The instrumental: dative and its double

Abstract: We argue that instrumentals and comitatives are the mirror image of dative/genitive obliques. We propose that both sets of adpositions/cases are elementary predicates, expressing a part-whole (inclusion/possession) relation. Comitatives/instrumentals reverse the direction of the relation with respect to datives/genitives; genitives/datives embed the whole/possessor, instrumentals/comitatives embed the part/possessum. In other words the genitive, dative and instrumental obliques result from the internal differentiation of a single core content – namely the part-whole content expressed in fairly uncontroversial fashion by the genitive. We apply this proposal to triadic verb constructions, where the comitative/instrumental alternates with dative. We extend our discussion to dative/instrumental syncretism (eventually including DOM objects) and to ergative alignments, addressing the most widespread patterns of syncretism of the ergative morpheme, with either instrumentals or genitives/datives.

Keywords: oblique, instrumental, dative, genitive, argument alternations, syncretism

1.   Genitive/dative vs. instrumental/comitative

In this article, we argue that instrumentals and comitatives are the mirror image of dative and genitive obliques. Both sets of adpositions or cases are elementary predicates, expressing a possession or part-whole relation; comitatives and instrumentals reverse the direction of the relation with respect to datives and genitives. Our empirical basis is Western European languages, therefore the data we are considering cluster around prepositions like Italian *con* 'with', or English *with*. Following a traditional line in generative grammar (Fillmore 1968), oblique cases are considered to be inflectional versions of prepositions; therefore we will freely intermix case languages with adpositional languages. The discussion will be extended to other languages for which we have first-hand data (Persian), and reference will be made to typologically diverse languages, which display

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relevant behaviour in a particularly robust way.

As is well-known, genitive, dative and instrumental are among the most likely obliques to appear in any given languages. For instance, Blake (2001: 156) proposes the implicational hierarchy in (1), such that cases on the right are progressively less likely to occur. Within a formal framework, Caha (2009) modifies Blake's hierarchy (not taking ergative into account) as in (2) – where the interesting property is the fact that locative can be seen to interlope at various points in the hierarchy rather than ranking at any precise point in it (possible syncretisms are the deciding factor in Caha's hierarchy, conceived of as an f-sequence in the nanosyntactic framework of Starke 2009).

(1)   NOMINATIVE > ACCUSATIVE / ERGATIVE > GENITIVE > DATIVE > LOCATIVE >

        ABLATIVE/INSTRUMENTAL > OTHER

(2)   NOM > ACC > LOC1 > GEN/PART > LOC2 > DAT > LOC3 > INS/COM

We agree with Caha on the rather special place that locatives have in case systems – and will not be dealing with them here. Our core idea, as set out at the beginning, amounts to saying that the fundamental obliques of any given language are accounted for in terms of the same conceptual nucleus (inclusion/possession/part-whole). Syncretisms are also to be understood as based on this shared content. This article eschews the postulation of precompiled structural hierarchies (f-sequences) of the type proposed in cartographic studies (Cinque and Rizzi 2010) or in nanosyntax as the basis for explaining syntactic and lexical regularities. We take a conservative view under which the lexicon precedes syntax, and in fact projects it, in keeping with the minimalist postulated of Inclusiveness (Chomsky 1995).

Our basic idea can best be grasped with reference to data like (3). In Italian, genitive and dative are lexicalized by the prepositions *di* 'of' or *a* 'to'. In (3b), *di* introduces a possession relation between the argument it selects, namely *Gianni* (the possessor), and the head of the DP, namely *il*

libro, 'the book' (the possessum). Similarly, in the English phrase *John's book*, we take the *–s* ending to realize the possession relation as a case inflection. Indeed, if we say that oblique case has a relational content (it is effectively an inflectional counterpart of an adposition), it is evident that we take the category case (at least, oblique case) to be interpretable. This approach is therefore incompatible with the view of case, or at least oblique case, as an uninterpretable feature (Chomsky 1995, 2001). This does not impinge on other minimalist postulates, as far as we can see. The same possession relation holds in (3a) between the dative *Gianni* and the theme of the ditransitive verb *il libro*, 'the book', as discussed by Kayne (1984) and many others. What we are interested in, is that possession relations may be realized also by *with* (instrumental/comitative) morphemes, as in (3c). The relation in (3c) is reversed with respect to that in (3b), since the preposition *con* 'with' embeds the possessum, while the possessor is the head of the DP.

(3)   a.   Ho dato il libro **a** Gianni

                I have given the book to Gianni

        b.   il libro **di** Gianni

                the book of Gianni

        c.   il ragazzo **con** gli occhiali

                the boy with the glasses

Various strands of literature converge on the conclusion that possession is a surface manifestation of a more elementary inclusion or part-whole relation. Manzini and Savoia (2005, 2007) propose that the Romance clitic *ne* (syncretic in several Italian varieties between genitive and dative) introduces a pronominal set, which is a superset of some other argument of the sentence (i.e. the internal argument, see Burzio 1986). Belvin and den Dikken (1997: 170) illustrate the relation introduced by *have* as zonal inclusion, as follows: "the 'meaning' of have … denotes a special kind of inclusion relation … dubbed 'zonal inclusion'… Entities have various zones associated with

them, such that an object or eventuality may be included in a zone associated with an entity without being physically contained in that entity… The type of zones which may be associated with an entity will vary with the entity".

The focus of this paper is on showing that instrumental/comitative inflections and adpositions denote a reverse zonal inclusion relation, by which the the possessum, rather than the possessor is in the oblique case. Possession, as in (4a) is only one of a range of fundamental meanings associated with Italian *con* 'with' (as with its English counterpart). These include the comitative in (4b), ambiguous in that *Maria* can be with the speaker or *Maria* can be with *Gianni*; the same is true in (instrumental/possession) sentences of the type *The boy saw the girl with the binoculars*, as is well known in psycholinguistics (Frazier and Fodor 1978, and subsequent literature). The example in (4c) illustrates the instrumental meaning of *con*, (4d) illustrates the cause meaning. In (4e) *con* introduces a manner adverbial and can be effectively paraphrased by a sentence including the manner adverb *efficacemente* 'efficaciously'.[1]

(4) a. Ho incontrato un ragazzo **con** gli occhiali

I have met a boy with the eye-glasses

b. Ho incontrato Gianni **con** Maria

I have met   Gianni with Maria

c. Mangio la pizza **con** le posate

I eat   the pizza with the cutlery

d. Gianni ha perso il lavoro **con** la crisi

Gianni has lost his job with the crisis

e. Gli antibiotici agiscono **con** efficacia

'Antibiotics act with efficacy'

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[1] On the idea that Romance adverbs of various kinds are the result of the incorporation/merge of a root (nominal) element to a preposition see Mateu (2002), Franco (2014), among others. We are not going to discuss adverbs and adverb-related meaning of 'with' any further here.

For German, Stolz et al. (2006: 41-43) identify up to fourteen different functional flavours of the instrumental/comitative preposition *mit*, for which they provide lexical semantics labels. Thus in the range of meaning that we have roughly individuated as comitative they distinguish Co-operative, Reciprocal, Active comitative/Human companion, Passive comitative/Animate companion, Confective/Inanimate companion. Similarly, they distinguish various subtypes of possession, namely Ornative/Temporary property, Combination, Part-whole/permanent property, Possession. Finally in the range of instrumentals proper, they individuate Human instrument, Body part instrument, Means of transportation, Material, Tool. More interestingly, perhaps, the comitative/instrumental can be employed cross-linguistically in triadic verb constructions alternating with oblique datives, where it encodes what in the dative version of the pair is the theme; it also surfaces as a Differential Object Marker (DOM) and as ergative subject – as we will see further on. In this section we concentrate on possession, comitative and instrumental meanings, taking the quite interesting finer distinctions made by Stolz et al. as pragmatic in nature.

1.1   Possession with

Let's start with the attributive possession construal of instrumental/comitative morphemes, as shown in English (5). This pattern is of course common cross-linguistically, as shown by the Italian examples above with the preposition *con* and the Persian examples in (6) with the preposition *ba*.

(5)   The girl **with** blue eyes

(6)   a.   dokhtare **ba** cheshmaye sabz

            the girl with green eyes

        b.   marde **ba** kolah

            the man with the hat

In various languages instrumental/comitative morphemes can express also predicative possession, as in the Portuguese and Icelandic examples in (7) and (8), taken from Levinson (2011).
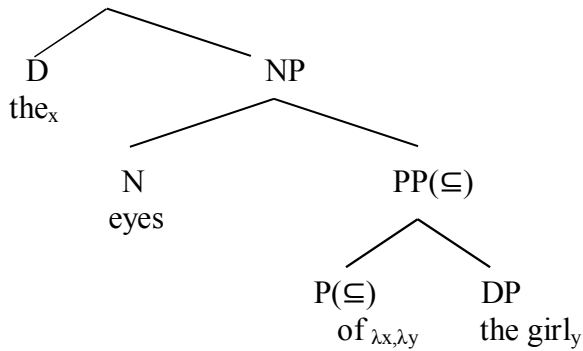
(7)   a.   O menino esta **com** fome.

              the child is with hunger ('hungry')

    b.   sentou-se porque estava **com** medo

              he sat himself because was with fear ('afraid')

(8)   a.   Huń er **með** bækurnar fimm.

              She is with ('has') five books

    b.   Joń er **með** blá augu.

              John is with ('has') blue eyes

A notable fact explored in formal grammar terms by Levinson (2011) is that in the nominal domain the comitative-instrumental morpheme can reverse the relation conveyed by another oblique, namely the genitive. This is illustrated in Italian (3c) vs. (4a) and in English (5) vs. (9).
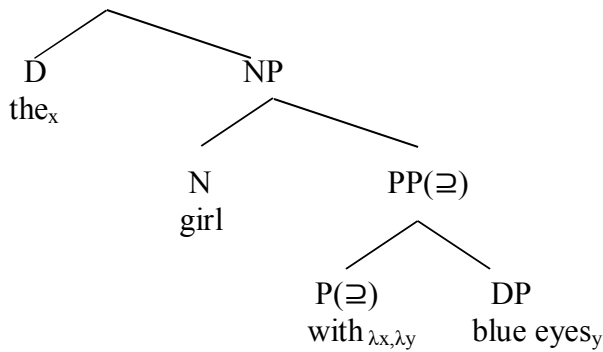
(9)   the blue eyes **of** the girl

We assume that the primitive content of the *di* 'of' preposition in (9a) is possession, which we characterize as before in terms of inclusion (part-whole). Following Manzini and Savoia (2011b), we notate the relevant relational content with ($\subseteq$), though as we have seen, inclusion is to be construed not mathematically but as looser zonal inclusion. In (10), P($\subseteq$) takes as its internal argument its sister DP (the possessor) and as its external argument the sister to its projection (the possessum) – and says that 'green eyes' is in the domain of inclusion of 'the girl'. In the reverse pattern, English *with* introduces an elementary ($\supseteq$) relation in which the complement of the preposition is the posessum, zonally included by the possessor, as in (11).

(10)

```
              DP
           ／      ＼
         D            NP
       the_x       ／      ＼
                 N            PP(⊆)
               eyes        ／      ＼
                        P(⊆)         DP
                      of_{λx,λy}   the girl_y
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(11)

```
              DP
           ／      ＼
         D            NP
       the_x       ／      ＼
                 N            PP(⊇)
                girl       ／      ＼
                        P(⊇)         DP
                      with_{λx,λy}  blue eyes_y
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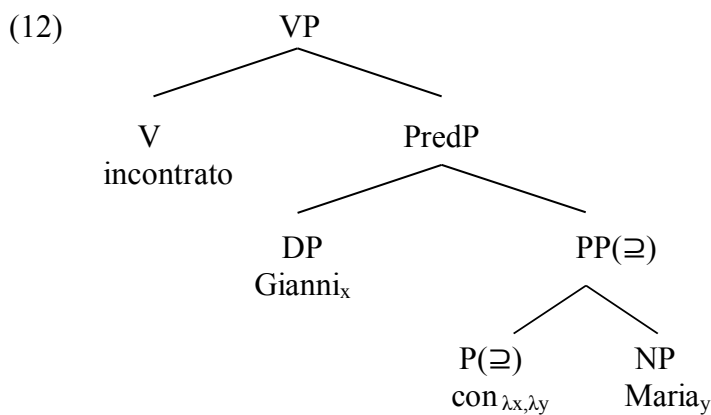
The crucial question then arises whether – and how – the content of the preposition *with* sketched in (11) is connected to its comitative and instrumental occurrences.

1.2   *Comitative* with

From a semantic viewpoint, comitatives encode a relation of accompaniment between two participants in an event, labelled in the literature the accompanee and the companion (Lakoff and Johnson 1980, Stolz 2001, Stassen 2000, Zhang 2006). For instance in Italian (4b) 'I have met Gianni with Maria', 'Maria' is the companion and either 'I' or 'Gianni' is the accompanee. The same propositional content could be expressed by using a coordination ('Maria and I met Gianni' or 'I met Gianni and Maria') but the presence of the comitative preposition provides a different presentation of the (I, Maria) set or the (Gianni, Maria) set – namely one in which the second member of the conjunction is 'included by' the first.

In essence, and fairly intuitively, we propose that comitatives express a form of possession.

