans-derivational' (Ross 1969)
2. Pseudosluicing [pivot of a cleft] (Pollmann 1975)
3. Resumptivity (Sauerland 1996)
4. LF-copy and Heimian merger (Chung, Ladusaw, and McCloskey 1995)
5. LF-copy after LF-correlate movement (Merchant to appear)

Problem: None of these approaches (quite) works.

"When all other alternatives have been eliminated, what remains, however strange, must be the truth." Sherlock Holmes, *The adventure of the copper beeches*, A. Conan-Doyle.

Conclusion: Fact 1 is false. All the apparent island-violating examples can be reanalyzed.

Approach 6. Sluicing is PF deletion after all.

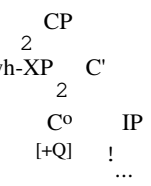
1 Background on sluicing

Ross 1969, Rosen 1976, van Riemsdijk 1978, Levin 1982, Chao 1987, Lobeck 1991, 1995, Ginzburg 1992, Chung Ladusaw and McCloskey [CLM] 1995.

Two main kinds of sluicing:

With an overt correlate (underlined)
(1) a. Jack bought <u>something</u>, but I don't know what.
b. <u>Someone</u> called, but I can't tell you who.
c. <u>Beth</u> was there, but you'll never guess who else.

With an implicit correlate
(2) a. Jack called, but I don't know {when/how/why/where from}.
b. Sally's out hunting — guess what!
c. A car is parked on the lawn — find out whose.

(3)


2 Syntactic ('strong') islands in sluicing

(4) *Relative clause island:*
They want to hire someone who speaks a Balkan language, but I don't remember which.

cf. * I don't remember which *(Balkan language) they want to hire someone [who speaks t].*

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

cf. * 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].*

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

(6) *Complement to nouns:* (CLM's (84c))
The administration has issued a statement that it is willing to meet with one of the student groups, but I'm not sure which one.

(7) *Sentential subject:* (CLM's (84b))
That certain countries would vote against the resolution has been widely reported, but I'm not sure which ones.

(8) *Embedded question:* (CLM's (84a))
Sandy was trying to work out which students would be able to solve a certain problem, but she wouldn't tell us which one.

(9) *Coordinate Structure Constraint:*
a. They persuaded Kennedy and some other Senator to jointly sponsor the legislation, but I can't remember which one. (CLM's (88b))
b. Bob ate dinner and saw a movie that night, but he didn't say which.

(10) *COMP-trace effects:* (CLM's (90), (91a))
a. It has been determined that somebody will be appointed; it's just not clear yet who.
b. Sally asked if somebody was going to fail Syntax One, but I can't remember who.

(11) *Left-branch* (attributive adjective case):
They hired a tall forward for the team — guess how tall!

See Albert 1993, Sauerland 1996, Romero 1998 for sluicing and selective ('weak') islands

2 Form identity

2.1 Case-matching

(12) *Form-identity generalization I: Case-matching*
The sluiced wh-phrase must bear the case that its correlate bears (would bear).

Old news (from Ross 1969)
schmeichlen assigns dative, *loben* assigns accusative

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

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

Cf.

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

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

English, Greek, Dutch, Finnish, Hungarian, Russian, Polish, Czech, Slovene, Hindi, Basque

(17) The police found someone's car, but they wouldn't tell us {whose / *who}.

(18) a. Kapjos pire tilefono, alla dhen ksero { pjos / *pjon}.
someone$_{nom}$ took telephone,but not I.know who$_{nom}$ who$_{acc}$
'Someone called, but I don't know who.'

b. Idha enan apo tous aderfous sou—mandepse { *pjos / pjon}!
I.saw one$_{acc}$ of the siblings your guess which$_{nom}$ which$_{acc}$
'I saw one of your siblings—guess which!'

New news: Case-matching in sluicing also holds across islands:

(19) Sie will jemanden finden, der einem der Gefangenen geholfen hat, aber
she wants someone find who one.DAT of.the prisoners helped has, but
ich weiß nicht, {*welcher / *welchen / welchem}.
I know not which.NOM which.ACC which.DAT
'She wants to find someone who helped one of the hostages, but I don't know which.'

(20) Sie will jemanden finden, der einen der Gefangenen gesehen hat, aber ich
she wants someone find who one.ACC of.the prisoners seen has, but I
weiß nicht, {*welcher / welchen / *welchem}.
know not which.NOM which.ACC which.DAT
'She wants to find someone who helped one of the hostages, but I don't know which.'

(21) The police said that finding someone's car took all morning, but they wouldn't tell us {whose /*who}.

(22) a. Theli na vri ena imerologio pu na exi grapsi enas stratigos
wants SUBJ find a diary that SUBJ has written a general$_{nom}$

tou Nixon, alla dhen thimame {pjos / *pjon}.
of.the Nixon but not I.remember which$_{nom}$ which$_{acc}$
'She wants to find a diary that a general of Nixon's may have written, but I don't remember which (general).'

b. O Petros tha thimosi an filisi i Maria enan apo tous aderfous tou—
the Petros FUT anger if kisses the Maria one$_{acc}$ of the brothers his
mandepse { *pjos / pjon}!
guess which$_{nom}$ which$_{acc}$
'Petros will get angry if Maria kisses one of his brothers—guess which!'

