Reconstructing Resumption*

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Overview

One Goal:

to study the properties of resumption in light of another well-known phenomenon called *reconstruction* or *connectivity*.

Two major claims in one analysis:

Claim #1: Resumptive pronouns are interpreted as *e*-type.

Claim #2: Resumption is tied to the ellipsis phenomenon.

⇒ Elbourne (2002)'s analysis of *e*-type pronouns via the presence of ellipsis can be extended to cases of resumption.

Empirical arguments:

- data from French (and other languages) arguing for reconstruction with resumption;
- reconstruction within islands;
- reconstruction with variable binding, but not with condition C;
- resumption and cyclicity;
- pair-list *vs* functional readings, the former being banned with resumption;
- reconstruction with ellipsis.

Theoretical arguments at the interfaces:

- *syn-sem* interface ⇒ *e*-type pronouns in variable-free semantics (Jacobson (1999));
- *gram-parsing* interface ⇒ resumption & ellipsis in dynamic syntax (Cann et al. (2005)).

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1 A reminder: several definitions

1.1 What Reconstruction is...

Reconstruction as an analysis: mechanism by which movement is 'deconstructed'.

(1) *Which picture of his$_1$ did every man$_1$ tear?*
⇒ Literal reconstruction: *Every man$_1$ tore which picture of his$_1$?*

Reconstruction as a problem: interaction between displacement (dislocation, interrogation, relativization) and structural constraints on interpretation (binding or scope).

1.1.1 Binding Reconstruction

(2) Condition A:

(a) *Which picture of himself$_1$ did John$_1$ tear?*

(b) *I tore the picture of himself$_1$ that John$_1$ chose.*

(3) Condition C:

(a) **Which picture of John$_1$ did he$_1$ tear?*

(b) **The picture of John$_1$, he$_1$ tore.*

(4) Condition on Bound Variable Anaphora (BVA):

(a) *Which picture of his$_1$ daughter did every man$_1$ tear?*

(b) *The picture of himself$_1$, every man$_1$ tore.*

(c) *I tore the picture of his$_1$ that every man$_1$ chose.*

⇒ (2) to (4) argue for reconstruction to account for the fact that positive conditions (BVA, cond. A) are satisfied, and cond. C is violated.

1.1.2 Scope reconstruction: distributive reading of an indefinite

(5) (a) *Which patient do you think that every doctor examined?*

(b) *We contacted the patient each doctor was assigned.*

Traditional assumption: distributive reading of an indefinite is tied to its narrow scope with respect a universal quantifier in syntax.

Two major readings:
- individual reading (wide scope of the indefinite)
  ⇒ a unique patient for the set of doctors;
- distributive reading (narrow scope of the indefinite)
  ⇒ a different (and specific) patient for every doctor.

⇒ Suggests the presence of an indefinite under the scope of the universal quantifier in both (5a) and (5b): a job for reconstruction[1].

[1]Straightforward for questions as the displaced element is an indefinite; less transparent for relatives, although presence of an indefinite is also traditionally assumed (see Kayne (1994) or Sauerland (1998)). One further argument: the availability of existential constructions in relatives (ex: *les erreurs qu'il y a dans cette copie*).

1.1.3 distributivity: functional or pair-list (PL)

Further distinction within distributive readings:

(6) *Which patient do you think that every doctor examined?*

(a) functional: *His mother.*

(b) PL: *(for) Dr Jeckyll, (it was) Paul; Dr Freud, John;...*

1.2 What *e*-type means...

Following Elbourne (2002) and traditional literature, two processes that can give rise to a covariant/distributive reading of an anaphoric expression:

• bound variable interpretation through c-command (see Heim and Kratzer (1998) or Reinhart (1997) among others);

• e-type interpretation (see Evans (1980)).

e-type anaphora (def. #1): distributive/covariant interpretation of anaphoric expressions which does not result from variable binding.

Two classical examples:

(7) (a) *Every farmer who owns a donkey*$_1$ *beats* ***it***$_1$.

(b) *Bill gave his paycheck*$_1$ *to his wife, and everybody else put* ***it***$_1$ *in the bank.*

e-type anaphora (def. #2): a covariant/distributive reading of a pronoun coming from the covariant/distributive potential of its antecedent;

⇒ surprisingly coincides with our distinction between binding and scope:

• in (7a), distributive potential of the antecedent comes from scope;

• in (7b), distributive potential of the antecedent comes from binding.

2 Starting by the end: accounting for reconstruction

Two possible strategies for reconstruction, depending on the displacement strategy (see Guilliot (2006) or Guilliot and Malkawi (2006) for more details):

(8) Gap strategy (with interrogation here):

(a) *Quelle photo*$_1$ *de lui*$_2$ *chaque homme*$_2$ *a-t-il déchirée* $\__1$*?*
'Which picture of his did every man tear?'

(b) *Which patient*$_1$ *did every doctor examine* $\__1$*?*

(9) Resumptive strategy (with dislocation here):

La photo qu'il$_2$ *avait choisie, chaque homme*$_2$ ***l'****a déchirée.*
'The picture that he had chosen, every man tore it.'

2.1 Syntax: building on copies

(10) *Reconstruction of a displaced XP requires the presence of a copy of that XP, resulting either from movement, or crucially from an ellipsis phenomenon.*

(11) *A resumptive pronoun can be interpreted as e-type in the sense of Elbourne (2002), i.e. as a determiner followed by an NP complement deleted under identity with its antecedent.*

2.1.1 Gap strategy

(12) (a) *Quelle photo de lui chaque homme*$_1$ *a-t-il déchirée* ~~*quelle photo de lui*$_1$~~*?*
'Which picture of his did every man$_1$ tear ~~which picture of his$_1$~~?'

(b) *Which patient did every doctor examine* ~~*which patient*~~*?*

⇒ For (12a), presence of *lui* 'his' within the c-command domain of *chaque homme* 'every man' via the copy.

⇒ For (12b), presence of the indefinite *which patient* within the syntactic scope of *every doctor* via the copy.