More formally, we propose that the accompaniment relation can be reduced to a part-whole inclusion relation (⊇), whereby the accompanee zonally includes the companion. Thus we suggest the representation in (12) for the reading of Italian (4b) in which the accompanee is *Gianni*. The Preposition *con* heads a small clause (Kayne 1994) whose internal argument is the companion and whose external argument is the accompanee. Since *Maria* is the sister of *con* and *Gianni* is the sister of the PP projection, locality is sufficient to determine the correct saturation of the argument slots of *con*.
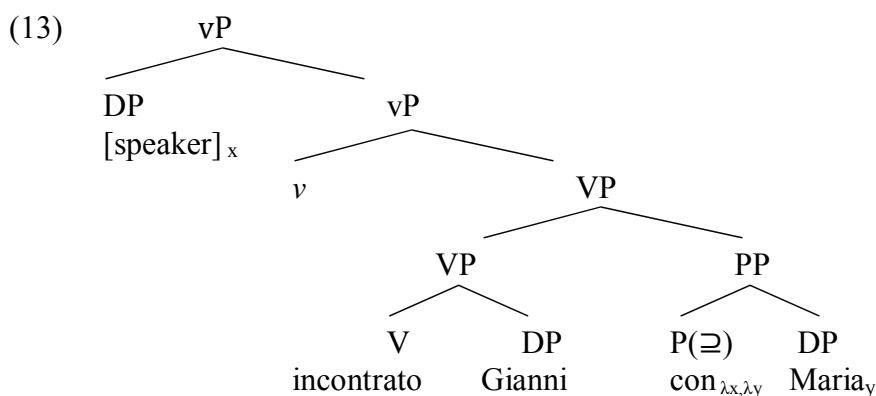
(12)

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                        VP
           ┌─────────────┴─────────────┐
           V                          PredP
       incontrato           ┌───────────┴───────────┐
                            DP                     PP(⊇)
                         Gianni_x            ┌───────┴───────┐
                                          P(⊇)              NP
                                       con_{λx,λy}        Maria_y
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The question now arises how to account for the interpretation under which the accompanee of *Maria* is 'I', the speaker. Kayne (1994: 65) suggests that, exactly as we generated the comitative in a small clause with the object in (12), so the comitative can be generated in a small clause configuration with the subject. In Kayne's terms, their relatively distant position in surface structure derives from the subject moving up the tree and stranding the comitative.

In the Applicative literature (Pylkkanen 2008, Cuervo 2003), two different possible sites for the occurrence of Applicatives are posited. Low Appl heads appear in a configuration comparable to the small clause in (12), where they establish a relation between the theme and a goal dative. High Appls heads appear in an intermediate position between VP and v and express a relation between the oblique argument in their Spec and the VP event. Benefactive/malefactive datives are a typical example of high Appls, as are instrumentals (Pylkkanen 2008: 13). Appl projections are avoided here in that they do not seem to respond to the actual morphosyntactic organization of

languages like Italian, where the 'applicative' content is not introduced by verbal morphology, but rather by a preposition (or eventually by a nominal inflection, in languages using case morphemes).[2]

However we assume that Appl theorists are correct in assuming that different interpretations can accrue to the same oblique because of its different position – and consequently the different constituents it related to (on locality grounds). Thus we express the ambiguity between object oriented comitative and subject-oriented comitatives as in (12) vs. (13). By Minimality, the low comitative in (12) takes the theme as its external argument. The high comitative in (13), attached VP-externally, takes as its external argument the subject, which is therefore interpreted as the accompanee. Following recent developments in generative grammar, we assume that linear order is not part of core syntax, but rather an externalization procedure (Chomsky 2001, 2013, Abels and Neeleman 2012). Thus to help the reader we have orientated the comitative to the right of the VP – but this is a post-syntactic operation. In terms of dominance relations the comitative intervenes between VP and v, occupying essentially the same position as a high Appl (on not positing abstract heads for the sake of mere adherence to X-bar theory see Chomsky 2013).

