The existential quantificational force of pseudo-incorporated nominals and its effects on their anaphoric uptake

Manfred Krifka

Fereshteh Modarresi

Workshop on Linguistic and Cognitive Aspects of Quantification
Budapest, October 16-17, 2015

Zentrum für Allgemeine
Sprachwissenschaft

HUMBOLDT-UNIVERSITÄT ZU BERLIN

1 Pseudo-Incorporation and Anaphora

1.1 Incorporation and Pseudo-Incorporation

What is incorporation?

◆ Morphological integration of a nominal head N into a transitive verb,
 thereby filling an argument slot (cf. Mithun 1984, Baker 1996, …)

What is pseudo-incorporation?

◆ Syntactic integration of an NP with a transitive verb, thereby filling an argument slot,
 but syntactically closer than "regular" object
◆ Example (Niuean, Oceanic; Massam 2001, Seiter 1980)

(1) a. *Takafaga tūmau nī   [e   ia] [e tau ika].*   non-incorporated
     hunt   always   EMPH ERG he ABS PL   fish
     'He always hunts for fishes', 'He is always fishing.'

  b. [*Takafaga ika*] *tūmau nī*   [*a   ia*].   incorporated
     hunt   fish   always EMPH ABS he.
     'He is always fishing.'

(2) *Ne* [*inu* [*kofe kono*]] [*a   Mele*].   incorporated, complex
    PST drink coffee bitter   ABS Mary
    'Mary drank bitter coffee.'

1.2 Pseudo-incorporation in Hungarian (Farkas & de Swart 2003)

(3) a. *Mari   olvas   egy hosszú verset.*   indefinite, non-incorporated
  Mari   read   a   long   poem.ACC
  'Mary is reading a long poem.'

  b. *Mari   hosszú   verset   olvas.*   pseudo-incorporated
  Mari   long   poem.ACC   read
  'Mary is reading a long poem / long poems.'

◆ pseudo-incorporated nominals are number neutral
◆ they lack articles
◆ they occur in pre-verbal position

1.3 Pseudo-incorporation in Persian (Modarresi 2015):

(4) a. *Mæn   roobah   did-æm.*   incorporated
  I   fox   saw-1SG
  'I saw a fox / foxes.'

  b. *Mæn   yek roobah(-ra) did-æm.*   indefinite
  I   a   fox-(ACC)   saw-1SG
  'I saw a fox.'

  c. *Mæn   roobah-rā   did-æm.*   non-incorporated
  I   fox-ACC   saw-1SG
  'I saw the fox.'

(5) *Mæn   mobl-e   atiqhe mi-frousham*   incorporated, complex
  I   sofa-EZ   antique DUR-sell-1SG
  'I sell antique sofa(s)'

◆ pseudo-incorporated nouns are bare nouns lacking accusative case marking (*-rā*)
◆ pseudo-incorporated nouns are number-neutral
◆ indefinite nouns may lack accusative marking
◆ bare nouns with accusative marking are interpreted as definite (no definite article)

1.4 Pseudo-Incorporation and Anaphora

◆ Common claim: Pseudo-incorporated NPs cannot be taken up by anaphora.
◆ But: Massam 2001, Asudeh & Mikkelsen 2000 for Danish, Dayal 2011 for Hindi claim that uptake by anaphora is possible in certain cases.
◆ Farkas & de Swart 2003 call this **discourse translucency** (contrasted with discourse transparency, discourse opacity):

(1) *János$_i$ beteget$_j$ vizsgált   a   rendelőben.*
     Janos$_i$ patient.ACC$_j$ examine.PAST the office.in
     'Janos$_i$ patient$_j$-examined in the office.'

   a. ??$\varnothing_i$ *Túl sulyosnak talála őt$_j$ és beutaltatta $\varnothing_j$ a korházba.*
      pro$_i$ too severe.DAT find   he$_j$.ACC and intern.CAUSE.PAST pro$_j$ the hospital.in

   b. $\varnothing_i$ *Túl sulyosnak talála $\underline{\varnothing_j}$ és beutaltatta $\varnothing_j$ a korházba.*
      pro$_i$ too severe.DAT find.PAST pro$_j$ and intern.CAUSE.PAST pro$_j$ the hospital.in
      'He$_i$ found him$_j$ too sick and sent him to hospital.'