2.1.2 Resumptive strategy

(13) Two structures for a (resumptive) pronoun –RP– (extension of Elbourne (2002)[2]):

(a) *[$_{DP}$ [$_{D^\circ}$ $RP_{(1)}$]* ~~*NP*$_\Delta$~~ *]* for an *e*-type interpretation

(b) *[$_{DP}$ RP_1]* for a bound variable interpretation

Both structures will be at stake for the case of reconstruction with resumption:

(14) *La photo qu'il avait choisie, chaque homme*$_1$ *a déchiré [$_{DP}$* ***l(a)*** *[$_{NP_\Delta}$* ~~*photo qu'il*$_1$ *avait choisie*~~*]].*
'The picture that he had chosen, every man tore it.'

- Structure (13a) for the resumptive clitic *l(a)*: *e*-type interpretation;
- Structure (13b) for the pronoun *il*: bound variable interpretation;

⇒ For (14), presence of *il* 'he' within the c-command domain of *chaque homme* 'every man' via the elided copy.

2.2 Semantics: definite *vs* indefinite copies

(15) *Syntactic copies are interpreted either as indefinite descriptions (see Sauerland (1998) or Aguero-Bautista (2001)), or as definite ones (see Fox (2003) or Heim and Jacobson (2005)).*

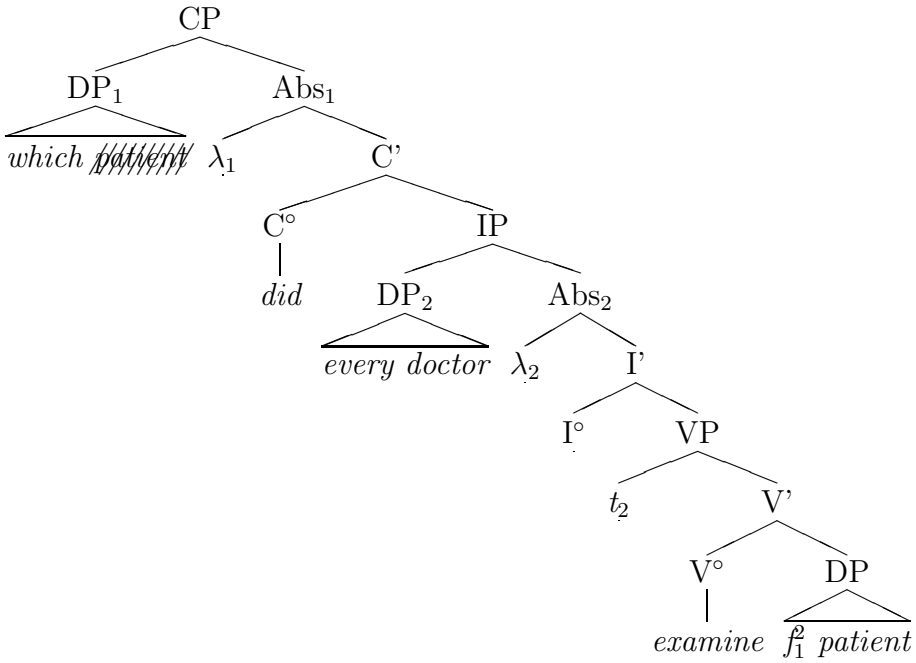
[2] A similar account is proposed in Freidin and Vergnaud (2001).

2.2.1 Indefinite copy: 'skolemized' choice function

Based on Sauerland (1998) and Aguero-Bautista (2001): a copy can be interpreted as a *'skolemized' choice function f*, which takes two arguments, a set of individuals (i.e. a property) P and an individual x, and returns one element of the set ($f(P)(x)$, where $f(P)(x) \in P$)[3].

(17) *Which ~~patient~~ did every doctor examine ~~which patient~~?*

(a)



(b) *What is the 'skolemized' choice function $f_{\langle et,ee\rangle}$ such that every doctor$_x$ examined f(patient)(x)?*
⇒ PL reading: the doctor-patient relation can be different with respect to each doctor (a set of arbitrary pairs).

(c) *What is the function $g_{\langle ee\rangle}$ ranging over patients such that every doctor$_y$ examined g(y)?*
⇒ Functional reading: the doctor-patient relation is the same with respect to each doctor[4].

[3]First introduced by Kratzer (1998) to account for distributive and specific readings of the indefinite:

(16) Every man loves **a** (certain) woman.
⇒ one different & specific woman for each man
LF: every man$_1$ loves f_1(woman).
$\forall x.[man(x) \rightarrow [loves(x, f_x(woman))]]$

[4]Follows from a logical implication: *A 'skolemized' choice function f ($CH_s(f)$) such that $f(P)$ corresponds to a Skolem function g such that $range(g) = P$.*

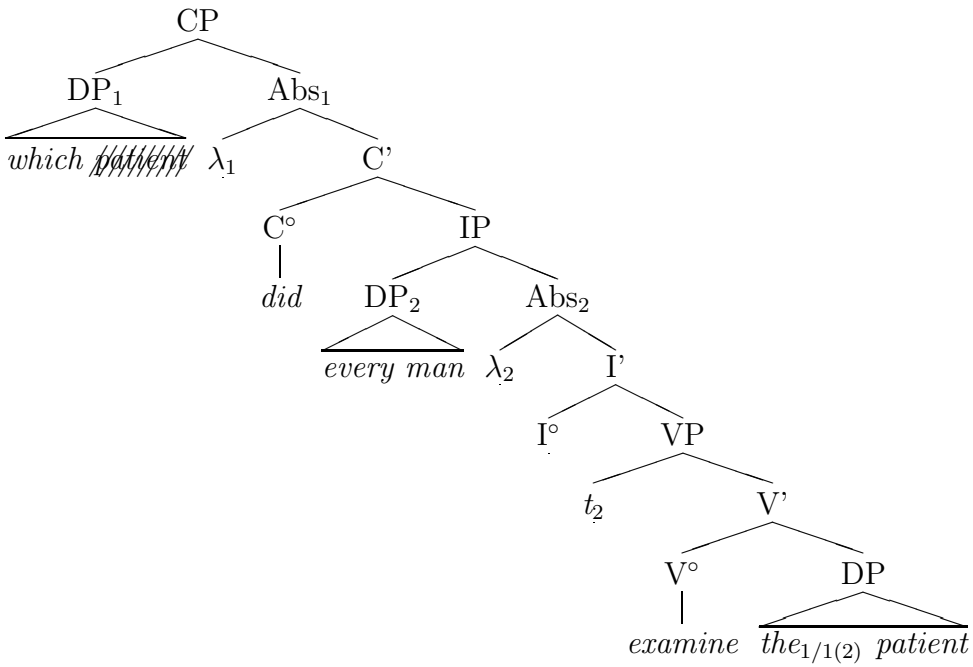
Requirements and conclusion:
-No interpretation of the restriction in the peripheral position[5];
-Requires a polymorphic *which*[6];
-Indefinite copy ⇒ PL or functional reading (without presupposition).

