

A decomposition analysis of Agent:

Evidence from adverbial distribution

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Main Points

- Agent should be decomposed into two primitive θ -roles: Causer and Affectee, which are assigned in Spec, VoiceP and Spec, ApplP respectively.
- I will identify 4 patterns of adverbial distribution. A standard analysis, which has the verbal spine Voice- V_{CAUSE} -V, only gives us a three-way split, whereas the decomposition analysis of Agent, which has the verbal spine Voice- V_{CAUSE} -Appl-V, captures all 4 patterns.
- The decomposition analysis of Agent also explains how comitatives and pure instrument PPs are interpreted and has interesting implications for Case alignment alternations.

1. Basic Data and Adverbial Distribution Scale

- Verbs that participate in the *transitive-unaccusative* alternation such as *break* display different restrictions on adverbial modification in their active, passive, middle, and inchoative use.

	(a) <i>by</i> -phrases	(b) causing-event-oriented adverbials	(c) Pure instrument PPs	(d) internal-argument-oriented comitatives
Actives	*	✓	✓	✓
Passives	✓	✓	✓	✓
Middles	*	*	✓	✓
Inchoatives	*	*	*	✓

(1) *Actives*

- *John broke the glass by Mary.
- John broke the glass deliberately.
- John broke the glass with a hammer.
- John broke the glass with the plates.

(2) *Passives*

- The glass was broken by John.
- The glass was broken deliberately.
- The glass was broken with a hammer.
- The glass was broken with the plates.

(3) *Middles*

- *Walnuts break easily by adults.
- *Walnuts break easily on purpose.
- Walnuts break easily with a hammer.
- Hearts break easily with pride.

(4) *Inchoatives*

- *The window broke by John.
- *The window broke on purpose.
- *The window broke with a hammer.
- The window broke with the plates.

- The four patterns are crucially not random, and they reveal the following generalization.

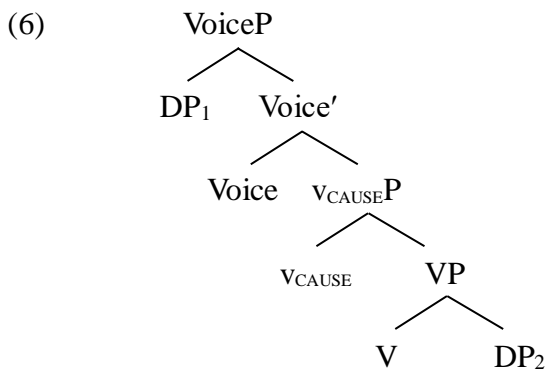
(5) **Adverbial Distribution Scale**

causing-event-oriented adverbials > pure instrument PPs > internal-argument-oriented comitatives

Adverbials on the right side of the scale are always licensed if the ones on the left side are licensed. *By*-phrases (which are not included in (5)) will be discussed later.

2. Standard Analysis

- Pykkänen (2002, 2008) and Legate (2014) decompose *v* into Voice and v_{CAUSE} .
- Voice introduces an external argument, v_{CAUSE} introduces a causing event. Voice is projected only if v_{CAUSE} is also projected, but not the inverse. The internal argument is assigned by the lexical category V in its complement.



- I distinguish two types of adverbials: *event-oriented adverbials* and *individual-oriented adverbials*
- The semantics of adverbials (the semantics of pure instrument PPs is left out for now):
 - 1) *By*-phrases: **event-oriented**; (2a) $\llbracket \text{by John} \rrbracket = \exists e_1. (\text{By}(\text{John}))(e_1)$
 - 2) Causing-event-oriented adverbials: **event-oriented**; (2b) $\llbracket \text{deliberately} \rrbracket = \exists e_1. \text{Deliberate}(e_1)$
 - 3) Internal-argument-oriented comitatives: **individual-oriented**; (2d) $\llbracket \text{with the plates} \rrbracket = (\text{With}(\text{the plates}))(\text{the glass})$
- Licensing of adverbials:
 - 1) *By*-phrases: causing event (i.e. v_{CAUSE}) is present; Spec, VoiceP is empty.
 - 2) Causing-event-oriented adverbials: causing event (i.e. v_{CAUSE}) is present.
 - 3) Internal-argument-oriented comitatives: Theme is present => V is present.
- Explaining the adverbial distribution patterns:
 - Since neither *inchoatives* nor *middles* are compatible with *by*-phrases or causing-event-oriented adverbials, they don't project a causing event. => Inchoatives or middles both lack v_{CAUSE} and VoiceP altogether: [_{VP} V DP₂]
 - *Passives* allow both *by*-phrases and causing-event-oriented adverbials. => Passives project v_{CAUSE}

