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Null DP and the Maximization Principle: A Study of Intransitive Resultative Constructions

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1. Introduction

➢ Type 1—Unergatives can participate in resultative constructions.

(1) English
  a. The joggers ran the pavement thin.
  b. Mary danced herself tired.

(2) Icelandic
  a. Hann hljóp sig haltan.
    he ran self-ACC limp-ACC
    "He ran himself limp."
  b. Hann oeskradhi sig haasan.
    he shouted himself-ACC hoarse-ACC
    "He shouted himself hoarse."

(3) German
  a. Die Jogger liefen den Rasen platt.
    the joggers run the lawn flat
    "The joggers ran the lawn flat."
  b. Er arbeitete sich műde.
    he worked self tired
    "He worked himself tired."

(Müller, 2002: 211-213)

➢ Type 2—Unergatives never participate in resultative constructions.

(4) French
  a. *Je me suis bu malade.
    I myself am drunk sick
    "I drank myself sick."

b. *Ils ont couru le trottoir mince.
they have run the pavement thin
"They ran the pavement thin."

(5) Spanish
a. *Mary corrio sus zapatillas gastadas
Mary ran her trainers threadbare
"Mary ran her trainers threadbare."

2. Previous Researches

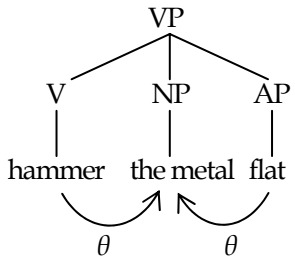
2.1. Basic Facts

(6) a. John hammered the metal flat.
b. John hammered the metal.

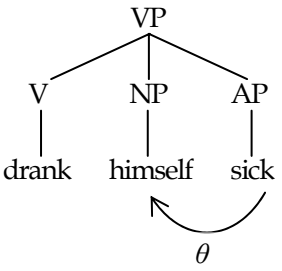
(7) a. John drank himself sick.
b. *John drank himself.
c. John drank.
d. *John drank sick. [*with the intended meaning* "John drank and as a result he became sick."]

2.2. Ternary-Branching Analysis—Carrier and Randall (1992)

(8) a. They hammered the metal flat.



b. John drank himself sick.

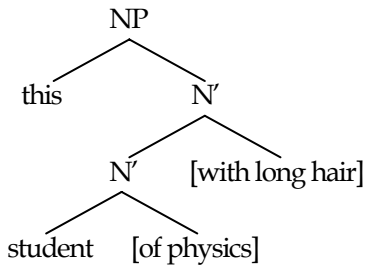


◆ Problem with Ternary-Branching Analysis

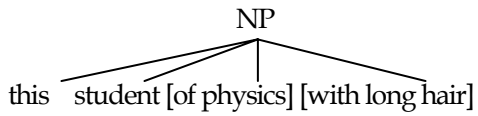
(9) a. John met this student of [physics] with long hair, and Bill met that one with short hair.
b. John met this student of [physics] with long hair, and Bill met that one.[1]
(Hornstein, Nunes, and Grohmann, 2004: 173)

[1] The word used in the original paper, *linguistics* is replaced with *physics* to fit in with the tree diagrams in (10). This change has no crucial influence on the analysis in this presentation.

(10) a.



b.

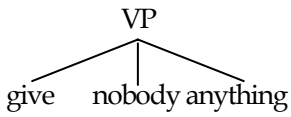


(Hornstein, Nunes, and Grohmann, 2004: 173)

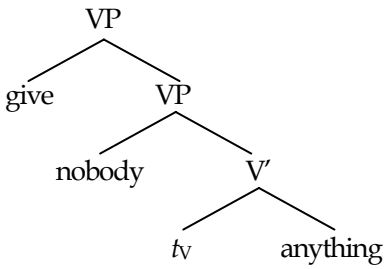
(11) a. John gave nobody anything.
b. *John gave anyone nothing.

(Hornstein, Nunes, and Grohmann, 2004: 174)

(12) a.