2.2.2 Definite copy: individual or functional indices

Based on Fox (2003) or Heim and Jacobson (2005): a copy can be interpreted as an 'individual' or 'functional' definite description.

(19) *Which ~~patient~~ did every doctor examine ~~which patient~~?*

(a)



(b) *What is the x such that every doctor$_y$ examined the$_x$ patient?*
⇒ Individual reading with presupposition that x is a patient.

(c) *What is the function $g_{\langle ee\rangle}$ such that every doctor$_y$ examined the$_{g(y)}$ patient?*
⇒ Functional reading with presupposition that g maps doctors to patients.

⇒ Definite copies add a presupposition condition on the individuals or functions considered.

[5]For the case of dislocation, no interpretation at all in the peripheral position. For more details, see Guilliot (2006).

[6]Three distinct denotations are required at least:

(18) (a) 'individual' $[\![which]\!] = \lambda F_{\langle e,\langle st,t\rangle\rangle}.\lambda p_{\langle st\rangle}.\exists x_e.[F(x)(p)]$
(b) 'skolem' $[\![which]\!] = \lambda F_{\langle ee,\langle st,t\rangle\rangle}.\lambda p_{\langle st\rangle}.\exists g_{\langle ee\rangle}.[F(g)(p)]$
(c) 'skolemized choice function' $[\![which]\!] = \lambda F_{\langle\langle et,ee\rangle,\langle st,t\rangle\rangle}.\lambda p_{\langle st\rangle}.\exists f_{\langle et,ee\rangle}.[CH_s(f) \wedge F(f)(p)]$

Requirements and conclusion:
-Similar constraint on what is interpreted in the peripheral position;
-Similar constraint on *which*: polymorphy;
-Definite copy ⇒ individual or functional reading (**with** presupposition).

2.3 Consequences about resumption

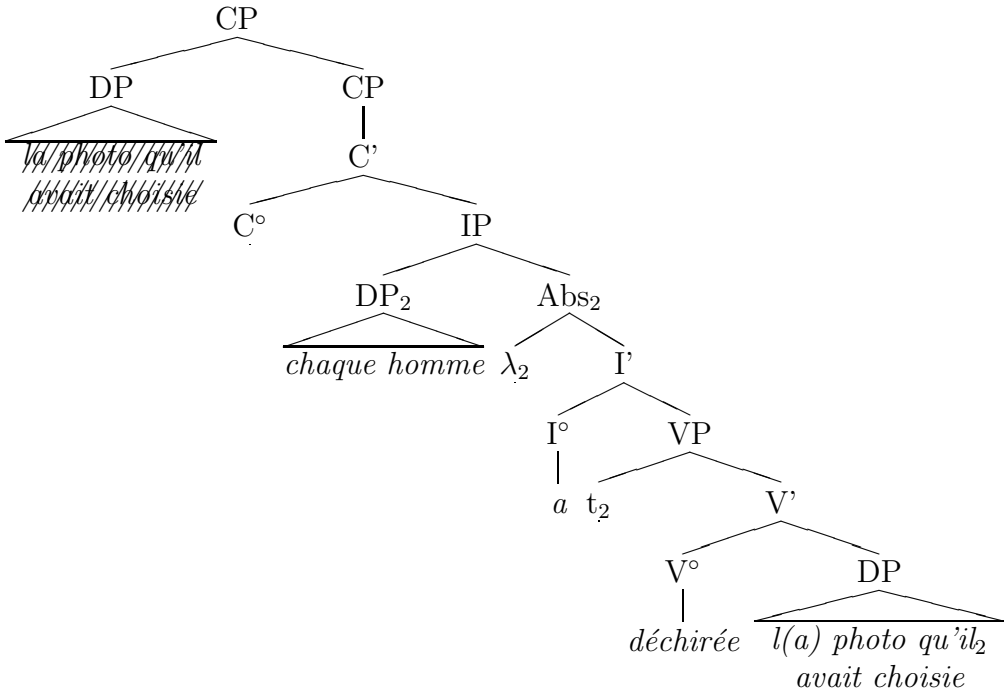
Two claims as logical consequence of (11):

(20) (a) **Claim #1:** Resumptive pronouns can be interpreted as *e*-type.
(b) **Claim #2:** Resumption is tied to the ellipsis phenomenon.

One further logical consequence:

(21) *A resumptive pronoun will necessarily be interpreted as a definite copy.*

(22) ~~*La photo qu'il avait choisie*~~, *chaque homme*$_2$ *a déchirée* ***l(a)*** ~~*photo qu'il*$_2$ *avait choisie*~~.
'The picture that he had chosen, every man tore it.'



3 Empirical Arguments

Several empirical arguments for both claims about resumption:
• resumption allows for reconstruction within islands;
• resumption obviates condition C effect;
• cyclicity effects disappear with resumption;
• the absence of pair-list (PL) reading with resumption;
• like resumption, other cases of ellipsis do allow for reconstruction.

3.1 First, a basic observation

(23) *La photo qu'il*$_2$ *avait choisie, chaque homme*$_2$ ***l****'a déchirée.*
'The picture that he had chosen, every man tore it.'

