

French perception verbs are not equal

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Introduction

- ECM may occur with perception verbs as shown in (1), where the embedded predicate has an overt subject, *Nicolas*, and it is marked accusative by the matrix verb.

- (1) a. J'ai entendu Nicolas ronfler.
 I.have heard Nicolas[ACC] snore
 'I heard Nicolas snoring.'
- b. J'ai vu Nicolas marcher.
 I.have seen Nicolas[ACC] walk
 'I have seen Nicolas walk.'

Puzzle

- However, perception verbs are not equal in that *entendre* can embed an infinitive complement without its subject (see (2-a)), while *voir* cannot (see (2-b)).

(2) a. J'ai entendu ronfler.

I.have heard snore
≈ 'I heard snoring.'

b. *J'ai vu marcher.

I.have seen walk
≈ 'I saw walking.'

Puzzle

- The contrasts in (2) is theoretically puzzling, and raises two issues:
 - Syntactically, if (2-a) means that the speaker heard any random person snoring, with the PRO_{arb} present in the syntactic structure (e.g., Casalicchio 2016), it is surprising that (2-b) with *voir* 'see' does not allow the same, given that see allows for ECM constructions with overt embedded subjects.
 - Can this difference be attributed to a semantic difference between the two items?

- (2) a. J'ai entendu ronfler.
 I.have heard snore
 ≈ 'I heard snoring.'
 b. *J'ai vu marcher.
 I.have seen walk
 ≈ 'I saw walking.'

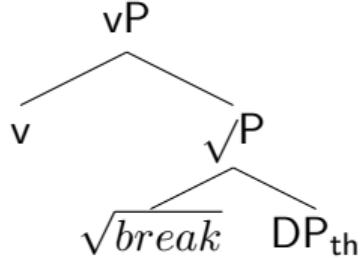
In a nutshell

- We will first propose that the lowest position that *entendre* attaches to is different from the lowest position that *voir* attaches to.
- We tentatively call this *minimal attachment*.
- At the end, we will propose that this syntactic difference is a reflection of a semantic difference between the two verbs.
- In particular, *see* takes “scenes/situations” as its argument while *entendre* combines with a function returning the associated sounds of a given entity.

Theoretical assumptions

- Our analysis benefits from certain assumptions regarding the representation of argument structure of verbs in syntax.
- The sole argument of an unaccusative verb combines directly with the root with a verbalizer on top.

(3)

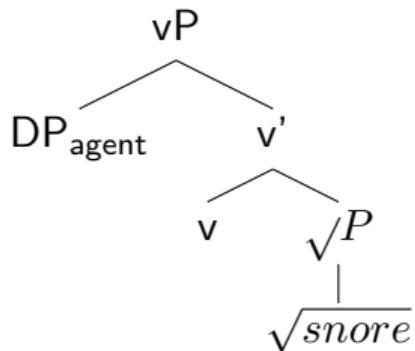


(Perlmutter, 1978; Kratzer, 1996, unaccusatives)

Theoretical assumptions

- The sole argument of an unergative predicate is projected in [Spec, v], as in (4).

(4)

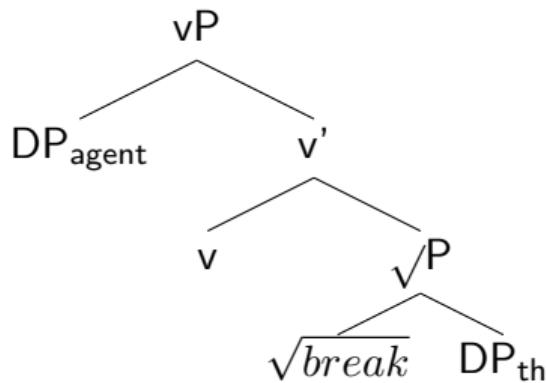


(Perlmutter, 1978; Kratzer, 1996, unergatives)

Theoretical assumptions

- Finally, the structure of a transitive is the same as an unergative except for the additional presence of the theme argument combining with the root (5).