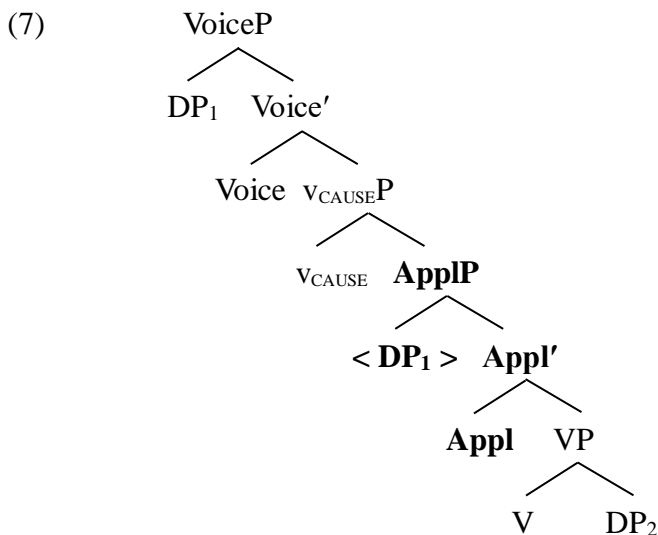
but lack VoiceP: [_{v_{CAUSE}}P v_{CAUSE} [VP V DP₂]]

➤ *Actives* allow causing-event-oriented adverbials but are incompatible with *by*-phrases. => Actives project both v_{CAUSE} and VoiceP: [VoiceP DP₁ Voice [_{v_{CAUSE}}P v_{CAUSE} [VP V DP₂]]]

- **First problem for the standard analysis:** The distribution of pure instrument PPs dictates a further split between inchoatives and middles: inchoatives do not allow pure instrument PPs, whereas middles do. => The decomposition into Voice, v_{CAUSE}, V is not fine-grained enough to make the needed distinction.

3. Decomposition Analysis of Agent

- To (6) I add a functional head **Appl**, which introduces the θ-role **Affectee**. The semantics of Appl will be discussed in section 5.
- The event structure of an ordinary agentive transitive verb can be represented as in (7).



- The argument introduced by Voice is a **Causer** (but not an Agent or any other θ-role typically borne by an external argument) and represents the participant of a causing event.
- **Agent** is a composite θ-role composed of a **Causer** and an **Affectee**, which I argue involves movement from Spec, ApplP to Spec, VoiceP.
- I argue that Appl provides the additional structure that licenses Pure instrument PPs.

- Explaining the adverbial distribution patterns:

➤ In *actives*, every head in the verbal spine Voice–V_{CAUSE}–Appl–V is projected, and the pure instrument PP modifies the Affectee in Spec, ApplP (8a). Since Affectee is a subpart of the Agent θ -role, the presence of an Agent also licenses pure instrument PPs.

(8) a. *Actives*: [TP John_i T [VoiceP t_i broke_j [_{V_{CAUSE}P} t_j deliberately] [_{ApplP} t_i t_j with a hammer] [_{VP} t_j the glass with the plates]]

➤ In both *passives* and *middles*, Voice is absent, but Appl is still projected, therefore pure instrument PPs are allowed in these constructions (8b,c) and modify the implicit argument in Spec, ApplP, which I represent as *pro* in the labelled brackets (for an overview of implicit arguments see Bhatt and Pancheva 2006).

(8) b. *Passives*: [TP The glass_i was [_{V_{CAUSE}P} broken_j by John/deliberately] [_{ApplP} *pro*_k t_j with a hammer] [_{VP} t_j t_i with the plates]]

c. *Middles*: [TP Walnuts_i/Hearts_i T [_{ApplP} *pro*_k break_j with a hammer] [_{VP} t_j t_i easily with pride]]

➤ In *inchoatives*, neither Voice nor Appl is projected, hence the incompatibility with the causing-event-oriented adverbial, the *by*-phrase, and the pure instrument PP. Only the internal-argument-oriented comitative *with the plates* is allowed (8d).

(8) d. *Inchoatives*: [TP The window_i T [_{VP} broke t_i with the plates]]

- The Adverbial Distribution scale in (5) directly follows from the c-command relations among functional heads that license different adverbials.

(5) **Adverbial Distribution Scale**

causing-event-oriented adverbials > pure instrument PPs > internal-argument-oriented comitatives

4. Comitatives and Pure Instruments

4.1 Comitatives

- Comitatives establish a relation of accompaniment between two participants in an event (Stolz, Stroh & Urdze 2006:17–18). They come with various types depending on which argument they modify (i.e. accompany).

- (9) a. Pat built a sand castle with Chris.
 b. Pat and Chris built a sand castle.

- (10)a. John broke the glass (along) with the plates.
 b. John broke the glass and the plates.