Why should it be an *e*-type phenomenon (claim #1)?
Because it just corresponds to our definition of what *e*-type means!!!

e-type anaphora: a covariant/distributive reading of a pronoun coming from the covariant/distributive potential of its antecedent;
⇒ covariant reading of the clitic *l(a)* (a different picture for each man) coming from the distributive potential of its antecedent *la photo qu'il avait choisie*;
⇒ That distributive potential comes from binding properties (the fact that it contains a potential bound variable).

On a par with Elbourne (2002)'s analysis of 'paycheck' sentences (classical *e*-type example):

(24) John$_1$ gave his$_1$ paycheck to his mistress. Everybody$_2$ else put [$_{DP}$ it [$_{NP}$ ~~paycheck of him$_2$~~]] in the bank.

⇒ Presence of the bound pronoun *him* in the elided copy straightforwardly accounts for the covariant/*e*-type reading of the pronoun *it*.

3.2 Reconstruction within islands

Reconstruction still holds within syntactic islands, hence banning any account of reconstruction based exclusively on movement (as defended in Aoun et al. (2001)):

(25) Dislocation with an adjunct island:
La photo$_1$ *de sa*$_2$ *classe, tu es fâché parce que chaque prof*$_2$ ***l***$_1$*'a déchirée.*
(lit.) 'The picture of his class, you're furious because every teacher tore it.'

(26) Interrogation with a *wh-* island:
?*Quelle photo*$_1$ *lui*$_2$ *est-ce que tu te demandes si chaque homme*$_2$ ***l***$_1$*'a déchirée?*
(lit.) 'Which picture of his do you wonder whether every man tore it?'

Reconstruction within islands is expected, as it follows from *e*-type (claim #1) and ellipsis (claim #2) phenomena, which (contrary to movement) are not restricted by any syntactic island (see (27a) and (27b) respectively):

(27) (a) *John saw a picture of himself, and Paul did [*$_\Delta$ *_] too.*
(b) *Bill gave his paycheck*$_1$ *to his wife, and everybody else put* ***it***$_1$ *in the bank.*

⇒ Obviously both ellipsis and *e*-type phenomena are licensed even when an island occurs between the antecedent and the site for ellipsis or *e*-type pronoun (*cf* coordination structures as classical contexts for ellipsis and *e*-type phenomena).

3.3 Condition C obviation

Well-known fact about resumption that it obviates condition C, hence arguing for the absence of reconstruction:

(28) Dislocation:
Le crayon$_2$ *de Laila*$_1$*, je pense qu'elle*$_1$ *l*$_2$*'a acheté aux Galeries.*
(lit.) 'Laila's pen, I think she bought it at the shopping arcade.'

Another argument for claim #2 (the link between resumption and ellipsis), as ellipsis also obviates condition C:

(29) *I kissed the sister of John*$_1$*, and he*$_1$ *did* [$_\Delta$ _] *too.*

⇒ Coreference available between *John* and *he*, which can be analyzed by Fiengo and May (1994) in terms of *Vehicle Change* (VC):

(30) (a) *I kissed the sister of John*$_1$*, and he*$_1$ *did* [$_\Delta$ ~~*kiss the sister of John*$_1$~~] *too.*
(b) VC ⇒ *I kissed the sister of John*$_1$*, and he*$_1$ *did* [$_\Delta$ ~~*kiss the sister of him*$_1$~~] *too.*

3.4 The PL reading disappears with resumption

Well-known property of resumption that it bans the pair-list (PL) reading:

(31) Interrogation in Hebrew (Sharvit (1997)):

Ezyo	*iSa*	*kol*	*gever*	*hizmin*	*ota?*
which	woman	every	man	invite.*past-3s*	her

(lit.) 'Which woman did every man invite her?'

(a) *Et* *im-o.*
acc mother-his
'His mother.'

(b) **Yosi* *et* *Gila; Rami* *et* *Rina...*
Yosi *acc* Gila Rami *acc* Rina
*'Yosi, Gila; Rami, Rina'

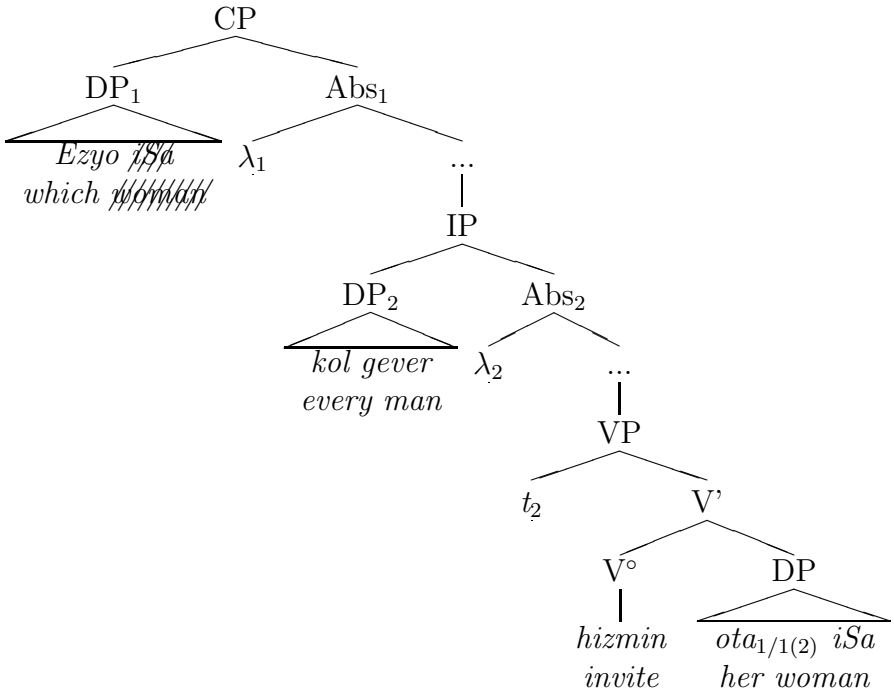
(32) Interrogation in French:
?*Quelle photo*$_1$ *de lui*$_2$ *est-ce que tu te demandes si chaque homme*$_2$ ***l***$_1$*'a déchirée?*
(lit.) 'Which picture of his do you wonder whether every man tore it?'