2.2 Preposition stranding

(23) *Form-identity generalization II: Preposition-stranding*
A language *L* will allow preposition stranding under sluicing iff *L* allows preposition stranding under regular wh-movement.

P-stranding languages:

(24) English
a. Peter was talking with someone, but I don't know (with) who.
b. Who was he talking with?

(25) Swedish
a. Peter har talat med någon; jag vet inte (med) vem.
Peter has talked with someone I know not with who
b. Vem har Peter talat med?

(26) Norwegian
a. Per har snakket med noen, men jeg vet ikke (med) hvem.
Per has talked with someone but I know not with who
b. Hvem har Per snakket med?

Non-P-stranding languages:

(27) German
a. Anna hat mit jemandem gesprochen, aber ich weiß nicht, *(mit) wem.
Anna has with someone spoken but I know not with who
b. * Wem hat sie mit gesprochen?

(28) Greek
a. I Anna milise me kapjon, alla dhe ksero *(me) pjon.
the Anna spoke with someone but not I.know with who
b. * Pjon milise me?

(29) Dutch
a. Anna heeft met iemand gesproken, maar ik weet niet ??(met) wie.
Anna has with someone spoken but I know not with who
b. * Wie heeft zij {met/mee} gesproken?

(30) Catalan
a. L'Anna va parlar amb algú, però no sé ??(amb) qui.
the-Anna aux spoke with someone but not I.know with who
b. * Qui va parlar l'Anna amb?

(31) French
a. Anne l'a offert à quelqu'un, mais je ne sais pas *(à) qui.
Anne it-has offered to someone but I not know not to who
b. * Qui est-ce qu'elle l'a offert à?

(32) Spanish
a. Ana habló con alguien, pero no sé *(con) quién.
Ana spoke with someone but not I.know with who
b. *¿Quién habló con?

(33) Italian
a. Pietro ha parlato con qualcuno, ma non so ??(con) chi.

Pietro has spoken with someone but not I.know (with) who

b. *Chi ha parlato Pietro con?

(34) Russian

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

b. * Kem ona govorila s?

(35) Slovene

a. Anna je govorila z nekom, ampak ne vem *(s) kom.
Anna aux spoken with someone but not I.know with who

b. * Kom je govorila Anna s?

(36) Polish

a. Anna rozmawia£a z kims`, ale nie wiem *(z) kim.
Anna spoke with someone, but not I.know with who

b. * Kim rozmawia£a Anna z?

(37) Hebrew

a. Adam diber 'im mishehu, aval ani lo yode ??('im) mi.
Adam spoke with someone but I not know with who

b. * Mi adam diber 'im.

(38) Moroccan Arabic [@ = schwa]

a. Driss tk@llem mᶜa sˇi wah@d, walakin ma ᶜraftsˇ *(mᶜa) m@n.
Driss talked with someone but not know-neg (with) who

b. * M@n tk@llem Driss mᶜa?

(39) Basque

a. Ana-k norbait-ekin hitzegin zuen, baina ez dakit nor-*(ekin).
Ana-erg someone-with talk.to aux but not know who-with

b. * Nor hitzegin zuen -ekin?

(40) Hindi

Gautam-ne kisi se baat kii-thii, lekin mujhe pataa nah~i~i kis *(se).
Gautam-erg someone with talk do-PfvPst but I-dat knowldg. Neg who with

Same for adjunct PPs:

(41) German

Anke ist in einem Seminar eingeschlafen, aber ich weiss nicht, *(in) welchem.
Anke is in a class fallen.asleep but I know not (in) which

(42) Greek

I Anna apokimithike se ena apo ta mathimata, alla dhe ksero *(se) pjo.
the A. fell.asleep in one of the classes but NEG I.know (in) which.

(43) Polish

Anna tan'czy£a z kims` ale nie wiem *(z) kim.
Anna was dancing with someone, but I don't know (with) who

(44) Russian

Pëtr tantseval s kem-to, no ja ne pomnju *(s) kem
Peter was dancing with someone, but I don't remember (with) who

P-stranding generalization holds even across islands:

German:

(45) Anke wird sich ärgern, wenn Peter mit einem der Lehrer spricht,
Anke will REFL upset if Peter with one of.the teachers speaks
aber ich weiß nicht mehr, *(mit) welchem.
but I know not more (with) which
'Anke will get upset if Peter talks to one of the teachers, but I don't remember which.'

(46) Anke will jemanden heiraten, der in einem bestimmten mitteleuropäischen Land
Anke wants someone marry who in a certain central-european country

gewohnt hat, aber ich erinnere mich nicht, *(in) welchem.
lived has but I remember REFL not (in) which
'Anke wants to marry someone who has lived in a certain central European country, but I don't remember which.'

Greek:

(47) I mitera tou Gianni tha thimosi an milisi me kapjon apo tin taksi tou,
the mom of G. FUT get.angry if he.talks with someone from the class his,
alla dhe thimame *(me) pjon.
but NEG I.remember (with) who
'Giannis's mom will get angry if he talks with someone from his class, but I don't remember who.'

