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Argument Formation:
Crosslinguistic considerations (from a Romance perspective).

I. Fragestellung.

By argument-formation in a narrow sense, I mean syntactically projected semantic operators that map a non argument (say a property $P_{\langle s,et \rangle}$ or a predicate X_{et}) into something of an argumental type (i.e. an individual or a kind). I will mostly focus on argument-forming operations typically semantically associated with articles (as opposed to those associated with the full range of quantifiers *every, most, no, less than three,...*).

Later on, I will employ ‘argument formation’ in a broader sense by extending it to include processes that create argument complexes through (Pseudo)Incorporation.

The ultimate objective (far from being reached yet) is to figure out what are the range of options in forming predicate-argument complexes through nominals not inherently marked for specific quantificational interpretations. As a facet of this general question, we want to try to understand why some languages cannot do without articles or article-like morphemes, while others seem to be perfectly happy without anything article-like.

(1) Argument forming operations: a limited inventory.

- a.
- DP
/ \
[+D +DEF ARG] NP

‘Maximization’: $\lambda X. \iota y \in D. X(y)$

 - i. Extensional
 - ii. D-sensitive
 - iii. Parameter: it may (/not) allow anaphoric uses

iv. Spell out rule for English: $[+D +DEF ARG] \Rightarrow \text{the} / _ NP$

v. Example: The cat walked in $\rightarrow \exists e [AG_w(e)(\iota y \in D. \text{cat}(y)) \wedge \text{walk-in}_w(e)]$

Note: I am assuming an event based semantics, where arguments are fed via thematic roles realized as suitable functional heads. E.g., the external thematic role might be associated with/driven by, say, ‘little v’ or voiceP, as the case may be.

- b.
- DP
/ \
[+D -DEF ARG] NP

‘ \exists -closure’: $\lambda X. f_{\exists}(X)$

 - i. Extensional
 - ii. f a variable over CFs subject to \exists -closure

vi. Spell out rule for English: $[+D +DEF ARG] \Rightarrow \text{a} / _ NP$

vii. Example: A cat walked in $\rightarrow \exists f \exists e [AG_w(e)(f(CAT_w)) \wedge \text{walk-in}_w(e)]$

‘There is a way of choosing a member of the sets of cats in w which is the agent of a walking in w’.

- c.
- DP
/ \
[+D +K ARG] NP

‘ \wedge -kind formation’: $\lambda P \lambda w. CUM(P). \iota y P_w(x)$

 - i. intensional
 - ii. restricted to cumulative properties
(cumulative = plural or mass)

viii. This argument forming operator lacks a spell out rule in English.

ix. Example: cats are extinct $\rightarrow \exists s [Hold_w(s)(\wedge CATS_w) \wedge \text{extinct}_w(s)]$

‘There is a state of being extinct in w of which the cat-kind is the holder’

NOTE: The D/DEF-feature could be thought of as having as values ‘+’ (for definites) ‘-’ (for indefinites) and Undefined/Neutral (for kinds).

- d. Languages may lack Spell out rules for various argument forming operations:
- E lacks a spell out rule for K-formation
 - Hebrew lacks a spell out for ARG-DEF (and for K-formation)
 - Hindi, Russian lack spell out rules for both ARG_{+/-DEF} (and for K-formation)
- Q: is K-formation ever realized? Is it even real? A: No and Yes
 ⇒ When DEF is unspecified for a value, D cannot be spelled out.

(2) To be investigated

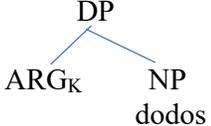
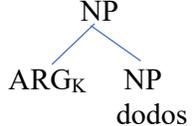
- a. Conjecture A: No language has a spell out rule for ARG_K. Kind-formation is universally null.
- b. Conjecture B: Null ARG-formation works like the theory of *pro*. I.e. ARG_K can be:
- Type I: Freely licensed (English, Hindi) [formerly: +pred, +arg]
 - Type II: Banned/unlicensed (French) [formerly: +pred, - arg]
 - Type III: Licensed in restricted positions, i.e. by specific heads (Italian, Romanian)
- To understand whether K-formation is universally null and why, it is useful to keep the Romance languages in focus, as they are quite restrictive towards bare arguments.
- c. Conjecture C: If a language bans null argument formation in toto or in part (i.e. Type II or Type III languages), it will not have (in toto or in part) null kind formation. How does such a language get by?
- The generic portion of K-behavior, is taken on by the definite article (because of its contiguity to kind formation, through a ‘last resort’ type adjustment).
 - The episodic portion of K-behavior is taken on by forms of incorporation, often marked via specialized morphemes.

II A base line theory.

(3) A sketch of the English kind module.

E freely allows null ARG-formation. It has spell out rules for ARG_{+/-DEF}; hence the only admissible null argument forming operator is kind-formation.

