MISSING TYPES
November 30 – December 2, 2020, Caritive constructions in the languages of the world

1. CARITIVES: SYNTACTIC BACKGROUND

What this talk is NOT about:
➢ how a caritive can be encoded (a PP or a corresponding case (abessive in Uralic, aka privative for Australian languages, anticomitative, or deprivative…))
➢ caritives as sentential (VP) modifiers (left without looking back)
➢ clausal (without looking back) vs. nominal (without a word) caritives
➢ determiners inside the caritive (bare NP caritives, such as sans peur et sans reproche)

What this talk IS about: NP-internal indefinite caritives:

(1) a. Elle était une petite enfant sans parures […] French, Choi-Jonin 2006
    she was a small child without adornments
    She was a small child without any adornments.

   b. Ik zoek naar een moderne laptop zonder besturingssysteem. Dutch
    I search towards a modern laptop without an operating system
    I’m looking for a modern laptop without an operating system.

Plan of the talk:
➢ the syntactic issue: the absence of an article (even in the singular)
➢ the semantic issue: the scope of the bare NP
➢ bare caritives and the notion of possession
➢ towards the solution: bareness as definiteness
➢ contextual relationality and what is presupposed

Warning: trees and lambdas to follow!

2. BARE NPs

A lot of semantic research has been done on bare (anarthrous) NPs in languages that normally have articles (Germanic, Romance, etc.)

General consensus (Carlson 1977a, b, Dayal 1999, Doron 2003, De Swart and Zwarts 2009, de Swart, Winter and Zwarts 2005, 2007, etc.): such bare NPs denote properties (sets of entities) or kinds (the intensional counterpart of thereof)

(2) a. Maria tem carro. Brazilian Portuguese, Cyrino and Espinal 2014
    Maria has car
    Maria has a car.

   b. Jan en Sofie zijn leraar. Dutch, de Swart et al. 2007
    Jan and Sofie are teacher
    Jan and Sofie are teachers.

   c. Dogs are intelligent/tired.

An important property of bare nominals is that they have narrow scope: they can be interpreted only in their surface position:

(3) Damian didn’t eat green beans/meat.
≠ There were some green beans/meat that Damian didn’t eat.
Why do we care? Because caritives can be bare (even in English!). And yet…

(4) un sac sans poignée
    a bag without handle
    a bag without a handle

An NP-internal without-caritive is ambiguous (in a way that a less-caritive is not)
And in one of the readings available the existence of a handle is not excluded

3. **Without scope**


(5) with (NEG (NP))

In normal language (note the two orders of possession and negation):

(6) without X
    a. = not having an X
    b. = having no X

In slightly formalized form (note the existential; it should not be there for definite caritives):

(7) \[\text{without } X] = \lambda y . \neg \exists x . x \text{ is an } X \text{ and } y \text{ has } x
    \text{there is no } x \text{ such that } x \text{ is a handle (}X\text{) and } y \text{ has } x

In formal representation assuming that bare NPs are properties (cf. the incorporating analysis of have and HAVE-verbs (Borthen 2003, Dobrovie-Sorin, Bleam and Espinal 2006, Espinal and McNally 2010, Le Bruyn, de Swart and Zwarts 2013))

(8) a. \[\text{with}] = \lambda N . \lambda M . \lambda x . M(x) \land \exists y . N(y) \land \text{HAVE}(x,y)
    \text{Le Bruyn, de Swart and Zwarts 2012}
    b. \[\text{without}] = \lambda N . \lambda M . \lambda x . M(x) \land \neg \exists y . N(y) \land \text{HAVE}(x,y)

The assertion of (non)existence then comes from the lexical entries for with(out)
This does not account for (4b), where the bag might have a remaining handle. Or for a table without a leg, where this is even clearer

3.1. A note about dialectal differences

In French, Dutch and Russian two types of idiolects have been detected:

(9) a. sobaka bez lapy
    dog without paw
    a dog without a paw
b. un chien sans pied
   a dog without a paw

c. een hond zonder poot
   a dog without a paw

For some speakers examples (9) are strongly infelicitous because they imply that dogs have only one paw.
For others they have no such implications.

