Presupposition projection from the scope of 'say'

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Introduction

Existing work on presupposition projection focuses mainly on how presuppositions project from under attitude predicates (Karttunen, 1973; Heim, 1992; Geurts, 1998; Uegaki, 2021, a.o.)

(1) Zoe is certain that the cat is inside.
Presupposes: Zoe believes that there is a unique cat and it is compatible with Zoe's beliefs that it is inside.

(2) Zoe is certain (about) which cat is inside.
Presupposes: Zoe believes that exactly one cat is inside.

⇒ Attitude predicates filter presuppositions to the beliefs of the attitude holder.

Introduction

Not much has been claimed about verbs of saying:

- Karttunen (1973) attributes to verbs of saying the label of presupposition plugs.
- *Tell* has been claimed to not be a presupposition plug. There is however some debate regarding its projection properties (Lahiri, 2002; Spector and Egré, 2015; Uegaki, 2015, a.o.).

Goals

Aims of this work:

1. Give **a characterization of presupposition projection from under 'say'** from declaratives and interrogatives using data from different languages (French, English, Italian, German);
2. Highlight **the difference between say and non-saying responsive attitude verbs**, where *say* does not fit into the generalization in which presuppositions from embedded declaratives and interrogatives project in the same way (Uegaki, 2021)
3. Give the desiderata of what an analysis of *say* would need to have.

Presupposition projection from declaratives embedded under verbs of saying

- Like other attitude predicates, presuppositions from verbs of saying need not project to the speaker's (SP) beliefs.
- Unlike other attitude predicates, we observe different types of projection behavior. Depending on the attitude holder's (AH) intentions at the speech act reported, the presuppositions project:
  - to AH's actual belief state, if AH is being truthful;
  - to a fake belief state of AH, if AH is lying.

Case 1: Truth reports

- We first look at the most common case, namely in contexts in which SP believes AH to be truthful.

(3) AH but not SP believes π:

When I left my appartment this morning, there was no milk left in the fridge.

Max me dit qu'il a acheté du lait, mais je ne le crois pas. Une heure plus tard, il me dit que Zoé **aussi** a acheté du lait. Mais je ne le crois toujours pas.

'Max tells me he bought some milk, but I don't believe him. One hour later, he says to me that Zoe bought some milk too. But I still don't believe him.'

π = Someone other than Zoe has bought milk.

$\Rightarrow$ π can project to AH's beliefs and not SP's beliefs.

Case 1: Truth reports

(4) SP but not AH believes π:

J'ai acheté du lait ce matin. De retour à la maison, je vois que Max en a acheté. Max n'a pas vu la nouvelle bouteille de lait, et pense qu'il est le seul à en avoir acheté. # Il va voir Zoé et il lui dit que lui **aussi** a acheté du lait.

'I bought some milk this morning. Back home, as I open the fridge I see that Max also bought some. Max didn't see the new milk, and thinks he's the only one who bought milk. # So he goes to Zoe and he says to her that he bought milk too.'

π = Someone other than Max has bought milk.

$\Rightarrow$ π can't project to only SP's beliefs and not AH's beliefs.

In truth reports, π must project to AH's beliefs

Case 1: Truth reports

- Presuppositions from weak triggers behave just like strong ones.

(5) AH but not SP believes π:

Zoe said Sue **stopped** smoking, but I know for a fact that Sue has never smoked before, so Zoe must be confused and thought Sue used to smoke.

(6) SP but not AH believes π:

Max met Zoe not long ago and mistakenly thinks that she has never smoked. #Earlier, he came to me and said that Zoe **stopped** smoking.

π = Zoe used to smoke.

Case 2: Lie reports

- We now look at cases in which SP believes AH to be lying, and show that presuppositions don't project to AH's beliefs, rather to AH's fake beliefs, namely those that AH wants their addressee to believe about AH's beliefs

(7) AH lies and SP doesn't believe π:

When I left my appartment this morning, there was no milk left in the fridge. Max, as always, has decided to lie.

Il me dit qu'il a acheté du lait, mais je ne le crois pas. Une heure plus tard, il me dit que Zoé **aussi** a acheté du lait. Mais il est toujours en train de mentir.

'Max tells me he bought some milk, but I don't believe him. One hour later, he says to me that Zoe bought some milk too. But he is still lying.'

π = Someone other than Zoe has bought milk.

$\Rightarrow$ π can project to AH's fake beliefs only (and not AH's actual beliefs or SP's beliefs)

Case 2: Lie reports

(8) AH lies and SP doesn't believe π, but π is part of AH's beliefs but not AH's lie:

When I left my appartment this morning, there was a new bottle of milk in the fridge. Max, as always, has decided to lie.

Il me dit que personne n'a acheté de lait, mais je ne le crois pas. #Une heure plus tard, il me dit que Zoé **aussi** a acheté du lait. Mais il est toujours en train de mentir.