[**Blocking/elsewhere:** if a language has an overt morpheme for a certain function, it must use it]

- a. i.  ii. 
- iii. For any $P_{\langle s,et \rangle}$, $\| \text{ARG}_K \| (P) = \cap P$ [or, if P is ‘indexical’- Dayal 2013, also $f_{\exists}(P)$]
- iv. I didn’t buy books only $\neg \exists$ (non indexical kind)
- v. I didn’t buy books I wanted to buy both $\neg \exists$ and $\exists \neg$ (indexical kind)

b. Pure kind level predication

- i. Dodos are extinct \rightarrow [[ARG_K dodos] are extinct]
- ii. $\exists s$ [holder_w(s) (\cap DODOS_w) \wedge extinct_w(s)]

c. Generic predication (I-level predication)

- i. Dogs (usually) bark (when they are scared) \rightarrow [[ARG_K dogs]_i usually GN t_i bark]
- ii. $\forall x \forall w [A_{w0}(w) \wedge BE_w(\cap \text{DOGS})(x) \wedge \Delta_w(x)] \rightarrow \text{bark}_w(w)(x)$

Q-adverb modality nominal argument contextual presupposition scope

‘For every accessible world w and every instance of the dog-kind x in w such that the presuppositions for x ’s barking are met, x will bark in w .’

Generics involve a contextually restricted, modalized quantification over worlds, essentially similar to that associated with overt conditionals.

- iii. Gen = $\lambda \phi_{\langle w,et \rangle} \lambda \alpha. \forall x \forall w [A_{w0}(w) \wedge BE_w(\alpha)(x) \wedge \Delta_w(x)] \rightarrow [\phi(w)(x)]$

Representation of the event argument in (iii) is omitted for simplicity.

d. Types of nominal arguments for generics:

- i. Bare plurals/kinds: dogs bark ii. Definite DPs: John smokes iii. Indefinite singulars: A dog barks

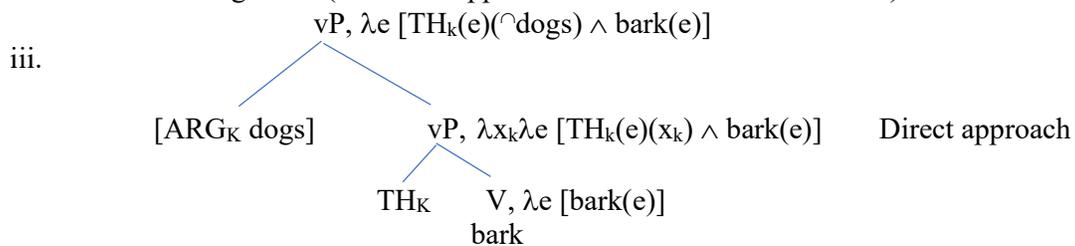
$$BE_w(\alpha)(x) = \begin{cases} \alpha = x, & \text{if } \alpha \text{ is of type } e \\ \alpha_w(x), & \text{if } \alpha_w \text{ is of type } \langle w, et \rangle \\ \cup \alpha_w(x), & \text{if } \alpha \text{ is of type } k \end{cases}$$

e. Episodic predication

- i. Dogs are barking (particularly loudly this morning)

- ii. [ARG_K dogs] are barking

In (ii) either the dog-kind is the theme of a barking event (Direct Approach) or there is an automatic type-adjustment by which (ii) winds up saying that instances of the dog-kinds are themes of a barking event ('Indirect Approach/Derived Kind Predication').



- iv. $TH_k(e)(x_k) =_{DF} \exists y [\cup x_k(y) \wedge TH(e)(y)]$ Indirect approach

(4) Consequences

A host of complicated scope facts, quantificational variability effects, etc. fall into place...

- a. In generic environments, bare arguments and indefinite singulars are predicted to pattern alike:

- | | | |
|------------------------------------|--|--------------------------------|
| i. Cowboys carry guns | i'. A cowboy carries a gun | SUBJ: \forall OBJ: \exists |
| ii. Cats chase mice | ii'. A cat chases a mouse | SUBJ: \forall OBJ: \forall |
| iii. Computers route modern planes | iii'. A computer routes a modern plane | SUBJ: \exists OBJ: \forall |
- Cf. also Quantificational Variability Effects, etc.

- b. In episodic environments, bare arguments and indefinite singulars diverge radically:

Scope with respect to negation:

- | | |
|-------------------------------------|--|
| i. I didn't see a spot on the floor | both $\neg \exists$ and $\exists \neg$ |
| ii. I didn't see spots on the floor | only $\neg \exists$ |

Pluractional modification

- | | |
|--|---------------|
| iii. John killed mosquitos repeatedly/for an hour/until midnight | ADV > Nominal |
| → John engaged in repeated mosquito-killing | |
| iv. John killed a mosquito/some mosquitos repeatedly | Nominal > ADV |

If the bare noun *mosquitos* had a quantificational force akin to that of overt indefinites, its behavior with respect to low pluractional modifiers would be a mystery.