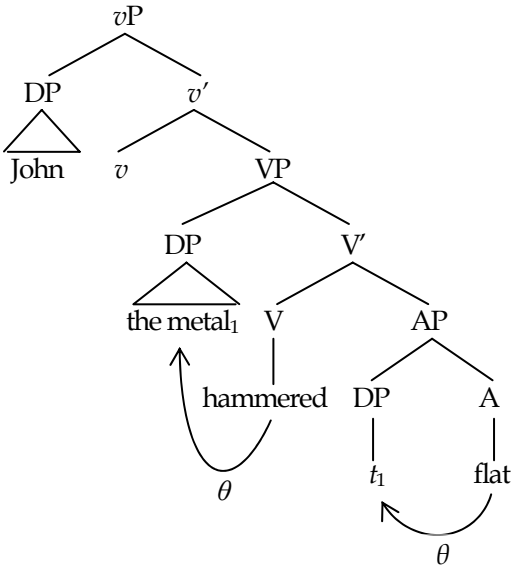


b.

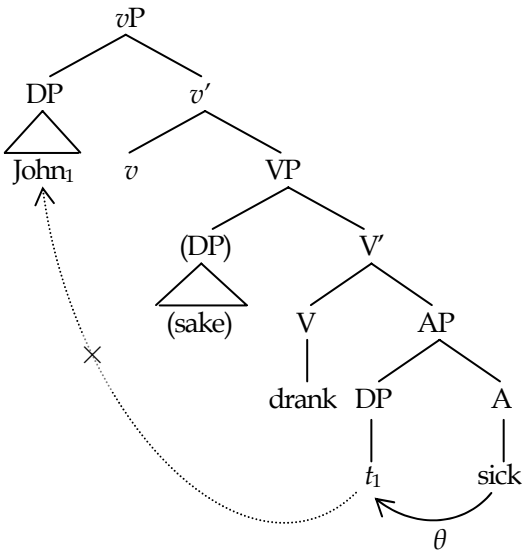


2.3. Analysis Based on the XP-Movement to Receive a Theta-Role—Saito (2001)

(13) a. John hammered the metal flat.



b. *John drank (sake) sick.



(14) Saito's Generalization
[A]n NP can move to VP Spec and pick up an internal θ-role. On the other hand, […] an NP cannot move to vP Spec and receive an external θ-role.

(Saito, 2001:56)

(15) a. *John [$_{VP}$ *t'* [HIT *t*]]
b. *John [$_{VP}$ *t'* [BELIEVE [*t* to be intelligent]]]
(HIT / BELIEVE share the θ-structure of *hit* and *believe* but lack Case feature)

(Chomsky, 1995: 313)

(16) a. Sue estimated Bill's weight.
b. *Sue estimated Bill.

(17) a. Sue estimated Bill's weight to be 150 lbs.
b. *Sue estimated Bill to weigh 150 lbs.

(Bošković, 1997: 96)

◆ Problem with Saito's Generalization

(18) a. John washed. (= John washed himself.)
b. John shaved. (= John shaved himself.)
c. John dressed. (= John dressed himself.)

(Lasnik, 1999: 125)

(19) a. [$_{v}$P ____ *v* [$_{VP}$ wash John]]

b. [$_{v}$P John$_1$ wash+*v* [$_{VP}$ t_V t_1]]

2.4. Analysis Based on the Case-Valuation

(20) John drank himself sick.
a. [$_{T'}$ T[~~*uφ*~~] [$_{v}$P John drank+*v*[~~*uφ*~~] [$_{VP}$ t_V [$_{AP}$ himself sick]]]]
NOM *ACC*

(21) John hammered the metal flat.
a. [$_{v}$P John hammered+*v*[*uφ*] [$_{VP}$ the metal$_1$ t_V [$_{AP}$ t_1 flat]]]
b. [$_{T'}$ T[~~*uφ*~~] [$_{v}$P John hammered+*v*[~~*uφ*~~] [$_{VP}$ the metal$_1$ t_V [$_{AP}$ t_1 flat]]]]
NOM *ACC*

(22) *John drank sake sick.