(48) I Maria theli na milisi me kapjon pu na exei polemisi s'enan apo tous
the Maria wants SUBJ talk with someone who SUBJ has fought in one from the
Valkanikous polemous, ala dhen ksero *(se) pjon.
Balkan wars but not I.know (in) which
'Maria wants to talk to someone who fought in one of the Balkan wars, but I don't know which.'

Polish:

(49) Anna ws` cieknie się jes`li Piotr zatan'czy z jedną z jej kolezanek i Piotr chcia£by
Anna angers REFL if Piotr dances with one of her friends and Piotr wants
wiedziec` *(z) kto'ra.
to.know (with) which
'Anna will get mad if Piotr dances with one of her friends, and Piotr wants to know which.'

(50) Piotr chcia£by ozenic` się z kims`, kto mieszka w jednym z krajów
P. wants to.marry REFL with someone who lives in one of countries
ba£kan'skich, ale nie wiem *(w) którym.
Balkan but not I.know in which
'Peter wants to marry someone who has lived in a certain Balkan country, but I don't remember which.'

Russian:

(51) Anna rasserditsja esli Pëtr budet tantsevat' s odnoj iz eë podrug,
Anna get.angry if Pëtr will dance with one from her friends
no on ne pomnit *(s) kakoj.
but he not remembers (with) which
'Anna will get mad if Pëtr dances with one of her friends, but he doesn't remember which.'

(52) Pëtr xochet zhenit'sja na zhenshchine kotoraja zhivët v odnoj iz balkanskix stran,
Pëtr wants marry on woman who lives in one from Balkan countries
no ja zabyl *(v) kakoj.
but I forgot (in) which
'Pëtr wants to marry a woman who lives in one of the Balkan countries, but I forgot (in) which.'

3 Resolving the IP-ellipsis

3.1 PF-deletion

Ross 1969

Form-identity effects follow immediately
Case:
(53) Er hat gesagt, daß er jemandem schmeicheln will,
he has said that he someone.DAT flatter wants
aber sie wissen nicht, wem ~~er schmeicheln will~~.
but they know not who.DAT he flatter wants

P-stranding:
(54) Anna hat mit jemandem gesprochen, aber ich weiß nicht,
Anna has with someone spoken but I know not
a. mit wem ~~sie gesprochen hat~~.
with who she spoken has
b. * wem sie ~~mit gesprochen hat~~.
who she with spoken has

But island effects are (mostly) mysterious:

(55) a. They want to hire someone who speaks a Balkan language, but I don't remember which.
b. * I don't remember which ~~(Balkan language) they want to hire someone [who speaks]~~.

(56) 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]~~.

These islands are not 'just PF'.
(57) [Everyone wants to hire someone who speaks a different Balkan language]
* Abby wants to hire someone who speaks Greek, but I don't remember which (language) Ben does ~~want to hire someone [who speaks]~~.

(58) * Ben will be mad if Abby talks to Mr. Ryberg, and guess who Chuck will be ~~mad [if she talks to]~~.

3.2 Pseudosluicing

Pro: Pollmann 1975, Erteschik-Shir 1977: 107-108, fn 4
Con: Klein 1976, Merchant 1998

Sluicing as a deleted cleft:
(59) Someone just left — guess who ~~it was~~.

A baker's half-dozen (plus one) of reasons to reject a hidden cleft structure underlying sluicing:

1. Implicit correlates
(60) a. He fixed the car, but I don't know {how, why, when} (*it was).
b. It says she speaks Greek, but it doesn't indicate how well (*it is).
c. He's hidden the jewels, but I don't know where (*it is).
d. He served time in prison, but I don't know how long (*it was).
(61) a. They served the guests, but I don't know what (*it was).
b. He said they had already eaten, but I don't know what (*it was).

c. They were arguing, but I don't know about what (*it was).

2. Prosody
(62) a. Someone KISSED you, and you can't remember WHO?!?
b. Someone KISSED you, and you can't remember who it WAS?!?
c. *Someone KISSED you, and you can't remember WHO it was?!?

3. Agressively non-D-linked wh-phrases
(63) Someone dented my car last night—
a. I wish I knew who!
b. I wish I knew who the hell it was!
c. *I wish I knew who the hell!

4. 'Mention-some' modifiers
(64) A: You should talk to somebody in the legal department for help with that.
a. B1: Could you tell me who (*it is), for example?
b. B2: Who (*is it), for example?

5. 'Mention-all' modifiers
(65) A bunch of students were protesting, and the FBI is trying to find out who all *(it was).

6. West Germanic R-pronoun inversion
(66) a. This opera was written by someone in the 19th century, but we're not sure who by (*it was). [Chung et al 1995: (4d)]
b. He was shouting to someone, but it was impossible to tell who to (*it was).
c. A: She's going to leave her fortune to someone. B: Really? Who to (*is it)?

