

THE PROBLEM OF TRITRANSITIVES

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OVERVIEW OF THE TRITRANSITIVES PROJECT

Work in progress, in collaboration

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Work presented in Cuervo & Troberg (2022); Troberg, Cuervo & Juneau (2022); Cuervo, Donohue, Takhtaganova & Troberg (2022)

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Structures with four participants

(1) Marisa le puso el bebé en los brazos a Emilio.

Marisa DAT=put the baby in the arms DAT Emilio

'Marisa put the baby in Emilio's arms'

Three internal arguments

Theme DP Locative PP Dative DP DO body-part possessor

Or three participants with unaccusatives

(2) La esquirla le cayó en la otra pierna a mi hermano the splinter DAT=fell in the other leg DAT my brother 'The splinter fell on my brother's other leg'

Three internal arguments

Theme DP Locative PP Dative DP SUBJECT body-part possessor

Latin

Venus Ascanio placidam per membra quietem in-rigat.

V.NOM A.DAT peaceful.ACC through limbs.ACC quiet.ACC in-pour.PRES.3S

'Venus poured in peaceful quiet through Ascanius's limbs.' Z. Feldcamp (f.o)

I-a seos adevărul din gură He-3s.DAT tore the truth from the mouth 'He forced him to speak.' Romanian

Lamiroy & Delbecque 1998

Er hat ihm etwas ins Ohr geflüstert He has 3s.DAT something in the ear whispered 'He whispered something into his ear.'

German

Lamiroy & Delbecque 1998

a jeté un coussin à la figure. Paul lui French Paul 3s.DAT has thrown a pillow to the face 'He threw a pillow in his face.'

Italian Gli sulla testa. avevano messo una corona 3s.DAT had.3PL put a crown on the head 'They had put a crown on his head.' Lamiroy & Delbecque 1998

évbii ríi ojé vbí úkpun Emai (Edoid) palm_oil be king LOC cloth 'Palm oil is on the king's cloth.'

Schaefer 1995 (in Van deVelde 2020)

3 PUZZLES

Valence: TTRs exceed valency ever proposed as associated with a class of verbs

Constituency: Apparent mismatch b/ semantic and syntactic relations.

Crosslinguistic distribution: why are TTRs so productive in some languages and more restricted or unavailable in others?

OVERVIEW OF THE PROJECT

GOALS:

Identify and describe TTRs; comparative approach

Analysis

Parametres/dimensions of crosslinguistic variation

Typology of applicatives & external possession

Integration within a theory of Argument Structure

PREVIOUS WORK

TTRs relate to rich literature (EP, dative DPs, ditransitives, PP)

TTRs mentioned in passing and data presented in work on EP, but not identified as a particular construction on its own right

a.o., Keach & Rochemont 1994, Lamiroy & Delbeque 1998, Haspelmath 1999, Conti 2011, Sánchez López 2007, Niculescu 2008, Nueva RAE 2010, Deal 2017

No structural account

Armstrong 2021: focus on *put* sentences (Vs which select a LocPP complement), with two external possessors; analyzed as Poss raising from inside LocPP to a special case of (High)Appl_{LOC}.

SPECIFIC QUESTIONS

Which is/are the added argument/s?

What is the role of the (type of) verb in selecting arguments?

What kind of Dative is the dative DP in TTR?

Are they co-extensive with inalienable EP?

Can work on EP directly cover these sentences?

Can three DPs be integrated into the spine? How?