a. [$_{v}$P ___ [$_{v'}$ drank+v[~~$u\varphi$~~] [$_{VP}$ sake t_V [$_{AP}$ John sick]]]]

b. [$_{T'}$ T[$u\varphi$] [$_{v}$P drank+v[~~$u\varphi$~~] [$_{VP}$ sake t_V [$_{AP}$ John sick]]]]
ACC

(23) θ-roles are formal features and are therefore capable of driving movement, […].
(Bošković and Takahashi, 1998: 351)

(24) Minimal Link Condition
Let P be a probe. Then the goal G is the closest feature that can enter into an agreement relation with P.[2]
(Collins, 2002: 57)

(25) Defective Intervention Constraints
$\alpha > \beta > \gamma$
> is c-command, β and γ match the probe α, but β is inactive so that the effects of matching are blocked.
(Chomsky, 2000: 123)

◆ Problem

(26) *John drank sick.

a. [$_{v}$P John$_1$ drank+v[$u\varphi$] [$_{VP}$ t_V [$_{AP}$ t_1 sick]]]

b. [$_{T'}$ T[~~$u\varphi$~~] [$_{v}$P John$_1$ drank+v[$u\varphi$] [$_{VP}$ t_V [$_{AP}$ t_1 sick]]]]
NOM

(27) John drank yesterday.

a. [$_{T'}$ T[~~$u\varphi$~~] [$_{v}$P John$_1$ drank+v[$u\varphi$] [$_{VP}$ t_V]] yesterday]
NOM

→ In both cases, the φ-set of v remains despite their different grammaticality. Therefore, we still need to explain why (26) is ungrammatical.

3. Proposals

[2] In this formulation, "closest feature" means as follows:

(i) P c-commands G and there is no G′ such that P asymmetrically c-commands G′ and G′.
(Collins, 2002: 57)

See also Chomsky 1995: 297, 2000: 122.

(28) [I]f an expression contains only features interpretable at IL[interface level], it converges at IL.
(Chomsky, 2000: 95)

(29) [T]he V in an unergative VP does have a null DP complement, […].
(Pesetsky and Torrego, 2004: 512)

(30) [$_{v\text{P}}$ v[~~*u*φ~~] [$_{\text{VP}}$ V null DP]]
ACC

(31) John drank yesterday.
a. [$_{\text{T}'}$ T[~~*u*φ~~] [$_{v\text{P}}$ John$_1$ drank+v[~~*u*φ~~] [$_{\text{VP}}$ t_{V} null DP]] yesterday]
NOM *ACC*

(32) John drank himself sick.
a. [$_{\text{T}'}$ T[~~*u*φ~~] [$_{v\text{P}}$ John drank+v[~~*u*φ~~] [$_{\text{VP}}$ t_{V} null DP [$_{\text{AP}}$ himself sick]]]]
NOM *ACC*

(33) There is likely to arrive a man.
a. [$_{\text{T}'}$ T[~~*u*φ~~] be likely [Expl[φ-incomplete] to arrive a man]]
NOM

(34) Expl[etive] is [φ-]incomplete.
(Chomsky, 2001: 16)

(35) α must have a complete set of φ-features (it must be φ-complete) to delete uninterpretable features of the paired matching element β.
(*ibid.*: 6)

(36) Maximization Principle
Maximize the matching effects.
(*ibid.*: 15)

(37) The null DP complement of the unergative VP is φ-incomplete (lacking a gender or a person feature, or both, but having a θ-feature) in English, iff the verb does not have a second object.[3]

[3] Notice that this proposal does not define the status of the null DP in (31), whether it is φ-complete or φ-incomplete. In English, there are both φ-complete and φ-incomplete expletives (*it* and *there* respectively) and therefore, the same case might hold for the null DPs. If the null DP in (31) is φ-complete, the φ-set of v can be deleted without any problem. On the other hand, if the null DP in (31) is φ-incomplete, we need to consider how the φ-set of v is deleted. Suppose that the

(38) Maximization Principle is applied in English intransitive resultatives.