(13)

```
                      vP
              ┌───────┴───────┐
             DP              vP
         [speaker]_x     ┌────┴─────┐
                         v          VP
                              ┌──────┴──────┐
                             VP            PP
                          ┌───┴───┐    ┌────┴────┐
                          V      DP   P(⊇)      DP
                      incontrato Gianni con_{λx,λy} Maria_y
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The accompanee cannot generally be an oblique, for instance in (14a) it is not possible to interpret 'the professor and his wife'. Nevertheless comitatives can be oriented towards the implicit

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[2] Comitative meaning encoded by applicative morphology on the verb seems to be particularly common in the languages of Australia (Polinsky 2013).

agent of a passive sentence (Bruening 2012), as in (14b); and they can be orientated towards lexicalized *by*-phrases as well, as (14c). This can be explained by assuming that the Spec, vP position is syntactically visible in passives.

(14)   a.   ≠Ho dato il libro al professore **con** la moglie

           I have given a book to the professor with his wife

      b.   Il paziente è stato visitato **con** il primario

           The patient has been examined with the head doctor

      c.   Il paziente è stato visitato dal primario **con** gli assistenti

           The patient has been examined by the head with his assistants

1.3   *Instrumental* with

In the functionalist literature, instruments are viewed as entities in a chain of causal events. As stated in Naess (2008: 99) "An instrument is in fact involved in two separate, though connected, instances of causation: the agent's causing movement or change in the instrument, and the instrument triggering an effect on the patient … It is this intermediate role in a causal chain that gives the instrument the properties of being 'a Patient and a Causer at the same time'". Baker (1992, 2015: fn. 10) seems to have a similar conception of instrumentals since he assumes that "[s]emantically, the instrument is a kind of intermediate agent-theme. If I cut the bread with a knife, then I act on the knife, such that the knife changes location. The knife thereby acts on the bread such that the bread goes into a new state" (Baker 1992: 28).

According to Marantz (1984: 246), in sentences like *Elmer unlocked the porcupine cage with a key* "a key is an intermediary agent in the act of unlocking the porcupine cage; Elmer does something to the key, the key does something to the cage, and the cage unlocks". On the other hand, in sentences like *Elmer examined the inscription with the magnifying glass*, "the magnifying glass is an indispensable tool in Elmer's examination of the inscription, but it is not an intermediary agent in

the examination". Similarly, Alexiadou et al. (2006) argue that German does not allow all instruments in subject position but only 'instrument causers', namely "instruments which can be conceived as acting on their own, once the agent has applied or introduced them" (cf. Kamp and Rossdeutscher 1994: 144), as in (15). These distinctions seem to us overstated, or in any event pertaining to the domain of general cognition rather than of grammar. In sentences like (15a) an instrument combines with an agent so that they concur to the realization of the event, or they are concomitant in the realization of the event. In (15b) an instrument substitutes for the agent, lexicalizing a cause – yet it is hard to see why in the cause interpretation it would be impossible to say *the (surgeon∅s) scalpel has cured many a patient.*

(15) a. Der Arzt heilt den Patienten **mit** der Kamille/ dem Skalpell

The doctor cures the patient with the camomile/ the scalpel

b. Die Kamille/ *Das Skalpell heilt den Patienten

The camomile/ *the scalpel cured the patient

As mentioned in section 1.2, Pylkkanen (2008) argues that instrumental are essentially high Appls, like benefactive datives as opposed to low Appls like goal datives. Pylkkanen (2008: 17) further argues against the presence of an underlying cause in unaccusatives, based (among others) on the diagnostics that instrumental modifiers cannot combine with English unaccusatives, as in (16). Similarly for Bruening, instrumentals and external-argument–oriented comitatives pattern with *by*-phrases, in being allowed with passives but not with unaccusatives, as illustrated in (17).

(16) a. John broke the window with a stone.

b. The window was broken with a stone.

c. *The window broke with a stone.

(17) a. *The ship sank by a saboteur

b. *The ship sank with a torpedo

c. *The ship sank with a henchman

By contrast, Alexiadou et al. (2006) argue that languages do allow instrumental modifiers with unaccusatives. This is exemplified with Italian in (18a)-(20a); that a causer interpretation of the *con* phrase is involved is indicated by the comparison with (18b)-(20b), where the instrumental is turned into the subject of a transitive causative sentence.[3] On the other hand Bruening is right that unaccusatives cannot host agent/cause-oriented comitatives, as shown in the (c) examples. Alexiadou et al. only consider causative/anticausative alternations – but in the Italian examples we use unaccusatives without a transitive counterpart (there is no transitive 'grow' in Italian), especially to avoid the multiple ambiguities created by the middle-passive (*si)* morphology present in anticausatives.

(18)   a.   Queste macchie spariscono **con** la candeggina

                these stains disappear with the bleach

       b.   La candeggina fa sparire queste macchie

                the bleach makes disappear these stains

       c.   Queste macchie *spariscono/vengono fatte sparire **con** lo specialista

                these stains disappear/are made to disappear with the specialist

(19)   a.   Le piante crescono **con** il sole

                plants grow with the sun

       b.   Il sole fa crescere le piante

                the sun makes grow the plants

       c.   Le piante *crescono/ vengono fatte crescere **con** il giardiniere

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[3] To take another language family, Martin (2014) shows that instrumentals in Twi (Kwa, Niger Congo) are available with unaccusatives. In many Kwa languages instrumentals are introduced by serial verb constructions. On the contrary, the status of the instrumental morpheme *de* of Twi, according to Martin (2014) is not so clear-cut (e.g. contra other serial verbs in that language *de* is never inflected).

the plants grow/are made to grow with the gardener'

(20) a.   Il problema è sorto **con** il caldo

              the problem has arisen with the heat

      b.   Il caldo ha fatto sorgere un problema

              the heat has made arise a problem

      c.   Il problema *è sorto/ è stato posto **con** i tedeschi

              the problem has arisen/has been posed with the Germans

According to Deal (2009), in English as well, instruments/causers can co-occur with unaccusatives. She proposes however a fine-grained classification of unaccusatives, drawing a parallel between the occurrence of instruments/causers and that of *there* insertion; specifically, she argues that there is an inverse correlation between the two phenomena. Change of state unaccusatives which most easily admit an instrument/cause, as in (21a), do not allow an expletive, as in (21a'); the reverse is true with plain unaccusatives in (21b-b'). Two of the verbs that we have chosen in (20) are discussed at length by Deal as problematic only on the surface ('disappear' and 'grow'); however it seems to us that there are genuine counterexamples such as 'arise' in (20) (e.g. *There arose a new king over Egypt*, etc.).

(21) a.   The ice cream melted from the heat

      a'.   *There melted some ice cream in the heat

      b.   *The portrait hung from the stapling

      b'.   There hung a portrait from the wall.

Now, most of the works we reviewed so far seek to explain their various empirical generalizations in terms of a fine grained picture of the verb phrase. All of them involve a three tiered predicate, including a VP projection, a *v*P projection associated with causation, and a Voice
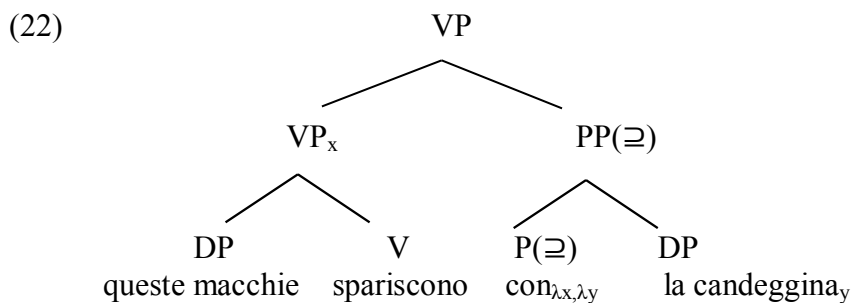
projection responsible for introducing the external argument. For Alexiadou et al. (2006) Voice can be +agentive or –agentive, characterizing causatives and anticausatives respectively; in the latter instance, it cannot support an agent/*by*-phrase, but it can support an instrument/causer. For Deal the crucial difference is between *v*'s with a CAUS specification, including inchoative unaccusatives, and those unaccusatives that simply have default *v*; the former but not the latter are able to combine with instruments/causers. Yet the ±agentive feature postulated by Alexiadou et al. encodes the observed differences, rather than explaining them; similarly for Deal's CAUS vs. default v. In general, it is somewhat unsatisfactory to have properties of adjuncts encoded into verbal projections, which (unlike the adjuncts themselves) are not visible. The sequencing of functional heads may accurately depict the observed semantic constraints – yet the fact is that the natural languages that we are considering have an all-purpose form of the verb for all the different interpretive nuances – and what actually plays a visible role in shaping these nuances are just the adjuncts themselves.

Bruening (2012: 26-27) differs from other approaches in that the properties of the different PP adjuncts guide the derivation (rather than features encoded on the verbal spine). For him "the difference between *by*-phrases and [instrumentals, comitatives] is that the *by*-phrase semantically saturates the argument of Voice. Instrumentals and comitatives do not … Hence, there is still an argument to be projected in Spec-Voice, and instrumentals and comitatives, unlike *by*-phrases, can appear in active clauses as well as passive ones." Unfortunately, even if "the *by*-phrase semantically saturates the argument of Voice", preventing it from composing with another agent, in order for syntactic selection of the Voice head by the Pass(ive) head to go through correctly, Pass must see an unsaturated Voice head. This model, requiring syntactic saturation and semantic saturation to be kept distinct, seems therefore quite complex. However here we are only concerned with instrumentals and comitatives – and not with *by*-phrases.

Let us summarize the evidence on instrumentals and comitatives so far. In section 1.2, we saw that comitatives may be orientated towards the object (12) or towards the subject (13), as well

as towards the expressed or unexpressed agent of transitives (14); however in unaccusatives they only have a theme/subject-oriented reading (18)-(20). Instrumentals seem different, in that in transitives they are agent oriented (15)-(16) – yet they also seem to attach to unaccusatives (18)-(20). In accounting for these facts, we will make it our strategy to impute as much semantics as possible to the adjuncts and to their different possible points of merger, while avoiding enrichments of the verbal spine, in line with Chomsky's (1995) minimalist program.

We begin with the occurrence of instrumentals/causers in unaccusative contexts. If we assume that an instrumental is essentially a high Appl, as suggested by Pylkkanen (2008), then the structure of the predicate in, say, (18a) must be something like (22). Following Chomsky (1995), we assume that in the absence of an external argument, there is no *v* layer of structure. In (22) the instrumental/causer has the same structure as the agent-oriented comitative in (13); what varies must therefore be interpretation. One possibility is that the two arguments of the transitive predicate P($\supseteq$) in the instrumental reading are not two DPs, but rather a DP, namely its complement – and an elementary event, namely VP (essentially the canonical interpretation for a high Appl). From the present point of view, the crucial question is whether being included by the event, formally ($\supseteq$), is sufficient to provide the desired characterization of instruments/causers – in practice whether *la candeggina* 'the bleach' is interpreted as the causer of the event of 'these stains disappearing' by the mere fact of being included in it.

(22)

$$
\begin{array}{c}
\text{VP} \\
\diagup \quad \diagdown \\
\text{VP}_x \qquad\qquad \text{PP($\supseteq$)} \\
\diagup \ \diagdown \qquad\qquad \diagup \ \diagdown \\
\text{DP} \qquad \text{V} \qquad \text{P($\supseteq$)} \qquad \text{DP} \\
\text{queste macchie} \quad \text{spariscono} \quad \text{con}_{\lambda x, \lambda y} \quad \text{la candeggina}_y
\end{array}
$$

In reality, cause is only one possible interpretation for each of the examples in (18a)-(20a); mere concomitance is equally possible, as seen in (25), where (25a) can equally well be paraphrased
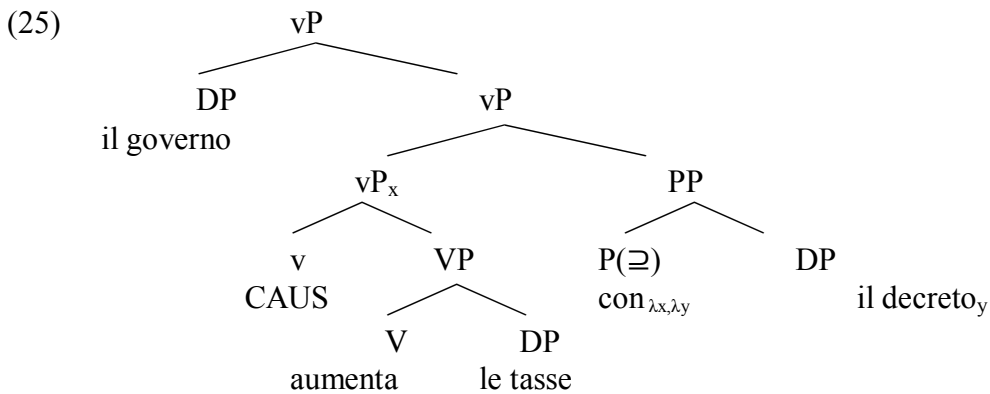
as in (25b) or as (25c). Transitive contexts can be used to disambiguate the two readings. In (24b) the government and the crisis are concomitant in raising taxes (an agent concomitant with a cause). In (24a) the decree is an instrument of the government in the strict sense of the term, in other words, the relation between the decree and the event of rising taxation depends on the agency of government.

(23)   a.   I fallimenti aumentano **con** la crisi

defaults are up with the crisis

b.   La crisi fa aumentare i fallimenti

the crisis makes go up the defaults

c.   Quando c'è la crisi, i fallimenti aumentano

when there is the crisis, defaults are up

(24)   a.   Il governo aumenta le tasse con un decreto

the government raises taxes with a decree

a'.   Il governo fa sì che le tasse aumentino con un decreto

the government makes taxes go up with a decree

b.   I governi aumentano le tasse con la crisi

governments raise taxes with the crisis

b'.   I governi fanno sì che le tasse aumentino **con** la crisi

governments make the taxes go up with the crisis

We tentatively propose that the (⊇) relation between the *con* phrase and the VP event, as schematized in (22), indeed yields inclusion in/concomitance with an event. Pragmatic inference is responsible for leading from inclusion/concomitance to causation. Note that the pragmatic inference that we are invoking must be postulated anyway for examples like (23c), where the syntax only encode temporal simultaneity – but one would normally interpret that there one of the two events

(the crisis) is causally prior to the other (the failures). To reiterate, causers of unaccusatives are mere concomitants with a VP event, and the pragmatic context must licence the inference to causation.