The paradigm in (b.iii)-(b.iv) is strongly reminiscent of what happens in incorporation structures.

The bimodal behavior of Bare Arguments follows from the fact that in generic environments, BA are handled by Gen-operator + the Q-adverbs on a par with singular indefinites, while in episodic environments, singular indefinites have their own lexical scope/quantificational specifications, while kinds do not and their quantificational force is wholly regulated by predication/aspect.

The behavior of the kind-oriented module seems to be crosslinguistically very stable.

Cf. e.g. Dayal (2004, 2011, 2018), Jiang (2018, 2020) a.o.

(5) Variation within Germanic: The definite article and kind formation.

- a. i. (*The) pandas are threatened with extinction

- ii. (Die) Pandabären sind vom Aussterben bedroht Krifka (1995)
- iii. *(The) panda is on the verge of extinction
- iv. *(Der) Pandabär ist vom Aussterben bedroht

Q1: How can the definite plural come to refer kinds (as in German (ii))?

Q2: Why doesn't *the_{PL}* work for kind reference in E?

Q3: Why can the definite singular pick kinds?

I am not going to address Q3. See Dayal (2004) or Appendix II. I'll focus on Q1-2, jumping directly to the hypothesis I am currently entertaining, without doing much justice to existing debates.

- b. Q1: How can the definite plural come to refer kinds?

A: Type adjustment: intensional abstraction.

Kind formation is maximization + intensional abstraction. It is easy to go from the former to the latter, when the context requires it.

Example:

- v. extinct (die Pandabären) \Rightarrow

extinct_{<k,t>} ($\lambda w. \iota x \in D. \text{pandas}_w(x)$), where if $D = U$, then $\lambda w. \iota x \in U. \text{panda}_w(x) = \hat{\cap} \text{panda}$

What makes this plausible: Intensional abstraction is typically freely available and rarely morphologically marked. Cf., e.g., predicate modification like *clever thief* vs. *alleged thief* or *he saw a unicorn in his garden/in his dream*, etc.

This type adjustment applies equally well to predicates that lexically hold of kinds and to derived predicates created by Gn.

- c. Q2: Why doesn't *the_{PL}* work for kind reference in E?

A: Some local constraint blocks intensional type adjustment. One easy way to do so is by assuming that setting the domain of the description D to the whole universe U, necessary to turn ι -maximization into kind formation, is only available on a language particular basis. Adopting this local constraint on English *the* tantamounts to saying that the definite article in E retains some kind of indexicality from its demonstrative ancestor. *The pandas = those pandas around here*. Because of this setting ($D \neq U$), intensional abstraction is unable to create general kinds in English.

Why not assume that *Die_{PL}* in German is ambiguous between ι -maximize and $\hat{\cap}$ -kind formation (cf. e.g. Dayal 2004)? I'll discuss some empirical evidence against this view in connection with Italian.

(6) Brief summary

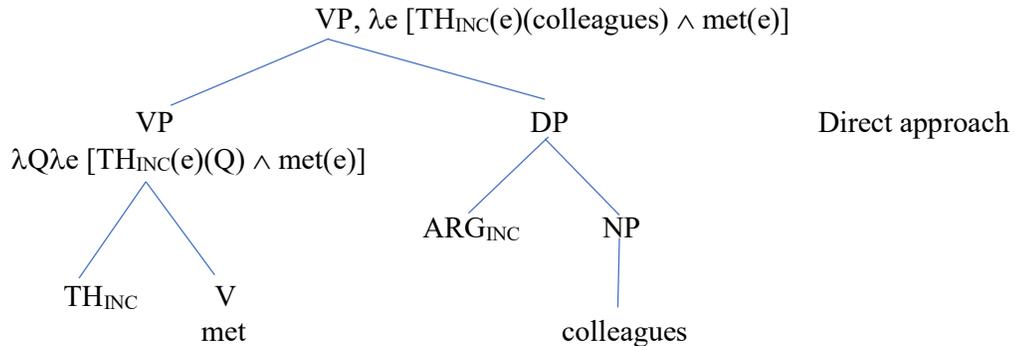
- a. We've established a base line theory for K-reference based on Germanic.
 - i. Bare Arguments (BAs) in E/G are kind denoting, where kind reference is obtained through a null kind forming operator ARG_K .
 - ii. German next to ARG_K uses the definite plural for kind reference as a last resort (= through a type adjustment mechanism triggered by k-level predicates).
- b. Main consequences:
 - i. Kind denoting NPs part take in Generic (universal) vs. Episodic (existential) predication.
 - ii. In generic environments BAs (or, in German, plural definites) pattern with singular indefinites. In episodic predication, they don't: kinds display 'scopelessness' (e.g., ultra narrow scope with respect to pluractional adverbs, akin to what happens in incorporation structures).