FOCUS TODAY

Explore properties of TTRs

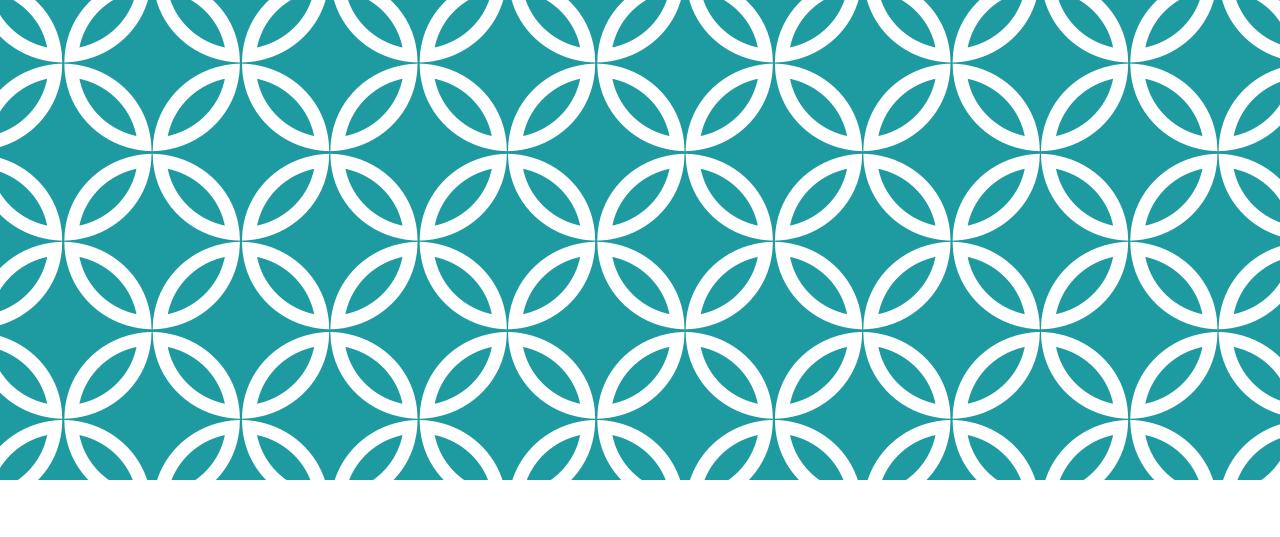
Identify special properties/problems (valence and constituency)

Syntactic analysis

Implications for argument structure theory

Mainly Spanish data

- Published data
- Speakers' intuitions
- Databases: Corpus del español



IDENTIFYING TRITRANSITIVES

DITRANSITIVE STRUCTURES

Marisa le mandó tres cartas a Emilio send Ditransitive (recipient)

'Marisa sent Emilio three letters'

Marisa le lavó los dientes a Emilio wash Tr. w/ External poss.

'Marisa washed Emilio's teeth'

Marisa le puso un sombrero a Emilio

put Ditransitive (loc, hum)

'Marisa put a hat on Emilio'

al café Marisa le puso azúcar

put Ditransitive (loc, inanim)

'Marisa put sugar in the coffee'

Marisa besó a Emilio en la frente

kiss Tr. w/ Loc body-part

'Marisa kissed Emilio on the forehead'

TTRs: One more argument...

SPECIAL PROPERTIES

No tritransitive verbs (Tesnière 1959; Hale & Keyser 1993)

- → Constituency: Are there really three internal arguments?
- → Are TTRs built on a ('lexically') ditransitive base?

How are properties of ditransitive EP or Dative constructions distributed among three arguments?

PROPERTIES

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Lexical scope:
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Vs and Ps

Semantics:

relation b/arguments

type of possession

animacy

referentiality

Syntax:

morphosyntax

constituency

argumenthood

hierarchy

LEXICAL SCOPE: VERBS

Restricted amount/type of verbs?

- Not only verbs of putting, contact
 - √ Verbs of communication (decir 'say', gritar 'shout')
 - √ Verbs of removal (sacar 'take away', robar 'steal')
- Not only ditransitive 'bases'
 - ✓ Verbs of (manner of) creation (escribir 'write', bordar 'embroider', coser 'sow', pintar 'paint')
 - ✓ Unaccusative verbs of movement (caer 'fall', aparecer 'appear', alcanzar 'reach')

LEXICAL SCOPE: VERBS

We see much more than contact verbs, change of location, or affectedness verbs (Cf. Sánchez López 2007, Armstrong 2021)

- (3) a. Le llovieron insultos en la cara a Messi Impersonal: rain 'They rained insults on Messi's face'
 - b. Le firmé mi nombre en el yeso a Emilio Intrans. Activity: sign

'I signed my name on Emilio's cast'

c. Le vimos una sombra en las manos a Emilio Non-dynamic: see

'We saw a shodow on Emilio's hand'

d. Le bordé un sol en el costado al amohadón Man. of place

'I embroidered a sun on the cushion's corner'

e. Le susurré el secreto al oído a Emilio.

'I whispered the secret in Emilio's ear'

Man. of placement: embroider

Man. communication: whisper

LEXICAL SCOPE: PREPOSITIONS

Not only 'en'

- ✓ Other prepositions: a, sobre 'on', entre 'between', de, hasta,
- ✓ Intransitive (adverbial) Ps: encima, (a)dentro, enfrente, debajo
- (4) Le arrebataron el libro <u>de</u> las manos (a Marisa)

 DAT=snatched the book from the hands DAT Marisa

 They snatched the book from Marisa's hands
- (5) ¿Qué le metiste debajo al vestido?
 what DAT=put underneath DAT.the dress
 'What did you put underneath the dress?