Let us then proceed to instrumentals as seen in bona fide caused events such as (24a). Following in essence Bruening (2012), we assume that an instrumental P takes as its arguments its complement DP and a vP event, that is an event involving a causation predicate, as illustrated in (25) for sentence (24a). In other words the ($\supseteq$) relation holds between 'the decree' and the causation event of 'the government CAUS VP', saying literally that the CAUS subevent includes 'the decree'. In the structural proposal that we are putting forward therefore an instrument is not a primitive notion – but a derived one, namely a concomitant of a CAUS event (and hence of an agent).

(25)

$$
\begin{array}{c}
\text{vP} \\
\text{DP} \qquad \text{vP} \\
\text{il governo} \\
\text{vP}_x \qquad \text{PP} \\
\text{v} \quad \text{VP} \qquad \text{P}(\supseteq) \quad \text{DP} \\
\text{CAUS} \qquad \text{con}_{\lambda x, \lambda y} \quad \text{il decreto}_y \\
\text{V} \quad \text{DP} \\
\text{aumenta} \quad \text{le tasse}
\end{array}
$$

1.4 Intermediate Conclusions

Comitatives establish a relation (of loose possession, inclusion) between two DPs. Instrumentals/causers establish a relation between their DP complement and a VP or *v*P events. The main difference with respect to other recent approaches is that we tried to derive the various interpretations without precompiling them in the functional sequence of the verb. We proceeded by adopting an elementary inclusion content for the *con/with* preposition, and a conservative approach to the internal structuring of the verbal predicate. We then derived various possibilities according to where the PP is attached– and whether it selects a DP or an event as an external argument. We identify the traditional comitative with a (DP, DP) relation which can be oriented to the internal

argument (lower attachment) or to the external argument (higher attachment). The traditional instrumental is a (event, DP) relation. Low attachment produces a pure causer/concomitant event meaning, while high attachment produces an instrumental reading proper.

Note that the difference we established between comitatives (two DP arguments) and instrumentals (an event a DP argument) also give us an easy way to handle languages where comitatives and instrumentals have a different lexicalization. An example of such a language is Latin, where ablative case lexicalizes instrumentals as in (26) and causers, as in (27) (Luraghi 2010: 47ff). [4] By contrast, comitative is lexicalized by *cum*, as in (28) – which gets extended in Romance languages like Italian to cover the old ablative as well.[5]

(26) a. naves habent Veneti plurimas, **quibus** in Britanniam navigare consuerunt

The Veneti have many ships, with which they used to sail to Britain Caes. *Gall*. 3,8,1

  b. quid ego **oculis** adspicio **meis**?

What do I behold with my eyes?   Plaut. *Men*. 1001

(27) a. orator metuo ne languescat **senectute**

The speaker I fear becomes weak with old age   Cic. *Cato* 28

  b. sed ubi **labore atque iustitia** res publica crevit, …

But when with/by labor and justice, the republic grew …   Sall. *Catil*, 10,1

(28) dum Antonius consultat, Varus **cum equitibus** prorupit

While Anthony held consultations, Varus burst in with the cavalry Tacitus, *Historiae*, 3, 10

Going back to the hierarchy of oblique cases in (1)-(2), the discussion in this section, taken together with the literature on which it is based, leads to the conclusion that the fundamental

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[4] This case "in spite of being called "ablative", … has as its main function the expression of Instrument and, to a lesser extent, Cause…The instrumental ablative is a direct outcome of the Indo-European instrumental case, to which it partly also goes back morphologically." (Luraghi 2010: 69).

[5] A genetically unrelated language that encodes the two meanings with different morphemes is Japanese, where comitatives are expressed with the *to* morpheme and instrumental by *de* Stolz et al. (2006: 70-71).

obliques of natural languages are a system of elementary operator attaching arguments to the verbal spine as possessing/including other DPs or of events/states – or as entertaining the reverse relation with them. Genitives and datives, i.e. English *of* and English *to* embed possessors/inclusors – of other DPs (cf. low Appls) and of events/states (cf. high Appl). The widespread syncretism of genitive and dative is therefore due to their common content – and there is no reason to postulate for instance their contiguity on an f-sequence (contra Caha 2009, cf. Manzini and Savoia 2011a, b). Here we have argued that the instrumental/comitative, or English *with*, is the reverse relation, in which a DP is introduced as possessed/included by another argument or a state/event. In a nutshell, what the present proposal amounts to is that there is a generator cell, or a common denominator in the fundamental oblique system (genitive-dative-instrumental) of many languages – and this is provided by the most fundamental element in the sequence namely the partitive/genitive, with its fairly unquestionable part/whole characterization.

Since the reverse relation is involved by *of/to* and by *with*, one is led to wonder why the instrumental is often syncretic with, say, dative (for instance in all Latin plurals, as well as in some classes of the singular). In other words, a theory of syncretism based on the sharing of contentive properties seems to be severely threatened by this simple fact. We return to it in section 3.2.[6] In the next section we will apply the analysis provided so far to argument alternations.

2.   Argument alternations involving the instrumental

2.1   *Dative/instrumental alternations*

---

[6] As mentioned at the outset, locatives are left out of the present discussion, which shares the descriptive conclusions of Caha (2009) as to their rather special status. For the sake of completeness, we mention that according to Manzini and Savoia (2011b) locatives can be lexicalized by genitive/datives (as in Albanian) to the extent that they really are a subtype of the latter case(s). In other words a locative amounts to an elementary predicate ($\subseteq$) restricted by location. Latin is a language where locative case (not governed by Loc prepositions, cf. Svenonius 2006) can be lexicalized by either genitive (I, II class) or dative (III, IV class and plural); an example of genitive of location is in (i). The idea of Manzini and Savoia is that 'the army' or the event of 'enrolling the army' is included by 'Rome'; locative is just the name of the all-purpose oblique when it applies to a location and is therefore locatively restricted.

(i)   dum conscribitur Romae exercitus
          'while the army is enrolled in Rome'   Liv. 6,28,5

Argument alternations involve an apparently triadic verb, which maintains the same association of an argument (the subject), but can express either of its other two arguments as its object, with the third usually expressed as an oblique (Levin 1993, Malchukov et al. 2010). Examples in English are the 'spray-load' alternation in (29), the 'image impression' alternation in (30) and the *with/against* alternation in (31) (Fillmore 1970, Jackendoff 1976, Hale & Keyser 1993, 2002 among many others).

(29) a. John sprayed the paint on the wall.

  a'. John sprayed the wall **with** paint.

(30) a. John embroidered peonies on the jacket.

  b. John embroidered the jacket **with** peonies.

(31) a. John hit the fence **with** a stick.

  b. John hit a stick against the fence.

In English, the prepositions that alternate with instrumental *with* to introduce the oblique argument in all the constructions presented above are locative prepositions (e.g. *on*, *against*). Nevertheless, there are also instances in which the instrumental morpheme alternates with the dative oblique *to*, as in (32), though only with a handful of verbs (*present, provide, supply, entrust, credit*, etc., cf. Levin 1993). The alternation is also found in Romance with very few verbs; a possible example is Italian *rifornire* 'supply' in (33).

(32) a. He presented the museum **with** his pictures.

  b. He presented his pictures **to** the museum

(33) a. Ha rifornito l'esercito **con** armi obsolete

    he has supplied the army with obsolete weapons'

  b. Ha rifornito armi obsolete **all**'esercito

he has supplied obsolete weapons to the army'

Typologists have found that triadic constructions involving an instrumental theme/patient are widespread in the world's languages (Heine and König 2010).[7] In what follows we will illustrate some of them. In Persian, many (if not all) the various alternations illustrated above can be rendered by the dative/instrumental interchange. In this language the dative preposition is *be*, normally employed with goal arguments, as in (34a), while the instrumental (and comitative) preposition is *ba*, as in (34b).

(34) a. sæfæ-ro   **be**   mæn   dad

record-DOM   to   me   gave

'S/he gave the record to me.'

b. pænjere-ro   **ba**   ajor   šikæst

window-DOM with   brick   broke

'She broke the window with a brick.'

Dative *be* alternates with instrumental/comitative *ba* in a wide range of triadic constructions, as shown in (35)-(38).[8]

(35) a. Pesar sang-ro   **be**   sag   zad

boy   stone-DOM   to   dog   hit.pst.3sg

'The boy hit the dog with the stone'

b. Pesar sag-ro   **ba**   sang   zad

boy   dog-DOM   with   stone hit.pst.3sg

---

[7] On the contrary, Siewierska (1998: 179) finds the presence of the 'double object' construction (of the English type) only in 12 out of 219 languages in her sample (about 6%).
[8] The direct object involved in these constructions can bear the DOM (Differential Object Marking) inflection –*ra* (Mahootian 1997, Ghomeshi 2003).

'The boy hit the dog with the stone'

(36) a.   Pomad-ro   **be**   dastash   malid

             cream-DOM   to   her/his.hand   spread.pst.3sg

             'S/he spread the cream on her/his hand'

      b.   Dastash-ro   **ba**   pomade   malid

             her/his.hand-DOM   with   cream   spread.pst.3sg

             'S/he spread her/his hand with the cream'

(37) a.   Chakkosh-ra **be**   divar   koobidam

             nail-DOM   to   wall   stick.pst.1sg

             'I stick the nail on the wall'

      b.   Divar-ro   **ba**   chakkosh   koobidam

             wall-DOM   with   nail   stick.pst.1sg

             'I stick the nail on the wall'

(38) a.   Namak-ro   **be**   ab   amikhtam

             salt-DOM   to   water mix.pst.1sg

             'I mixed the salt with the water'

      b.   ab-ra   **ba**   namak amikhtam

             water-DOM   with   salt   mix.pst.1sg

             'I mixed the water with the salt'

In Croatian, the dative in (39a) alternates with the instrumental in (39b) (Zovko Dinkovic 2007: 65).

(39) a.   Lena je   poslužila   gost-**ima**   čaj   i   keks-e.

             Lena aux   served   guest-dat.pl   tea.acc   and   biscuit-acc.pl

             'Lena served tea and biscuits to the guests.'

b.   Lena je   poslužila   gost-e   čaj-**em**   i   keks-**ima.**

           Lena aux   served   guest-acc.pl   tea-ins   and   biscuit-ins.pl

           'Lena served the guests (with) tea and biscuits.'

In West Greenlandic (Fortescue 1984, Johns 1992), an argument in the allative (dative) case in (40a) alternates with an instrumental (inflected by –*mik*) in (40b). The example in (40a) matches the English *to*-dative pattern; the example in (40b), can be compared to the English type 'He presented Niisi with money'.

(40)   a.   aningaasa-t   Niisi-**mut**   tunniup-pai

              money-pl   Niisi-all   give-3sg.3pl

              'He gave the money to N.'

      b.   Niisi   aningaasa-**mik**   tuni-vaa

              Niisi   money-ins   give.3sg.3sg

              'He gave money to N.'   (Fortescue 1984: 88-89)

In many Austronesian languages (WALS, Chapter 105, Haspelmath 2005) 'give' verbs present the case array of English (32a), i.e. 'present X with Y'. The example in (41) is from Chamorro (Austronesian, Guam). The example in (42) is from the Mandak language of Papua New Guinea.

(41)   Ha   na'i   i   patgon **ni**   leche.

       he.erg   give   abs   child   ins   milk

       'He gave the milk to the child.'   (Topping 1973: 241, 251)

(42)   di   ga   raba   i   **mi**   la-mani.

       they   pst   give   him   ins   the-money

'They gave him the money' (Blansitt 1984: 141)

2.2 *Reverse goals*

Beginning with Kayne (1984), 'give'-type ditransitive verbs are assumed to they take a predication as their complement; the content of this predication is a possession relation between the direct object (the possessum) and the dative (the possessor). We argue that in the Persian alternations in (35)-(38), the predication is reversed – so that is the accusative direct object that possesses the instrumental. In other words, ditransitive alternations of the type seen in section 2.1 reproduce the basic alternation between 'of' complements and 'with' complements within the DP, as analysed in (12)-(13).

In many theoretical works, the head of the predication postulated by Kayne for English double object constructions is an abstract version of the verb 'have'. For instance, for Harley (2002) the head of the predication in an English Dative Shift sentence is an abstract preposition P_{HAVE}, as in (43b); for Beck and Johnson (2004), the head of the predication is an abstract verb HAVE, as in (43c) – though Pesetsky (1995) limits himself to an abstract characterization of the predicate head as G, cf. (43a).

(43) a.   … give Sue [$_G$ a letter]   (Pesetsky 1995)

      b.   … CAUSE [$_{PP}$ Mary [P_{HAVE} a letter]]   (Harley 2002)

      c.   … send [$_{HAVEP}$ Satoshi [$_{HAVE'}$ HAVE the guide]]   (Beck and Johnson 2004)
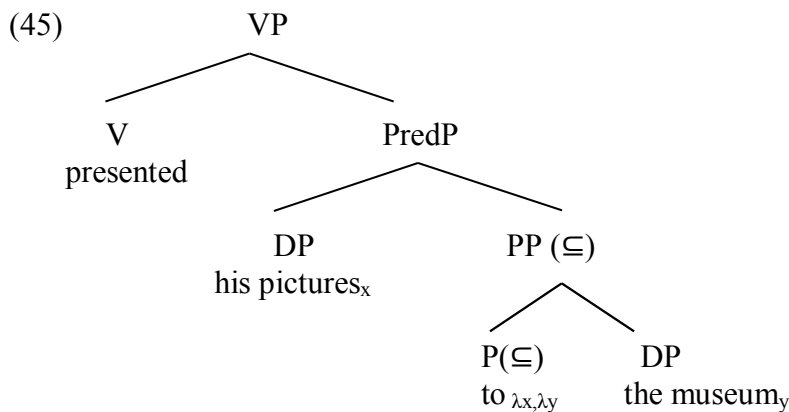
In the tradition of studies in (43), the alternation between Dative Shift and DP-to-DP structures is not shaped derivationally, but rather as an alternation between two distinct base structures.[9] For Pesetsky (1995) the DP-to-DP structure remains exactly the same as in (31a), only

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[9] The lexical alternation view of Dative Shift is not universally held (Maling 2001, Rappoport Hovav and Levin 2008, among others). Freeze (1992) identifies the DP-to-DP structure as the base structure (cf. Hudson 1992) and construes it

the predicate head changes to *to*, as in (44a). The same is true for Harley (2002) who takes English *to* to be a P_{LOC} as in (44b). Beck and Johnson (2004) follow Larson (1988) in adopting a variant of the same fundamental structure where the DP and to-DP complements occupy the Spec and sister position of V respectively, as in (44c).

(44) a. … give a letter [PP to Sue]   (Pesetsky 1995)

  b. … CAUSE [PP a letter [[P $_{LOC}$ to] Mary]]   (Harley 2002)

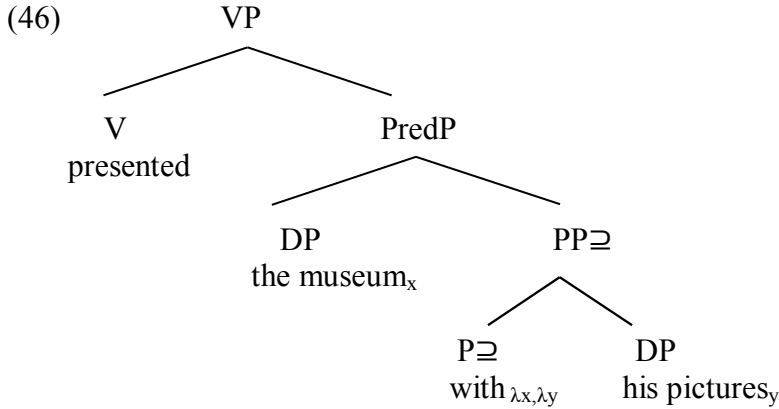 c. … [VP the guide [V' send to Satoshi]]   (Beck and Johnson 2004)

In present terms, the primitive content of the *to* preposition is inclusion or part-whole – to be more precise the ($\subseteq$)relation already introduced for genitives in (12). In the structure in (45) for sentence (32b), P($\subseteq$) takes as its internal argument its sister DP (the possessor) and as its external argument the sister to its projection, i.e. the theme of the verb (the possessum).
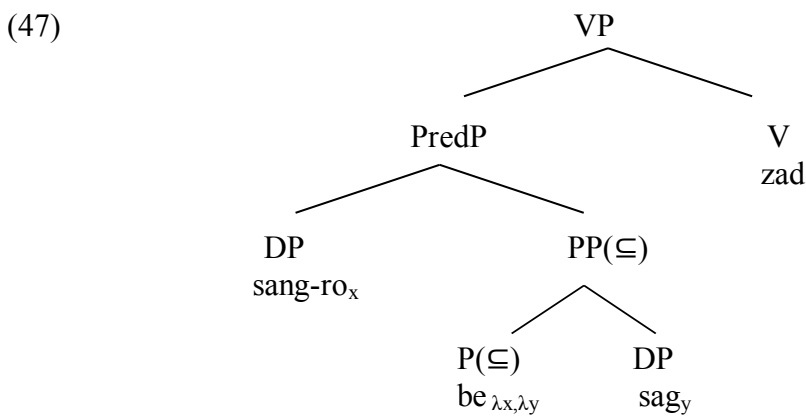
(45)