'Max tells me nobody bought milk, but I don't believe him. #One hour later, he says to me that Zoe bought some milk too. But he is still lying.'

π = Someone other than Zoe has bought milk.

$\Rightarrow$ π can't project to AH's actual beliefs only, and not AH's fake beliefs or SP's beliefs

π must project to AH's fake belief set.

Case 2: Lie reports

- Weak presuppositions triggers behave just like strong presupposition triggers.

(9) John said that he saw **the** king of Chubiland. But he lied; Chubiland doesn't even have a king.

(10) Mary said that she recently **stopped** smoking. I then learned that that was in fact a lie, and that she hasn't even smoked before.

Apparent matrix-level projection

- We can find cases in which there is apparent projection of the presupposition up to SP's beliefs only (and not to AH's beliefs)

(11) SP but not AH believes π:

Zoe comes to my house not knowing that Max and Theo have a cat. She sees it as she comes up to the door.

Zoe to Max: I saw a white cat outside! Do you have cats?
Max to Theo: Zoe says she saw the cat!

- We follow Heim (1992) in claiming that these cases are simply taken to be *de dicto* readings of the presupposition triggers. A paraphrase of (11) would be: 'As for the cat, Zoe says she saw it.'
- We therefore exclude these from consideration, as these presupposition triggers are to be interpreted outside the scope of *say*.

Projection out of embedded declaratives

When a declarative involving a presupposition trigger is embedded under 'say', π is anchored to the AH's presented beliefs at the matrix level.

- We have rejected a characterization of *say* as a presupposition plug.
- We have shown that presuppositions project to the AH's **'presented doxastic state'** at the speech act described by the speech report.

(12) Pr-Dox(x)(e) := the set of worlds compatible with x's presented beliefs, i.e., with beliefs that x wants their addressee to believe they have at e

(13) When p presupposes π:

a. AH says to X that p.

b. *Presupposes:* Pr-Dox(x)(e) $\subseteq \pi$.

Robust projection pattern observed across four languages (English, French, German and Italian) and across embedded declaratives involving other strong presupposition triggers.

Projection out of embedded interrogatives

Verbs of saying also embed interrogatives, and when they do so:

- Presuppositions project from them differently than from embedded declaratives.
- They project to the matrix level (i.e. they must be included in the SP's beliefs as well), whether AH is being truthful or not.

Case 1: Truth reports

- We first look at contexts in which SP believes AH to be truthful.

(14) SP but not AH believes π(Q):

I believe that there is a new milk carton in the fridge. Max heard one of his flatmates talk about it, but he is skeptical.

Je demande à Max ce qu'il a entendu. Il me dit qui a acheté du lait, pourtant il ne croira pas qu'il y en a tant qu'il ne le verra pas.
'I ask Max about what he heard. He says to me who bought milk, yet he won't believe that there is some until he sees it.'

$\pi(Q)$ = Someone bought milk.

Case 1: Truth reports

(15) AH but not SP believes π(Q):

When I left my appartment this morning, there was no milk left in the fridge.

\# Contrairement à Max, je pense que personne n'a acheté de lait. Lui me dit qui en a acheté.
\# 'Unlike Max, I think that no-one bought milk. He says to me who bought some.'

$\pi(Q)$ = Someone bought milk.

π must project not only to AH's presented beliefs but also to SP beliefs.

Case 2: Lie reports

- We now look at cases in which SP believes AH to be lying.

(16) AH lies and SP doesn't believe π(Q):

When I left my appartment this morning, there was no milk left in the fridge.

\# Je pense que personne n'a acheté de lait. Max vient me voir et me dit qui en a acheté. Comme à son habitude, il me ment.
\# 'I think that no-one bought milk. Max comes to me and says to me who bought some. As always, he is lying to me.'

$\pi(p)$ = Someone bought milk.

π must project not only to AH's presented beliefs but also to SP beliefs.

Projection out of embedded interrogatives

When an interrogative is embedded under 'say',
its existential presupposition π projects to the matrix level.

(17) When Q presupposes π(Q):

a. AH says to X whether Q.

b. *Presupposes:* π(Q).

Robust projection pattern observe across several types of embedded interrogatives, including 'who'-questions, 'what'-questions and polar questions involving strong presupposition triggers in English, French, German.

Presupposition projection from under other responsive predicates

Generalization about responsive predicates (Uegaki, 2021):

Presuppositions project from embedded declaratives in the same way that the existential presupposition does from embedded interrogatives, and presupposition triggers embedded therein.