SEMANTIC RELATIONS: DAT-LOC

Marisa le puso el bebé en los brazos a Emilio.

Marisa DAT.CL put the baby in the arms DAT Emilio

```
[DOTheme] [Dative [PPLoc P [Body Part]]]
```

- Dative: possessor of DP-LOC and participant in event
- Relation b/ dative and locative to the exclusion of the Theme

SEMANTICS: TYPES OF RELATION

The Inalienability Hierarchy (Haspelmath 1999)
Body-part; garment; special objects "other contextually salient unique items"

Part-whole or inclusion relations Possessive or spatial

Concernee-concern (Van de Velde 2020)

RELATION DAT-LOC

Not only inalienable possession (6)

...como una bola que le cayó en el guante a América Latina 'Like a baseball that fell on LatinAmerica's glove'

Le=pusieron una bacha horrible en el baño a Emilio DAT.CL put a sink horrible in the bathroom DAT Emilio 'They installed a horrible sink in Emilio's bathroom'

...las propuestas que le puso en la mesa a Piñera 'the proposals that s/he put on the table for Piñera ('s consideration)'

RELATION DAT-LOC

Not only possession: Dat is also (null) Ground, DO is Figure

(7) A Marisa le cayó una piedra al lado

DAT Marisa DAT.CL put a stone to the side
'A stone fell by Marisa's side'

Alguien le puso debajo unas brazas [a la olla] somebody DAT.CL put under some embers DAT the pot 'somebody put some embers under it (the pot)'

Verbs of movement plus adverbial Ps (Axial Parts/Place)

Fábregas 2007; Acedo-Matellán 2017 for ditransitive clauses.

SEMANTICS: ANIMACY

Spanish TTRs are not restricted to animate Datives

- Correlation between animacy of dative DP and type of possession relation
- Human datives do not require inalienable possession
- Inanimate datives require part-whole/inclusion relation with locative

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Same in predicative possession in English:

John has a big nose/bird

The tree has a bird on it
```

AFFECTEDNESS IN DITRANSITIVES

Sánchez López 2007: Alternation in Part-whole relations (locative predication)

(8) a. Le cortaron la cabeza. him.DAT cut.3PL the head 'They cut off his head.'

DAT-ACC "holistic affectedness"

b. Lo cortaron en la cabeza. him.ACC cut.3PL in the head 'They cut him in the head.' ACC-LOC "Concerned locative"

- Sánchez López 2007: "[the dative construction is] the result of the promotion of the argument denoting the whole and its licensing via dative case; this promotion takes place when the locative denoting the body-part has **a holistic affectation reading**."
- Picallo and Rigau (1999): verbs which do not take affected arguments prevent the dative possessive construction

SEMANTICS: AFFECTEDNESS IN TTRS

(9) a. Le pusieron un anillo en el dedo.

'They put a ring on his finger.'

b. Le vimos una mancha en la camisa.

'We saw a shadow on her hands.'

c. Le susurré el secreto al oído.

'I wispered the secret in her years.'

d. Le bordé un sol en el costado al amohadón.

'I embroidered a sun on the side of the cushion.'

e. Le encontraron un quiste en el pulmón.

'They found a cyst in his lung.'

Concerned locatives, no holistic affectedness of the 'part', verbs without affected arguments

SEMANTIC RELATIONS: DO-LOC

Marisa le puso el bebé en los brazos a Emilio.

Marisa DAT.CL put the baby in the arms DAT Emilio

```
Dative ... [[DOTheme] [PPLoc P [Body Part]]]
```

- > Fig-Ground b/ DO and locative (to exclusion of DAT)
- > Dative related to [DO-LOC]: possessive entailment
 - Emilio has [a baby in his arms] (also distributed reading,

Vergnaud and Zubizarreta 1992)

MORPHOSYNTAX:

Dative: A clitic, can be doubled by a full lexical a-DP

Spanish, Romanian vs. H French, Italian

Locative: a P with a DP complement; an adverbial P def/indef. Determiner (needs c-commanding antecedent) possessive Determiner (typically) disallowed

en los brazos ~ *en sus brazos

can be referential (accept modifiers, demonstratives)

Cornilescu&Nicolae 2021

SYNTAX

Marisa le puso el bebé en los brazos a Emilio