2 Discourse Referents and Thematic Arguments: Farkas & de Swart

2.1 Discourse Translucency

◆ Pseudo-incorporated NPs are not accessible to **overt** pronouns
◆ But anaphoric uptake is possible for **covert** pronominals (pro).

Theoretical reconstruction in Discourse Representation Theory (Kamp & Reyle 1994) here illustrated with Persian data, to ensure comparability.

Format of discourse representations (DRS):

(6) K_0 + *Pedro owns a donkey.*
     = [x_1 x_2 | x_1=PEDRO, DONKEY(x_2), OWN(x_1,x_2)]

(7) K_0 + *Every farmer owns a donkey*.
     = [| [x_1 | FARMER(x_1)] → [x_2 | DONKEY(x_2), OWN(x_1,x_2)]]

Regular indefinite object vs pseudo-incorporated object:

(8) K_0 + [*Leili* [*yek sib*] *khærid*]
     = [x_1 x_2 | x_1 = LEILI, APPLE(x_2), BUY(x_1, x_2)],   two DR introduced: x_1, x_2

(9) K_0 + [*Leili* [*sib khærid*]]
     = [x_1 | x_1 = LEILI, APPLE(x_2), BUY(x_1, x_2)]   one DR introduced: x_1
     = K_1 x_2: "thematic argument"

Standard interpretation of DRS:

(10) $[x_1\ x_2 \mid x_1 = \text{LEILA}, \text{APPLE}(x_2), \text{BUY}(x_1, x_2)]$
    is true w.r.t. a model M = $\langle A, [\![\ ]\!] \rangle$
    iff there is a DR assignment f: $\{x_1, x_2\} \to A$
    such that all DRS conditions are true in the model w.r.t. the assignment f,
    i.e. $f(x_1)=[\![\text{LEILA}]\!]$, $f(x_2)\in[\![\text{APPLE}]\!]$, $\langle f(x_1), f(x_2)\rangle\in[\![\text{BUY}]\!]$

Interpretation of thematic arguments:

(11) A function f verifies a condition of the form $P(x_1, \ldots, x_n)$ relative to a model M
    iff there is a sequence $\langle a_1, \ldots, a_n \rangle \in A_n$, such that $\langle a_1, \ldots, a_n \rangle \in [\![P]\!]$,

    and if x_i is a **discourse referent**, $a_i = f(x_1)$

    and if x_i is a **thematic argument**, a_i is some element in A.

◆ As thematic arguments do not introduce DRs,
   no anaphoric uptake possible.

◆ We need a special rule for translucency cases.

2.2 Semantics of Translucency

(12) If a suitable discourse referent cannot be found in K for an anaphoric expression,
    introduce a new DR x_j and **add a condition** of the form $x_j \approx x_i$,
    where x_i is a thematic argument that is part of a condition $P(x_1, \ldots, x_i, \ldots x_n)$
    in the conditions of K or a DRS that is superordinate to K

(13) f verifies $x_i \approx x_i$, where there is a condition $P(x_1, \ldots, x_i, \ldots, x_n)$,
    iff f maps x_j onto the individual a_i that is the i-th element
    of the n-tuple $\langle a_1, \ldots, a_i, \ldots, a_n \rangle$ that verifies the condition $P(x_1, \ldots, x_i, \ldots, x_n)$.