7. Languages with limited or no cleft strategy, but with sluicing
(67) German
a. * Mit wem war es, daß er gesprochen hat?
with who was it that he spoken has
b. Er hat mit jemandem gesprochen — rate mal mit wem!
he has with someone spoken guess PRT with who

Also Romanian (Grosu 1994, Dobrovie-Sorin 1996), Hungarian (Kiss 1998)

8. Languages with pivots of clefts in nominative
(68) Greek
I astinomia anekrine enan apo tous Kiprious prota, ala dhen ksero
the police interrogated one$_{acc}$ of the Cypriots first, but not I.know
a. {*pjos / pjon}.
which$_{nom}$ which$_{acc}$
b. {pjos itan / *pjon itan}.
which$_{nom}$ it.was which$_{acc}$ it.was

The cleft can pick up any suitable (unique) discourse antecedent, case-matching is not required:
(69) The police said that finding someone's car took all morning, but I can't remember who *(it was).

3.3 Resumptives to the rescue?

Sauerland 1996

(70) a. * Who$_1$ did the Brazilian team improve after t$_1$ started playing for them?
b. * What play$_2$ does he want to interview the woman who wrote t$_2$?

(71) a. Who$_1$ did the Brazilian team improve after he$_1$ started playing for them?
b. What play$_2$ does he want to interview the woman who wrote it$_2$?

(72) a. The Brazilian team improved after somebody from Ajax started playing for them, but I can't remember who.
b. He wants to interview the woman who wrote some play, but I can't remember what play.

Idea: The sluices in (72) come not from the movement variants in (70) but rather from their resumptive counterparts in (71).

PF deletion of resumptive-containing structure:
(73) a. The Brazilian team improved after somebody from Ajax started playing for them, but I can't remember who$_1$ ~~the Brazilian team improved after he$_1$ started playing for them~~.

Keeps the advantages of the PF-deletion account (form-identity effects) without having to say crazy stuff about the lack of island effects.

Unfortunately, it doesn't work:

Case-matching required in sluicing...
(74) The police said that finding someone's car took all morning, but I can't remember
a. whose.
b. *who.

...but impossible with resumptives
(75) a. Who$_1$ did the police say that finding his$_1$ car took all morning?
b. * Whose$_1$ did the police say that finding (his$_1$) car took all morning?

Resumptivity can't generate (74a) even with NP-ellipsis à la [$_{DP}$ whose [$_{NP}$ *e*]] ...
(76) Abby's car is parked in the driveway, but whose is parked on the lawn?

... because resumptive operators must be 'bare' — no pied-piping allowed:
(77) a. *?[Whose car]$_2$ did the police say that finding it$_2$ took all morning?
b. * I know that the police said they found Ben's car right away, but [whose *e*]$_2$ did they say that finding it$_2$ took all morning?

Same for PPs:
(78) a. (*For) which candidate$_2$ did they receive reports that more than 60% of eligible voters were planning to vote for him$_2$?
b. Schroeder was the candidate {who/ that/ *for whom} they received reports that more than 60% of eligible voters were planning to vote for him$_2$.

- 'Real' case can't even appear on a resumptive operator

Greek
(79) a. * Pjon$_1$ psaxnun enan giatro pu na (ton$_1$) voithisi?
who$_{acc}$ they.seek a doctor that SUBJ him helps
b. * Pjos$_2$ psaxnun enan giatro pu na (ton$_2$) voithisi?
who$_{nom}$ ...
'Who are they looking for a doctor who can help (him)?'

(80) a. * Pjanou$_1$ ipe i astonomia oti to na vroune to avtokinito (tou$_1$)
whose said the police that the SUBJ they.find the car his
dhiirkese olo to proï?
took all the morning
b. * Pjos$_2$ ipe i astonomia oti to na vroune to avtokinito (tou$_2$)
who$_{nom}$ ...
dhiirkese olo to proï?

'Who did the police say that finding (his) car took all morning?'

But of course the sluicing equivalents show the obligatory case-matching:
(81) Psaxnun enan giatro pu na voithisi kapjon, alla dhen ksero {pjon / *pjos}.
they.seek a$_{acc}$ doctor that SUBJ helps someone, but not I.know who$_{acc}$ who$_{nom}$
'They're looking for a doctor to help someone, but I don't know who.'
(82) I astinomia ipe oti to na vroune to aftokinito enos apo tous ipoptous dhiirkese olo to proï, alla dhen thimame {pjanou / *pjos}.
'The police said that finding the car of one of the suspects took all morning, but I don't remember which one's.'

German
(83) * {Welchem Gefangenen$_1$ / wem$_1$} will sie jemanden finden, der ihm$_1$ geholfen hat?
which.DAT prisoner / who.DAT wants she someone find who him.DAT helped has
'{Which prisoner / who} does she want to find someone who helped him?'
(84) * {Welcher Gefangene / wer} will sie jemanden finden, der ihm geholfen hat?
which.NOM prisoner / who.NOM wants she someone find who him.DAT helped has
'{Which prisoner / who} does she want to find someone who helped him?'