3.2. The scope of the existential

Examples like (4b) and (9) suggest the opposite scopal relation between the existential and the negation inside without: there is a handle that the bag in question does not have:

(10)  \( \lambda x . \text{bag} (x) \land \exists y \text{handle} (y) \land \neg \text{HAVE} (y)(x) \Rightarrow \text{always true} \)

Obviously this is wrong: there is always a handle that any given bag does not have.
It is not just any handle that the bag in question does not have, it is its handle (or one of its handles).
And this is where we enter the domain of what possession is.

4. The nature of possession


Possession is in the argument structure of the possessee

Guéron 1985, 1995, Tellier 1990, Sæbø 2009: the internal argument slot of relational nouns is saturated by a null pronoun, which is then \{coindexed with/bound by\} the subject of have:

(11)

This mechanism cannot be used for NP-internal caritives because there is no entity-denoting NP to bind the possessee (e.g., no committee without a chair: no possessor individual).

But the same result can (and should!) be achieved semantically:

(12)  \[ \text{have} \] = \( \lambda R \lambda w \exists v (R(w)(v)) \)  
      after Le Bruyn, de Swart and Zwarts 2016

where R is a relation of type \((e, (e, t))\) (e.g., sister).

This means that the direct object of have is a relation (rather than an entity) and have applies this relation to its own second (external) argument (i.e., the subject) and asserts the existence of an entity that bears this relation to the subject.
Similar proposals have been advanced for adnominal possession (e.g., Higginbotham 1983, Burton 1995, Vikner and Jensen 2002, Sæbø 2009, Karvovskaya 2018)

So the lexical entry for with could work like this:

(13) \[
\llbracket \text{with} \rrbracket = \lambda R \langle e, t \rangle \lambda P \langle e, t \rangle \lambda y . P(y) \land \exists v (R(y)(v))
\]

(13) takes a relation R (the possessee) and a property P (the modified NP) and returns another property (underlined), that of being P and being in the relation R with an object y

\[
\text{(14) NP} \overset{\text{bag}}{\rightarrow} \text{PP} \overset{\text{with}}{\rightarrow} \text{NP} \overset{R}{\rightarrow} P
\]

The NP in (14) returns the property of being a bag (P) that some object has the handle-of relation (R) with

This is how the relative scopes in (8b) and (10), now presented side by side, also work:

(15) a. \[
\llbracket \text{without} \rrbracket = \lambda R \langle e, y, t \rangle \lambda P \langle e, y, t \rangle \lambda y . P(y) \land \neg \exists v (R(y)(v))
\]

(15) b. \[
\llbracket \text{without} \rrbracket = \lambda R \langle e, y, t \rangle \lambda P \langle e, y, t \rangle \lambda y . P(y) \land \exists v \neg (R(y)(v))
\]

(15) is even more ridiculous than (10): it says that there is an object that does not entertain the handle-of relation (R) with the modified NP (i.e., with bag)

For the scopal relation in (10) or (15b) to work, we need to do something more complicated: to say that there is an object x that is an R (handle of) the P (bag) y and that is not located (instantiated) on y:

(16) \[
\lambda x . \text{bag}(x) \land \exists y \text{handle}(x)(y) \land \neg \text{HAVE}(y)(x)
\]

But then we will not be able to account for clutches, as in (4a): clutches have no handles!

(4) a bag without a handle
   a. a handleless bag
   b. a bag with a handle missing

In addition, scoping the existential over negation gives rise to the wrong truth conditions for plural caritives

4.1. Plural caritives

French is of particular interest here because it does not normally allow bare plurals:

(17) Damian a mangé *(des) haricots verts.
    Damian has eaten DES beans green
    Damian has eaten green beans.

Though they are ok in plural caritives:

(18) a. plat'je bez pugovic
       dress without buttons
       a dress without buttons

   b. une robe sans boutons
       a dress without buttons
       a dress without buttons
c. een jurk zonder knopen
   a dress without buttons

(18) means a buttonless dress, a dress with all of its buttons missing and cannot mean (19):

(19) $\lambda x.\text{dress}(x) \land \exists y \text{buttons}(x)(y) \land \lnot \text{HAVE}(y)(x)$ $\Rightarrow$ wrong

(19) means a dress with buttons missing

4.2. Intermediate summary

The caritive relation is negative and parasitic on possession

However, the scopal relation between the existential and the negation that it introduces is far from clear:

- with the negation scoping over the existential ($\lnot \exists x: \text{handle}(x) \land \text{HAVE}(x)(y)$), the bag has no handles
- with the existential scoping over the negation and its domain limited to possessees ($\exists x: \text{handle}(y)(x) \land \lnot \text{HAVE}(x)(y)$), clutches and plurals cannot be accounted for. In addition, this view necessitates double encoding of the same possessive relation

Both scopal relations seem to be needed

This is why we have been working with French and Dutch

- bare NPs are known to have surface scope, so scoping the NP out is not an option
- scopal relations cannot vary internally to a lexical item

And so we have a puzzle.