```
              VP
           /      \
          V       PredP
      presented    /    \
                 DP       PP (⊆)
             his pictures_x   /    \
                          P(⊆)      DP
                          to_λx,λy  the museum_y
```

The silent P_{HAVE} or HAVE head assumed for Dative Shift in (43) is the covert counterpart of 'with', if we follow Levinson's (2011) suggestion on Icelandic *með*. Indeed the *with* preposition can be overtly seen in English (32a). For (32a), we propose the structure in (46), paralleling (13) above. As before, we notate the relation expressed by *with* as ($\supseteq$), namely a reverse zonal inclusion in

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as a locative structure. For Freeze, Dative Shift structures depend on what we may call locative inversion or possessor raising (cf. Kayne 1994).

which the possessor is the complement of P and the possessor its external argument.
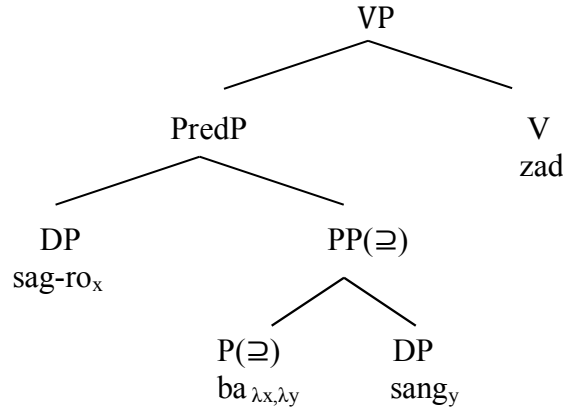
(46)

```
                    VP
            ┌────────┴────────┐
            V               PredP
         presented     ┌──────┴──────┐
                       DP          PP⊇
                   the museum_x   ┌───┴───┐
                                 P⊇       DP
                           with_{λx,λy}  his pictures_y
```

In section 2.1 we have exemplified the presence of *with/*instrumental morphemes in triadic structures cross-linguistically. In most instances the transfer from (46)-(47) is straightforward, for instance for the Persian examples in (35)-(38). In structure (47) for example (35a), P($\subseteq$), instantiated by *be*, the dative preposition in Persian, takes as its internal argument its sister DP (*sag* 'dog') and as its external argument the sister to its projection, (*sang* 'stone'). The reverse pattern represented in (48) for example (35b) shows a P($\supseteq$) elementary predicate, morphologically realized as the instrumental/comitative morpheme *ba*, taking as its internal argument the possessum (*sang*) and as its subject the possessor (*sag*).[10]

(47)

```
                        VP
              ┌──────────┴──────────┐
            PredP                   V
      ┌───────┴───────┐            zad
      DP            PP(⊆)
   sang-ro_x    ┌─────┴─────┐
               P(⊆)         DP
             be_{λx,λy}     sag_y
```
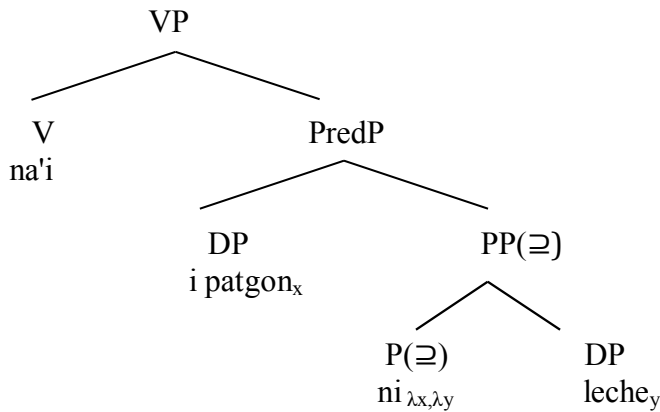
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[10] Despite the fact that Persian is a verb final language, the (specific) direct object appears in a higher position, preceding the indirect object. This is a property shared by various languages (Hindi, German, Turkish, cf. Folli et al. 2005).

(48)

```
                              VP
                  ┌───────────┴───────────┐
                PredP                      V
          ┌──────┴──────┐                 zad
         DP           PP(⊇)
       sag-ro_x    ┌────┴────┐
                 P(⊇)        DP
                ba_{λx,λy}  sang_y
```

Nothing of course prevents a language from instantiating only one of the two alternating patterns – and specifically the 'with' pattern. This is what happens in Chamorro, which encodes 'give' structures by means of the P(⊇) relation, as shown in (49) for example (41).

(49)