Example:

(14) K_1 + [*Majnoon khord=∅*]
    = [x_1 $\mid x_1 = \text{LEILA}, \text{APPLE}(x_2), \text{BUY}(x_1, x_2)$
        $x_3\ x_4$ $\mid x_3 = \text{MAJNOON}, x_4 \approx x_2, \text{EAT}(x_3, x_4)]$

    true w.r.t. f and a model $\langle A, [\![\ ]\!] \rangle$
    iff $f(x_1) = [\![\text{LEILA}]\!]$,
      there is an a_2 such that $a_2\in A$ with $a_2\in[\![\text{APPLE}]\!]$,
      there is a sequence $\langle a_1, a_2 \rangle \in A \times A$ with $f(x_1)=a_1$ and $\langle a_1, a_2 \rangle \in [\![\text{BUY}]\!]$
      $f(x_3) = [\![\text{MAJNOON}]\!]$,
      f maps x_4 to a_2,
      $\langle f(x_3), f(x_4)\rangle\in[\![\text{APPLE}]\!]$

2.3 Problems

◆ Non-compositional rule:
a_2 is bound by existential quantifier "there is a...", hence not accessible from outside.

iff $f(x_1)$ = ⟦LEILA⟧,
there is an $a_2 \in A$ with $a_2 \in$⟦APPLE⟧,
there is a sequence $\langle a_1, a_2 \rangle \in AxA$ with $f(x_1)=a_1$ and $\langle a_1, a_2 \rangle \in$⟦BUY⟧
$f(x_3)$ = ⟦MAJNOON⟧,
f maps x_4 to a_2,
$\langle f(x_3), f(x_4) \rangle \in$⟦APPLE⟧

◆ Yanovich 2008:
the rule does not guarantee binding between the individual that is an apple
and the individual that Majnoon ate,
as a_2 is bound by two independent quantifiers "there is..."

◆ Yanovich 2008 also points out an empirical problem
with Farkas & de Swart's claim about Hungarian:
Anaphoric uptake of pseudo-incorporated objects with overt pronoun is possible
(data: Anna Szabolcsi):

(15) *A bátyám házat$_1$ vett a múlt héten. Egész vagyont adott érte$_1$.*
    'The brother house-bought last week. He spent a fortune for it.'

3 Number-neutral Discourse Referents: Modarresi 2015

3.1 Number-neutral DRs

◆ Pseudo-incorporated NPs do introduce DRs
◆ But these DRs are number-neutral
◆ Overt pronouns are marked for number, hence expect number-marked DRs
◆ Covert pronouns: not marked for number, hence do not expect number-marked DRs
◆ If world knowledge suggests atomic or sum interpretation of number-neutral DR,
singular or plural overt pronouns are possible.

Number-neutral DRs in Kamp & Reyle 1994:

(16) *All lawyers hired secretaries and payed them well.*
    'All lawyers hired one or more secretaries and payed him/her/them well.'

Example for number neutral DRs (rendered by ξ):

(17) *Leili   sīb   khærid.   Majnoon khord-∅ /-[??]esh/ -[??]eshoon.*
    Leili   apple   bought.3SG   Majnoon ate-pro/-it/-them
    'Leila bought apple(s). Majnoon ate it / them.'
    [x_1 ξ_2 | x = LEILI, APPLE/S(ξ_2), BUY(x_1,ξ_2)
      x_3 | x_3 = MAJNOON, ATE(x_3, ξ_2)] ξ_2: number-neutral DR

3.2 Contextual factors for singular / plural overt pronouns

Example for contexts that favors atomic / sum interpretation:

(18) *Leili apartman khærid.*   *Gheimat-esh bala bood.*   atomic interpretation
  Leili <mark>appartment</mark> bought.3SG.   Price-<mark><u>its</u></mark>   high was.3SG
  'Leili bought appartment(s). Its price was high.'

(19) *Leili havij khærid. Majnoon khord-eshoon.*   sum interpretation
  Leili <mark>carrot</mark> bought.3SG. Majnoon ate-<mark><u>them</u></mark>.
  'Leili bought carrot(s). Majnoon ate them.'