In (9a) the comitative *with Chris* modifies the Agent *Pat* and is Agent-oriented, while in (10a) the comitative *with the plates* modifies the Theme *the glass* and is Theme-oriented.

- When the argument contained in a comitative is conjoined with the argument it modifies, the new sentence is an entailment of the original one => Comitatives are always linked to the θ -role of the argument they modify.

4.2 Pure Instruments

- Pure instruments encode devices designed for a particular task and manipulated by an Agent and can be viewed as a special type of comitatives:
 - 1) Crosslinguistically, instruments and comitatives are morphologically marked in the same way (e.g. both are marked with the preposition *with* in English) (Luraghi 2001).
 - 2) Lakoff & Johnson (1980) introduce the “Companion metaphor” (the instrument is a companion) to explain it and argue that these two concepts are **cognitively** similar.
 - 3) Franco & Manzini (2017) treat comitatives and instruments **semantically** alike: they both express a zonal inclusion (part-whole/possession relation).
- If we remove the pure instrument PP from a sentence and conjoin the pure instrument argument with its subject (regardless of being an Agent or Causer), the new sentence is not entailed by the original one.

- (11)a. John picked up the potato with the fork.
 b. #John and the fork picked up the potato.

- (12)a. #The falling hammer broke the window with the axe.
 b. #The falling hammer and the axe broke the window.

4.3 Second Problem for the Standard Analysis

- Ordinary agentive transitive verbs such as *pick up* only take Agent subjects, and transitivized unaccusatives such as *break* take either Agent or Causer subjects. The impossibility of conjoining pure instrument and the subject argument of both verb types suggests that pure instrument PPs cannot be linked to Causers or Agents. Then, which θ -role are pure instrument PPs linked to in (1–3)?

- (1c) John broke the glass with a hammer.
 (2c) The glass was broken with a hammer.
 (3c) Walnuts break easily with a hammer.

- The same question applies to comitatives.

- (13)a. Pat rowed a boat to the island with Chris.
 b. Pat and Chris rowed a boat to the island.

- **Second problem for the standard analysis:** The standard analysis does not explain why the pure

instrument PP, which cannot be linked to an Agent θ -role, can modify the Agent subject in (1c) and be allowed in (2c) and (3c), where no external argument is even present.

4.4 Explanation

- Pure instrument PPs are linked to the θ -role **Affectee** and are licensed by **Appl**. Pure instrument PPs are *individual-oriented* and the semantics of *with a hammer* in (1c) can be represented as $\llbracket \text{with a hammer} \rrbracket = (\text{With(a hammer)})(\text{John}_{\text{Affectee}})$
- The comitative PP in the reading of (14a) is linked to the Agent (Causer+Affectee). Thus it can be conjoined with the Agent subject, leading to the success of entailment. The comitative PP in the reading of (14b) is linked to the Affectee. Thus, it cannot be conjoined with the Agent subject, leading to the failure of entailment.

(14)a. $[\text{TP Pat}_i \text{ T } [\text{VoiceP } \mathbf{t}_i \text{ rowed}_j [\text{v}_{\text{CAUSE}} \text{P } \mathbf{t}_j [\text{ApplP } \mathbf{t}_i \mathbf{t}_j [\text{VP } \mathbf{t}_j \text{ a boat to the island}]]]]$
 $\llbracket \text{with Chris} \rrbracket$ $\langle \llbracket \text{with Chris} \rrbracket \rangle$

b. $[\text{TP Pat}_i \text{ T } [\text{VoiceP } \mathbf{t}_i \text{ rowed}_j [\text{v}_{\text{CAUSE}} \text{P } \mathbf{t}_j [\text{ApplP } \mathbf{t}_i \mathbf{t}_j [\text{VP } \mathbf{t}_j \text{ a boat to the island}]]]]$
 $\llbracket \text{with Chris} \rrbracket$

- The most convincing argument that pure instrument PPs are licensed by Appl comes from Korean inchoative constructions. As reported in Kim (2011), Korean has two types of inchoatives: zero inchoatives and I-inchoatives. Zero inchoatives disallow *by*-phrases and pure instrument PPs (15), while I-inchoatives license pure instrument PPs, but disallow *by*-phrases (16).

(15) *Korean zero inchoatives*

- a. *elum-i Inho-eyuyhay nok-ass-ta (by-phrase)
ice-NOM Inho-by melt-PAST-DEC
‘The ice melted by Inho.’
- b. *elum-i motakpwul-lo nok-ass-ta (pure instrument PP)
ice-NOM bonfire-with melt-PAST-DEC
‘The ice melted with the bonfire.’