```
              VP
       ┌──────┴──────┐
       V           PredP
     na'i     ┌──────┴──────┐
             DP           PP(⊇)
          i patgon_x   ┌────┴────┐
                     P(⊇)        DP
                   ni_{λx,λy}  leche_y
```

2.3 Genitives in the VP

In section 1.1 we have seen that within DPs, instrumental/comitative prepositions alternate with genitive ones in lexicalizing the relation between a possessor and a possessum. In a widespread pattern in Romance (Haspelmath and Michaelis 2008), the genitive preposition *di/de* 'of' introduces the same relation as 'with' in the VP, rather than its reverse. Thus in Italian example (33a), repeated here as (50b) *con* 'with' can be replaced by *di* 'of', as in (51c). The triadic alternations in (51) and (52) are similar in this respect.[11] This pattern is unexpected, considering the DP data in section 1.1,

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[11] It has been argued that there is a difference in meaning concerning the two types of sentences, because only 'load the truck with hay' would express the idea that the truck is completely filled. This is known as the holistic effect (Anderson, 1971, Damonte 2005, Bleotu 2011). Nevertheless, as argued in Rappoport Hovav and Levin (1998) and Mateu (2002)

as illustrated by the English structures in (12)-(13). While in the DP, the genitive and the instrumental introduce opposite inclusion/possession relations, in (50)-(52) they introduce the same relation. Hence, the genitive preposition seems to work in the VP as a mirror image of its DP counterpart.

(50)   a.   Ha rifornito armi obsolete **all**'esercito

                he has supplied obsolete weapons to the army

        b.   Ha rifornito l'esercito **con** armi obsolete

                he has supplied the army with obsolete weapons

        c.   Ha rifornito l'esercito **di** armi obsolete

                he has supplied the army of obsolete weapons

(51)   a.   Gianni ha caricato il fieno **sul** camion

                Gianni has loaded the hay onto the truck

        b.   Gianni ha caricato il camion **con** il fieno

                Gianni has loaded the truck with the hay

        c.   Gianni ha caricato il camion **di** fieno

                Gianni has loaded the truck of hay

(52)   a.   Gianni ha spruzzato la vernice **sui** muri

                Gianni has sprayed paint on the walls'

        b.   Gianni ha spruzzato i muri **con** la vernice

                Gianni has sprayed the walls with the paint

        c.   Gianni ha spruzzato i muri **di** vernice

                Gianni has sprayed the walls of paint

---

the holistic effect may be seen as an epiphenomenon of the fact that the verb in the relevant contexts expresses a change of state. Also, the definite restriction of *di* possessums assumed in the literature for the (c) examples (Damonte 2005) may be questioned, as in (i).

(i)   Ha rifornito l'esercito **delle** armi pesanti

             he has supplied the army of the heavy weapons

The so-called 'clear' verbs in English (Levin 1993: 124, Haspelmath and Michealis 2008), work along similar lines, since the (un)possessum (i.e. the cleared thing) is either the direct object as in (53a) or is preceded by an *of* preposition, as in (53b).

(53) a. John cleared the dishes from the table

b. John cleared the table of the dishes

Italian examples of the form in (50a)-(50b) reproduce the structure detailed in (45)-(46) for English ditransitives, as shown in (54a) and (54b) respectively. In relation to English (12), we further proposed a structure for *of* phrases within the DP, which we reproduce in (55) for the Italian example *il bicchiere di Gianni* 'the glass of John'

(54) a. [$_{VP}$ rifornito [$_{PredP}$ armi obsolete [$_{PP(\subseteq)}$ all'esercito]]]

b. [$_{VP}$ rifornito [$_{PredP}$ l'esercito [$_{PP(\supseteq)}$ con armi obsolete]]]

(55) [$_{DP}$ il bicchiere [$_{PP(\subseteq)}$ di Gianni]]

In the structural schemas in (55a) and (56) dative *a* 'to' and to genitive *di* 'of' are seen to have the same relational content, introducing a possessor. This makes it particularly easy to account for the widespread dative/genitive syncretism (specifically in Indo-European languages, cf. modern Greek, Albanian, Romanian, class I of Latin, Kurdish, and so on). According to Manzini and Savoia (2011a, b), the languages where dative is lexically different from genitive (including English *of* and *to*, Italian *di* 'of' and *a* 'to', etc) display contextual sensitivity in the realization of the ($\subseteq$) category, which is lexicalized as dative 'to' when attached to sentential projections, as in (54a), while it is lexicalized as genitive 'of' when it is attached to nominal categories, as in (55).

Now, in the alternations in (50)-(52), *di* 'of' appears to have the same distribution as *con* 'with' – while on the basis of what precedes 'with' should be introducing the opposite relation, as in (54b). One possible analysis that comes to mind is that in fact *of/di* is a pure syntactic device devoid of any interpretive content – however elementary. This is by far the most popular analysis in approaching *of* phrases within the DP – starting with Chomsky's (1981) proposal of a rule of *of*-Insertion.[12] The latter acts as a syntactic repair, allowing for case assignment to the object of an N which would otherwise be caseless. One family of proposals takes the repair to be a matter of PF. For instance, Richards (2010) proposes that *of*-Insertion avoids a potential N-N local identity; in other words it is a morphosyntactic counterpart of the phonological OCP.

Another family of proposals takes *of* to parallel the copula (Hoekstra 1999; den Dikken 2006). In particular, Den Dikken (2006: ch. 5) investigates DP-*of*-DP phrases of the type in (56a). According to him, *a jewel* in (56) originates as the predicate of a small clause complement, as in (57a). The predicate nominal can stay in its base position, leading to sequences like (56b). But the predicate may also invert with its subject, as in (57b), raising to the specifier position of a small-clause external functional head F lexicalized by the *of* nominal copula – and yielding (56a).

(56)   a.   a jewel of an island

       b.   an island as/like a jewel

(57)   a. $[_{RP} [_{XP} \text{subject}] [\text{relator} [_{YP} \text{predicate}]]]$

       b. $[_{FP} [\text{predicate}]_j [_{F0} \text{relator}_i [_{RP} [\text{subject}] [_{R0} t_i t_j]]]]$

It seems to us however that theories relying on a non-contentive construal of *of* face empirical problems, specifically when applied to the verbal contexts that are of interest here. Saying that *of* repairs lack of case or is a means for identity avoidance is not applicable to verbal contexts. As for Den Dikken's proposal, we would have to find a predication of which *of* is the copula.

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[12] By and large, theories of *of*-Insertion in the Chomskyan sense parallel those of linkers (Franco et al. 2015 for review).
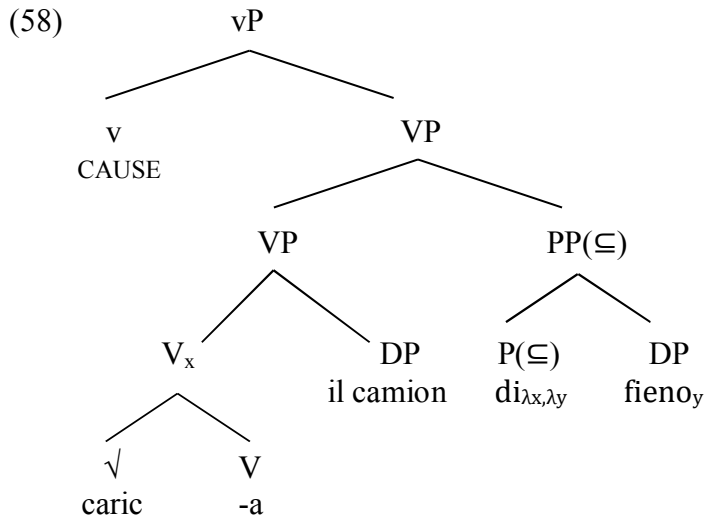
Clearly there is neither a direct nor an inverse copular relation between 'the army' and 'obsolete weapons' in (50) (≠furnished [the army is obsolete weapons]; ≠the army like obsolete weapons). We provisionally conclude that there are no clear grounds for abandoning the stance that we adopted so far, namely that *of* is endowed with a predicative content, however elementary.

For instrumentals, we have connected ambiguities to the different sites of attachment of the oblique, hence to the different types of constituents that enter the (⊇) relation. Similarly, in the Appl literature, Appls can either introduce a relation to a theme, or a relation to a (sub)event. In the discussion that precedes we have concluded that occurrences of *of* sentence-internally cannot introduce a relation (whether possession, or copula) to the theme argument. Indeed there are already dedicated lexicalizations for this, namely *a* 'to' for the (⊆) relation and *con* 'with' for the (⊇) relation, as in (54).

One possible analysis left is that *di* in (50)-(52) establishes a relation between its complement, e.g. 'hay' in (51c), and the event depicted by the verb, i.e. 'load'. According to the classical theory of transitive predicates put forth by Hale and Keyser (1993), the latter result from the incorporation of a nominal/stative component into a transitivizing light verb-like component. In Chomsky's (1995) formalization, this corresponds to the two-tiered organization normally assumed for transitive predicates, where V has a stative content and *v* introduces a causative or other transitivizing event. Thus 'load' is roughly 'make a load' and 'load the hay on the truck' is 'make a load of hay on the truck'. These paraphrases provide an intuitive introduction to the analysis we propose for the *di* 'of' complement in (50)-(52). While 'of' apparently substitutes for 'with' in Italian (50)-(52), 'with' denotes that 'the truck has/contains the hay' ('the army has the obsolete weapons' in (54b) etc.) – 'of' denotes something else, namely a relation with 'load'.

In structure (58) for sentence (51c), the (⊆) relation holds of the DP complement of *di* 'of' and of the stative (nominal-like) inner component of the predicate, meaning that the whole 'hay' encompasses 'load' as one of its parts – indeed as in the construction 'a load of hay'. One may also consider the relevant relation between 'load' and 'hay' as being closer to a copula or identity, in the

manner suggested by den Dikken, than to the part/whole relation suggested here – in other words 'the load = the hay'. In fact, the content we suggested for *of* already contemplates the possibility of an identity, in other words $\subset/=$. These matters, which involve the evidence regarding 'of' DP-internally, are beyond the scope of the present work.

(58)

```
                        vP
                   ┌─────┴─────┐
                   v          VP
                 CAUSE   ┌─────┴─────┐
                        VP         PP(⊆)
                    ┌───┴───┐    ┌───┴───┐
                   Vx      DP   P(⊆)    DP
                 ┌──┴──┐  il camion  di_{λx,λy}  fieno_y
                 √     V
               caric  -a
```

3.   Instrumentals as DOM and ergatives

3.1   Instrumentals (and datives) as DOM

In Malacca Creole Portuguese (Kristang), instrumentals and comitatives are both expressed by the morpheme *ku*, as shown in (59) (Stolz et al. 2006: 31). The same morpheme *ku* introduces DOM objects, ranked high on the animacy hierarchy (Aissen 2003, among others), as in (60). Furthermore, the *ku* morpheme enters dative structures, as in (61), where it introduces the goal (Heine and König 2010, Hancock 1975: 211-216, Bruyn et al. 1999: 337).[13]

(59)   a.   eli   ja   kotrá   aké   kandri **ku**   faka

            he   PERF cut   that   meat   INSTR knife

---

[13] Michaelis and Haspelmath (2003) report that a *with* strategy for goals is quite widespread among Portuguese-based creoles of Asia, citing analogous constructions in Malayo-Portuguese and Tugu Creole.

'He cut the meat with a knife.'

b.   yo   sa   papa ta   bai   mar **ku** yo   sa   kanyóng

     I   GEN father PROG go   sea   COM I   GEN elder-brother

     'My father is going fishing with my elder brother.'

(60) a.   eli   ja   dali **ku**   John

        he   PERF hit   DOM John

        'He hit John.'

b.   aké tempu sa   jenti   midu **ku**   deus

     that time GEN people   fear DOM God

     'People of those times fear God.'

(61) eli   ja   da   **ku** Rita aké   pesi.

    3SG PFV give GOAL Rita that fish

    'He gave the fish to Rita.'   (Baxter 1988: 115-162 *passim*)

The lexical coincidence of goal datives and DOM objects, as exemplified in (60)-(61) is unsurprising, specifically from a Romance perspective. Nevertheless in the Romance languages, both goal and Dom arguments are normally introduced by the dative preposition *a* 'to' – in other words the further syncretism with instrumental/comitative is lacking.[14] Here we illustrate a Southern Italian (Apulian) dialect (Manzini and Savoia:§ 4.9.1); DOM is displayed in (62), the goal dative in (63).

(62) sɔ vvistə   **a** kkur ɔmə/ n ɔmə

    I.am seen   to that man/a man

---

[14] In several Iranian languages (e.g. Vafsi, Stilo 2010) the adposition *ra* lexicalize both the goal/benefactive argument and the comitative/instrumental adjunct. In other Iranian varieties the same morpheme *–ra/re* is employed for both DOM and goals (Caucasian Tat, Mazandarani, Stilo 2009, Lecoq 1989; cf. North-Caucasian languages, e.g. Adyghe and Kabardian, Primus 1998).

'I saw that man/a man'

(63)   da-nn-illə   **a** jiddə

        give-him-it   to him

        'Give it to him'   *Canosa di Puglia*

Manzini and Franco (2015) argue that the syncretism of goal dative and DOM depends on a shared syntactic structure. Specifically, in their terms, highly ranked object DPs, require for their embedding the same ($\subseteq$) predicate that introduces goals. They propose that in DOM structures the two arguments of P($\subseteq$) are the object DP, for instance 'that man' in (63) and an eventive constituent. Recall that according to Hale and Keyser (1993, 2002), Chomsky (1995), transitive predicates result from the incorporation of an elementary state/ event into a transitivizing predicate *v* (Cause). Within such a framework, informally, (63) can be rendered as 'He had a sight of that man'. Formally, Manzini and Franco postulate structures of the type in (64a), where 'that man' is lexicalized a possessor-of (location-of etc.) the seeing/sight subevent. Indefinite/inanimate complements are embedded in a canonical transitive structure comprising a nominative agent and an accusative theme, as in structure (64b). In (64b), 'see' behaves as a single predicate, its complementation structure displaying no sensitivity to the presence of subevents/states in it.
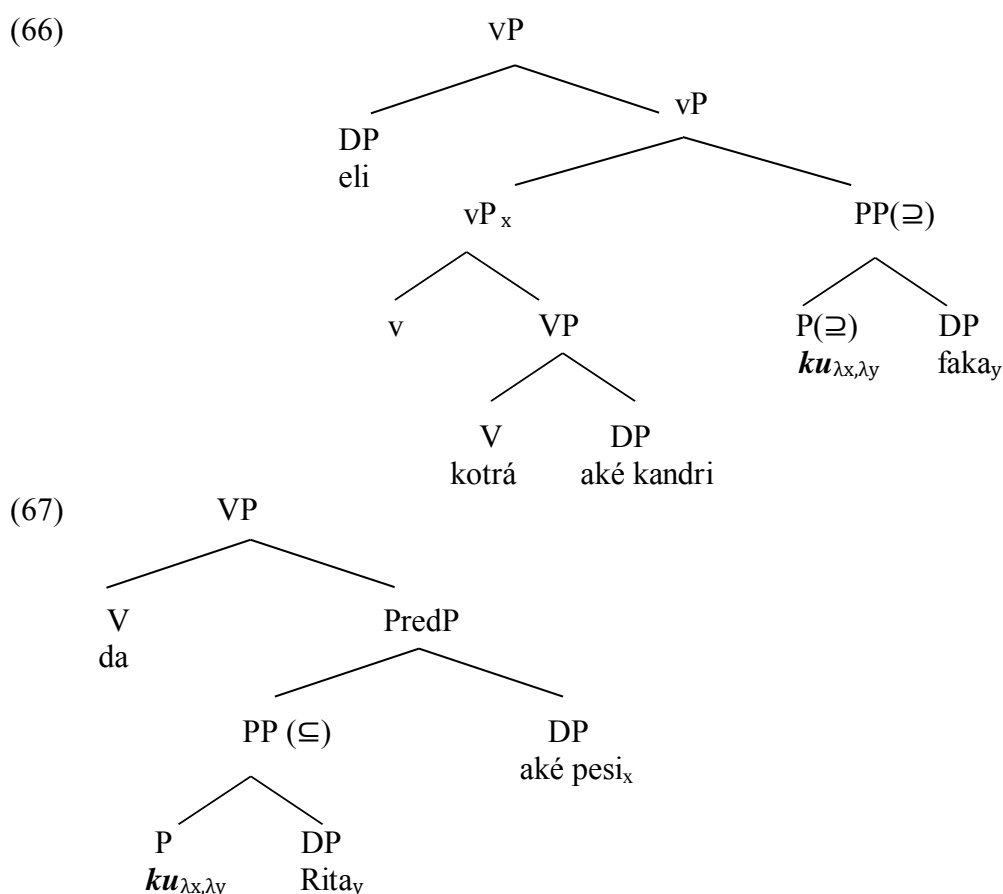
(64)   a.   [$_{vP}$ CAUSE/HAVE [$_{VP}$ vvistə   [$_{PP(\subseteq)}$ a [$_{DP}$ kkur ɔmə]]]]

        b.   [$_{VP}$ vvistə [$_{DP}$ n ɔmə]]

Therefore for Manzini and Franco languages with DOM datives are those where an argument with highly ranked referential properties (definiteness, animacy) must have a role at least as high as that of 'possessor' (of the event), as schematized in (65).

(65)   [$_{VP}$ … [*(P/K($\subseteq$)) DP] …]   where DP is definite or animate

These conclusions can of course be applied to the Malacca Creole data in (60)-(61), where both goal and DOM arguments are introduced by the *ku* preposition. The problem is that the same *ku* element lexicalizes instrumentals as well, as in (59) – where in present terms 'to' in (6a) is a ($\subseteq$) relator, while the instrumental/comitative is its reverse, namely ($\supseteq$). We are then led to hypothesize that Malacca Creole Portuguese does not differentiate between the two specular zonal inclusion relations, resorting to an all purpose oblique, spanning from genitives/DOM/goals to instrumentals/comitatives. [15] We schematize the proposal for Malacca Creole Portuguese in structures (66)-(67), for examples (59a) and (61) respectively; the structure in (66) reproduce the proposal for instrumentals advanced in (25) above, while (67) reproduces the dative structure in (45). These structures prospect a lexical entry for *ku* where this element is associated with both ($\subseteq$) and ($\supseteq$) content.

(66)

