

A decomposition analysis of Agent: Evidence from adverbial distribution

Verbs that participate in the transitive-inchoative alternation such as *break* display different restrictions on adverbial modification in their active, passive, middle, and inchoative use. I identify an implicational relationship among the adverbials allowed in these four constructions and propose an analysis for it. I argue that decomposing *v* into Voice and v_{CAUSE} (Pylkkänen 2002) is not fine-grained enough to capture the new generalization and propose that the Agent-introducer (Voice) should be further decomposed into 2 heads.

Data. Voice alternations affect adverbial modification. Actives are incompatible with (a) *by*-phrases, but are compatible with (b) causing-event-oriented adverbials, (c) pure instrument PPs, and (d) internal-argument-oriented comitatives. Passives are compatible with all 4 of them. Middles do not allow *by*-phrases or causing-event-oriented adverbials, but are compatible with the other types. Inchoatives only take internal-argument-oriented comitatives.

(1) *Actives*

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

(2) *Passives*

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

(3) *Middles*

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

(4) *Inchoatives*

- a. *The window broke by John.
- b. *The window broke on purpose.
- c. *The window broke with a hammer.
- d. 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 in more detail below.

Licensing. I postulate two types of adverbials: *event-oriented* and *argument-oriented adverbials*. *By*-phrases and causing-event-oriented adverbials belong to the former, which modify events, while pure instrument PPs and comitatives belong to the latter, which modify arguments. (2a, b) can be paraphrased as the causing event is “by John” and is deliberate. Although *by*-phrases and causing-event-oriented adverbials both identify the causing event, the compatibility with *by*-phrases not only signals the presence of the causing event, but also indicates the absence of a Causer argument, while causing-event-oriented adverbials are insensitive to the presence of a Causer. Consider the comitative in *Pat ran with Chris*. *With Chris* modifies Pat and describes Chris’s being with him. When comitatives replace the arguments they modify the new sentence is an entailment of the original one. Thus, *Pat ran with Chris* entails that *Chris ran*. It indicates comitatives are always linked to the θ -role of the argument they modify. Instruments can be viewed as a type of comitatives. They have three subtypes: *pure instruments*, *instrument Causers*, and *instrument Agents*. Pure instruments encode devices designed for a particular task and manipulated by an Agent. Instrument Causers encode natural forces with kinetic energy. Instrument Agents encode devices that can work on their own, typically machines. While pure instruments cannot function as a subject (6a,c), instrument Causers can function as subjects of transitivized inchoatives (6b), and instrument

Agents can function as subjects of ordinary transitive verbs (6d) (Alexiadou and Schäfer 2006).

- (6) a. #The hammer broke the window. b. The falling hammer broke the window.
 c. #The fork picked up the potato. d. The crane picked up the potato.

Ordinary transitive verbs only take Agent subjects, and transitivized inchoatives take either Agent or Causer subjects. Thus the incompatibility of pure instrument subjects with either verb type suggests they can be neither Causers nor Agents. If comitatives need to be linked to the θ -role of the argument they modify, which θ -roles are pure instrument PPs linked to in (1–3)?

Standard analysis. Pykkänen (2002) decomposes v into 2 heads: Voice and v_{CAUSE} . The former introduces an external argument, and the latter introduces a causing event. The distribution of *by*-phrases and causing-event-oriented adverbials indicates inchoatives and middles lack v_{CAUSE} and VoiceP altogether, passives project v_{CAUSE} but lack VoiceP, while actives project both v_{CAUSE} and VoiceP. This gives us a three-way split. However, the distribution of pure instrument PPs dictates a further split between inchoatives and middles, the decomposition into Voice, v_{CAUSE} , V is not fine-grained enough to make the needed distinction. It also cannot explain why the pure instrument PP, which cannot be linked to the Agent θ -role, can modify the Agent subject in (1c) and be allowed in (2c) and (3c), where the argument introduced by Voice is not present.

Decomposition analysis. I propose that Voice is further divided into Voice and Appl; an ordinary transitive verb then has the following verbal spine: Voice– v_{CAUSE} –Appl–V. v_{CAUSE} introduces a causing event. Voice assigns the Causer θ -role, which is the sole participant of the causing event. Appl assigns the Affectee θ -role, while V assigns the Theme θ -role. Both of them are the participants of the caused event. Crucially, Agent is a composite θ -role made of Causer and Affectee, which I argue involves movement from Spec, ApplP to Spec, VoiceP (regarding movement into θ -positions see Bošković 1994; Ramchand 2008). I will provide evidence in the talk for the close connections between Appl used here and the one posited for applicatives. The scale in (5) falls out directly from the proposal. *By*-phrases and causing-event-oriented adverbials identify the presence of v_{CAUSE} . In the case where the former is disallowed, and the latter is allowed, Voice is also projected in the structure. Pure instrument PPs and internal-argument-oriented comitatives are licensed by Appl and V respectively. In actives, every head in the verbal spine is projected, and the pure instrument PP modifies the Affectee in Spec, ApplP (7). Since Affectee is a subpart of the Agent θ -role, the presence of an Agent also licenses pure instrument PPs. In both passives and middles, Voice is dropped, thus neither Causer nor Agent is present, but Appl is still projected, therefore pure instrument PPs are allowed in these constructions (8–9) and modify the implicit arguments in Spec, ApplP, which I represent as *pro* in the labelled brackets (for an overview of implicit arguments see Bhatt and Pancheva 2017). 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 (10).

(7) *Actives*: [TP John_i T [VoiceP **ti** broke_j [v_{CAUSE} P t_j [AppIP **ti** t_j [VP the glass t_j

(8) *Passives*: [TP The glass_i was [v_{CAUSE} P broken_j [AppIP **pro_k** t_j [VP t_i t_j

(9) *Middles*: [TP Walnuts_i T [AppIP **pro_k** break_j [VP t_i t_j easily

(10) *Inchoatives*: [TP The window_i T [VP t_i broke

In summary, the implicational relations in (5) are a direct consequence of the decomposition analysis of Agent. In this talk I also discuss further implications this approach has for the ditransitive alternation and the NOM-ACC vs DAT-NOM case alignment alternation.