```
Q: Constituency and relations

poner [el bebé en [los brazos]] ... [a Emilio]

poner el bebé ... [en los brazos [a Emilio]]
```



CONSTITUENCY

The Locative PP and the Dative cannot be extracted as a constituent, but each can be independently extracted.

- (10) a. Marisa le puso el bebé [en los brazos] [a Emilio]
 - b. *Fue [en los brazos a Emilio] que Marisa le puso el bebé
 - c. Fue [en los brazos] que Marisa le puso el bebé [a Emilio]
 - d. Fue [a Emilio] que Marisa le puso el bebé [en los brazos]
- The Dative is not a constituent of the Locative PP.

CONSTITUENCY

The DO and the Locative PP cannot be extracted as a constituent, but each can be independently extracted.

- (11) a. Marisa le puso [el bebé] [en los brazos] a Emilio
 - b. *Fue [el bebé en los brazos] que Marisa le puso a Emilio
 - c. Fue [el bebé] lo que Marisa le puso [en los brazos] a Emilio
 - d. Fue [en los brazos] que Marisa le puso [el bebé] a Emilio
- The DO and the Locative PP do not form a constituent.

However: Fue [un beso en la frente] que Marisa le dio a Emilio

SYNTAX: ARGUMENTHOOD

They behave as three separate clausal arguments

Q: Are they all arguments, or adjuntes?

Tests of argumenthood (language dependent?)

Definition of 'argument'

RAE 2010 Arguments of a predicate are elements semantically selected, but not always obligatory. Ch. 35, p. 2677.

Is the dative the only "extra" argument?

- Condition on EP: the possessee must be an argument of the verb
 - verbs of putting fulfil this requirement

VALENCE/SELECTION

Which of the arguments are more closely associated with the verb?

(12)a. Le puso el bebé en los brazos a Emilio

b.*Le puso el bebé a Emilio.

(Locative omitted)

c. *Le puso en los brazos a Emilio.

(Theme omitted)

d. Puso el bebé en sus brazos.

(Dative omitted).

The Dative is least associated with the verb

But depend on other DPs: Le puso un sombrero (en la cabeza) a Emilio

SPLIT VALENCE: SEMANTIC \neq SYNTACTIC

Datives in TTRs are non-selected datives

semantic licensing vs. syntactic licensing

If not directly associated with verb, what argument(s) do they relate to?

what is the base structure?

Q: Argumenthood

Hierarchical relations

SYNTAX: ARGUMENTHOOD TESTS (ROMERO 2008)

1. Conditional periphrasis

*Si (le) envió un paquete, habrá sido <u>a Pedro</u> Argument

'If s/he sent a package, it must have been to Pedro'

Si preparó un pastel, habrá sido <u>para Mateo</u> Adjunct

'If s/he prepared a cake, it must have been for Pedro'

(13) *Si le puso en los brazos a Emilio, habrá sido el bebé

*Si le puso el bebé a Emilio, habrá sido en los brazos

*Si le puso el bebé en los brazos, habrá sido a Emilio

*Si le puso el bebé, habrá sido en los brazos a Emilio

Ŝ

SYNTAX: ARGUMENTHOOD TESTS (ROMERO 2008)

2. Hacerlo substitution (do so)

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(le) Envió un paquete <u>a Pedro</u> → Lo hizo (*a Pedro) Argument
```

Preparó un pastel <u>para Mateo</u> → Lo hizo *(para Mateo) Adjunct

Le puso el bebé en los brazos a Emilio

- (14) $\rightarrow \sqrt{\text{Lo hizo}}$
 - → *Lo hizo el bebé
 - → *Lo hizo en los brazos
 - → *Lo hizo a Emilio ?Se lo hizo a Emilio ?
 - → *Lo hizo en los brazos a Emilio

HIERARCHY

```
(15) a. Le=entregó su; llave en la mano [a cada huésped];.

DAT=delivered their key in the hand DAT each guest

'She handed each guest their key.'
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- b. */?? Le=entregó [cada llave]; en la mano a su; dueño DAT=delivered each key in the hand DAT its owner 'She handed each key to its owner.'
- The Dative assymetrically c-commands the Theme

HIERARCHY