III. Romance vs. Germanic.

(7) The main generalizations in broad strokes

- a. In E and G, BAs can occur in any position (with different interpretations, depending on the, the aspect, the type of predicate, etc.).

b. PseudoIncorporation (PI)



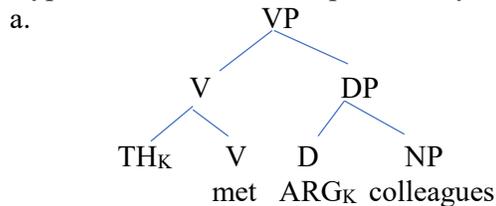
The ARG_{INC} checks that its sister is a (cumulative) property. It would be a sort of ‘agreement marker’:

- i. ARG_{INC} = $\lambda P : CUM(P). P$

The Incorporating TH-head on the verb makes the property the theme of the event, like in Hindi.

[It is also possible to build the CUM-restriction into the PI-applicative head (i.e. into the operation of PI itself).]

- c. What needs to be done for PseudoIncorporation/Restrict to work in I:
- ii. Block this operation in the EPP subject position.
 - iii. License it in Topic position.
 - iv. PseudoIncorporation is subject to ‘nameworthiness’ restrictions. Italian BAs are not subject to nameworthiness constraints, but to cumulativity.
- d. Problems with the PI approach:
- i. The cluster of restrictions in (c.i-ii) is typologically unattested for PseudoIncorporation (?)
 - ii. **We have *no account of the occurrence of kind level predicates with bare arguments.***

(10) Hypothesis 2: Just ARG_K, positionally restricted.

- b. i. λe [$TH_K(e)(\cap colleagues) \wedge met(e)$] Direct
 ii. $\lambda e \exists x$ [$\cup \cap colleagues(x) \wedge TH(e)(x) \wedge met(e)$] Indirect
- c. The null D-must be licensed appropriately
- i. By a lexical head (e.g. through head raising of the null [_D ARG_K] into a higher lexical head)
 - ii. By Spec Head agreement (or whatever) with a TOP-head
- In so far as I can see, this has approach has none of the issues in (9c-d).

(11) What about the definite article in Italian?

Like in German:

- It spells out ‘ ι -maximization’, not kind formation.

- It undergoes intensional abstraction in presence of kind level predication (i.e. with kind-level predicates and generics)

A prediction:

- Ieri sera ho ucciso (*le) zanzare per un'ora, prima di addormentarmi
Last night, I killed (*the) mosquitos for an hour, before falling asleep
 - (*I) soldati di ogni regione sono morti per diverse ore stamattina in difesa del confine nord.
(The) soldiers from every region died for hours this morning in defense of the northern border
- If *the_{PL}* simply denoted kind formation the versions of (a) and (b) with the article should be seamless, contrary to fact. If, on the other hand, kind formation with the definite article is a 'last resort', i.e., triggered by a type mismatch, it would not be available in (11a-b). Kind formation will be available, however, with kind oriented predicates and generics:
- **(Le)* zanzare portano la malaria/purtroppo non sono estinte
Mosquitos carry malaria/unfortunately are not extinct
 - $\lambda\alpha_k.\text{extinct}(\alpha_k)(\lambda\mathbf{w}.\iota x \in U [\text{mosquitos}_w(x)])$
 - $\lambda\alpha_k[\text{Gen}(\alpha_k)(\lambda\mathbf{w}\lambda x \text{ carries malaria}_w)] (\lambda\mathbf{w}.\iota x \in U [\text{mosquitos}_w(x)])$
 - The intensional-abstraction approach:
 - makes the right prediction with respect to interactions with pluractional modifiers
 - enables us to retain the view that the definite article is unambiguously the spell out of ι -maximization.

Similar considerations apply (I believe) to German.

- (12) The "Partitive article" in Italian: a weak plural existential determiner.

Morphologically: di + DEF (only plural/mass). Semantically, '∃'.

It displays scope ambiguities. It tends to take wide scope with respect to low pluractional operators.

- Ieri sera ho ucciso (*delle) zanzare per un'ora, prima di addormentarmi
Last night, I killed (*some) mosquitos for an hour, before falling asleep
- Ieri ho ingoiato (*delle) pillole ripetutamente
yesterday I swallowed (some) pills repeatedly
- Ho schiacciato (*delle) pulci ripetutamente ieri sera sul mio gatto
Yesterday, I swatted (some) fleas repeatedly last night on my cat
- Ho fatto nascere (*dei) bambini molte volte
I assisted in giving birth to (some) children many times
- (*Dei) gattini con difetti congeniti sono nati ripetutamente
(Some) kittens with birth defects were born repeatedly

Find, discover, give birth, kill etc. are strongly telic; bare plurals turn them systematically into atelic, something that kind reference (or incorporation) is known to do.