4. Analysis

4.1. Intransitive Resultatives

(39) Postverbal DP is valued an accusative Case by the application of the Maximization Principle.
   a. John drank himself sick.
   b. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ John drank+*v*[~~*uφ*~~] [$_{VP}$ t_V null DP[*φ*-incomplete] [$_{AP}$ himself sick]]]]
      NOM *ACC*

(40) We expect there to arrive a man.
   a. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ we expect+*v*[~~*uφ*~~] [$_{TP}$ Expl[*φ*-incomplete] to arrive a man]]
      NOM *ACC*

(Chomsky, 2001: 16)

(41) Null DP complement blocks the movement of the postverbal DP to *v*P Spec.
   a. *John drank sick.
   b. [$_{vP}$ ___ [$_{v'}$ drank+*v*[*uφ*] [$_{VP}$ t_V null DP[*φ*-incomplete] [$_{AP}$ John sick]]]]
   c. [$_{T'}$ T[*uφ*] [$_{vP}$ drank+*v*[~~*uφ*~~] [$_{VP}$ t_V null DP[*φ*-incomplete] [$_{AP}$ John sick]]]]
      ACC

(42) Phrase Structure of Resultatives:
   a. transitive resultatives: [$_{vP}$ DP *v* [$_{VP}$ DP V [$_{AP}$ t_{DP} A]]]
   b. intransitive resultatives: [$_{vP}$ DP *v* [$_{VP}$ V null DP [$_{AP}$ DP A]]]

4.2. Supporting Evidence

φ-set of T (or *v*) can be deleted by an incomplete set of *φ*-features of a DP, iff there is no more remote goal. Then, the contrast below should be analyzed without asserting that the *φ*-set of T cannot be deleted. See Vikner (1995) for a possible approach.

(i) It is likely that John is honest.
(ii) *There is likely that John is honest.

I will take the first view since the second view might make the Maximization Principle meaningless.

4.2.1. Gapping

(43) a. John hammered a hubcap thin and Mary, flat.
b. *John sang the baby asleep and Mary, happy.

(44) a. John$_3$ [$_{v\text{P}}$ t_3 hammered+v [$_{\text{VP}}$ a hubcap$_1$ t_{V} [$_{\text{AP}}$ t_1 thin]]] and
Mary$_2$ [$_{v\text{P}}$ t_2 hammered+v [$_{\text{VP}}$ a hubcap$_1$ t_{V} [$_{\text{AP}}$ t$_1$ flat]]]

b. John$_3$ [$_{v\text{P}}$ [$_{v\text{P}}$ t_3 hammered+v [$_{\text{VP}}$ a hubcap$_1$ t_{V} t_{AP}]] [$_{\text{AP}}$ t_1 thin]] and
Mary$_2$ [$_{v\text{P}}$ [$_{v\text{P}}$ t_2 hammered+v [$_{\text{VP}}$ a hubcap$_1$ t_{V} t_{AP}]] [$_{\text{AP}}$ t_1 flat]]

c. John hammered a hubcap thin and Mary Δ [$_{\text{AP}}$ t_1 flat]

(45) a. John$_2$ [$_{v\text{P}}$ t_2 sang+v [$_{\text{VP}}$ t_{V} null DP [$_{\text{AP}}$ the baby asleep]]]and
Mary$_1$ [$_{v\text{P}}$ t_1 sang+v [$_{\text{VP}}$ t_{V} null DP [$_{\text{AP}}$ the baby happy]]]

b. John$_2$ [$_{v\text{P}}$ [$_{v\text{P}}$ t_2 sang+v [$_{\text{VP}}$ t_{V} null DP t_{AP}]] [$_{\text{AP}}$ the baby asleep]]and
Mary$_1$ [$_{v\text{P}}$ [$_{v\text{P}}$ t_1 sang+v [$_{\text{VP}}$ t_{V} null DP t_{AP}]] [$_{\text{AP}}$ the baby happy]]

c. *John sang the baby asleep and Mary Δ [$_{\text{AP}}$ ~~the baby~~ happy]

(46) The deleted element is inconsistent with the remaining element in intransitive resultatives.