```
(16)a. Puse [a cada bebé]; en su; cuna. put DOM each baby in its crib 'I put each baby in its crib.'
b. *Puse su; llave en [cada cerrojo]; l.put its key in each lock Int. 'I put its key in each lock.'
```

The Theme asymmetrically c-commands the Locative

CONSTITUENCY & HIERARCHY: SUMMARY

- Constituency tests tell us that the dative forms a constituent with neither the Theme nor the Locative.
- Hierarchy tests tell us that the dative is higher than both the Theme and the Locative.

INTERIM CONCLUSIONS

Lexical productivity: TTRs are not restricted to verbs of putting and P 'en'

- TTR: Syntactic frame that is independent from particular verbs and Ps: not a "locution"
- > A lexical analysis would miss generalizations
- TTRs need a structural analysis that accounts for their syntax and semantics

INTERIM CONCLUSIONS

- Tension between syntactic and semantic relations between arguments.
- Neither double-objects, LowAppl or Figure-Ground structures can account for TTRs
- The dative DP: in form and interpretation is not dependent on the verb...



ANALYSIS

SPECIAL PROPERTIES

Three independent phrases acting as internal arguments

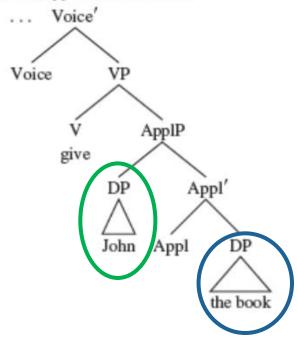
Unexpected: TTRs exceed verbal valency

Argument introducers/complex predicates: if not the verb, how are arguments introduced?

Argument-augmenting operation (e.g., applicativization, raising) on a ('lexically') ditransitive base?

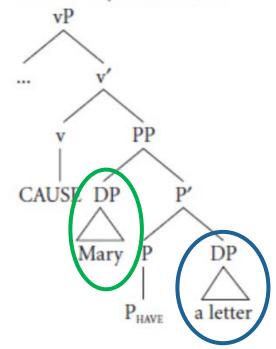
DITRANSITIVE STRUCTURES

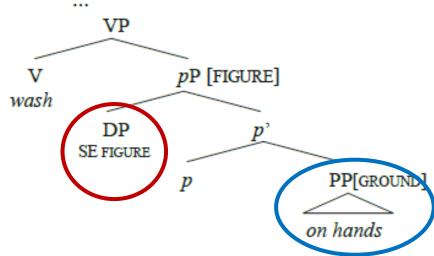
(13) Low applicative structure



Low Appl, Pylkkänen 2002

b. double object structure





pP Figure-Ground, Svenonius 2007 (Rumanian figure reflexives, Cornilescu & Nicolae 2021)

VALENCE/SELECTION: SUMMARY

The dative is an additional internal argument.

Two strategies to add an argument:

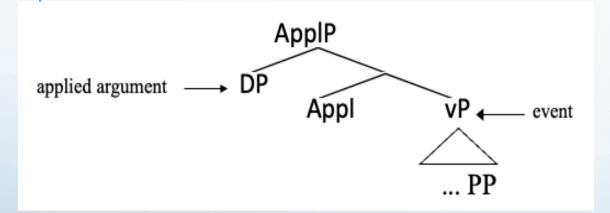
Causativization: this adds an external argument/subject

Applicativization: this adds an internal argument/object

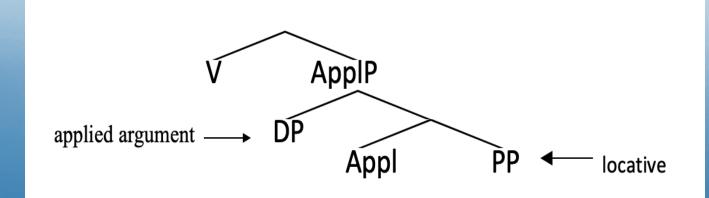
- → Applied to what?
- → What is the complement of Appl?

Cannot be a LowAppl, related to DO or LocDP directly

(17a)



(17b)



THE CONSTRUCTION

This dative/applied argument requires a verb that licenses a locative PP.

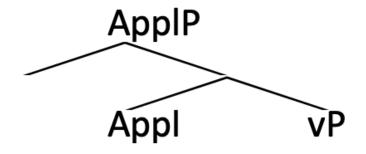
Options:

- The applied argument applies to the event (17a) or
- The applied argument applies to the locative PP (17b)?

HIGH APPLICATIVES

Could these datives merge high in the clause, taking the vP as a complement? (Pylkännen 2002, 2008)

High applicative



(18) Desde que traje el perro a la casa, nunca me lo has querido.

'Ever since I brought the dog home, you've never loved it (and this hurts me).

(Armstrong (2021, ex. 27)

(19) A Daniela le gustan los gatos.

'Daniela likes cats.' (Cuervo 2003, ch.4, ex.6)

WHAT TYPE OF DATIVE IS THIS? HIGH?

Interpretation

Pylkännen (2002, 2008) among many others.

Typical interpretations are Benefactive, Malefactive, Instrument, Experiencer.