(a) *Celle de son mariage.*
'The one from his wedding.'

(b) **Jean, celle de sa naissance; Fred, celle de son mariage;...*
'For John, the one from his birth; For Fred, the one from his wedding;...'

⇒ Follows nicely from our analysis:
• Recall from section 2.2 that a PL reading is tied to the presence of an indefinite copy ('skolemized' choice function).
• however, interpretation of the resumptive clitic can only give rise to a definite copy.

(33) Individual or functional reading of (31):



3.5 Cyclicity effects disappear with resumption

Reconstruction is a traditional argument for cyclicity effects of movement, as shown by the following contrast (from Lebeaux (1990)):

(34) (a) *Which paper that he$_1$ gave to Mrs Brown$_2$ did every student$_1$ hope* $\underline{\surd}$ *that she$_2$ would read* $\underline{*}$*?*

(b) **Which book that he$_1$ gave to Mrs Brown$_2$ did she$_2$ hope* $\underline{*}$ *that every student$_1$ would revise* $\underline{*}$*?*

But the contrast disappears when resumption is at stake:

(35) (a) *?Quel exercice qu'il$_1$ a rendu à Hamida$_2$ est-ce que chaque étudiant$_1$ se demande si elle$_2$ va le corriger?*
(lit.) 'Which exercise that he gave back to Hamida does each student wonder whether she will grade it?'

(b) *?Quel exercice qu'Hamida$_2$ lui$_1$ a donné est-ce qu'elle$_2$ se demande si chaque étudiant$_1$ va le faire?*
(lit.) 'Which exercise that Hamida gave him does she wonder whether each student will do it?'

⇒ The absence of cyclicity with resumption follows if we assume an analysis based on ellipsis.

3.6 Reconstruction with ellipsis

An argument in two steps...

Step #1: cases of VP-fronting in English and 'NP-fronting' in French for which the original site is embedded within a strong island.

(36) (a) *?As for inviting Mary to the party, I don't know anybody who would like to.*

(b) *?Les films de Spielberg, je ne connais personne qui ait manqué les plus célèbres.*
(lit.) 'The films by Spielberg, I don't know anybody who missed the most famous.'

⇒ Traditionally not considered as cases of resumption, these data seem however to involve ellipsis of some kind.

Step #2: these specific structures also license reconstructed readings!

(37) (a) *?As for inviting his$_1$ mother, every guy$_1$ who would like to should inform the organizer.*

(b) *?Quant aux matchs de son$_1$ équipe, je ne connais aucun joueur$_1$ qui manquerait les plus importants.*
(lit.) 'As for his team games, I don't any player who would miss the most important.'

⇒ In the same way that resumption allows for reconstruction (even within islands), so do other cases of ellipsis with a displaced antecedent, hence pleading in favor of that link between resumption and ellipsis (claim #2).

4 Theoretical Arguments

Further arguments in favor of the *e*-type and ellipsis properties of resumption:
• resumption & *e*-type pronouns in variable-free semantics (Jacobson (1999));
• resumption & ellipsis in dynamic syntax (Cann et al. (2005)).

4.1 Resumption in variable-free semantics (Jacobson (1999))

• rejects the notion of variable as a theoretical object: idea that 2 different variables (x_1 et x_2) contribute equivalently to the meaning (*John loves* x_1 = *John loves* x_2);
• pronouns are not variables either: their constant semantic contribution is the identity function ($\lambda x.x$).
⇒ Consequence: neither indices in syntax nor assignment functions in semantics.

4.1.1 Pronouns and the *g* rule

A pronoun denotes the identity function over individuals ($\lambda x.x$)

(38) *He left.*
he → type $\langle e, e\rangle$
left → type $\langle e, t\rangle$

To combine the two items, a type-shifting rule is required:

(39) *The g rule*
For any semantic types a, b and c: if h is a function of type $\langle a, b\rangle$, then $g_c(h)$ is a function of type $\langle\langle c, a\rangle, \langle c, b\rangle\rangle$ such that $g_c(h) = \lambda V_{\langle c,a\rangle}[\lambda X_c[h(V(X))]]$

We can now compose *he* and *left* by applying the g rule to the meaning of *left*:

(40) $[\![he\ g_e(left)]\!]=[\lambda f_{\langle ee\rangle}.\lambda x_e.[\![left]\!](f(x))]([\![he]\!])$
$=[\lambda f_{\langle ee\rangle}.\lambda x_e[\lambda v.v\ left](f(x))](\lambda y.y)$
$=[\lambda f_{\langle ee\rangle}.\lambda x_e.f(x)\ left](\lambda y.y)$
$=\lambda x_e.[\lambda y.y](x)\ left$
$=\lambda x.x\ left$

⇒ we obtain the same denotation as *left*[7], but with one major difference:
- *left* is syntactically unsaturated;
- *he left* is syntactically saturated, but will have a truth value only by attributing an individual from the context to x (a kind of contextually unsaturated proposition).

4.1.2 Binding and the *z* rule

Implementation of binding through another type-shifting rule, which makes binding very local:

(41) *The z rule*
For any semantic types a and b: if h is a function of type $\langle a, \langle e, b\rangle\rangle$, then $z(h)$ is a function of type $\langle\langle e, a\rangle, \langle e, b\rangle\rangle$ such that $z(h) = \lambda V_{\langle e,a\rangle}[\lambda x_e[h(V(x))(x)]]$.

(42) Every man loves his mother.

$[\![z(loves)\ his\ mother]\!]=[\![z(loves)]\!]([\![his\ mother]\!])$
$=[\lambda f_{ee}.\lambda x_e.[\![loves]\!](f(x))(x)](\lambda y.the\ mother\ of\ y)$
$=[\lambda f_{ee}.\lambda x_e[\lambda v.\lambda k.k\ loves\ v](f(x))(x)](\lambda y.the\ mother\ of\ y)$
$=[\lambda f_{ee}.\lambda x_e.x\ loves\ f(x)](\lambda y.the\ mother\ of\ y)$
$=\lambda x_e.x\ loves\ [\lambda y.the\ mother\ of\ y](x)$
$=\lambda x_e.x\ loves\ the\ mother\ of\ x$

[7] In sum, a constituent containing an unbound pronoun will be of type 'from individuals e to the type that constituent would be by replacing the pronoun with a proper name' (ex: *the picture of John* of type $\langle e\rangle$, then *the picture of him* of type $\langle e, e\rangle$).