4.2.2. Topicalization

(47) a. Flat, John hammered the metal.
b. *Thin, the joggers ran the pavement.

(48) a. ___, John hammered [$_{\text{VP}}$ the metal$_1$ t_{V} [$_{\text{AP}}$ t_1 flat]].
b. [$_{\text{AP}}$ t_1 flat], John hammered the metal$_1$ t_{V} t_{AP}.

(49) a. ___, the joggers ran [$_{\text{VP}}$ t_{V} null DP [$_{\text{AP}}$ the pavement thin]].
b. *[$_{\text{A}}$ thin], the joggers ran null DP [$_{\text{AP}}$ the pavement t_{A}].

(50) Topicalization cannot be applied to nonmaximal projections.

4.2.3. Though-Movement

(51) a. Flat though John hammered the metal, the customer ordered thick one.
b. *Thin though the joggers ran the pavement, the city was in financial difficulties in road repairing.

(52) a. ____ though John hammered the metal$_1$ [$_{AP}$ t_1 flat], …
b. [$_{AP}$ t_1 flat] though John hammered the metal t_{AP}, …

(53) a. ____ though the joggers ran null DP [$_{AP}$ the pavement thin], …
b. *[$_A$ thin] though the joggers ran null DP [$_{AP}$ the pavement t_A], …

(54) Only maximal projections are subject to though-movement.

4.2.4. Cleft Sentence

(55) a. It was a steak that John cooked black.
b. It was his Nikes that the jogger ran threadbare.

(56) a. *It was crazy that Mary drove John.
b. *It is eccentric that Mary considers John.

(57) a. It is white that Peter painted the walls.
b. *It is thin that the joggers ran the pavement.

(58) a. It was [$_{DP}$ a steak]$_1$ that John cooked [$_{AP}$ t_1 black].
b. *It is [$_A$ eccentric]$_1$ that Mary considers [$_{AP}$ John t_A].

(59) Clefting can be applied only to maximal projections.

(60) a. It is ____ that Peter painted the walls [$_{AP}$ t_1 white]
b. It is [$_{AP}$ t_1 white] that Peter painted the walls t_{AP}

(61) a. It is __ that the joggers ran null DP [$_{AP}$ the pavement thin]
b. *It is [$_A$ thin] that the joggers ran null DP [$_{AP}$ the pavement t_A]

4.3. Unaccusative Resultatives

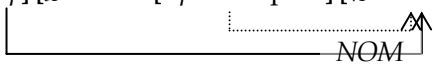
(62) a. The ice froze solid.
b. The bottle broke open.
(63) A phase is CP or *v*P, but not TP or a verbal phrase headed by H lacking φ-features not entering into Case / agreement checking: neither finite TP nor unaccusative / passive verbal phrase is

phase.

(Chomsky, 2000: 106-107)

(64) The ice froze solid.

a. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ froze+*v*[~~*uφ* incomplete~~] [$_{VP}$ the ice[D] t_V [$_{AP}$ t_1 solid]]]]



(65) Phrase Structure of Unaccusative Resultatives

[$_{vP}$ *v*[*uφ*-defective] [$_{VP}$ DP V [$_{AP}$ t_{DP} A]]]

(66) Phrase Structure of Resultatives

a. transitive resultatives: [$_{vP}$ DP *v* [$_{VP}$ DP V [$_{AP}$ t_{DP} A]]]

b. intransitive resultatives: [$_{vP}$ DP *v* [$_{VP}$ V null DP [$_{AP}$ DP A]]]

(67) a. Solid, the ice froze.

b. Solid though the ice froze, John broke it by hand.

c. It is solid that the ice froze.

5. Crosslinguistic Variety

5.1. Expletive Constructions

➢ Type1—The verb agrees with the postverbal DP.

(68) Icelandic

a. Það eru/*er málfræðingar í heberginu.
*Expl are/*is linguists in room.the*
"There are linguists in the room."