(85) * {Welcher Lehrer / wer} wird Anke sich ärgern, wenn Peter mit ihm spricht?
which.NOM teacher / who.NOM will Anke REFL upset if Peter with him.DAT speaks
'Who will Anke get upset if Peter talks to him?'
(86) * Wer glaubst du, daß Italien besser spielt, seitdem sie ihn in der Mannschaft haben?
who.NOM think you that Italy better plays since they him.ACC in the team have
'Who do you think that Italy has been playing better since they have him on their team?'

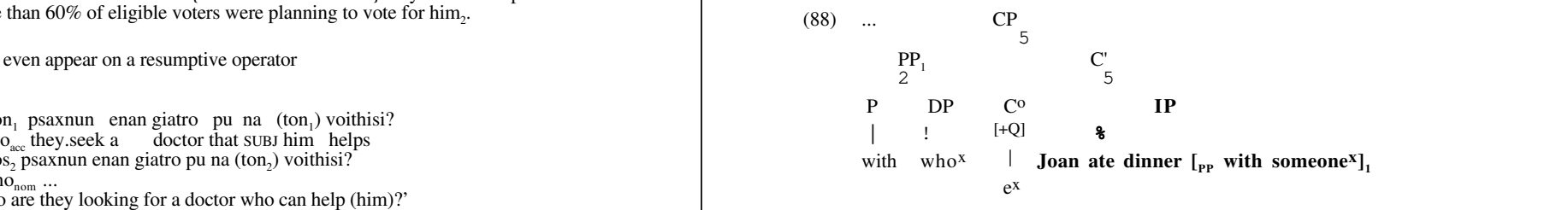
Same in Russian, Polish, Czech, Slovene, Serbo-Croatian, Bulgarian, Romanian, Dutch.

3.4 LF-copy and 'merger'

Chung, Ladusaw, and McCloskey's (1995) account: Building the interpretation at LF

Sluicing with overt correlates—Merger

(87) Joan ate dinner with someone, but I don't know (with) who.
The correlate (necessarily a weak DP -- *someone*) undergoes 'merger' with the wh-phrase to provide the restriction on the semantic variable (indicated by superscripting) bound by the Q-operator.

(88)


(89) i. an interrogative C (the locus of the Q-operator)
ii. the wh-phrase in SpecCP (providing the semantic restriction)
iii. the copied IP (providing the semantic scope)

Lewis-Kamp-Heim tradition:

(90) $Op_{x,y,...}$ (Restriction x,y,...)[Scope x,y,...]

Adapted to questions (Berman 1991)

(91) a. Which suspect did Abby call?

b. $\lambda p[\exists x(\textbf{suspect}(x))[\check{}p \wedge p = \hat{}[\textbf{call}(\textbf{abby}, x)]]]$

The restriction in a sluice = the wh-phrase in SpecCP + the inner antecedent, via merger.

Or, using the copy theory of movement and choice functions (Reinhart 1995, 1997, Winter 1997)

Merger = by-product of LF-copying with in-situ restrictions:

(92) a. Abby called some suspect,

b. but the police don't know which.

(93) a. $[\![\text{IP}]\!] = \textbf{call}(\textbf{abby}, f(\textbf{suspect}))$

b. $\exists f.\text{CH}(f) \wedge \textbf{call}(\textbf{abby}, f(\textbf{suspect}))$

(94) $\lambda p[\exists f.\text{CH}(f) \wedge \check{}p \wedge p = \hat{}[\textbf{call}(\textbf{abby}, f(\textbf{suspect}))]]$

If there's no free variable in the copied IP for the $\exists f$ to bind, we have vacuous quantification, and a *. This is the source of the 'roofing effects' for them:

(95) *Joan ate dinner with {most students, every student in her class, John, nobody} and we're all wondering (with) who.

Polarity items:

(96) a. Abby will be upset if {someone/*anyone} comes to the party, but I can't remember who.

b. I Anna tha stenaxorithi an {kapjos/*kanenas} erthi sto glendi, alla dhe thimame pjos. [Greek]

Subjunctive relatives: (Giannakidou 1997, Quer 1998)

(97) a. Psaxni kapjon pu (*na) milai oromo, alla dhe ksero pjon. [Greek]
seeks someone that SUBJ speaks Oromo, but not know who

b. Està buscant algu que {sap /*sàpiga} oromo, però no sé qui. [Catalan]
is seeking s.o. that knows.IND knows.SUBJ Oromo but not I.know who
'She is looking for someone who would know Oromo, but I don't know who.'

As long as the IP copied in has an appropriate free variable, the resulting structure is fine.

Prediction: *Scopal parallelism*
Possible sluices should track the scope of indefinites, and **not** overt wh-movement possibilities.

This is the great achievement of CLM's system. Same for indefinites inside islands (they can scope out — Farkas 1981)

(98) They want to hire someone who speaks a Balkan language, but I don't remember which.

The antecedent sentence is potentially ambiguous (keeping *someone* ... narrow scope; imagine a subjunctive relative here):

(99) a. $\exists y.\textbf{Balkan-language}(y) \wedge \textbf{want}(\textbf{they}, \hat{}[\exists x.\textbf{person}(x) \wedge \textbf{speak}(x,y) \wedge \textbf{hire}(\textbf{they},x)])$

b. $\textbf{want}(\textbf{they}, \hat{}[\exists x.\textbf{person}(x) \wedge \exists y.\textbf{Balkan-language}(y) \wedge \textbf{speak}(x,y) \wedge \textbf{hire}(\textbf{they},x)])$

But sluicing disambiguates in favor of (99a).