5. Towards a solution

Intuition: bare NPs in caritives are exceptional (cf. French). If they were kind-denoting in the same way as English bare NPs are, we would not see the exceptional behavior in French

Proposal: the bare NP in a caritive is a weak definite

5.1. Weak definites: clearing out the confusion

There are two very different kinds of things called weak definites (maybe more)

5.1.1. Morphologically weak definites (the wrong ones)

Ebert 1971a, b, Schwarz 2009, 2013, Cabredo Hofherr 2012, etc.: in a number of languages two definite articles are available:

(20) a. Ik skal deel tu a/*di kuupmaan. Fering, Ebert 1971b via Schwarz 2013
   I must down to the weak/the strong grocer
   I have to go down to the grocer.

   Oki has a horse bought the weak/the strong horse limps
   Oki has bought a horse. The horse limps.

The weak definite article (roughly) encodes uniqueness, the strong one encodes anaphoricity

Forget these
5.1.2. Semantically weak definites

Potentially, several kinds (or rather, there have been several branches of research on definite NPs that do not introduce the uniqueness presupposition):

(21) a. John was hit on the arm. Ojeda 1993
b. He was taken to (the) hospital. Löbner 1985
c. There is a fire hydrant by the side of the house. cf. Matushansky and Zwarts 2019
d. There was the wedding picture of a young black couple among his papers. Woisetschlaeger 1983

These examples may be not the same and have been examined separately:
➢ those like (21a) involve relational nouns
➢ those like (21b) and (21c) allow article drop (can be bare)
➢ those like (21c-d) may be the same as those like (21a) (Löbner 1985, 2011 calls them “configurational uses”, Ojeda 1993 links (21a) and (21c), Poesio 1994 links (21c) and (21d))

Alternation with a bare NP characterizes “prototype-interpreted” definites:

(22) a. Sue took her nephew to college/to prison/to class. Carlson and Sussman 2005
b. She took her nephew to the hospital/to the store/to the beach.

However, we are interested in relational weak definites (Löbner 1985, 2011, Ojeda 1993, Poesio 1994, Barker 2005, Le Bruyn 2014) tries to conclude that what is unique is the relation

5.2. Caritives and relational weak definites

Intuition: caritive NPs are normally interpreted maximally (like possessives), and this is why examples (9) are strongly infelicitous for some speakers:

(9) a. sobaka bez lapy
dog without paw
*a dog without a paw

b. un chien sans pied
a dog without foot
*a dog without a paw

c. een hond zonder poot
a dog without foot
*a dog without a paw

So we adapt (16) to be definite:

(23) λx . bag (x) ∧ ∃!y handle (x)(y) ∧ ¬ HAVE (y)(x)

Advantages: correct truth conditions for:
➢ a dog without a paw: = the presupposition of uniqueness will be violated except in those idiolects where a paw can be treated as a configurational weak definite
➢ a dress without buttons: = a dress with all of its buttons missing

Issue 1: Manx cats and clutches:

(24) a. a cat without a tail
b. a bag without a handle
Issue 2: in English we have an indefinite here, not a definite or a bare NP

5.3. A pre-existing relation

Suppose the relation between the possessor and the possessee is a function (each bag has only one handle (or none))

Conditions on why and how this is broken are a separate matter

The relation is contextual (and can be identical to the relation that is introduced by the lexical semantics of the possessee noun itself, as with, e.g., the noun *son*)

And this relation does not obtain between the possessor and the possessee

Crucially, in bare caritives *R* is established not between two entities but between a kind and a property (think of it as the relation that bags should have with handles)

\[
\text{without} = \lambda k, \lambda y. P(y) \land \neg R(y)(k)
\]

where *R* is the relevant possessive relation between entities and a kind

After combining with its two arguments (the first of which denotes a kind (*handle*) and the second, a property (*bag*)), *without* returns the set of bag-entities *y* such that none of them is in the relevant contextual relation with the handle-kind *k*

I know, this is complicated :(  

**There is no existential quantifier and so no handle is asserted to (pre-)exist**

Why do the weird *R* thing instead of saying that *x* doesn’t have *y*?