(Vangsnes, 2002: 57)

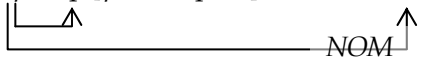
b. [$_{T'}$ T[~~*uφ*~~] Expl[*φ*-incomplete] eru málfræðingar í heberginu]

(69) German

a. Es sind/*ist drei Autos drauβen.
*there are/*is three cars outside*
"There are three cars outside."

(Vikner, 1995: 181)

b. [$_{T'}$ T[~~*uφ*~~] Expl[*φ*-incomplete] sind drei Autos drauβen]



➢ Type2—The verb agrees with the expletive subject.

(70) French
a. Il y a des livres sur la table.
Expl there has INDEF-PL books on the table
"There are books on the table."
b. [$_{T'}$ T[~~*uφ*~~] Expl y a+*v*[~~*uφ*~~] des liveres sur la table]
~~*NOM*~~ *ACC*

(71) Spanish
a. [*pro*] Hay various papeles en ese cuaderno.
there have several papers in that notebook
"There are several papers in that notebook."
(Zagona, 1988: 134)

b. [$_{T'}$ T[~~*uφ*~~] Expl Hay+*v*[~~*uφ*~~] various papeles en ese cuaderno]
~~*NOM*~~ *ACC*

(72) There exists a parameter pertaining to the existence of the *φ*-incomplete DPs.

	φ-incomplete DPs
English, Icelandic, German	yes
French, Spanish	no

5.2. Intransitive Resultatives

➢ Type 1—Null DP complement is *φ*-incomplete and therefore, the Maximization Principle can be applied.

(73) Icelandic
a. Hann oeskradhi sig haasan.
he shouted himself hoarse
"He shouted himself hoarse."
b. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ Hann oeskradhi+*v*[~~*uφ*~~] [$_{VP}$ *t*$_{V}$ null DP[*φ*-incomplete] [$_{AP}$ sig haasan]]]]
~~*NOM*~~ *ACC*

(74) German
a. Die Jogger liefen den Rasen platt.

the joggers run the lawn flat
"The joggers ran the lawn flat."

b. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ Die Jogger liefen+*v*[~~*uφ*~~] [$_{VP}$ t_V null DP[*φ*-incomplete] [$_{AP}$ Rasen platt]]]]
NOM *ACC*

- Type 2—Null DP complement is *φ*-complete and therefore, the Maximization Principle cannot be applied.

(75) French
a. *Ils ont couru le trottoir mince.
they have run the pavement thin
"They ran the pavement thin."

b. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ ils ont couru+*v*[~~*uφ*~~] [$_{VP}$ t_V null DP [$_{AP}$ le trottoir mince]]]]
NOM *ACC*

(76) Spanish
a. *Mary corrio sus zapatillas gastadas
Mary ran her trainers threadbare
"Mary ran her trainers threadbare."

b. [$_{T'}$ T[~~*uφ*~~] [$_{vP}$ Mary[corrio+*v*[~~*uφ*~~] [$_{VP}$ t_V null DP [$_{AP}$ suz zapatillas gastadas]]]]
NOM *ACC*

(77) The status of the null DP, namely whether it is *φ*-complete or *φ*-incomplete is involved with the acceptability of intransitive resultatives in natural language.

	φ-incomplete expletive	*φ*-incomplete null DP	intransitive resultatives
English	yes	yes	acceptable
Icelandic	yes	yes	
German	yes	yes	
French	no	no	unacceptable
Spanish	no	no	

6. Summary

(78) The V in the unergative VP has a null DP complement in English and this DP blocks the movement of the postverbal DP in intransitive resultatives.

(79) Phrase Structure of Resultatives:
a. transitive resultatives: $[_{vP}$ DP v $[_{VP}$ DP V $[_{AP}$ t_{DP} A]]]
b. intransitive resultatives: $[_{vP}$ DP v $[_{VP}$ V null DP $[_{AP}$ DP A]]]

(80) There exists a parameter pertaining to the existence of the φ-incomplete DPs and the parametrically determined status of the null DP, namely whether it is φ-complete or φ-incomplete is involved with the acceptability of intransitive resultatives in natural languages.

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