No movement, therefore no island effects:

(100) a. At Spell-Out
... $[_{CP}$ which $[_{IP}\ e\ ]]$

b. At LF after IP-copy and merger
... $[_{CP}$ which^x $[_{IP}$ **they want to hire someone who speaks [a Balkan language]^x**]]

Unfortunately

- Semantics: The restrictions to indefinites is wrong in some cases, and the scopal parallelism can be derived by an appropriate focus operator (Romero 1998)
- Syntax: The P-stranding generalization is not captured

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

(102) a. ... [mit wem^x]$_1$ $[_{IP}$ **sie [mit jemandem^x]$_1$ gesprochen hat**]
with who she with someone spoken has

b. ... wem$^x{}_1$ $[_{IP}$ **sie mit jemandem$^x{}_1$ gesprochen hat**]

Nothing rules out (b).

Also a problem: cases where the descriptive content clashes:

(103) a. She's an absolute idiot: unaware of who she is, or where.

b. The channel was 15 feet wide, but I don't know how deep.

(104) a. Abby knew which of the MEN Peter had invited, but she didn't know which of the WOMEN (he had).

b. We know which STREETS are being re-paved, but not which AVENUES.

c. Max has five MONETS in his collection, and who knows how many van GOGHS.

d. There are nine WOMEN in the play, but I don't know how many MEN.

e. I know how many WOMEN are in the play, but I don't know how many MEN.

These require contrastive focus, cf.

(105) * WE know which streets are being re-paved, but THEY don't know which avenues.

These fall into line for a focus-background approach to ellipsis applied to sluicing (Romero 1998). Such a condition can of course be imposed on either a PF-deletion approach or an LF-copy one...

3.5 LF-scope movement and LF-copy

Merchant (to appear)

Idea: Correlates provide the antecedent IP for sluicing by scoping out, leaving a free variable (trace) behind.

I.e.: indefinites move at LF (they're generalized quantifiers), resulting (lower) IP segment is used to resolve the sluice:

(106) a. Abby called someone,
but we don't know who.

b. someone$_1$ $[_{IP2}$ Abby called t_1]

c. [who]$_1$ [$_{IP2}$ **Abby called [$_{DP}$t]$_1$**]

(107) a. Abby called some suspect,
but we don't know which.
b. [$_{IP1}$ some suspect$_1$ [$_{IP2}$ Abby called t$_1$]]
c. [which [**suspect**]]$_1$ [$_{IP2}$ **Abby called t$_1$**]

How does this help? It puts movement back into the picture.

Bayer 1996: LF movement respects P-stranding constraints.

(108) a. I spoke only to Bobby. LF: [$_{PP}$ only to Bobby]$_1$ I spoke t_1
b. I spoke to only Bobby. LF: [$_{DP}$ only Bobby]$_2$ I spoke [$_{PP}$ to t_2]
(109) a. Milisa mono me ton Bobby. LF: [$_{PP}$ mono me ton Bobby]$_1$ milisa t_1
I.spoke only with the Bobby
b. * Milisa me mono ton Bobby. LF: *[$_{DP}$ mono ton Bobby]$_2$ milisa [$_{PP}$ me t_2]

(110) a. Idha kapjon, alla dhen ksero pjon.
I.saw someone but not I.know who
b. kapjon$_1$ [$_{IP2}$ idha t$_1$]
[[kapjon]] = λPλw.∃x **person**(x,w) ∧ P(x,w)
[[[$_{IP2}$ idha t$_1$]]] = λyλw.**saw**(**I**, y, w)
c. [pjon]$_1$ [$_{IP2}$ **idha [$_{DP}$t]$_1$**]
... λp [∃x.**person**(x,w$_o$) ∧ p(w$_o$) ∧ p = λw.**saw**(**I**, x,w)]

(111) a. I Anna milouse me kapjon, alla dhen ksero me pjon.
the Anna spoke with someone but not I.know with who
b. [me kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ t$_1$]]
c. [me pjon]$_1$ [$_{IP2}$ **i Anna milouse [$_{PP}$ t$_1$]]**

(112) **A'-chain uniformity** (cf. Chomsky 1981, 1986 Chain uniformity)
∀α,β . [α,β ∈ C] → [F(α) = F(β)]
where
a. C = <α$_1$, ..., α$_n$>, α$_1$ in an A'-position and α$_n$ in a Case-marked position, *and*
b. F(x) = {F | F a feature of x} (let 'feature' here range over at least category, case, and φ-features)

(113) * I Anna milouse me kapjon, alla dhen ksero pjon.