Role of context like in specificational anaphora (anaphora adds information):

(20) *There was <mark>a donkey</mark> at the gate. <mark>The poor old animal</mark> cried terribly.*

(21) *There was <mark>a person</mark> at the door. <mark>She</mark> was quite young.*

Problems:

◆ Why are pseudo-incorporated NPs interpreted as number neutral,
  in spite of being morphologically singular?
◆ Uptake not always easily possible, even with covert pronoun.

(22) *Man* <mark>*roobah*</mark> *didam.*   *[?]Shekar kardam-∅.*
  I   fox   saw.1SG   hunt   did.1SG.
  'I saw fox(es). I hunted it/them.'

(23) *Man <mark>yek roobah</mark> didam. Shekar kardam-∅ / -esh.*
  I   one fox saw.1SG   hunt did.1SG-pro / -it.
  'I saw a fox. I hunted it.'

4 Incorporated NPs and E-type Pronouns

4.1 E-type pronouns

Pronouns that pick up DRs with quantifier antecedents,
without being c-commanded by them (Evans 1980):

(24) *Few congressmen admire Kennedy, and they are very junior.*
  'There are (only) few congressmen that admire Kennedy,
  and the congressmen that admire Kennedy are very junior.'

Maximality effect with the pronoun interpretation, lacking with indefinites (Heim 1990):

(25) a. *A wine glass broke last night. It was very expensive.*
  (o.k. if several wine glasses broke last night, and only one was expensive.)

  b. *Few wine glasses broke last night, but they were very expensive.*
  (all the wine glasses that broke last night were very expensive.)

E-type pronouns have been seen as evidence
for a descriptive theory of pronouns (Neale 1990, Heim 1990, Elbourne 2005),
but this is not required (Nouwen subm.)

4.2 E-type pronouns in DRT

DRT (Kamp & Reyle 1993, Hardt 2003): abstraction and summation over DRSs

(26) *John beats most donkeys he owns. They complain.*

$$[x_1 \mid x_1 = \text{JOHN}, [x_2 \mid \text{DONKEY}(x_2), \text{OWN}(x_1,x_2)] \langle \text{MOST } x_2 \rangle [\mid \text{BEAT}(x_1,x_2)]$$

$$\xi_3 \mid \xi_3 = \Sigma x_2 [x_2 \mid \text{DONKEY}(x_2), \text{OWN}(x_1,x_2), \text{BEAT}(x_1,x_2)]]$$

Abstraction and Summation rule:

◆ Given a triggering configuration with a duplex condition $K_1 \langle Q \rangle K_2$ in a DRS K,
  – form the union $K' = K_1 \cup K_2$,
  – choose a DR x from the universe of K′, add new DR ξ to universe of K′,
    add condition $\xi = \Sigma x\ K'$
◆ $\Sigma x\ K'$ is interpreted relative to an assignment f and a model M = $\langle A, [\![]\!] \rangle$
  as the sum of all a∈A such that there is an extension f′ of f with f′(x) = a,
  and K′ is true w.r.t. f′ and M

Notice:

◆ DRs that are introduced in embedded DRSs become available as antecedents
◆ the choice of singular / plural pronoun depends on whether ξ is atomic or not
◆ Maximality effect arises by the interpretation of summation, Σ
◆ reference to DRSs K_1, K_2 is itself an anaphoric process (cf. Asher & Lascarides)

4.3 E-type analysis of incorporated nominals

Taking up a suggestion of Yanovich 2008 for "thematic argument abstraction", but assuming that incorporation is treated like quantification:

◆ Pseudo-incorporated nominals are introduced in embedded DRS
◆ Anaphoric uptake is possible, but only via abstraction + summation

Predictions:

◆ Anaphoric uptake is more complex for incorporated antecedents
◆ Number neutrality of incorporated NPs
◆ Uptake can be achieved by covert number-neutral anaphora
◆ Uptake possible with singular or plural pronouns, depending on context.