```
                          vP
                _____/ _____
              DP                   vP
              eli          _____/  _____
                         vP_x              PP(⊇)
                       /    \            /     \
                      v      VP       P(⊇)      DP
                           /    \     ku_{λx,λy} faka_y
                          V      DP
                        kotrá  aké kandri
```

(67)

```
                VP
          _____/  \_____
        V              PredP
        da          ___/  \___
                 PP (⊆)         DP
               /    \         aké pesi_x
              P      DP
          ku_{λx,λy} Rita_y
```

---

[15] On all purpose obliques, cf. Arkadiev 2009 and Stilo 2009, specifically on Iranian languages.

3.2   The dative/instrumental syncretism

Prepositional systems or the Malaccan Creole type are not isolated. Some of the data for Southern Italian dialects in Manzini and Savoia (2005: § 4.9.1) confirm a tendency towards the syncretism of datives with instrumentals. Thus in *Canosa di Puglia*, which we used in (62)-(63) to illustrate the standard Romance DOM/goal syncretism, the *kə* preposition introduces instrumentals in (68b) and comitatives in (68c), but also benefactives in (68a), i.e. what Pylkkanen (2008) calls high Appls, turning up as datives elsewhere in Romance. The same is true in other neighbouring varieties, like *Accettura* in (69); note that the only natural reading of (69a) is indeed benefactive.

(68) a.   u sɔ fattə   **kə** jiddə

             it am made   with him

             'I made it for him'

      b.   u sɔ fattə   **kə** u martiddə

             it am made   with the hammer

             'I made it with the hammer'

      c.   ɔ ʃʃeutə   **kə** kkurə

             I went   with him

             'I went with him'   *Canosa di Puglia*

(69) a.   kostə jɛ   **kə** ttɛ

             this is   with you

             'This is for you'

      b.   l addʒə fattə   **kə** kkostə

             it have made   with this

             'I made it with this'

      c.   addʒə camə:tə   **a** jeddə/ u kə:nə

have called   to him/ the dog

'I called him/ your son'   *Accettura* (Lucania)

The data in (68)-(69) are strengthened by the observation that in other varieties of the same area, the same syncretism of benefactives (high Appls) and instrumentals is lexicalized by the *pe* preposition which otherwise in Romance lexicalizes only benefactives, as exemplified in (70) (cf. Rohlfs (1969 [1954]: 212).

(70)   a.   l aɟɟə fattə   **pə** jeddə

                it have made   for him

                'I made it for him'

        b.   viənə   **pə** mmi:kə

                come.imp   for me

                'Come with me'

        c.   l aɟɟə fattə   **p** u martiəddə

                it have done   for the hammer

                'I made it with the hammer'   *Gravina in Puglia*

Leaving aside prepositional systems, the syncretism between dative and instrumental is widespread in case systems (Narrog 2009). As briefly mentioned in section 1.4, Latin dative and ablative (i.e. the instrumental) are always syncretic in the plural where they are lexicalized by –*is* (I, II class) and –*ibus* (III-V class). If we follow the lead of Malaccan Creole in section 3.1, we must conclude that Latin plural dative/ablative morphology are reversible inclusion predicates.

In evaluating the proposal we are putting forward, it should be kept in mind what the alternatives are. One leading alternative is having recourse to morphology-internal explanations of the type associated in generative grammar with Distributed Morphology (DM) (Halle and Vaux

1998 on Latin). Calabrese (2008) is specifically interested in absolute syncretism, i.e. in the fact that certain cases (or case oppositions) are missing altogether in some languages. He assumes that functional categories are represented by abstract feature clusters in the syntax, realized by actual exponents only at the PF interface. His key proposal is that there is a markedness hierarchy of cases (technically of the feature clusters corresponding to them), not unlike the descriptive hierarchies we introduced in (1)-(2). Crucially, lower cases in the hierarchy are more likely to be blocked. If they are, the corresponding feature cluster cannot surface at PF, but must be readjusted by the morphological component (including the key rule of Impoverishment) yielding surface syncretism.

In the cartographic stream of studies, extended to the morphology by nanosyntax, Caha (2009) assumes that the Case hierarchy is represented in UG by a hierarchy of syntactic K (Case) heads. As implied by the discussion surrounding (2) above, Caha assumes that this syntactic hierarchy explains the attested patterns of syncretism, in that only contiguous heads can be realized by the same forms, given an *ABA constraint (cf. Bobaljik 2012, Franco 2013).

Now, the argument has been made more than once (Manzini and Savoia 2011a, Kayne 2010 for Romance) that the morphological rules of DM, and especially Impoverishment, are powerful enough to generate essentially any lexical string from any underlying syntactic structure. Calabrese's markedness hierarchies are an attempt at restricting this overgeneration – but note that the desired restriction is obtained not via some internal necessity, but via an external stipulation. In other words the markedness hierarchy is not generated by internal principles, but corresponds simply to the UG encoding of typological implicational scales, of the type introduced in (1). Much the same can be said of the syntactic encoding of the Case markedness hierarchy by Caha (2009). Concerns have been raised in the literature on the necessity or even on the sustainability of such hierarchies (cf. Cinque 2005 vs. Abels and Neeleman 2012). Apart from this, Caha's hierarchy does not so much derive predictions about syncretisms, as in precompiles them in the computational system of UG. In a nutshell, markedness or functional hierarchies are an interesting response to non-accidental syncretism patterns – since contiguity in lexicalization is made to depend on

contiguity in the hierarchy. However they have the same problem as any extrinsic ordering device: is there any internal reason for the ordering?

Ultimately, we find it striking that these approaches, while manipulating in ingenious ways the notion of markedness hierarchy, leave the traditional cases, and the traditional notion of case itself, unanalyzed. Here on the contrary we approached obliques (inflectional or prepositional) keeping Chomsky's (2001) conclusions on the non primitive nature of case firmly in mind. Specifically, oblique case is simply the name given to elementary predicative content ('includes' and 'is included by') when realized inflectionally on a noun. Correspondingly there is no externally imposed hierarchy ordering the relevant primitives, but rather a conceptual network determined by the primitive predicates we use and the relations they entertain with each other. Calabrese's markedness hierarchies, or nanosyntactic functional hierarchies are not necessary because syncretism depends essentially on natural class.

In section 1.4, concluding the discussion of instrumentals and comitative in relation to genitives and datives, we suggested that the genitive, dative and instrumental obliques result from the internal differentiation of a single core content – namely the part-whole content expressed in fairly uncontroversial fashion by the conventional genitive. Seen from this perspective, case hierarchies of the type in (1) take on rather different contours. In essence they reduce to a binary split between direct case (perhaps to be reduced to the agreement system, according to Chomsky 2001) – and oblique case, reducing to the part-whole operator. Other so-called cases are presumably analysable into a case core (typically oblique) and some additional structure, yielding something similar to the internally articulated PPs of Svenonius (2006) (but see fn. 6 on locatives).

3.3   The ergative as dative and as instrumental

Ergative constructions of Indo-Iranian languages are traditionally characterized as passive-like, involving a demoted agent bearing an instrumental inflection, as in classical Sanskrit (Cardona 1970, Bynon 2005). On the other hand an important stream of literature connects ergative structure

with possession structures; for instance, Montaut (2004: 39) quotes Benveniste's (1966: 176-86) conclusion that "the Old Persian structure … is intrinsically possessive in its meaning, and is analogical with the periphrastic perfects in Latin (*mihi id factum*, me-DAT this done)". In fact, in Sanskrit, the expression of 'X did Y' oscillates between 'by-X done' and 'of-X Y done', with the agent in the instrumental case or in the genitive (for pronouns) and the predicative participle agreeing in gender and number with the patient, as shown in (71) (cf. Hook and Koul 2004).

(71)   mayâ /   mama tat   kRtam

     I-instr /   I-gen this-nom.n.sg   done-nom.n.sg

     'I did/have done that'

The dative–ergative connection is still visible visible in many modern Indo-Aryan varieties.[16] For instancem, in Harauti (Allen 1960, Stronsky 2009, cf. Khokhlova 2001), a dialect of Rajasthani language, goal datives as in (72c), DOM objects as in (72a) and ergative subjects (72b) are all lexicalized by the same *-n*ɛ morphology. The conclusion that they must be identified at a deeper level is supported by the observation that the DOM case and the ergative are in complementary distribution, as in (72a-b) – in other words either can be lexicalized, but not both. In other words an OCP-like identity avoidance seems to apply between them similar to that discussed for Hindi *–ko* morpheme by Mohanan (1994).

(72)   a.   tʃhoro sãp̃-nɛ   mɑr-j-o

         boy   snake.m.sg-DOM   hit.pst-ptcp.m.sg

         'A boy hit the snake.'

     b.   tʃhorɑ-nɛ   sãp̃   i   mɑr-j-o

---

[16] Evidence presented by Butt and Ahmed (2011), Verbeke and de Cuypere (2009), shows that the origin of the ergative morpheme is to be sought diachronically in the *–ne* dative still preserved in some Indo-Aryan languages, and therefore syncretic with the dative in those languages.

boy-erg   snake.m.sg   emph hit.pst-ptcp.m.sg

'A boy hit a/the snake.'

  c.   muŋ   chora-**nɛ**   photi duŋgo

        I   boy-dat   book will.give

        'I will give the boy a book'.   (Harauti, Allen 1964: 343, Stronsky 2009: 243)

Nevertheless, other Indo-Aryan varieties show an instrumental/ergative syncretism, for instance Central and Western Pahari (Himalayas, India and Pakistan, Stronsky 2009). This is shown in (73) with an example from Kumauni (Central Pahari) and in (74) with an example from Kului (Western Pahari) (cf. Palancar 2002). In both examples, the external argument bears the same inflection as the instrumental adjunct.

(73)   tə   wi-**l**   jorɛ-**l**   svɔʈɛ-**l**   mɑrɔ

        then   he-erg power-ins   stick-ins   beat.pst-ptcp.m.sg

        'Then he beat (her) vehemently with a stick.'   (Kumauni, Stronsky 2009: 247)

(74) mɑʃʈar-   ʃohru hɔtʰ-   zuku

        teacher-erg   boy   hand-ins   beat.pst-ptcp.m.sg

        'The teacher beat a boy with his hand.'   (Kului, Stronsky 2009: 248)

An analysis of ergative case that takes it to be essentially a dative is provided by Manzini et al. (2015), in terms compatible with the present discussion. They consider the Indo-Aryan language Punjabi, as exemplified in (75).

(75) o-ne   roʈʈ-i   kadd-i

        s/he-erg   bread-f.sg   eaten-f.sg
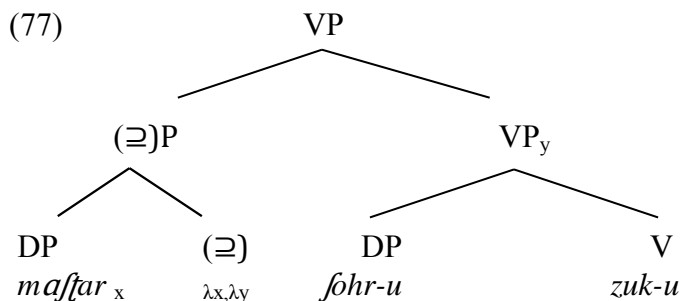
        'S/he ate the bread'

Though the ergative case in this language has the specialized *–ne* ending, different from dative/DOM *–nu*, they argue that the ergative case instantiates a ($\subseteq$) category, as in structure (76). The interpretation of such a structure is that the external argument 's/he' is introduced as including (possessing/locating) the property represented by the VP 'eaten the bread'. An important component of the proposal in (76) is the idea that in split ergative languages like Punjabi, the ergative perfect corresponds to a more elementary organization of the predicate than the nominative progressive. Thus in (77), the perfect projects only a VP rather than a vP/AspP as the progressive does. In other words, only progressive makes a position available for the insertion of the external argument on the main verbal spine; in perfects external arguments must be inserted as possessors. The structural complexity account of perfectivity splits has been consistently explored in recent generative work, though with different formal outcomes; for Baker and Atlamaz (2013) ergatives are passive-like, for Coon (2013) the nominative alignment involves a biclausal structure, for Nash (2014) the ergative has a vP layer, but lacks the Voice/Event layer.

(76)

$$
\begin{array}{c}
\text{VP} \\
\diagup \quad \diagdown \\
(\subseteq)\text{P} \qquad \text{VP}_y \\
\diagup \; \diagdown \qquad \diagup \; \diagdown \\
\text{D} \qquad (\subseteq) \qquad \text{DP} \qquad \text{V} \\
o_x \qquad ne_{\lambda x, \lambda y} \qquad ro\d{t}\d{t}\text{-}i \quad \diagup \; \diagdown \\
\text{V} \qquad \text{N} \\
khadd \qquad i
\end{array}
$$
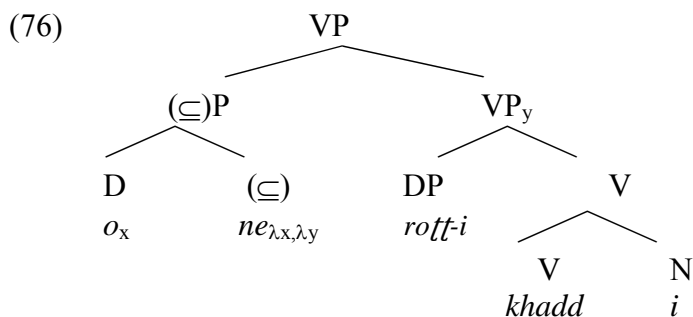
A second important component of the proposal in (76) is more directly relevant here, namely the idea that ergativity relates to possession structures, as briefly evoked at the beginning of this section. Within the generative literature, Alexiadou (2001: 172-173) concludes that "nominalizations and ergative patterns … are reflections of the same structure: one that involves a single theme argument that appears as sister of the lexical root, and an adjunct type of phrase that introduces the agent". For Johns (1992: 68) "similarities in case and agreement between transitive

clauses and possessive phrases is a long-standing issue in Eskimo linguistics … the case assigned to the specifier (possessor) of a possessed noun is the relative case, the same case that is assigned to the actor in the transitive construction". To reiterate, in the terms of Manzini et al. (2015), the unavailability of transitivizing/aspectual projections along the sentential spine means that an extra argument can only be added to the VP elementary predicate in (76) via an oblique case, itself an elementary predicate, establishing a relation between its DP complement and the VP event/state.[17]

At this point, we are in a position to consider the languages, for instance Central and Western Pahari in (73)-(74), that display the instrumental/ergative syncretism. Given our characterization of the instrumental oblique as the reverse of the dative, namely as a ($\supseteq$) elementary predicate, it is tempting to simply assume the structure (77) for the relevant portion of the example (74). In other words, the perfect predicate is construed as an elementary VP projection with stative interpretation. Since further transitivizing/aspectual projections are lacking, the external argument DP is by means of an oblique case, introducing a relation between the DP itself and the VP state/event. Importantly, the relation established by the instrumental in (77) between its complement DP and the elementary event VP is formally identical to the relation we have assumed for causers in section 1.3. This establishes at the very least the internal consistency of the analysis we are proposing with our previous results.

(77)