Because, as discussed above, there is really no possessive relation, it is either contextual or supplied by the argument structure of the possessee noun (if *k* is *mother*, then *R* is *mother-of*)

Another important point: because the inner argument of *without* is a kind (type *e*), *without* is compatible with entity-denoting arguments as well:

\[
\text{(26) a. Je me suis retrouvé sans Marie.} \quad \text{Choi-Jonin and Mignon 2010}
\]

*I* found *myself* without *Marie.*

\[
\text{b. l’utopie Yiddish sans un aréopage de propagandistes}
\]

*a Yiddish utopia without an areopagus of propagandists*

\[
\text{c. However, an English football team without Beckham is like an Indian cricket}
\]

*team without Sachin Tendulkar.*

What is denied is the cooccurrence of the possessor and the possessee; the possessive relation is there as a free variable

It is the verification of *R(y)(k)* that gives rise to weak definiteness

6. Conclusion and further questions

The problem is not solved

There is no independent evidence that relational weak definites can be bare

The appeal to *R* is a kind of existential disclosure (Dekker 1993), because kinds cannot be relational and it is not clear how a truly relational noun fares here (consider *child* vs. *child of*, one is true for the lifetime of an individual, the other is not)
The mechanism by which relational nouns (and other relations) can be definite without being unique is still to be determined

6.1. Presuppositions of without

Feigenbaum 1996: *sans* ‘without’ introduces the presupposition that the absent entity should be present. However…

(27) a. Like most if not all of Romance, French is a language without a glottal stop.
   b. Lou was the only person without a movie.

What is presupposed is a relation between languages and glottal stops (obvious) or between people and movies (contextually given)

6.2. Plurality

What does the plural NP in the caritive denote, given that it is unlikely to be a bare plural?

The singular marking always entails a single possessee and the plural marking always entails plurality (cf. Sauerland, Anderssen and Yatsushiro 2005 for #Does the girl have noses?), but such is not generally the case for possession (Does the bag have handles?)

However, property-denotation for the complement of without is supported by independent evidence: the partitive *de* in the presence of an intervening modifier (Grevisse 2006:1389) or with higher negation (Larrivée 2009):

(28) a. sans *(presque/ vraiment) d’* efforts
   without almost/really of efforts
   *almost/really without efforts*

b. je ne mens jamais sans de bonnes raisons
   *I NEG lie never without of good reasons*
   *I never lie without good reasons.*

The missing object cannot be referred to by a relative pronoun; for anaphoric pronouns this is marginally possible:

(29) C’était un jeune soldat sans nez…
   this+was a young soldier without nose
   *It was a young soldier without a nose.*

a. *qu’il avait perdu à Waterloo.
   REL+3MSG.NOM had lost at Waterloo

b. *Il l’avait perdu à Waterloo.
   3MSG.NOM 3SG.ACC+ had lost at Waterloo
   *He had lost it at Waterloo.*

Yet there is no effect of modification or semantic enrichment

6.3. What about clutches and Manx cats?

Proposal: the caritive there is a kind-level modifier, i.e., the NP it combines with denotes a set of kinds rather than entities

Or it could be something akin to coercion:

(30) le Louvre sans Mona Lisa/ aucun tableau
   the Louvre without Mona Lisa/any painting
   *the Louvre without Mona Lisa/any paintings*
7. **APPENDIX: KINDS OF NON-EXISTENCE**

There are other instances where an indefinite has been treated as kind-referring: with caritive predicates (*missing*), with creation failure verbs (*prevent*) and language-specifically for kinds

### 7.1. The *missing* link

Higginbotham 1989, Zimmermann 2010: *missing* as an opaque predicate

Dowty 1985, citing Irene Heim and Emmon Bach: *missing* has an intensional subject:

(31) a. A screw is missing from this TV set.
   b. The spare tire is missing from this car.

Higginbotham 1989: *missing* is an unaccusative predicate with intention interpretation with the subject originating low. There is a transitive variant:

(32) This TV set is missing a screw.

“In short, missing involves failing to have”. No specific proposal is made

Zimmermann 2010: *missing* is a two-place predicate requiring the entity its subject is missing from and a modal component: “After all, Peter cannot be said to be missing from the German government x just because it happens to have a vacancy and Peter does not happen to be a minister”.