Proposal, in more detail:

◆ Existential closure (EC) (Diesing 1991) with scope over vP
◆ EC quantifies over the event variable of the verbal predicate
◆ Nominals within EC can introduce DRs within the scope of EC

4.4 Illustration of E-type analysis

(27) K_0 + [$_{IP}$ Leili$_1$ EC$_2$ [$_{vP}$ t_1 *sīb$_3$ kharīd$_2$*]]
'Leila apple bought'

[x_1 | x_1=LEILI, $\exists[e_2 \, x_3$ | x_3 = APPLE-OF(e_2), BUY(x_1,x_3,e_2)]]
= K_1

Syntactic structure:

◆ Pseudo-incorporated noun *sīb* remains within vP
◆ Existential closure over vP, indexed with event argument
◆ Subject *Leili* has moved out of vP, leaving trace

Discourse representation:

◆ Existential closure creates embedded DRS, with quantifier $\exists$
◆ Quantifies over an event argument of the predicate, e_2
◆ Bare singular noun *sib* is interpreted as dependent definite,
  here on the event argument, apple-of(e_2): 'the apple of the event e_2'
◆ Being dependent on e_2, the associated discourse referent x_3 must be interpreted
  in the local box

Semantic interpretation:

◆ Condition $\exists K$ is true w.r.t. assignment f, model M
  iff there is an extension f' of f such that K is true w.r.t. f', M.

4.5 Anaphoric uptake of incorporated NP

Abstraction and summation over existentially quantified DRS

(28) $K_1 + [_{IP}$ *Majnoon*$_4$ EC_5 $[_{vP}$ t_4 t_6 *khord*-$\varnothing]]$

$[x_1 \quad | \; x_1 =$ LEILI, $\exists[e_2\, x_3 \mid x_3 =$ APPLE-OF(e_2), BUY$(x_1,x_3,e_2)]]$

$x_4\; \xi_6 \quad | \; x_4 =$ MAJNOON,

$\xi_6 = \Sigma x_3[e_2\, x_3 \mid x_3 =$ APPLE-OF(e_2), BUY$(x_1,x_3,e_2)]]$, Abstraction, Summation

$\exists[e_5 \mid$ EAT$(x_4,\xi_6,e_5)] \;]$

- ◆ The covert pronoun can be interpreted as an e-type pronoun,
  requiring abstraction and summation
- ◆ The covert pronoun does not require a specific number feature,
  ideally relating to the number-neutral DR ξ_6
- ◆ If world knowledge suggests an atomic or sum individual,
  overt singular or plural pronouns are licensed (cf. Modarresi 2015)
- ◆ Anaphoric uptake is more complex compared to cases
  in which a DR is already introduced;
  hence if speaker intends to take up a DR, non-incorporated NPs are better.

4.6 Number neutrality

The representation of singular incorporated count nouns refers to to atomic individuals

(29) $K_0 + [_{IP}$ *Leili*$_1$ EC_2 $[_{vP}$ t_1 *sīb*$_3$ *kharīd*$_2$ $]]$

$[x_1 \quad | \; x_1 =$ LEILI, $\exists[e_2\, x_3 \mid x_3 =$ APPLE-OF(e_2), BUY$(x_1,x_3,e_2)]]$,

where APPLE-OF(e_2): the unique apple of e_2.

Nevertheless, we have apparent number-neutrality:

- ◆ The existential closure does not imply uniqueness,
  there may be many buying events e_2
  for which there is a unique apple that Leili buys.
- ◆ Anaphoric uptake uses abstraction and sum formation,
  which involves **all** of the ways in which the vP-DRS can be interpreted:

(30) $\xi_6 = \Sigma x_3[e_2\, x_3 \mid x_3 =$ APPLE-OF(e_2), BUY$(x_1,x_3,e_2)]]$

- ◆ Hence, reference to all apples for which there is a buying event e by Leili.