Presupposition projection from under other responsive predicates

Under factive predicates like *know*, embedded presuppositions project both into the beliefs of AH and SP:

(18) a. Max knows that the unicorn danced.
Presupposes: There is a unique unicorn & it danced & Max believes that there is a unique unicorn.

b. Max knows who caught the unicorn.
Presupposes: There is a unique unicorn. & Someone caught it. & Max believes that there is a unique unicorn. (Uegaki, 2021)

Presupposition projection from under other responsive predicates

Under non-veridical predicates like *agree* and *be certain*, embedded presuppositions project into the beliefs of AH (and the beliefs of the *with*-argument):

(19) a. Max agrees with Kim that the unicorn danced.
Presupposes: Both Max and Kim believe that there is a unique unicorn & Kim believes that it danced.

b. Max agrees with Kim on who caught the unicorn.
Presupposes: Max and Kim believe that there is a unique unicorn.

(20) a. Max is certain that the unicorn danced.
Presupposes: Max believes there is a unique unicorn & it is compatible with Max's beliefs that it danced.

b. Max is certain (about) who caught the unicorn.
Presupposes: Max believes that there is a unique unicorn. (Uegaki, 2021)

Back to say

'Say' does not fit into this generalization, because:

- When it embeds a declarative, the presuppositions are anchored to AH's presented beliefs;
- When it embeds an interrogative, the presuppositions project up to the matrix level.

Summary: Projection properties of responsive predicates

'Say' behaves similarly to 'be certain' when it embeds declaratives (in contexts in which the AH is truthful):

	SP believes π	AH believes π
know that	✓	✓
know wh	✓	✓
be certain that	X	✓
be certain wh	X	✓
say that	X	✓
say wh	✓	✓

Table: Projection properties of three kinds of responsive predicates

Summary: Projection properties of responsive predicates

'Say' behaves like 'know' when it embeds interrogatives:

	SP believes π	AH believes π
know that	✓	✓
know wh	✓	✓
be certain that	X	✓
be certain wh	X	✓
say that	X	✓
say wh	✓	✓

Table: Projection properties of three kinds of responsive predicates

An ambiguity analysis?

To account for the parallel behavior between 'say' and 'be certain' on the one hand, and 'say' and 'know' on the other hand, one may want to analyze 'say' as being ambiguous between:

- an anti-rogative non-veridical predicate, where presuppositions project similarly to other non-veridical predicates:

  (21) $[\![\text{ say }]\!](p)(x)(w)$ is defined iff Pr-Dox$(x) \subseteq \pi(p)$

- and a rogative factive predicate, whose factive presupposition entails matrix presupposition projection, like with *know*:

  (22) $[\![\text{ say }]\!](Q)(x)(w)$ is defined iff $\pi(Q)$

Say vs. Know

However, we show that 'say' differs from 'know' and is not veridical when it embeds a question (see Tsohatzidis (1993) and Tsohatzidis (1997) on *tell* and Spector and Egré, 2015)

(23) a. Zoe said to me whom she saw in the fog. But it turned out that she was mistaken.
b. Zoe knows whom she saw in the fog. # But it turned out that she was mistaken.

(24) a. Zoe said to me which students passed. But I don't think she got it right.
b. Zoe knows which students passed. #But I don't think she got it right.

Proposal

- 'Say' is not a responsive predicate, but rather an anti-rogative predicate, which can only embed declarative clauses or DPs.
- When it appears to embed questions, it in fact takes a silent noun phrase that embeds the question.

(25) Zoe said ~~the answer to~~ who came/what happened/whether it was raining.

Preliminary proposal

- We will give a semantics of *say* that is unified for declaratives and interrogatives in its truth conditions, but differs in its definedness conditions
- Unified truth conditions:

(26) $[\![\text{say(x)(p)}]\!] = 1$ iff
$\exists e.saying(e) \wedge ag(e) = x \wedge content(e) = \lambda w.p(w) \wedge PrDox(x)(e) \subseteq p$

- p is a proposition corresponding to the content of the embedded declarative, or the answer to the embedded question
  - This guarantees p to be part of the presented belief set of the AH

Preliminary proposal

Diverging definedness conditions:

- Projection of presuppositions into AH's projected belief set when *say* embeds a declarative:

  (27) $[\![\text{ say }]\!](p)(x)$ is defined iff Pr-Dox$(x) \subseteq \pi(p)$

- Projection of presuppositions into SP's beliefs when *say* embeds an interrogative:

  (28) $[\![\text{ say }]\!](Ans((Q))(x)$ is defined iff $\pi(Ans(Q))$

We leave a full compositional analysis for future work.

Conclusions

- In this work, we investigate the projection behavior of *say* across different types of embedded clauses.
- There are a few apparent differences in the projection behavior between verbs of saying and other attitude predicates:
  - presupposition projection from under verbs of saying projects to the AH's presented beliefs and not to AH's actual beliefs;
  - the projection behavior of presuppositions from interrogatives differs from that of declaratives (as opposed to other attitude predicates, as in Uegaki's generalization)
- We propose a preliminary analysis of *say* in which we see unification of truth conditions across declarative and interrogative embedding, but diverging definedness conditions.

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