$[\![every\ man]\!]=\lambda Q_{\langle et\rangle}.\forall y(y\ is\ a\ man \rightarrow Q(y))$

$$\begin{aligned}[\![every\ man\ z(loves)\ his\ mother]\!] &=[\![every\ man]\!]([\![z(loves)\ his\ mother]\!])\\ &=[\lambda Q_{\langle et\rangle}.\forall y(y\ is\ a\ man \rightarrow Q(y))](\lambda x_e.x\ loves\ the\ mother\ of\ x)\\ &=\forall y(y\ is\ a\ man \rightarrow [\lambda x_e.x\ loves\ the\ mother\ of\ x](y))\\ &=\forall y(y\ is\ a\ man \rightarrow y\ loves\ the\ mother\ of\ y)\end{aligned}$$

4.1.3 *E*-type anaphora

Jacobson (1999) also accounts for *e*-type interpretation of pronouns within Variable-free semantics (VFS):

(43) Every man$_1$ loves his$_1$ mother, but no man$_2$ marries **her**.

⇒ *E*-type/covariant interpretation of *her* with respect to *each man*.

To account for *e*-type anaphora in VFS, we just need several instances of z or g rules:

(44) $[\![g(her)]\!]=\lambda f_{ee}.\lambda x.[\![her]\!](f(x)) = \lambda f_{ee}.\lambda x.[\lambda y.y](f(x)) = \lambda f_{ee}.\lambda x.f(x) = \lambda f.f$
(type $\langle ee, ee\rangle$)

$[\![z(marries)]\!] = \lambda g_{ee}.\lambda x.x\ marries\ g(x)$
(type $\langle ee, et\rangle$)

$$\begin{aligned}[\![g_{ee}(z(marries))]\!] &= \lambda D_{\langle ee,ee\rangle}.\lambda h_{ee}.[\![g(marries)]\!](D(h))\\ &=\lambda D_{\langle ee,ee\rangle}.\lambda h_{ee}.[\lambda g_{ee}.\lambda x.x\ marries\ g(x)](D(h))\\ &=\lambda D_{\langle ee,ee\rangle}.\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ D(h)(x)\end{aligned}$$
(type $\langle\langle ee, ee\rangle, \langle ee, et\rangle\rangle$)

$$\begin{aligned}[\![g_{ee}(z(marries))\ g(her)]\!] &= [\lambda D_{\langle ee,ee\rangle}.\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ D(h)(x)](\lambda f.f)\\ &=\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ [\lambda f.f](h)(x)\\ &=\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ h(x)\end{aligned}$$
(type $\langle ee, et\rangle$)

$$\begin{aligned}[\![g_{ee}(no\ man)]\!] &=[\lambda R_{\langle ee,et\rangle}.\lambda f_{ee}.[\![no\ man]\!](R(f))]\\ &=\lambda R_{\langle ee,et\rangle}.\lambda f.[\lambda P.\neg\exists y.y\ is\ a\ man \wedge P(y)](R(f))\\ &=\lambda R_{\langle ee,et\rangle}.\lambda f.\neg\exists y.y\ is\ a\ man \wedge R(f)(y)\end{aligned}$$
(type $\langle\langle ee, et\rangle, \langle ee, t\rangle\rangle$)

$$\begin{aligned}&[\![\text{g(no man) g(z(marries)) g(her)}]\!]\\ &=[\lambda R_{\langle ee,et\rangle}.\lambda f.\neg\exists y.y\ is\ a\ man \wedge R(f)(y)](\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ h(x))\\ &=\lambda f.\neg\exists y.y\ is\ a\ man \wedge [\lambda h_{\langle ee\rangle}.\lambda x.x\ marries\ h(x)](f)(y)\\ &=\lambda f.\neg\exists y.y\ is\ a\ man \wedge y\ marries\ f(x)\end{aligned}$$

⇒ This proposition will have a truth value under the contextual assignment of a value for f_{ee}:
• in this example, *the-mother-of* function is clearly provided by the context (through the presence of $[\![hismother]\!]=\lambda x.the\ mother\ of\ x$).

• crucially in VFS, an *e*-type pronoun denotes the identity function over 'skolem' functions ($\lambda f.f$).

4.1.4 And what about resumption

How would VFS account for our cases of reconstruction with resumption? Let's take a simple case:

(45) *La photo de lui, chaque homme* ***l'a*** *déchirée.*
(lit.) 'The picture of his, every man tore it.'

VFS can also deal with these data under the assumption that the resumptive clitic is interpreted as *e*-type:

(46) *La photo de lui, chaque homme* ***l(a)****'a déchirée.*

-$[\![\text{lui}]\!] = \lambda x.x$
-$[\![\text{la photo de lui}]\!] = \lambda x.the\ picture\ of\ x$
-$[\![\text{l(a)}]\!] = \lambda f.f$
-$[\![\text{chaque homme a déchiré l(a)}]\!] = \lambda f.\forall x.(x\ is\ a\ man \rightarrow x\ tore\ f(x)$
with f given by the context (the hanging topic): $\lambda x.the\ picture\ of\ x$

⇒ Strong theoretical argument for **Claim #1:** resumptives can be interpreted as *e*-type.

4.1.5 Advantages & potential problems

The VFS system may have several advantages:

• it also accounts for the fact that e-type interpretation is available within islands
⇒ *no movement in that system.*

(47) *La photo de sa classe, tu es fâché parce que chaque prof*$_2$ ***l'a*** *déchirée.*
(lit.) 'The picture of his class, you're furious because every teacher tore it.'