Two possible derivations:
*1. *P-stranding at LF*

(114) * [kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ me [$_{DP}$ t$_1$]]]

2. Pied-pipe

(115) [me kapjon]$_1$ [$_{IP2}$ i Anna milouse [$_{PP}$ t$_1$]]

(116) [pjon]$_1$ [$_{IP2}$ **i Anna milouse [$_{PP}$ t$_1$]]**

Chain = <[$_{DP}$ *pjon*], [$_{PP}$ t]> : This violates A'-Chain Uniformity condition

Potential objections

- Requires island-insensitive long QR of indefinites

(117) They want to hire someone who speaks a Balkan language, but I don't remember which.

(118) a. [a Balkan lg]$_1$ [$_{IP}$ they want to hire someone who speaks t_1]
b. [$_{IP1}$ they want [[a Balkan lg]$_1$ [$_{IP2}$ to hire someone who speaks t_1]]]

Scopal parallelism OK: only (a) will provide an appropriate IP to resolve the sluice.
Goes against Reinhart 1997, Winter 1997's account of Ruys's observation.

- The A'-Chain Uniformity condition should be a derived property, not stipulated.
- It must also be stipulated that the A'-Chain Uniformity condition cannot apply to A'-chains formed with resumptive pronouns.

(119) a. Who$_1$ did the police say that finding his$_1$ car took all morning?
b. * Whose$_1$ did the police say that finding (his$_1$) car took all morning?

3.5 What's left? PF-deletion redux

- Form-identity effects follow immediates, including P-stranding
- What about the islands?

Not all islands are created equal
Two classes of syntactic islands:
1. syntactic
CNPC
adjuncts
sentential subjects
some CSC
2. 'PF'
other CSC
left-branch
COMP-trace
derived positions (subjects, topicalizations)

Why did we think there was an island in the sluice to begin with? The interpretation.

3.5.1 Syntactic islands

- Using the embedded IP

(120) That [$_{IP}$ Bob had insulted one of the guests] was obvious; it just wasn't clear which.
a. * which$_1$ ~~that [Bob had insulted t$_1$] was obvious~~
b. which$_1$ [~~Bob had insulted t$_1$~~]

(121) The riot started after [$_{IP}$ Bob insulted one of the guests], but the police never discovered which.
a. * which$_1$ ~~the riot started after [Bob insulted t$_1$]~~
b. which$_1$ [~~Bob insulted t$_1$~~]

(122) They hired someone who speaks a Balkan language, ...
∃y.**Balkan-language**(y) ∧ ∃x.**person**(x) ∧ **speak**(x,y) ∧ **hire**(**they**,x)

(123) ... but I don't remember which.
a. * which$_1$ [$_{IP1}$ ~~they hired someone who$_2$ [$_{IP2}$ t$_2$ speaks t$_1$~~]]
b. which$_1$ [~~t$_2$ speaks t$_1$~~]

Only problem with (b) is the unbound t_2. It's really:
(124) which$_1$ [~~(s)he$_2$ speaks t$_1$~~]

This equivalence between traces in the antecedent and pronominals in the ellipsis site is an instance of Bouton's 1970 'sloppy identity', Fiengo and May's 1994 'vehicle change'.
Holds for wh-traces and QR-traces (Merchant to appear b):

(125) a. The report details what IBM did and why.
b. Who did the suspect call and when?
c. Most gangs will be at the rumble, though it's not clear why.

The ellipsis site contains a *syntactic* pronoun (BT tests, island insensitivity), interpreted as an E-type pronoun.

- But this way out is not available in all cases.

Subjunctive relatives (here, Greek)
(126) Psaxnun kapjon pu na milai mia Valaniki glossa, alla dhe ksero pja.
they.seek someone that SUBJ speaks a Balkan language, but not I.know which.
'They're looking for someone who (would) speak(s) a Balkan language, but I don't know which.'
De dicto for *someone who ...*

a. -/→ ∃y.**Balkan-language**(y) ∧ ∃x.**person**(x) ∧ **speak**(x,y) ∧ **seek**(**they**,x)
b. ∃y.**Balkan-language**(y,w$_0$) ∧ **want**(**they**, λw[∃x.**person**(x,w) ∧ **speak**(x,y,w) ∧ **hire**(**they**,x,w)], w$_0$)

(127) ... pja *(na) milai
which SUBJ speaks

The subjunctive in the ellipsis indicates modal subordination

Roberts 1996
(128) You should buy a lottery ticket. It might be worth a million dollars.
He wants to marry a Norwegian. She should like the cold.
If you (should) see a finch, stop moving. It might get scared off.
A patient might come in complaining of pressure in the head. What questions should you ask him?
Where can I find an Italian newspaper, and how much will it cost?

A model is an ordered triple consisting of a valuation function V over propositional variables p such that V(p,w) = 1 if V assigns the value 1 to p in w, and ... = 0 if ... 0. R an accessibilty relation over W, W a non-empty set of worlds. M = <W, R, V>
L = necessarily operator

(129) V(Lϕ, w) = 1 if ∀w' [wRw' → V(ϕ, w') = 1], otherwise V(Lϕ, w) = 0
< Hughes and Creswell 1996

Modal subordination is just restricting R by the modal base *f* (ie., by excluding those worlds w$_i$ from the range of R which are not in ∩*f*(w)).