(33) (\(\forall j \models\), i) \([-I_i(p, x) \& I_j(p, x)]\)

where the transitive constant I expresses the concept of completing (being part of, taking part in, etc., and \(\models\) introduces, roughly, possible worlds (indices) where the minimally different x is complete

In other words, *missing* means lacking a part that is obligatory for completeness

If the subject is quantified, it can scope above or below the universal…

…except this doesn’t give rise to the precise truth-conditions required! Zimmermann 2010 introduces several hypotheses, including turning the missing part into a transitive property (e.g., *screw is screw of*), but does not arrive at a firm conclusion

Important: *missing* combines with a generalized quantifier, not a property!

Hence the intensionality cannot be achieved by assuming that the complement is a property, as in Zimmermann 1993 or Van Geenhoven and McNally 2005, but the analysis of Moltmann 1997 might work

(34) Every screw is missing.
   a. All the screws are not where they are supposed to be.
   b. Where there are supposed to be screws, there is nothing.

But is this genuine ambiguity?

(35) Two missing screws have been replaced.

Zimmermann 2010 sketches an intentionalist analysis, with the denotation of the noun *screw* including both ordinary screws and missing ones (cf. Condoravdi, Crouch and van den Berg 2001b, Condoravdi, Crouch, Berg, Everett, Paiva, Stolle and Bobrow 2001a)

### 7.2. Preventing accidents

Condoravdi et al. 2001b, Condoravdi et al. 2001a: while (36) is ambiguous between a general and a specific readings, neither of the two asserts existence of an accident:

(36) Safety procedures at Chernobyl prevented a serious nuclear accident.
   a. general: no accident occurred false
   b. specific: there was an accident that could have happened but didn’t potentially true
Condoravdi et al. 2001b: non-indefinite NPs are restricted to a specific reading implying a set of particular potential objects quantified over

The direct object of prevent can be a DE-environment (under the general reading)

Proposal: the direct object of prevent denotes in the domain of concepts rather than entities:

(37) a. \( \exists y \exists X. X = \text{SNA} . \text{safetyprocedure} (y) \& \text{prevent} (y, X) \) \hspace{1cm} \text{general}

b. \( \exists y \exists X. X \subseteq \text{SNA} . \text{safetyprocedure} (y) \& \text{prevent} (y, X) \) \hspace{1cm} \text{specific}

The specific reading involves sub-types of a concept (there is a sub-type of accident that was prevented)

Problem: why is the article indefinite in (36) for the reading in (37a)?

The lexical meaning of prevent entails non-instantiation of the relevant concept:

(38) \( \forall x \forall T. \text{prevent} (x, T) \rightarrow \neg \text{instantiated} (T) \)

What is a concept (both formally and intuitively)?

➢ Condoravdi et al.: it is an individual (a first-order entity)

In essence, it is what we call a kind when we do not mean the sum of all of its instantiations (cf. Carlson 2010)

7.3. Two kinds

The word kind is used to denote (at least) two different things:

➢ entities referred to by bare plurals or mass nouns in English generic sentences

➢ entities referred to by singular definite subjects of inherently kind level predicates (the same as the well-established kind of Krifka, Pelletier, Carlson, ter Meulen, Chierchia and Link 1995?)

(39) a. Tigers eat meat

b. The tiger is the largest cat species.

Intensionalized sum of all instantiations (\( \langle s, \langle e, t \rangle \rangle \)) vs. a species or established kind (type e)

Rothstein 2013: the notion of an encyclopedic kind is independently needed:

Doron 2003, Rothstein 2013: A singular kind-denoting NP in Hebrew is bare and unlike a proper name not introduced with the direct object marker required for definites:

(40) be- yamim ele menase cevet mada’anim sqoti le-šabet (*et) namer tasmani. in days these try.sg team scientists Scottish to-clone DOM tiger Tasmanian Currently a Scottish team of scientists is trying to clone the Tasmanian tiger.

The appearance of the definite article leads to anaphoric interpretation

In Hebrew there is no difference in definiteness: prevent cases are also bare

8. References


Le Bruyn, Bert, Henriëtte de Swart, and Joost Zwarts. 2016. From HAVE to HAVE-verbs: Relations and incorporation. Lingua 182, 49-68.