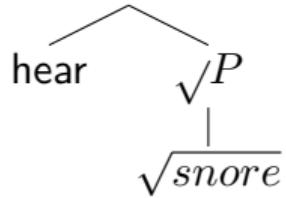
(5)



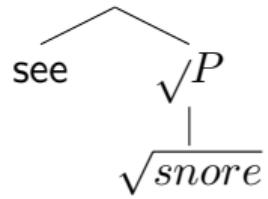
Proposal

- We propose that the minimal attachment sites of these predicates in French are not uniform. In particular, *hear* minimally attaches at \sqrt{P} (6) whereas this is not a possibility for *see* (7).

(6) ✓



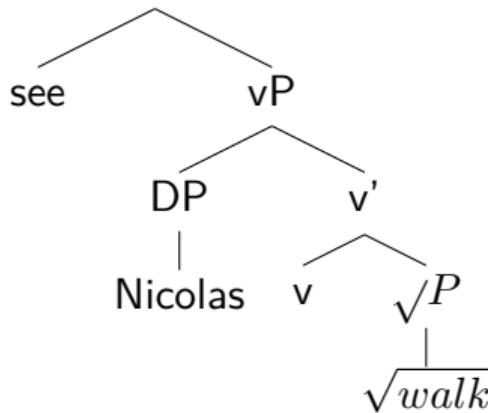
(7) ✗



Proposal

- Instead, *see* minimally attaches somewhere near vP (8).

(8) ✓



Proposal

- MINIMAL ATTACHMENT

Minimal attachment is not a syntactic property of a lexical item. We take this to mean that it is the lowest possible projection with which it can combine given the semantic combinatorial properties of the embedding verb. This does not mean that the verb cannot attach higher than the minimal projection.

Proposal

- This proposal immediately accounts for the contrast in (2).
- If *see* in French minimally attaches at somewhere near vP, the embedded unergative predicate must have already combined with its DP argument, hence the ungrammaticality of (2-b).
- In contrast, if *hear* attaches at the \sqrt{P} level, then the unergative agent need not be present in the structure, hence the possibility of (2-a).

(2) a. J'ai entendu ronfler.

I.have heard snore

≈ 'I heard snoring.'

✓ [entendre [\sqrt{P} ronfler]]

b. *J'ai vu marcher.

I.have seen walk

≈ 'I saw walking.'

✗ [voir [\sqrt{P} marcher]]

Proposal

- If *see* in French attaches at the vP, the embedded unergative predicate must have already combined with its DP argument.

(1-b) J'ai vu Nicolas marcher.

I.have seen Nicolas[ACC] walk

'I have seen Nicolas walk.'

✓ [voir [_{vP} Nicolas v [_{VP} marcher]]]

Predictions

- PREDICTION 1: Embedding unaccusative predicates should be possible both with *see* and *hear* on the condition that the theme argument is present. This is borne out as shown in (9).

- (9) a. *Jean a entendu/vu tomber.
 Jean have heard/seen fall
 'Jean heard/saw falling.' [without theme]

b. Jean a entendu/vu tomber le vase.
 Jean have heard/seen fall the vase
 'Jean heard/seen the vase falling.' [with theme]

c. Jean a entendu/vu le vase tomber
 Jean have heard/seen the vase fall
 'Jean heard/saw the vase fall.' [with theme]

Predictions

- PREDICTION 2: When *hear* attaches at the root level, where the agentivity is not yet introduced, then the agentive adverbials like *deliberately/willingly* or controlling into purpose clauses in embedded clause must be ungrammatical.

- (10) a. Hier, j'ai vu Nicolas marcher {pour faire du
yesterday I.have seen Nicolas walk {for do some
sport,délibérément}.
sport/deliberately}
'Yesterday, I saw Nicolas walking to do sport/deliberately.'
- b. Jean a entendu Marie crier {pour déranger les voisins,
Jean have heard Mary shout {for disturb the neighbors,
délibérément}.
deliberately}
'John heard Mary shouting to disturb the neighbors/deliberately.'