The partitive article (in my dialect) gets systematically wide scope over pluractional adverbs, or an iterative reading.

- (13) Second brief summary: The case of Italian

- | | |
|--|-------|
| DP | |
| ARG _K | NP |
| ∅ | gatti |
| [gatti con cui avrei voluto giocare] | |
| 'cats I would have liked to play with' | |

- [ARG-K ∅] is licensed adjacent to a lexical head (V/P) or in TOP
- [ARG-K ∅] can only have 'can only be interpreted as '∩'

- (if simplex, or also as 'f_∃' if 'indexical').
- (ii) follows from the fact that Italian has spell out rules associated with +/-DEF specifications.
- iii. ARG_{+DEF} → il ARG_{-DEF} → un
- b. Differences with English:
- In E, [ARG-K ∅] is freely allowed.
 - In E, *the_{PL}* is 'indexical' (the boys = the boys around here), and hence cannot be used for kind oriented predication.
- A host of complicated scope facts, quantificational variability effects, etc. fall into place...

(14) The case of French.

- a. Basically, no bare arguments allowed. [ARG-K ∅] is not licensed.
[Only cases where where something like a bare NP occurs are:
- 'Pseudo partitive'- like constructions: three kilos of apples ⇒ trois kilos de pommes
 - Predicate position: Jean et Paul sont amis
 - Coordinated structures (in some dialects): chiens et chats]
- b. The 'partitive' article: *de + def* (cognate of Italian *di + def*).

- i. Morphology :
- de + le [mas sing] → du (before consonant) del (before vowel and h)
- de + les [mas/fem pl] → des

The definite article is 'dropped'/not present in three circumstances :

- With prenominal adjectives
- ii. J'ai d' anciennes poupées
I have DE old dolls
- iii. J'ai des amis anciennes
I have DES friends old I have old friends
- After negation
- iv. Je n'ai pas de bagues d'or
I don't have DE rings of gold
- In pseudopartitives
- v. beaucoup d' argent trois kilos de pommes
a lot of money three kilos of apples

- c. ARG_{PART} → $\left[\begin{array}{l} \text{de / } \left\{ \begin{array}{l} \text{MP} _ \\ \text{NEG} _ \\ _ \text{ADJ} \end{array} \right\} \\ \text{de + ARG}_{\text{DEF}} / \text{elsewhere} \end{array} \right.$ (MP = measure phrase; e.g. *trois kilos*)

d. Semantics:

- restricted to plural and mass NPs (i.e. cumulative properties)
 - i. * J'ai lu du livre
I have read DE book
 - Existential: cf. (b.ii)
 - Narrow scope under negation (b.iv).
 - No kind-reading
 - ii. * Des baleines sont en voie d'extinction no kind
Some whales are on the verge of extinction (OK only on taxonomic reading)
 - Differentiated scope
 - iii. La nuit dernière, j'ai tué *(des) moustiques pendant une heure avant de m'endormir
Last night, I have killed some mosquitos for an hour before falling asleep.
 - iv. *(Des) soldats sont morts à plusieurs reprises
DES soldats died repeatedly
- Sentences (iii)-)iv_ shows that the partitive article has 'ultra low' scope and creates *atelic*

predicates, unlike its Italian counterpart.

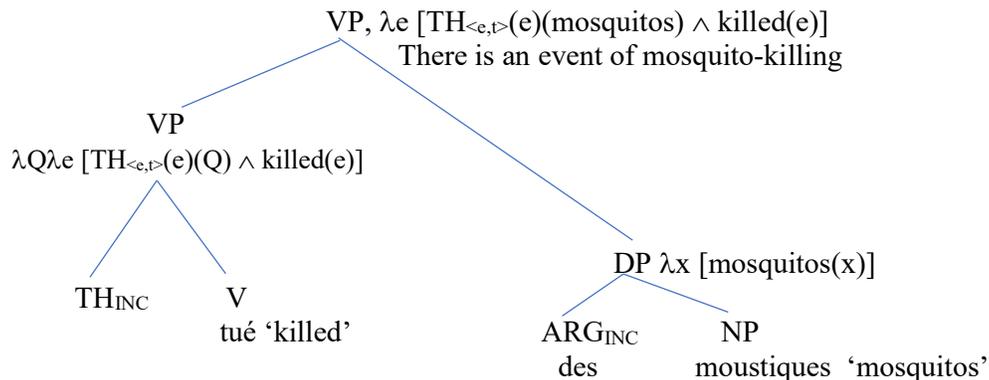
(15) Analysis of French.