```
                          VP
              _____|_____
            ($\supseteq$)P              VP_y
          ____|____              ____|____
        DP      ($\supseteq$)   DP          V
      maʃʈar_x   λx,λy        ʃohr-u       zuk-u
```

---

[17] The structure in (77), implying a coincidence in the content of ergative and dative, amounts to a rejection of the view that ergative is a structural case assigned under the dependent case algorithm (Marantz 1991 [2000]). This is in keeping with an important stream of generative theorizing in turn (Woolford 1997). Manzini et al. show that in modal necessity constructions both the external argument os transitives and the sole argument of unaccusatives is assigned ergative case. A dependent case treatment of the ergative cannot capture this pattern. Manzini et al. simply suggest that the necessity verb inherently assigns ergative to its subject.

The question however arises as to how both the ($\supseteq$) relation in (77) and its reverse ($\subseteq$) in (78) can possibly come to embody the oblique subject. In considering a number of occurrences of the two fundamental obliques ($\supseteq$) and ($\subseteq$) inside DPs (section 1.1) and inside VPs (notably in ditransitive alternations, section 2.1) we have seen that they reverse the relations between their respective arguments (*the blue eyes of the girl* vs. *the girl with the blue eyes*). This forces us to maintain that the relations introduced by the dative/ergative in (77) and by the instrumental/ergative in (78) are indeed different. There is therefore no interpretive equivalence between (77) and (78). At the same time the complex/state event being depicted may very well be the same. The comparison with DP-internal syntax is once again telling (cf. Alexiadou 2001); thus *an article by Chomsky* and *an article of Chomky∅s* may depict the same complex object – though of course *by*- keeps its causer/agent denotation and *of* its possessor denotation.

To reiterate, either of the two fundamental obliques of any language, i.e. dative/genitive or instrumental, may be called upon to attach an extra argument to a stative predicate – as a possessor of that state or as a causer of that state. The syntaxes are distinct – which does not prevent them from converging towards the depiction of the same state of affairs.[18]

4. Conclusions

In this article we have argued that instrumentals and comitatives are the mirror image of dative/genitive obliques. We have proposed that both sets of adpositions/cases are elementary predicates, expressing a zonal inclusion (part-whole/possession relation); comitatives/instrumentals reverse the direction of the relation with respect to datives/genitives. We derived four possibilities according to whether the PP is attached to VP or vP – and whether it selects a DP or an event as an external argument. We identify the traditional comitative with a (DP, DP) relation which can be oriented to the internal argument (lower attachment) or to the external argument (higher

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[18] In a historical perspective Lazard (2005: 81) argues that the possessive-passive debate concerning the raise of ergativity in Indo-Iranian languages is a groundless matter: "On a discuté la question de savoir si cette construction est possessive ou passive. Vaine querelle. C'est, en iranien, une périphrase fonctionellement active, formée d'un participe passif et d'un complément possessif représentant l'agent".

attachment). The traditional instrumental is an (event, DP) relation. Low attachment produces a pure causer/concomitant event meaning, while high attachment produces an instrumental/concomitant causer reading (section 1).

We have extended our proposal to account for the observation that the comitative/instrumental can be employed cross-linguistically in triadic verb constructions alternating with datives (section 2). In the *V-DP₁-with-DP₂* structure we have proposed that the *with* morpheme spells out a zonal inclusion relation, in which the complement of the adposition DP₂ is the possessee while the theme of the verb DP₁ is the possessor. This is the reverse of the *V-DP₂-to-DP₁* construction, where the object of the adposition *DP₁* is the possessor and the theme of the verb *DP₂* is the possessee. In Romance *V-DP₁-of-DP₂* constructions, we have argued that the *of* relation holds of the DP complement of *of* itself and of the stative V component of the v-V predicate .

In section 3 we have broaden our discussion to account for dative/instrumental syncretism (eventually including DOM objects). We have argued that the inclusion predicate ($\subseteq$) corresponding to 'to' or dative case and its reverse ($\supseteq$), corresponding to 'with' or instrumental case, may reduce to an even more primitive content capable of conveying inclusion in either direction. Finally, we have addressed ergative alignments, showing that languages may attach external arguments/agents either as possessors ($\subseteq$) or as causers ($\supseteq$) of a given event/state, yielding the two most widespread patterns of syncretism of the ergative morpheme, that is with either instrumentals or genitives/datives.

References

Abels, Klaus, and Ad Neeleman. 2012. Linear Asymmetries and the LCA. *Syntax* 15. 25–74.

Aissen, Judith. 2003. Differential object marking: iconicity vs. economy. *Natural Language & Linguistic Theory* 21. 435-483.

Alexiadou, Artemis. 2001. *Functional Structure in Nominals. Nominalization and ergativity.* Amsterdam: John Benjamins.

Alexiadou, Artemis, Anagnostopoulou, Elena, and Florian Schäfer. 2006. The properties of anticausatives crosslinguistically. In Mara Frascarelli (ed.), *Phases of Interpretation*, 187-212. Berlin: de Gruyter.

Allen, W. Sidney. 1964. Transitivity and Possession. *Language* 40(3). 337-343.

Anderson, Stephen R. 1971. On the Role of Deep Structure in Semantic Interpretation. *Foundations of Language* 7. 387–396.

Arkadiev, Peter M. 2009. Differential argument marking in two-term case systems and its implications for the general theory of case marking. In Helen de Hoop & Peter de Swart (eds.), *Differential Subject Marking*, 151-171. Dordrecht: Springer.

Baker, Mark, C. 1992. Thematic conditions on syntactic structures: Evidence from locative applicatives. In Iggy M. Roca (ed.), *Thematic structure: Its role in grammar*, 23–46. Berlin: Foris.

Baker, Mark, C., and Ümit Atlamaz. 2013. On the Relationship of Case to Agreement in Split-Ergative Kurmanji. Available at: www.rci.rutgers.edu/~ua46/assets/pdf/mb_ua_draft.pdf

Baxter, Alan N., 1988. *A Grammar of Kristang (Malacca Creole Portuguese).* (Pacific Linguistics, Series B, 95.). Canberra: The Australian National University.

Beck, Sigrid, & Kyle Johnson. 2004. Double Objects Again. *Linguistic Inquiry* 35. 97-124.

Belvin, Robert, and Marcel den Dikken. 1997. *There*, Happens, *To, Be, Have. Lingua* 101. 151–183.

Benveniste, Émile. 1966. Problèmes de linguistique générale 1. Paris: Gallimard.

Blake, Barry J. 2001. Case. Cambridge University Press, Cambridge, second edn.

Blansitt, Edward L. 1984. Dechticaetiative and dative. In Frans Plank (ed.), *Objects: towards a theory of grammatical relations*, 127- 150. Orlando, FL: Academic Press.

Bleotu, Adina Camelia. 2011. Location, Locatum Verbs and the Locative Alternation in English. *Wiener Linguistische Gazette* 78A: 178-197.

Bobaljik, Jonathan, D. 2012. *Universals in comparative morphology: Suppletion, superlatives, and*

the structure of words. Cambridge MA: MIT Press.

Bruening, Benjamin. 2012. By Phrases in Passives and Nominals. *Syntax* 16. 1-41.

Bruyn, Adrienne, Pieter Muysken, and Maaike Verrips. 1999. Double-Object Constructions in the Creole Languages: Development and Acquisition. In Michel DeGraff (ed.), *Language creation and language change*, 329-373. Cambridge, MA: MIT Press.

Burzio, Luigi. 1986. *Italian Syntax*. Dordrecht: Reidel.

Butt, Miriam, and Tafseer Ahmed. 2011. The redevelopment of Indo-Aryan case systems from a lexical semantic perspective. *Morphology* 21. 545-572.

Bynon, Theodora. 2005. Evidential, raised possessor, and the historical source of the ergative construction in Indo-Iranian. *Transactions of the Philological Society* 103. 1-72.

Caha, Pavel. 2009. The nanosyntax of case. PhD Dissertation. CASTL, Tromsø.

Calabrese, Andrea. 2008. On Absolute and Contextual Syncretism. In Andrew Nevins & Asaf Bachrach (eds.), *The bases of inflectional identity*, 156-205. Oxford: Oxford University Press.

Cardona, George. 1970. The Indo-Iranian construction mana (mama) krtam. *Language* 46. 1–12.

Chomsky, Noam. 1995. *The minimalist program*. Cambridge, MA: MIT Press.

Chomsky, Noam. 2001. Derivation by Phase. In Michael Kenstowicz (ed.), *Ken Hale: A Life in Language,* 1-54. Cambridge, MA: MIT Press.

Chomsky, Noam. 2013. Problems of projection. *Lingua* 130. 33–49.

Cinque, Guglielmo. 2005. Deriving Greenberg's Universal 20 and its exceptions. *Linguistic Inquiry* 36. 315–332.

Cinque, Guglielmo and Luigi Rizzi. 2010. The cartography of syntactic structures. In Bernd Heine and Heiko Narrog (eds.), *The Oxford handbook of linguistic analysis*, 51–65. Oxford: Oxford University Press.

Coon, Jessica. 2013. *Aspects of split ergativity*. Oxford: Oxford University Press.

Cuervo, María Cristina. 2003. Datives at large. PhD Dissertation. MIT.

Damonte, Federico. 2005. Classifier Incorporation and the Locative Alternation. In Laura Brugè, Giuliana Giusti, Nicola Munaro, Walter Schweiker and Giuseppina Turano (eds.), *Contributions to the thirtieth Incontro di Grammatica Generativa*, 83-103. Venezia: Libreria Editrice Cafoscarina.

Deal, Amy Rose. 2009. The origin and content of expletives: evidence from "selection". *Syntax* 12. 285-323.

Deo, Ashwini, & Devyani Sharma. 2006. Typological variation in the ergative morphology of Indo-Aryan languages. *Linguistic Typology* 10. 369–418.

Den Dikken, Marcel. 2006. *Relators and Linkers*. Cambridge, MA: MIT Press.

Fillmore, Charles J. 1968. The Case for Case. In Emmon Bach & Robert T. Harms (eds.), *Universals in Linguistic Theory*, 1-88. New York: Holt, Rinehart, and Winston.

Fillmore, Charles J. 1970. The Grammar of Hitting and Breaking. In Roderick A. Jacobs & Peter S. Rosenbaum (eds.), *Readings in English Transformational Grammar*, 120-133. Waltham, MA: Ginn.

Folli, Raffaella, Heidi Harley and Simin Karimi. 2005. Determinants of Event Structure in Persian Complex Predicates. *Lingua* 115. 1365-1401.

Fortescue, Michael. 1984. *West Greenlandic*. London: Croom Helm.

Franco, Ludovico. 2013. Before strikes back – an *ABA constraint on temporal expressions. *Acta Linguistica Hungarica* 60. 265–302.

Franco, Ludovico. 2014. The morphosyntax of adverbs of the Carpone/i type in (Old and Modern) Italian. *Probus*.

Franco, Ludovico, Manzini, M. Rita, and Leonardo M. Savoia. 2015. Linkers and agreement. *The Linguistic Review*. 32. 277–332.

Frazier, Lyn, and Janet Dean Fodor. 1978. The Sausage Machine: A New Two-stage Parsing Model. *Cognition* 6. 291-325.

Freeze, Ray. 1992. Existentials and other locatives. *Language* 68. 553-595.

Ghomeshi, Jila. 2003. Plural marking, indefiniteness and the noun phrase. *Studia Linguistica* 57. 47-74.

Hale, Kenneth, & S. Jay Keyser. 1993. On argument structure and the lexical expression of grammatical relations. In Kenneth Hale & S. Jay Keyser (eds.), *The view from Building 20. Essays in linguistics in honor of Sylvain Bromberger*, 53-109. Cambridge, MA: MIT Press.

Hale, Kenneth, & S. Jay Keyser. 2002. *Prolegomenon to a theory of argument structure*. Cambridge, MA: MIT Press.

Halle, Morris & Bert Vaux. 1998. Theoretical aspects of Indo-European nominal morphology: The nominal declension of Latin and Armenian. In Jay Jasanoff, Craig Melchert & Lisi Olivier (eds.), *Mir Curad. A Festschrift in honor of Calvert Watkins*, 223-240. Universität Innsbruck.

Hancock, Ian, F. 1975. Malacca Creole Portuguese: Asian, African or European? *Anthropological Linguistics* 17. 211-236.

Harley, Heidi. 2002. Possession and the Double Object Construction. *Linguistic Variation Yearbook* 2. 29-68.

Haspelmath, Martin, and Susanne Michaelis. 2008. Leipzig fourmille de typologues: Genitive objects in comparison. In Greville G. Corbett and Michael Noonan (eds.), *Case and Grammatical Relations: Studies in honor of Bernard Comrie*, 149–166. Amsterdam: John Benjamins.

Heine, Bernd, & Christa König 2010. On the linear order of ditransitive objects. *Language Sciences* 32. 87–131.

Hoekstra, Teun. 1999. Parallels between nominal and verbal projections. In David Adger, Susan Pintzuk, Bernadette Plunkett and George Tsoulas (eds), *Specifiers: Minimalist Approaches*, 163–187. Oxford: Oxford University Press.

Hook, Peter Edwin, & Omkar N. Koul. 2004. Case as agreement: Non-nominative subjects in Eastern Shina, non-dative objects in Kashmiri and Poguli, and labile subjects in Kashmiri

and Gujarati intransitive inceptives. In Peri Bhaskararao & K. V. Subbarao (eds.), *Non-nominative Subjects, Vol. 1*, 213-225. Philadelphia: John Benjamins.

Hudson, Richard. 1992. So-Called 'Double Objects' and Grammatical Relations. *Language* 68. 251-276.

Jackendoff, Ray. 1976. Toward an Explanatory Semantic Representation. *Linguistic Inquiry* 7. 89-150.

Johns, Alana. 1992. Deriving Ergativity. *Linguistic Inquiry* 23. 57-87.

Kayne, Richard. 1984. *Connectedness and Binary Branching*. Dordrecht: Foris.

Kayne, Richard. 1994. *The Antisymmetry of Syntax*. Cambridge, MA: MIT Press.

Kayne, Richard. 2010. *Comparisons and contrasts*. Oxford: Oxford University Press.

Khokhlova, Liudmila, V. 2001. Ergativity attrition in the history of Western New Indo-Aryan languages (Punjabi, Gujarati and Rajastahani). *The Yearbook of South Asian Languages and Linguistics*. 159–184.

Lakoff, George, and Mark Johnson. 1980. *Metaphors We Live By*. Chicago: The University of Chicago Press.

Lazard, Gilbert. 2005. Structures d'actances dans les langues irano-aryennes modernes. In Dieter Weber (ed.), *Languages of Iran: Past and Present   Iranian Studies in memoriam David Neil MacKenzie* [Iranica 8], 81–93. Wiesbaden: Harrassowitz.

Lecoq, Pierre. 1989. Les dialectes caspiens et les dialectes du nord-ouest de l'Iran. In Rüdiger Schmitt (ed.), *Compendium Linguarum Iranicarum*, 296-314. Wiesbaden: Dr. Ludwig Reichert Verlag

Levin, Beth. 1993. *English Verb Classes and Alternations: A Preliminary Investigation*. Chicago, IL: University of Chicago Press.

Levinson, Lisa. 2011. Possessive *with* in Germanic: *have* and the Role of P. *Syntax* 14. 355–393.

Luraghi, Silvia. 2010. Adverbial Phrases. In Philip Baldi and Pierluigi Cuzzolin (eds.), *New Perspectives on Historical Latin Syntax* (Volume 2: Constituent Syntax: Adverbial Phrases,

Adverbs, Mood, Tense), 19-108. Berlin: Mouton de Gruyter.

Mahootian, Shahrzad. 1996. *Persian*. London: Routlegde.

Malchukov, Andrej, Martin Haspelmath & Bernard Comrie (eds.). 2010. *Studies in Ditransitive Constructions: A Comparative Handbook*. Berlin: Mouton De Gruyter.

Maling, Joan. 2001. Dative: The Heterogeneity of the Mapping Among Morphological Case, Grammatical Functions, and Thematic Roles. *Lingua* 111. 419-464.

Manzini, M. Rita, and Ludovico Franco. 2015. Goal and DOM datives. *Natural Language and Linguistic Theory*. DOI: 10.1007/s11049-015-9303-y.

Manzini, M. Rita, and Leonardo M. Savoia. 2005. *I dialetti italiani e romanci: Morfosintassi generativa.* Alessandria: Edizioni dell'Orso, 3 vol.

Manzini, M. Rita, and Leonardo M. Savoia. 2007. *A unification of morphology and symtax. Studies in Romance and Albanian varieties.* London: Routledge.

Manzini, M. Rita, and Leonardo M. Savoia. 2011a. *Grammatical Categories.* Cambridge: Cambridge University Press.

Manzini, M. Rita, and Leonardo M. Savoia. 2011b. Reducing 'case' to denotational primitives: Nominal inflections in Albanian. *Linguistic Variation* 11(1). 76-120.

Manzini, M. Rita, Leonardo M. Savoia, and Ludovico Franco. 2015. Ergative case, Aspect and Person splits: Two case studies. *Acta Linguistica Hungarica* 62.

Marantz, Alec. 1984. *On the Nature of Grammatical Relations*. Cambridge, MA: MIT Press.

Marantz, Alec. 1991[2000]. Case and licensing. In Eric Reuland (ed.), *Arguments and Case*, 11–30. Amsterdam: John Benjamins. Originally published as: Marantz, Alec. 1991. Case and licensing. In German Westphal, Benjamin Ao, and Hee-Rahk Chae (eds.), *ESCOL ∅91: proceedings of the eighth eastern states conference on linguistics*, 234–253, Cornell, Ithaca: Cornell Linguistics Club.

Martin, Melinda, C. 2014. Decomposing the Instrumental Construction: Verbal shells and Argument structure in Twi. MA thesis. UCLA.

Mateu, Jaume. 2002. Argument Structure: Relational construal at the Syntax-Semantic Interface. Doctoral dissertation, Universitat Autònoma de Barcelona.

Michaelis, Susanne, and Martin Haspelmath,. 2003. Ditransitive constructions: Creole languages in a cross-linguistic perspective. *Creolica* (available on-line).

Mohanan, Tara. 1994. Case OCP in Hindi. In Miriam Butt, Tracy H. King, and Gillian Ramchand (eds.), *Theoretical Perspectives on Word Order Issues in South Asian Languages,* 185-216. Stanford, CA: CSLI Publications.

Montaut, Annie. 2004. Oblique Main Arguments in Hindi/Urdu as localizing predications. Questioning the Category of Subject. In Peri Bhaskararao & K.V. Subbarao (eds.), *Non Nominative Subjects*, 33-56. Amsterdam: John Benjamins.

Næss, Åshild. 2008. *Prototypical transitivity*. Amsterdam: John Benjamins.

Narrog, Heiko. 2009. Varieties of Instrumental. In Andrej Malchukov & Andrew Spencer (eds.), *The Oxford Handbook of Case*, 547–556. Oxford: Oxford University Press.

Nash, Léa. 2014. The structural source of split ergativity and ergative case in Georgian. Ms. Université de Paris 8.

Palancar, Enrique. 2002. *The Origin of Agent Markers*. Berlin: Akademie Verlag.

Pesetsky, David. 1995. *Zero syntax*. Cambridge, MA: MIT Press.

Polinsky, Maria. 2013. Applicative Constructions. In Matthew S. Dryer & Martin Haspelmath (eds.), *The World Atlas of Language Structures Online.* Leipzig: Max Planck Institute for Evolutionary Anthropology. (Available online at http://wals.info/chapter/109, Accessed on 2015-06-13.).

Primus, Beatrice. 1998. The relative order of recipient and patient in the languages of Europe. In: Anna Siewierska (ed.), *Constituent order in the languages of Europe*, 421-473. Berlin: Mouton de Gruyter.

Pylkkänen, Liina. 2008. *Introducing Arguments*. Cambridge, MA: MIT Press.

Richards, Norvin. 2010. *Uttering Trees*. Cambridge, MA: MIT Press.

Rappaport Hovav, Malka and Beth Levin. 1998. Building Verb Meanings. In Miriam Butt and Wilhelm Geuder (eds.), *The projection of arguments: Lexical and compositional factors*, 97–134. Stanford, CA: CSLI Publications.

Rappaport Hovav, Malka, and Beth Levin. 2008. The English Dative Alternation: The Case for Verb Sensitivity. *Journal of Linguistics* 44. 129-167.

Rohlfs, Gerhard. 1969. *Grammatica storica della lingua italiana e dei suoi dialetti. Sintassi e formazione delle parole. Vol. 3*. Torino: Einaudi.

Siewierska, Anna. 1998. Languages with and without objects. *Languages in Contact* 1. 173-190.

Starke, Michal. 2009. Nanosyntax: A short primer to a new approach to language. *Nordlyd* 36. 2–6.

Stassen, Leon. 2000. AND-Languages and WITH-Languages. *Linguistic Typology* 4. 1-54.

Stilo, Donald. 2009. Case in Iranian: From reduction and loss to innovation and renewal. In Andrej Malchukov, and Andrew Spencer (eds.), *The Oxford Handbook of Case*, 700–715. Oxford: Oxford University Press.

Stilo, Donald. 2010. Ditransitive Constructions in Vafsi. A corpus based study. In Andrej Malchukov, Martin Haspelmath, and Bernard Comrie (eds.), *Studies in Ditransitive Constructions: A Comparative Handbook*, 243-276. Berlin: Mouton De Gruyter.

Stolz, Thomas. 2001. To be with X is to have X: Comitatives, Instrumentals, Locative, and Predicative Possession. *Linguistics* 39. 321-350.

Stolz, Thomas, Cornelia Stroh, and Aina Urdze. 2006. *On Comitatives and Related Categories: A Typological Study with Special Focus on the Languages of Europe*. Berlin: Walter de Gruyter.

Stroński, Krzysztof. 2009. Variation of Ergativity Patterns in Indo-Aryan. *Pozna Studies in Contemporary Linguistics* 45. 237-253.

Svenonius, Peter. 2006. The emergence of axial parts. *Nordlyd* 33. 1–22.

Topping, Donald M. (with the assistance of Bernadita C. Dungca). 1973. *Chamorro Reference Grammar*. Honolulu: University of Hawaii Press.

Verbeke, Saartje, and Ludovic De Cuypere. 2009. The rise of ergativity in Hindi. Assessing the role of grammaticalization. *Folia Linguistica Historica* 30. 367–390.

Woolford, Ellen. 1997. Four-way Case systems: Ergative, nominative, objective, and accusative. *Natural Language and Linguistic Theory* 15. 181–227.

Zhang, Niina N. 2006. The Syntax of English Comitative Constructions. *Folia Linguistica* 41. 135-169.

Zovko Dinković, Irena. 2007. Dative Alternation in Croatian. *Suvremena Lingvistika* 63. 65-83.