Predictions

- (11) a. *Jean a entendu crier {pour déranger les voisins, délibérément}.
 Jean have heard shout {for disturb the neighbors, deliberately}
 'John heard shouting to disturb the neighbors/deliberately.'
- b. Jean a entendu Marie manger une pomme la bouche ouverte {pour
 Jean have heard Mary eat an apple the mouth open {for
 déranger sa soeur, délibérément}.
 disturb her sister, deliberately}
 'John heard Mary eating an apple with her mouth open to disturb her
 sister/deliberately.'

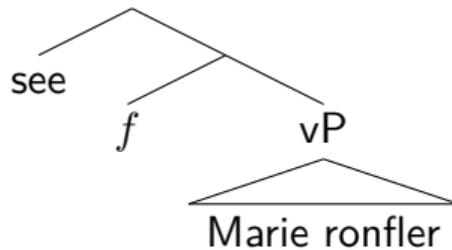
Understanding minimal attachment

- So far, we have shown that *voir* and *entendre* minimally attaches at different syntactic heights.
- We also observe that each verb may attach at different nodes.
- Syntax cannot be the answer to everything. If this were about strict selection, we would have to list every possible projection as a disjunctive rule as the lexical property of these verbs.
- Then, how should we understand this minimal attachment?

Understanding minimal attachment

- FURTHER REFINEMENT: We suggest that *see* actually combines with situation type entities, derived from events in the spirit of Ramchand and Svenonius (2014). Very broadly, we can represent this as in (12).

(12)



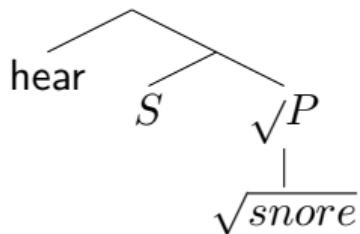
- (13)
- $\llbracket f \rrbracket = \lambda P_{\langle v, t \rangle} \cdot \lambda s. \exists e : e \text{ is part of } s \wedge P(e) = 1$
 - $\llbracket \text{see} \rrbracket = \lambda P_{\langle s, t \rangle} \cdot \lambda e. \exists s : \text{see}(e) \wedge P(s) = 1 \wedge \text{theme}(e) = s$

- Under the assumption that *f* is merged at the end of the event domain to introduce situations, *see* with the current type has to occur above vP. This accounts for why it cannot combine with \sqrt{P} .

Understanding minimal attachment

- FURTHER REFINEMENT: *entendre*, in contrast, do not take situations as its argument. It takes individuals, in particular "sounds". Hence, the theme of the verb *hear* has to be a sound that could be associated with another entity, e.g., an event. Formally, we can represent this as in (14).

(14)



- (15)
- $\llbracket S \rrbracket = \lambda P_{\langle \alpha, t \rangle}. \lambda x. \exists y \wedge P(y) = 1 \wedge SOUND(x, y)$
 - $\llbracket \text{hear} \rrbracket = \lambda P_{\langle e, t \rangle}. \lambda e. \exists x : \text{hear}(e) \wedge P(x) = 1 \wedge \text{theme}(e) = x$

- Notice that the input of *hear* is a subset of the domain of individuals, i.e., sounds. As long as what *S* combines with is defined for *S*, then it will be a good argument for *hear*.

Understanding minimal attachment

- FURTHER REFINEMENT: We reduced minimal attachment to semantic types/semantic selection.
- Do we have empirical evidence for such a split?

Understanding minimal attachment

- FURTHER REFINEMENT: The fact that *see* combine with situation type entities have been supported in the literature because of the availability of paraphrases like (16-b) for sentences like (16-a) (e.g., Barwise 1981; Barwise and Perry 1981; Perry and Barwise 1983; Liefke 2023).

- (16) a. Jean a vu Marie dormir.
Jean have seen Marie sleep
'Jean saw Mary sleeping.'
- b. Jean a vu la situation où Marie dormait.
Jean has seen the situation where Marie slept.
'Jean saw the situation in which Marie was sleeping.'
- c. #Jean a vu le son/le bruit de Marie qui dormait.
Jean has seen the sound/the noise of Marie sleeping.
'Jean saw the the sound/the noise of Marie sleeping.'

Understanding minimal attachment

- Situation involving paraphrases are degraded with *entendre*, but are better with sounds.