All of the facts in (14) are consistent with the partitive article being an indefinite. The fact in (14c.ii) requires that the partitive article act as a ‘marker of PseudoIncorporation/Restrict’ (as proposed by Gonzales and Mihoc 2018).

A possible implementation is that the partitive article per se just checks whether the NP is cumulative; if it is, it passes the denotation up. The DES-DPs are thus property denoting. The V-complex that combines with a DES-DPs must be made capable of combining with a property. This can be done exactly as Hindi, say, through a dedicated functional head that merges with V.

Cf. van Geenhoven (1998), Chung and Ladusaw (2003), Dayal (2011), a. o.,

i.



ii. $\|ARG_{INC}\| = \lambda P: CUM(P).P$

iii. $\|TH_{INC}\| = \lambda P_{ev} \lambda Q_{et} \lambda e$ [$TH_{\langle e,t \rangle}(e)(Q) \wedge P(e)$] Direct

iv. $TH_{INC}(e)(Q) \stackrel{DF}{=} \exists x [Q(x) \wedge TH(e)(x)]$ Indirect

It is having the whole property as theme of the event that enables strongly telic Vs, like kill/die to become atelic.

Let us call this process through which a full property becomes an argument in a way that allows this type of aspectual class shifts and ultra narrow scope construals, while *not* being kind oriented, ‘Full Property’ Incorporation. [Basically, I’m looking for a ‘process nominal’ label for a way of feeding properties arguments akin to Chung and Ladusaw’s ‘Restrict’ (‘Restriction’ has for me the wrong connotations). We may reserve the terms ‘PseudoIncorporation’ for processes that typically are positionally restricted and subject to ‘Nameworthiness’.]

In French Full Property Incorporation is:

- v. limited to cumulative properties
- vi. not restricted to specific positions in the clause
- vii. marked by a designated morpheme on the DP.

I do not think that these are universal features of Full Property Incorporation.

(16) Maori and ‘Restrict’ (Chung and Ladusaw 2003)

There is a (strong?) resemblance between the French partitive and the ‘Restrict’ article *he* in Maori as described by C&L. The ‘article’ *he* in Maori is used to mark narrow scope indefinites. For example, *he* cannot scope across negation; the ‘article’ *tetahi* can.

a. Kāore he tangata i waiata mai.

T.not a person T sing to here ‘No one at all sang’

b. Kāore tetahi tangata i waiata mai.

T.not a person T sing to here ‘There was a person who didn’t sing’.

Also, existential sentences require *he*-DPs and disallow *tetahi*-DPs.

C&L do not provide data on Differentiated scope/atelicity.

c. C&L analysis

i. “*He* is a marker for ‘Restrict’”; *tetahi* is interpreted in terms of choice functions.

‘Restrict’ is an operation that combines a property with a verb via intersection:

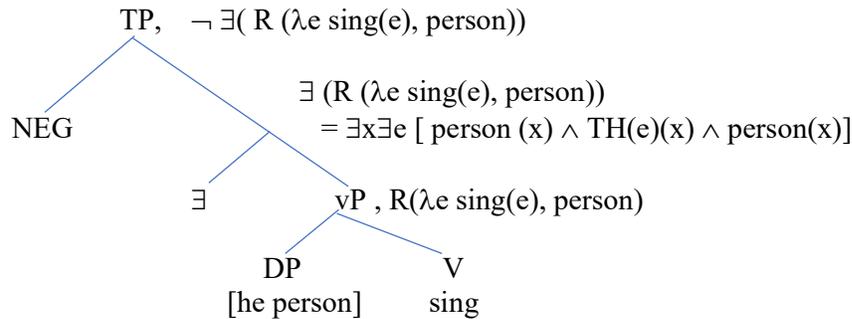
ii. $R(\lambda e \text{ sing}(e), \text{person}) = \lambda x \lambda e [\text{person}(x) \wedge \text{TH}(e)(x) \wedge \text{sing}(e)]$

Plus there is a stipulation that the argument left unsaturated by Restrict has to be existentially closed when the event argument gets existentially closed.