4.7 A new prediction: Maximality

◆ Maximality effect, as with other E-type pronouns, due to summation Σ
◆ Not predicted by Farkas & de Swart 2003, Modarresi 2015

(31) *Ali* ==khaneh== *darad.* #*Khane-ye-digari ham dard ke ejareh mideh.*
    Ali house has.   house-EZ-other also has that rent gives.
    'Ali has house(s). He also has another house that he rents.'

(32) *Ali* ==yek khaneh== *darad. Khane-ye-digari ham dard ke ejareh mideh.*
    Ali a house has.   house-EZ-other also has that rent gives
    'Ali has a house. He also has another house that he rents.'

4.8 Comparison with yek-marked indefinites

With *yek*-marked nouns without *-ra,* we assume vP-internal interpretation:

(33) K_0 + [$_{IP}$ *Leili*$_1$ EC$_2$[$_{vP}$ t$_1$ [$_{NP}$ *yek sīb*] *kharīd*]]
        Leili   an apple bought.3SG

Two possible readings:

(34) [x_1 | x_1 = LEILI, $\exists$[e_2 ==x_3== | ==APPLE(x_3), #(x_3)=1,== BUY(x_1,x_3,e_2)]]

◆ No relation of x_3 to e_2
◆ Compatible with more than one apple being bought by Leili
◆ Anaphoric uptake by abstraction and sum formation would refer
  to all the apples that were bought by Leila, just as with bare nominals
◆ The number information of *yek* 'a / one' would be irrelevant in this case
◆ Hence this reading is blocked by the form with bare nominal.

(35) [x_1 ==x_3== | x_1 = LEILI, ==APPLE(x_3), #(x_3)=1,== $\exists$[e_2 | BUY(x_1,x_2,e_3)]]

◆ Indefinite NP is interpreted outside of the existential closure
◆ This is known to be possible with indefinites, cf. "specific" reading of:

(36) *If you see a black dog, then be careful, it will bite you!*
    [x_1 | BLACK-DOG(x_1), [e_2 | SEE(YOU, x_1, e_2)] $\Rightarrow$ [e_3 | $e_1 < e_3$, BITE(x_1,YOU,e_3)]

◆ Notice: x_3 is an accessible singular discourse referent,
  can easily be picked up by singular pronouns in subsequent sentences.

4.9 Accusative-marked bare nominals

Assumption (Modarresi 2015):

◆ *ra* marking is a morphological reflex of an object scrambling out of vP, with interpretative consequences

◆ (Movement of an object NP into a initial focus position does not require *ra*-marking)

◆ (Scrambling of subjects has similar effects, but this is marked only prosodically)

ra-marking of bare NP results in definite interpretation:

(37) [Leili$_1$ **sīb-rā$_3$** EC$_2$ [$_{vP}$ t$_1$ t$_3$ *kharīd*]]
　　Leili　apple-ACC　　　　bought-3SG
　　'ILeili bought the apple.'

◆ Recall: we have interpreted bare NPs as definites w.r.t. an event: APPLE-OF(e)

◆ Outside of vP, e cannot be dependent on the event e$_2$ introduced by EC

◆ Hence it must depend on a salient event given in the previous discourse or in the utterance situation

◆ Generates definite reading: the apple given in previous discourse or in the situation

◆ Predicts: No number neutrality

◆ Observe: We have a uniform interpretation of bare NPs as definites (for Persian)

4.10 Accusative marking of indefinite nominals

rā-marking of *yek*-marked nouns also indicates scrambling out of vP

(38) [Leili$_1$ **[yek sīb-rā]$_3$** EC$_2$ [$_{vP}$ t$_1$ t$_3$ *kharīd*]]
　　Leili　an apple-ACC　　　　bought-3SG
　　'Leili bought an apple.'