But the dative argument of a tritransitive always has an affected and a possessor reading.



WHAT TYPE OF DATIVE IS THIS? HIGH?

Animacy: In Spanish, high applicatives may not be inanimate.

(20) *A la planta le salieron bien las flores.

'[The flowers the plant made] turned out alright'

(Cuervo 2003 ch.4, ex.54a)

But datives of tritranstives can be inanimate.

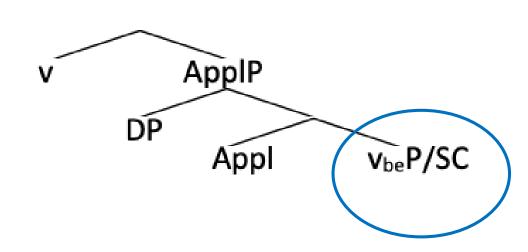
- (21) a. Le bordé un sol en el costado al amohadón.
 - b. A la casa; le; ha caído un rayo en el tejado.

'The ray has fallen on the house roof.' (Conti 2011, ex.10b)



MIDDLE APPLICATIVE

Could these be datives that select a predication relation? (Cuervo 2003, 2020)



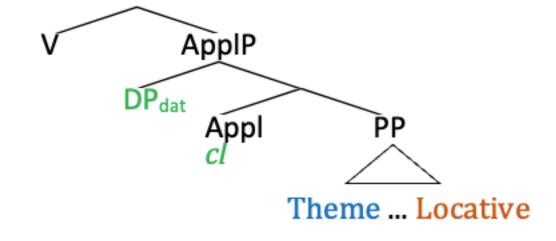
(22) Emilio le rompió la radio a Valeria.

'Emilio broke the radio on Valeria.'

(Cuervo ch.3, ex. 1)

Selection: MiddleAppls select a predication structure that is itself licensed under a higher verb.

Tritransitives are attested with a range of dynamic verbs that can associate with a predication structure (locative PP).





MIDDLE APPLICATIVE

Interpretation: Affectedness

Affectedness is a structural interpretation and thus entailed by the congiguration as a whole.

- The dative is related to the state denoted by the predication relation.
- It is also indirectly related to the higher causing event since this event brings about the state.
- It does not depend on one feature or denotation of a head

Middle applicatives are naturally paraphrased by "What X did to Y was..."

(23) Lo que Emilio le hizo a Valeria fue romperle la radio. 'What Emilio did to Valeria was break her radio.'

This holds for tritransitives — even with inanimate datives:

(24) Lo que ella le hizo al amohadón fue bordarle un sol en el costado.

'What she did to the pillow was embroider a sun on its corner'



Middle applicatives capture the fact that "affectedness" in TTRs

- relation to DativeDP, and the lexical verb (e.g., contact vs. creation vs. putting)
- does not involve "complete affectedness" of the (body-part) locative
- Cf. Affectedness introduced by an extra verbal layer/applicative itself (Sánchez López 2007, a.o.)

Animacy: There is no restriction on inanimate datives.

(25) Emilio le rompió la pata a la mesa.

'Emilio broke the table's leg'

(Cuervo 2003, ch.3, ex.44)

Tritransitive datives can also be inanimate (see ex. 7, 9 above): a la olla 'the pot' / al amohadón 'the cushion'



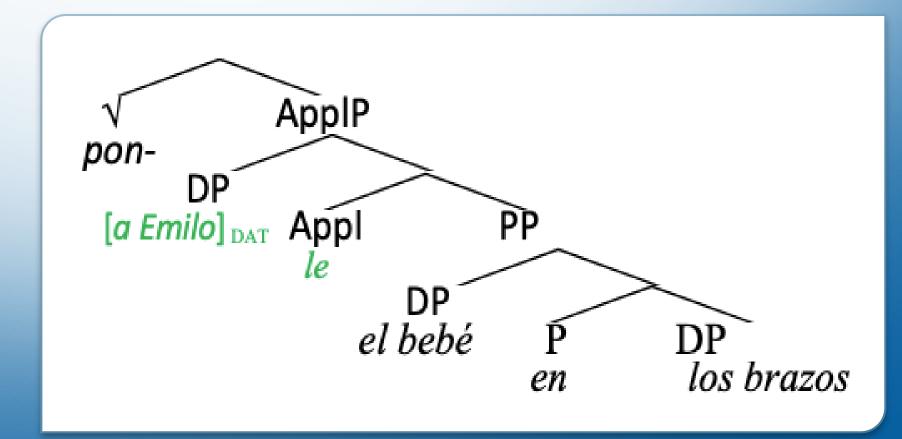
TTR datives pattern with Middle (Affected) Applicatives

	High applied argument	Middle applied argument	Tritransitive dative
Complex event involving a predication relation?	√ possible	√always	√always
Affected interpretation?	X	✓	✓
Allows inanimate datives?	X	✓	✓

WHAT TYPE OF DATIVE IS THIS? LOOKS LIKE A MIDDLE

- √ Constituency
- √ Hierarchy
- **√** Selection
- ✓ Interpretation
- √ Morphosyntax

(26)



A NOTE ON POSSESSION

The MiddleAppl analysis does not require a priori any special mechanism for establishing a possession relation between the dative and the locative.