Thus, (ii) comes to:

iii. $\exists x \exists e [\text{person}(x) \wedge \text{TH}(e)(x) \wedge \text{sing}(e)]$

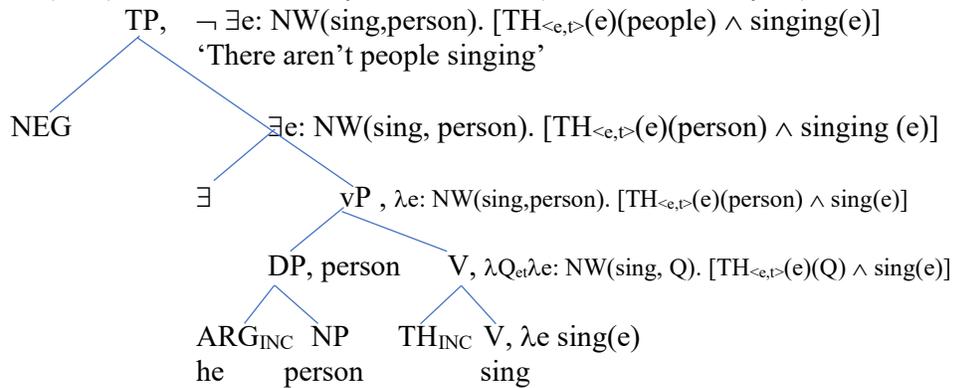
This would have to happen within the scope of negation (as \exists -closure of the event argument must occur within the scope of negation). Whence the ‘narrow scope’ behavior of he-nominals.



According to C&L, ‘Restrict’ is subject to positional/syntactic constraints and to ‘Nameworthiness’ (like Hindi PI), unlike French DES-nominals.

A Full Property Incorporation-re-analysis of Maori:

Legenda: $NW(P, Q) = P$ is ‘nameworthy’ relative to Q (whatever that may be).



i. $\| \text{TH}_{\text{INC}} \| = \lambda P_{ev} \lambda Q_{et} \lambda e: NW(P, Q). [\text{TH}_{\langle e, t \rangle}(e)(Q) \wedge P(e)]$

Where, $NW(P, Q) =$ The combination of events of type Q with things of type P is nameworthy

(17) Summary on French

a. French disallows ARG_K .

The role ARG_K plays in English/Italian is split in two:

b. The definite article for kind reference/generic predication, as in Italian and German.

i. les dinosaures ont disparu ii. les chiens aboient

‘dinosaures are extinct’

‘dogs bark’

c. The pseudo partitive article, a marker of Full Property Incorporation.

(18) Towards a typology of ‘minimal’ argument formation [VERY FAR from complete]

Cumul: Restricted to cumulative properties **NW:** Subject to Nameworthiness

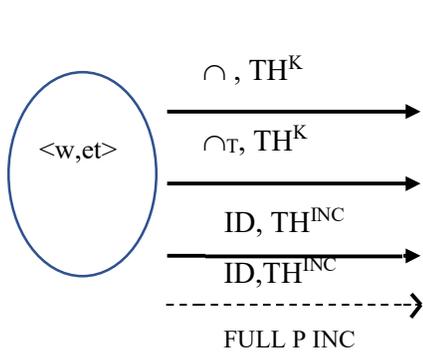
Aspect: Atelic vs both Telic/Atelic

Positional restrictions: Yes/No

Marking on N: None, No Case (NC), Special Morpheme (SM).

In the typology below I include Turkish and Bangla that have been argued to have

PseudoIncorporation of so called Taxonomic (Singular) Kinds (Sag 2019, 2022 on Turkish, Saha 2023 on Bangla).



Exemplification	Cumul	NW	Pos Rest	Aspect	Marking on N
English, Hindi BPs	YES	NO	NO	ATELIC	None
Italian BPs	YES	NO	YES	ATELIC	None
Turkish, Bangla	NO	YES	YES	ATELIC	NC
? English Weak Def	NO	YES	YES	TEL/ATEL	SM/NC
Hindi	NO	YES	YES	TEL/ATEL	NC
Maori PI	NO	YES	YES	?	SM
French	YES	NO	NO	ATEL	SM

ID = Identity Map (possibly restricted, e.g., to cumulative properties)

(19) Summary: Slow steps towards a restrictive theory of argument formation.

a. Argument formation in narrow sense recruits: ι -maximization, \exists -instantiation, $\cap^{(T)}$ -kind formation.

b. K-formation is always null.

c. The syntax of Argument Formation is subject to licensing; the semantics is governed by blocking/elsewhere and ranking.

d. Argument Formation in a broader sense includes a variety of Pseudo/Full PropertyIncorporation.

We have re-analyzed in light of (a)-(d) Germanic vs. Romance:

e. In Germanic ARG_K is freely licensed; in Italian it is licensed by certain heads; in French it is (basically) disallowed. French compensates via Full Property Incorporation.

f. Microparameters /local constraints:

- The definite article is/isn't indexically restricted
- Cumulativity
- Nameworthiness
- Positional restrictions
- Morphological exponence

Appendix

I. Hindi PseudoIncorporation

- a. i. Anu puure din cuuhaa pakaRtii rahii

Anu whole day mouse catch-IMP PROG ‘Anu mouse-caught the whole day’