◆ possible, but disfavored in the current case

◆ reason: wide-scope indefinite reading can be achieved without *rā*

◆ but good to guarantee wide scope with respect to other quantifiers, especially when c-commanding the other quantifier

(39) **yek ketab-rā** *har daneshjoo-i bayad be-khoon-ad*
　　a　book-RA　each student-i　must　SUBJ-read-3SG
　　'Each student must read a certain book.'

4.11 i-marked nouns

Another way of expressing indefiniteness in Persian: *i*-marking

(40) a. [$_{IP}$ *Mæn$_1$* EC [$_{vP}$ t$_1$ *roobah-i did-æm*]]
     I   fox-INDEF   saw-1SG
    'I saw a fox (not: foxes)'

   c. [$_{IP}$ *Mæn$_1$* *roobah-i-rā$_2$* EC [$_{vP}$ *did-æm*]]
     I   fox-INDEF-ACC   saw-1SG
    'I saw a certain fox.'

- *i*-marking: restrictive selection out of a kind or plurality (Windfuhr 1987)
- Modeling by choice functions
  (cf. Reinhart 1997, von Heusinger 1997, Kratzer 1998, Yanovich 2005, others)

(41) [$_{IP}$ *Leili$_1$* EC$_2$ [$_{vP}$ t$_1$ *sīb-i kharīd*]]

    [x_1 (F) x_3 | x_1=LEILI, $\exists$[e_2 | x_3 = F(APPLE), EAT(x_1,x_3,e_2)]]

- F is a choice function, selects F(APPLE), an a where a$\in$⟦APPLE⟧
- as with other referring expressions, discourse referent x_3 introduced in higher box, hence easily accessible for anaphoric uptake
- no dependency on on event of existential closure e_2, hence no number neutrality

Situation is more complex, as combination *yek + i* is possible as well: *yek sīb-i*

5 Weak Definites

Carlson e.a. 2006, relating weak definites to incorporation and bare singulars;
cf. also Bosch 2010; Schwarz 2012 for a kind-referring analysis

Number neutrality:

(42) *The accident victims were taken to the hospital*.

Narrow scope effect of weak definites:

(43) *Every accident victim was taken to the hospital*.

(44) *Jedes Unfallopfer wurde ins Hospital gebracht.* (*ins*: *in das*)

(45) *Hans ist im Kino und Maria auch.*
    Hans is   in-the cinema and Mary too.
    'Hans is in the cinema, and Mary too (potentially different cinemas)'

Representation as event-dependent definites:

(46) *Mary took John to the hospital.*
    [x_1 x_2 | x_1 = MARY, x_2 = JOHN, $\exists$$e_3$[x_4 | x_4 = HOSPITAL-OF(e_3), TAKE-TO(x_1,x_2,x_4,e_3)]]

- Weak definites as functional definites, cf. Asic and Corblin 2012, but w.r.t. event
- Prediction: Anaphora to weak definites are possible only via abstraction / summation

6 Predictions for Anaphoric Processing

We have examined three theories to account for discourse translucency:

◆ Farkas & de Swart 2003:
Thematic arguments, DRs can be created by special rule for covert pronominas
◆ Modarresi 2015:
Number-neutral DRs, can be picked up by covert pronouns,
also, supported by world knowledge with overt singular / plural pronouns
◆ Proposed here (working out suggestions by Yanovich 2008):
Event-dependent functional definites, can be picked up by abstraction / summation,
world knowledge relevant for using singular / plural pronouns

Other work:

◆ Asudeh & Mikkelsen 2000: Implicit entities, as in *John got married. She is nice.*
◆ Dayal 2011, 2015: influence of aspect
◆ Schwarz 2012, for weak definites: reference to event kinds

How to decide? – Different, testable predictions for anaphoric uptake, for example:

◆ Do covert pronouns always have an advantage over overt pronouns?
◆ Is uptake of incorporated NPs with covert pronouns
always as easy as uptake of non-incorporated NPs with covert/overt pronouns?
◆ Is there a maximality effect with anaphoric uptake of pseudo-incorporated NPs?