- ✓ Does not assume raising out of LocDP
- ✓ Does not assume Possession as denotation of a particular head
- ✓ Compatible with alternatives to movement
 - ✓ Introducing a thematic role/argument ≠ a role being saturated by a DP (e.g., Shäffer 2022, Wood 2015, Wood & Marantz 2017)
 - ✓ Discourse binding: associative anaphora (Kleiber, 2001)
 - ✓ Binding: obligatory co-indexation with an anaphoric element

RELATED ANALYSES: AFFEC APPL WITH NULL GROUND

Datives with intransitive prepositions/adverbs

Fábregas 2007: Spanish Axial Parts with null ground; inalienable possession b/Ground and Axial Part

(28) a. Ana tiene un lunar en la mejilla.

Ana has a spot in the chin.
WHOLE has POSSESSUM in PART

b. Ana tiene un paraguas delante.

Ana has an umbrella of-front.

Pavón 2000

- Datives with verbal prefixes Acedo Matellán's 2017: Latin Null Ground
- (29) Pecori=que a-spergere uirus.

cattle.dat=and at-sprinkle.inf venom.acc

'And sprinkle the cattle with venom.' (Verg. georg. 3, 416; in A-M 2017))

Also Daskalaki & Mavrogiorgos 2016 on Locative Applicatives in Greek



SOME IMPLICATIONS FOR ARGUMENT STRUCTURE

APPLICATIVES AND ARGUMENT STRUCTURE

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Dative DP in TTRs as a structural type of Appl
Middle/Affected Appl:
             below v head (dynamic event)
             above a pP (predicational relation, Figure-Ground)
                   cf. above vP (predication, Subject-predicate in
causatives/inchoatives)
Interpretation of applicatives (datives): configurational
Relevant properties: hight-complement (entity, predication, event)
                      embedding-head above (v, Voice, nothing)
                      dynamic/stative contrast
                                                          Cuervo 2020
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APPLICATIVES AND ARGUMENT STRUCTURE

Dative DP in TTRs as a structural type of Appl/Dative

Interpretation of Dative not as theta-role, but from the construction.

Not a new idea! E.g., Guéron 1984 against InalPoss as theta-role

Semantic licensing (part-whole relation) is mediated by structural relations: Dative outside [DO-LOC] → related to a new location/state, not an individual Dative not very dependent on verb (cf. Campos 1999)

TTR AND VALENCE

TTRs as productive constructions beyond valence

Need to split semantic valence and syntactic valence

Dissociation b/ argumenthood and verbal valence

→ Loss of explanatory power

Verbal meanings: less denotation and features of morphemes more configurational meanings: allosemy & composition

We don't know what a verb/root means in isolation (Harley 2014)

No linguistic meanings out of context; the context is syntax first

FUTURE DIRECTIONS

- More corpus work
- Refine description and analysis
- Microvariation within Romance
- Integration with typology of applicatives
- Comparative research outside Indo-European