-$[\![g(l(a))]\!]=\lambda f_{ee}.f$ (*e*-type interpretation of the resumptive clitic)
-$[\![la\ photo\ de\ sa\ classe]\!]=\lambda x.the\ picture\ of\ the\ class\ of\ x$ (the antecedent as the required contextual function)

⇒ A kind of 'coreferential' reading between the two items: not over individuals, but over functions.

• it dispenses with a heavy theory of reconstruction
⇒ *no movement, no trace/copy, no reconstruction, just combination rules.*

• contrary to the generative approach, everything gets interpreted in its surface position within VFS.
⇒ *no need to posit that the dislocated element (or the restriction of the wh- element) is not interpreted in its base position.*

But it also raises potential problems or questions:

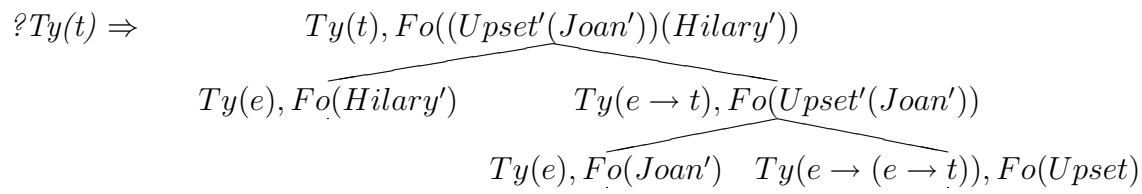
• how to account for the absence of pair-list readings with resumption?
⇒ Analysis largely inspired by Engdahl (1986) for which there is a quite direct implication from functional to pair-list readings...

• why is that functional/e-type reading blocked with strong resumption in strong islands? (that was yesterday!!!)

4.2 Resumption & ellipsis in dynamic syntax (Cann et al. (2005))

• Dynamic Syntax (DS): a novel formalism in which grammar and parsing (constraints) interact.
• incremental (word by word) building of syntactic and semantic representations, from an initial requirement to the end of the parse:

(48) Parsing *Hilary upset Joan*:



• Two types of actions to develop the tree: lexical actions (words) and computational actions;

(49) Lexical actions for *Upset*:

Upset'

IF	$?Ty(e \rightarrow t)$ (Trigger)
THEN	go to mother node;
	put tense information $Tns(PAST)$;
	go to predicate (daughter) node;
	make a functor node;
	go to that functor node;
	put $Fo(Upset'), Ty(e \rightarrow (e \rightarrow t))$;
	go to mother node;
	make an argument node;
	go to the argument node;
	put $?Ty(e)$).
ELSE	Abort

• Crucial feature in DS: the notion of underspecification.

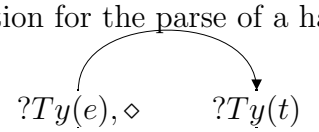
Let's take a concrete example to illustrate major properties of DS.

(50) *As for John, Mary likes him.*

4.2.1 Displacement

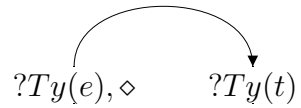
Computational action for the parse of a hanging topic (linked structure)[8]:

(51) $?Ty(t), \diamond \Rightarrow$

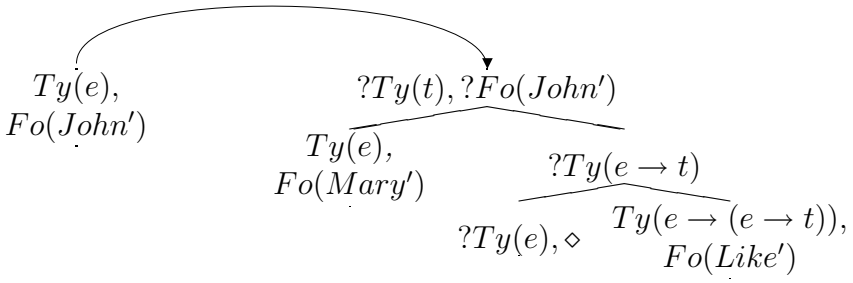


(52) Parsing *As for John, Mary upset him*:

-Linked structure ⇒



-Insertion of *John*, *Mary* and *likes* ⇒



4.2.2 (Resumptive) pronouns in DS as lexical underspecification

Resumptive pronouns are just pronouns in DS, as they just introduce lexical underspecification:

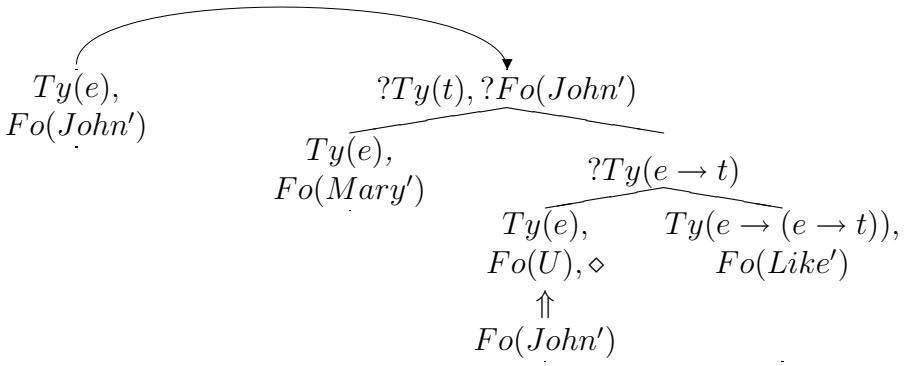
(53) *him*

IF	$?Ty(e)$ (Trigger)
THEN	put $Ty(e), Fo(U_{Male'})$,
	$?\exists x.Fo(x)$ (Requirement for an antecedent)
ELSE	Abort

⇒ Lexical underspecification of pronouns (metavariable U) requiring later unification with an antecedent.