[Kim 2011:101–103]

(16) *Korean I-inchoatives*

- a. *haswukwu-ka Inho-eyuyhay mak-**hi**-ess-ta (by-phrase)
drainage-NOM Inho-by block-**I**-PAST-DEC
‘The drainage blocked by Inho.’
- b. haswukwu-ka ssuleyki-lo mak-**hi**-ess-ta (pure instrument PP)
drainage-NOM garbage-with block-**I**-PAST-DEC
‘The drainage blocked with garbage.’

[Kim 2011:101–103]

Interestingly, the morpheme *-I-* in Korean also appears in morphological causatives (17), and it has been argued by Kim (2010, 2011) to be the morphological realization of a Voice head that takes high Appl as its complement. Here, I treat *-I-* as the spell-out of Appl.

- (17) emma-ka ai-eykey chayk-lul ilk-**hi**-ess-ta
 mother-NOM child-DAT book-ACC read-**I**-PAST-DEC
 ‘Mother made the child read the book.’

[Kim 2010:488]

- Analysis: If *-I-* is absent as in zero inchoatives, Appl is also absent, and pure instrument PPs are not licensed. If *-I-* is present as in I-inchoatives, Appl is projected, and pure instrument PPs are licensed.

- (18)a. *Zero Inchoatives*: [TP the ice_i T [VP melted t_i
 *with the bonfire]
- b. *I-Inchoatives*: [TP the drainage_i T [AppIP *pro*_k blocked_j-**I** [VP t_j t_i
 with garbage]

5 Case Alignment Alternations

- A prediction of the decomposition analysis of Agent: if Agent is composed of two primitive θ -roles, we may expect to find constructions where Agent alternates with Affectee. There are two subcases:
 - 1) when a two-place verb inherently only selects an Affectee, a Causer can be added by *causativization*.
 - 2) when a two-place verb inherently selects an Agent, the Causer can be *expletivized*.
 Both subcases are attested.
- Samoan Absolutive-*i* Case and Ergative-Absolutive Case alignment alternation (middle-ergative alternation) fits nicely with the causativization subcase.

- (19)a. *Middle*
 Na fesili [le leoleo] [i le tamāloa].
 PST ask DET police.ABS *i-Case* DET man
 ‘The police asked the man.’
- b. *Derived Erg-Abs*
 Na fesiligia [e le leoleo] [le tamāloa].
 PST grope.ES ERGDET police DET man.ABS
 ‘The police questioned the man.’

[Tollan 2018:26]

- Spanish Nominative-Accusative and Dative-Nominative Case alignment alternation instantiates the expletivization subcase.

- (20)a. El tintorero quemó los pantalones de Carolina
 the dry-cleaner burnt.SG the trousers of Carolina
 ‘The dry-cleaner burnt Carolina’s trousers.’
- b. Al tintorero **se** le quemaron los pantalones de
 to.the dry-cleaner **REFL** her.DAT burnt.PL the trousers of
 Carolina (*a propósito / *para vengarse).
 Carolina (on purpose / to take revenge)
 ‘The dry-cleaner (accidentally) burnt Carolina’s trousers (*on purpose / *to take revenge).’

[Cuervo 2003:186–187]

- Analysis: in the more agentive alternants, the subject is an Agent, in their less agentive counterparts, the subject is only an Affectee. I argue that **high agentivity** comes from the presence of the functional complex [Voice, v_{CAUSE}]. This functional complex can be either added as in Samoan or removed as in Spanish.

(21)a. highly agentive: [VoiceP **DP-Nom/Erg_i** Verb_j [v_{CAUSE} P t_j [AppIP t_i t_j [VP t_j DP-Acc/Abs

b. lowly agentive: [AppIP **DP-Obl/Abs** Verb_j [VP t_j DP-Nom/i-Case

- Constructions taking an Affectee subject are in fact quite general and are classified under Oblique Subject Constructions (OSCs). OSCs do not necessarily involve Case alignment alternation and a OSC predicate does not always have an agentive counterpart, see (22) from Italian.

(22)a. Mi piace questo libro.
me.DAT please.3SG this book
'I like this book.'

b. *(Io) piaccio questo libro.
I.NOM please.1SG this book
Intended: 'I like this book.'

- Oblique subjects have the following interpretations: location, experiencer, beneficiary, malefactive, possessor, etc., see Barðdal et al. (2012). They have a high degree of overlap in meanings with Affectee. I argue that the common property of these interpretations is **low agentivity**.
- Both Theme and Affectee can be understood as the participants of the caused event (i.e. process). These two θ -roles only differ in their prominence, namely the closeness of involvement in the event, with Theme being more prominent than Affectee.

6 Conclusion

- I argued that the traditional Agent θ -role is not primitive and is derived by combining Causer and Affectee, which involves movement from Spec, AppIP to Spec, VoiceP.
- The decomposition analysis of Agent captures adverbial distribution that is conditioned by voice alternations and has interesting implications for Case alignment alternations.

7 References

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