(130) ... pja$_2$ ~~na milai t$_2$~~
which SUBJ speaks
?y **language**(y)(w) ∧ L **speak**(w')(x,y)
= λp ∃y [**language**(y)(w) ∧ p(w) ∧ p = λw ∀w' [wRw' → **speak**(w')(x,y)]

Same story for adjuncts (they restrict adverbs of quantification), and potentially some cases of sentential subjects (the nonveridical ones).

(131) Ben will be mad if Abby talks to one of the teachers, but she couldn't remember which.
∃x.**teacher**(x,w$_0$) ∧ ∀w'[**talk**(**abby**,x,w')] → [**mad**(**ben**, w')]

a. which ~~[she talks to t]~~
λp ∃y [**teacher**(y)(w) ∧ p(w) ∧ p = λw∀w' [wRw' → **talk**(**abby**, x, w')]

(Deletion is required here; cf E-type pronouns)

- The interpretation (of being inside the island) can be derived by use of E-type pronouns and modal subordination. The semantic condition on deletion is sensitive to this.
- The syntactic condition on deletion (Rooth's 1992 'redundancy relation 1', Fiengo and May's 1994 'reconstruction') need only be insensitive to the differences between A'-traces and pronouns ('vehicle change'). Related speculation: this condition too might be formulable in semantics terms.

Sensitivity to availability of E-type pronoun: no good with (certain) NPIs:
(132) * Dhen ithelan na proslavoun kanenan pu na milai mia Valkaniki glossa,
not wanted.they SUBJ hire anyone that SUBJ speaks a Balkan language
alla dhen ksero pja (na milai).
but not I.know which (SUBJ speaks)
'*They didn't want to hire anyone who speaks a Balkan language, but I don't know which.'

3.5.2 PF islands

Coordinate Structure Constraint:

1. Extraction of a conjunct:

(133) They persuaded Kennedy and some other Senator to jointly sponsor the legislation, but I can't remember which one. (CLM's (88b))

(134) * Which senator did they persuade Kennedy and __ to jointly sponsor the legislation?

Grosu 1973(?)
(135) a. Bob can juggle, * and Abby can [__ and sing], too.
b. ... * and Abby can [sing and __], too.
(136) * Which books did Bob read [__ and __]?

2. Extraction out of a conjunct:

(137) Bob ate dinner and saw a movie that night, but he didn't say which.
a. ...* which [~~he ate dinner and saw *t* that night~~]
b. ... which [~~he saw *t* that night~~]

LF-copy with merger fails to predict that 'sprouting' cases will also be possible:

(138) a. I packed up all the dishes and dumped them without telling her where.
b. He sold the farm and moved away, but no-one knows where to.

c. She quit and got a new job — guess what as!

Again deletion requires an E-type in the sluiced IP: if no semantic antecedent is available, the sluice crashes:

(139) a. No-one quit their job and moved to a certain town — * guess which!
b. No-one was sitting in the back and playing one of the horns, * but I couldn't tell which.

Left branch effects

(140) They hired a tall forward for the team — guess how tall!
a. ... how tall [~~they hired [a __ forward]~~]

Kennedy and Merchant 1998

(141) a. Pico wrote a more interesting novel than Brio {wrote, did, expected, ∅}.
... than Op_2 Brio did [~~write [a t_2 interesting novel]~~]
b. * Pico wrote a more interesting novel than Brio wrote [a __ novel].

Unpronounceable feature combinations cause a PF-crash (FI violation) unless
1. move and check (ho-hum), or
2. delete (ellipsis saves the day)

COMP-trace effects

(142) It's probable that a certain senator will resign, but which is still a secret.
a. which [~~*t* will resign~~]
b. which [~~it's probable that *t* will resign~~]

(143) Sally asked if somebody was going to fail Syntax One, but I can't remember who.
a. ≠ who [~~*t* was going to fail Syntax One~~]
b. = who [~~Sally asked if *t* was going to fail Syntax One~~]

McCloskey 1997 COMP-trace is PF; cf. distribution of resumptives in Swedish
RNR (cf. de Chaine 1996)

(144) ?Which gangster did the DA claim that, though he couldn't absolutely prove, [__ was responsible for the killing]?

Derived position islands (topicalizations, non-sentential subjects)

(145) a. *Which Marx brother did he say that [a biography of __] is going to be published this year?
b. *Which Marx brother did he say that [a biography of __], he refused to read?

(146) a. A biography of one of the Marx brothers is going to be published this year — guess which!
b. A: A biography of one of the Marx brothers, he refused to read.
B: Which one?

(147) ... $which_2$ [$_{IP}$ ~~__ is going to be published [a biography of t_2]~~]

What goes wrong in a strict cycle violation? The EPP isn't checked, causing a PF crash ('strong' features uninterpretable at the PF-interface). Deletion provides a way out, up to recoverability.

- Deletion *does* save PF islands

6 Conclusions

Syntax:

- Sluiced wh-phrases are syntactically in the specifier of CPs with elliptical IPs.
- Lack of island effects for certain kinds of sluicing weighs against PF-deletion for these.
- The form of the wh-phrase is sensitive to language-specific constraints, reinterpreted as constraints on LF-movement.
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