- (17) a. Jean a entendu Marie ronfler.
Jean have heard Marie ronfler
'Jean saw Mary snoring.'
- b. #Jean a entendu la situation où Marie ronflait.
Jean has heard the situation where Marie snored.
'Jean heard the situation in which Marie was snoring.'
- c. Jean a entendu le son/le bruit de Marie qui ronflait.
John has heard the sound/the noise of Mary who snored
Jean have heard the sound/noise of Mary snoring.
(≈Jean a entendu le ronflement de Marie)

Understanding minimal attachment

- Expressions standing for the objects of seeings can be identified as situations or scenes, while this is not possible with hearings. Rather they need to be associated with sounds.

- (18) a. Jean a vu le bébé pleurer. Ce qu'il a vu, c'est #du
Jean has seen the baby crying. What that.he has seen it.is some
bruit, une scène, une situation.
noise, a scene, a situation.
'Jean saw the baby crying. What he have seen was a noise/a
scene/situation.'
- b. Jean a entendu le bébé pleurer. Ce qu'il a entendu,
Jean has heard the baby crying. What that.he has heard
c'est du bruit, #une scène, #une situation.
it.is some noise, a scene, a situation
'Jean heard the baby crying. What he heard was noise.'

Understanding minimal attachment

- Hence, the substitution data suggests that the objects of the two verbs are not uniform.
- If *voir* must combine with situations, under the assumption that situations are introduced after the event domain is closed off at vP/VoiceP (Ramchand and Svenonius, 2014), then the apparent syntactic attachment is a result of the semantic combinatorial restrictions of *voir*.
- This analysis is in the spirit of Wurmbrand and Lohninger (2023); Wurmbrand (2024), where the semantic selection governs the syntactic merge sites of lexical items.

Apparent issues

- So far, we have investigated infinitive complements of *voir* and *entendre*.
- Both verbs can combine with embedded tensed complements, and DPs.
- Is our analysis for infinitival complements in conflict with this?
- Not necessarily!

Apparent issues

- (19) a. J'ai vu que Marie est partie.
I.have seen that Marie is left
'I saw that Mary left'.
b. J'ai entendu que Marie est partie.
I.have hear that Marie is left
'I heard that Mary left.'

- We note that *that* clauses do not undermine the analysis presented here. It has been proposed they only specify the content of some object combining with the attitude predicate (e.g., Moulton 2009; Moltmann 2024; they do not necessarily directly merge with them.

Apparent issues

- (20) a. J'ai vu un chat.
 I.have seen a cat.
 'I saw a cat.'
- b. J'ai entendu un chat.
 I.have heard a cat
 'I heard a cat.'

- The DP complements of *see* has been analyzed as scene-like in the literature (see e.g., Liefke (2024)). As such (20-a) would correspond to a paraphrase like *I have seen a scene in which there was a cat*.
- For *entendre*, the function *S*, can simply combine with an entity and return the associated sounds.
- This is further supported by the fact that paraphrases of the sort: *I heard the scene in which there was a cat* are infelicitous while *I heard the meow of the cat* is a good substitution.

Concluding remarks

- In short, evidently *voir* and *entendre* have different syntactic attachments.
- Given that both types of verbs can attach at different syntactic heights, reducing this to c-selection involving disjunctive criteria is arbitrary, and does not have any explanatory power.
- Instead, we believe this can be better made sense of in terms of semantic restrictions of these items.
- We proposed that the difference lies in what type of semantic objects these two perceptions verbs combine with.

Concluding remarks

- An open question is what type of entities to which *S* can apply to return its associated sounds.
- This question is about the metaphysics/ontology of natural language.
- The infelicity of the data in (17-b) suggests it cannot apply to situations, but we leave an understanding of that for further research.

- (21) a. Jean a entendu la situation où Marie ronflait.
 Jean has heard the situation where Marie snored.
 'Jean heard the situation in which Marie was snoring.'
- b. Jean a entendu le bébé pleurer. Ce qu'il a entendu,
 Jean has heard the baby crying. What that.he has heard
 c'est #une scène, #une situation.
 it.is a scene, a situation, an event
 'Jean heard the baby crying. What he heard was a situation.'

Acknowledgments

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