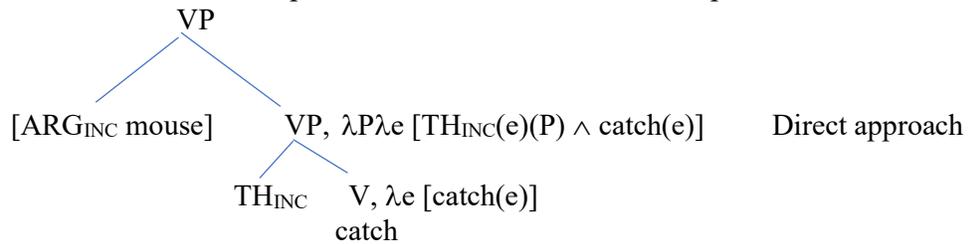
In Hindi incorporated objects are caseless; both plural and singular NPs can be incorporated; but the singular ones can get plural interpretation in the scope of a pluractional adverbs. In subject position, where incorporation is disallowed, bare singulars cannot get a plural interpretation.

- ii. pure din kamre meN cuuhaa ghustaa rahaa
whole day room in mouse enter-IMP PROG

A certain mouse/the mouse kept entering the room the whole day.

- b. The syntax and semantics of Incorporation is similar to that of kind-predication

- iii.



- iv. $TH_{INC}(e)(P) =_{DF} \exists y[P(y) \wedge TH(e)(y)]$

Indirect approach

The ARG-forming operation on the NP is an incorporation marker, which syntactically blocks case and semantically checks that the NP is property denoting. The applicative thematic head on the verb incorporates the property as a theme of the event in ways fully analogous to how kinds are argumentized.

- c. Dayal’s (2011) proposal

- v. $catch_{TV} = \lambda x \lambda y \lambda e [catch(e) \ \& \ Agent(e) = y \ \& \ Theme(e) = x]$

- vi. $catch_{INC-V} = \lambda P \lambda y \lambda e [P-catch(e) \ \& \ Agent(e) = y],$

where $\exists e [P-catch(e)] = 1$ iff $\exists e' [catch(e') \ \& \ \exists x [P(x) \ \& \ Theme(e') = x]]$ Direct

- vii. $catch_{INC-V} = \lambda P \lambda y \lambda e [catch(e) \ \& \ Agent(e) = y \ \& \ \exists x [P(x) \ \& \ Theme(e) = x]]$

II. The core behavior of the definite singular generic: variations on themes in Dayal (2004).

- a. The dog evolved from the wolf K-level
b. The dog is rarely ferocious/barks when scared Generic
c. i. The horse arrived in the new world with Columbus Episodic

- ii. I’ve finally seen the Maremma Sheepdog

Notice the contrast with:

- iii. Horses arrived in the new world with Columbus

- iv. I looked outside. Horses/(??the horse) were/(was) grazing placidly.

- Episodic predication of definite singulars is ‘momentous’: it must have consequences for the kind as a whole.

- d. Compatibility with group level predication.

- v. Di questi tempi, il cinghiale in Italia è più numeroso del lupo

These days the wild boar in Italy outnumbers the wolf

- vi. * Di questi tempi, un cinghiale in Italia è più numeroso di un lupo

These days a wild boar outnumbered a wolf

- Predication of singular definites allows for collective/group-level predication.

Conclusion: Basic kinds diverge from 'taxonomic kinds' the way in which plurals differ from groups.

vii. The group of first year students has 3 members

viii. * The first year students have 3 members

The shift to Taxonomic Kinds (TKs) happens at the N-level

e. ix. Every dog is easy to train: the fox terrier, the German Shepard,...

x. The whale is in danger of becoming extinct. In fact, most whales are already extinct.

f. From properties to TKs

Let $P_{\langle w, st \rangle}$ be any property:

$$\cap^T P = \lambda w. \uparrow \cup P_w$$

Where ' $\cup X_{\langle e, t \rangle}$ ' is the supremum of X (which may or may not be a member of X)

' \uparrow ' is your favorite group forming operation (Cf. Landman 1989)

g. Let ' $\leq_{K, c}$ ' be the 'subkind relation salient in a context c. I.e.:

xi. $a \leq_{K, c} b = a$ is a salient subkind of b in context c.

Use it to form kind level common nouns:

xii. $[whale_w, \langle e, t \rangle]_{k, c} = \lambda x. x \leq_{K, c} \cap^T whale$ ($[]_{k, c}$ of type $\langle \langle e, t \rangle, \langle e, t \rangle \rangle$)

xiii. $\|[whale]_{k, c}\| = \{ \cap^T blue\ whale, \cap^T humback, \cap^T bowhead \dots \}$

xiv. $\|[whale]_{k, c'}\| = \{ \cap^T whale \}$

In such a case, we can use the definite singular article with its usual (weak) meaning

h. $[DP\ the\ [whale]_k,] = \iota \{ \cap^T whale \} = \cap^T whale$