(54) Ending the parse of *As for John, Mary upset him*:

-Insertion of *him* ⇒



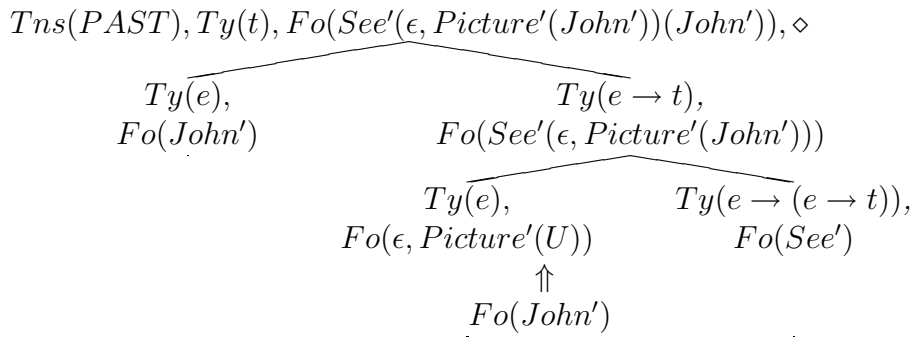
⇒ Lexical unification with the hanging topic can apply: lexical underspecification ($Fo(U)$) can be updated with $Fo(John')$.

[8] ◇ corresponds to the pointer, i.e. the node under process.

4.2.3 Ellipsis in DS as... lexical underspecification

(55) *John saw a picture of him. Paul did _ too.*

(56) Parsing the CONTEXT *John saw a picture of him*:



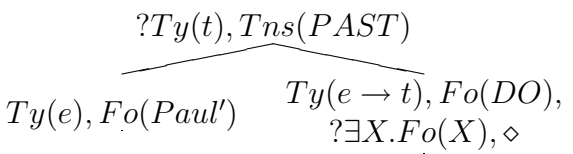
In DS, ellipsis will also treated via lexical underspecification, here introduced by the lexical entry of *did*:

(57) *did*

IF	$?Ty(e \rightarrow t)$ (Trigger)
THEN	go to mother node
	put tense information $Tns(PAST)$
	go to predicate (daughter) node
	put $Ty(e \rightarrow t), Fo(DO)$,
	$?\exists X.Fo(X)$ (Requirement for an antecedent)
ELSE	Abort

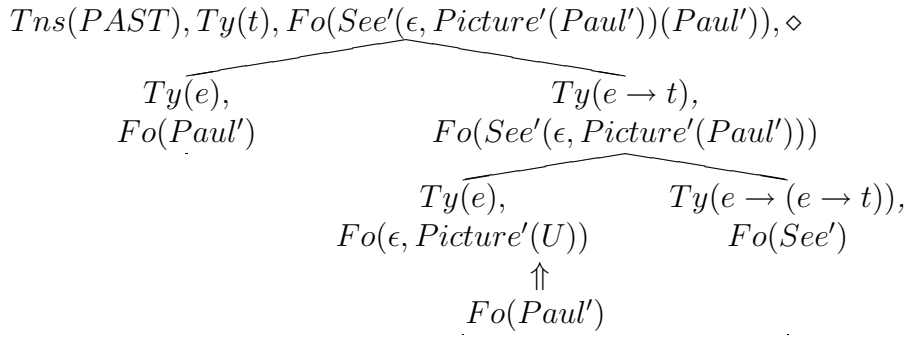
$\Rightarrow$ the only difference between *did* and *him*: underspecification over one-place predicates for the former, and underspecification over individuals for the latter.

(58) Parsing *Paul did*:



$\Rightarrow$ Lexical unification with the contextual VP:
• updating lexical underspecification ($Fo(DO)$) through a *re-doing actions* process;
• re-doing all the actions induced by the parse of *see*, *picture* and *him* (+ update of lexical underspecification $Fo(U)$ induced by *him*).

(59) Re-doing actions of the VP antecedent:



4.2.4 Reconstruction with ellipsis or resumption: just the same!

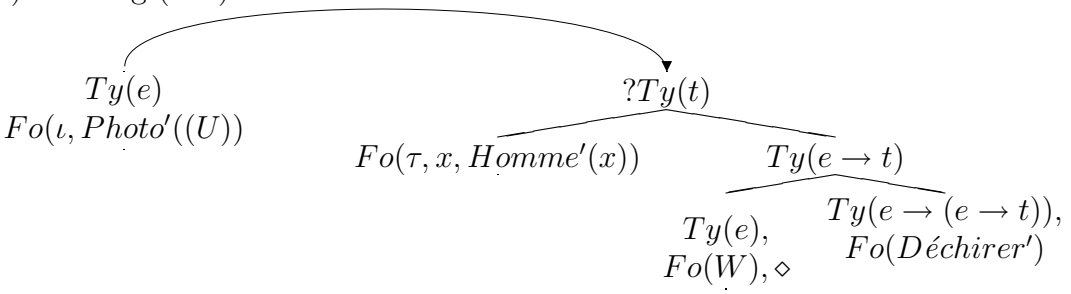
(60) *Reconstruction of a displaced constituent XP requires the presence of lexical underspecification on the 'source' position associated with that XP.*

(61) (a) *?As for inviting his$_1$ mother, every guy$_1$ who would like to should inform the organizer.*

(b) *La photo de lui, chaque homme* ***l'****a déchirée.*
(lit.) 'The picture of his, every man tore it.'

Update/Unification of lexical underspecification through the *re-doing actions* process will give rise to reconstruction:

(62) Parsing (61b):



$\Rightarrow$ Update of lexical underspecification induced by the resumptive clitic l(a) ($Fo(W)$) by re-doing actions of *la photo de lui*, which leads to $Fo(\iota, Photo'(U))$.

5 Conclusion

The study of resumption in light of reconstruction leads to the following claims:

Claim #1: Resumptive pronouns are interpreted as *e*-type.

Claim #2: Resumption is tied to the ellipsis phenomenon.

$\Rightarrow$ Corrseponds to Elbourne (2002)'s analysis of *e*-type pronouns via the presence of ellipsis can be extended to cases of resumption.

Empirical arguments:

- reconstruction with resumption even within islands;
- condition C obviation with resumption;
- absence of pair-list readings with resumption;
- other cases of reconstruction with ellipsis.

Theoretical arguments:

- the parallel between *e*-type pronouns and reconstruction cases with resumption in variable-free semantics;
- the parallel between resumption & ellipsis in dynamic syntax (lexical underspecification).

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