

# Coming and Going with a Shift in Perspective

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## 1 Indexical Presuppositions of *Come* and *Go*

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- *Come* and *go* describe movement of **Theme** from **Source** to **Goal**.

(1) *Rough semantics*<sup>1</sup>

$\llbracket \text{Natasha came/went to London} \rrbracket^{g,c}(t)(w)$   
 $= \exists e [ \text{MOVE}_w(e) \wedge \text{THEME}_w(e, \text{Natasha}) \wedge \text{GOAL}_w(e, \text{London}) \wedge \tau_w(e) \subseteq t ]$

(There's an event of moving in world  $w$  whose Theme is Natasha, whose Goal is London, and whose run time is included in the reference time  $t$  (=the time reference by the tense) in  $w$ )

- But *come* and *go* are not interchangeable.

(2) a. Natasha is coming here soon.  
b. #Natasha is going here soon.

- *Come* and *go* have different **indexical restrictions** on Goal (Fillmore 1997, Oshima 2006, 2007, Percus 2011):<sup>2</sup>

(3) *Indexical Restriction* (to be refined)

If the Goal is the Speaker or Hearer's **Home-Location (HL)**, *come* is used.  
Otherwise *go* is used.

(4) A location  $\ell$  is an entity  $x$ 's **Home-Location (HL)** at  $t$  in  $w$  if

- a.  $x$ 's location at  $t$  in  $w$  is  $\ell$ ; or  
b.  $x$  is somehow associated with  $\ell$  at  $t$  in  $w$ , e.g.  $x$  was born and grew up in  $\ell$  in  $w$ ,  $x$ 's close relative lives in  $\ell$  at  $t$  in  $w$ , etc. (Also known as  $x$ 's **home-base**).

(4b) is highly context-dependent, e.g. (5). I will try to focus on (4a).

(5) a. My friend came to my cousin's flat last week.  
b. ??My father came to my cousin's flat last week.

- **Situation:** John in London is talking to Hanako in Tokyo. Natasha is in Moscow.

1. If Goal = Speaker's HL, then *come*:

- (6) a. Natasha is **coming** to London next week.  
b. #Natasha is **going** to London next week.

2. If Goal = a third place, then *go*:

- (7) a. #Natasha is **coming** to Boston next week.  
b. Natasha is **going** to Boston next week.

<sup>1</sup> $g$  is an assignment function,  $c$  is a possible context,  $t$  is a time interval, and  $w$  is a possible world,  $\tau(e, w)$  is the run time of event  $e$  in  $w$ . A possible context has coordinates like  $s_c$  (the speaker of  $c$ ),  $t_c$  (the time of  $c$ ),  $w_c$  (the world of  $c$ ), etc.

<sup>2</sup>I put aside the 'tag-along' reading of *come* as in *You should come with me*, where the restriction is not about Goal. (The 'principal actor', which often corresponds to the *with*-phrase, needs to be Speaker or Hearer to get this interpretation, so *Mary should come with John* doesn't allow this reading)

- The indexical restrictions show the characteristic properties of presuppositions (Oshima 2006, 2007, Percus 2011).
  - **Presupposition failure:** I'm talking to Klaus on Skype.
    - (8) me: You should come to York.  
Klaus: Wait, I didn't know that you are in York!!
    - (9) Klaus: It looks like Andrew is going to Tromsø.  
me: Wait, I thought you were in Tromsø!!
  - **Projection tests:** All of the following presuppose that the speaker or hearer is in York. (We'll talk about attitude contexts below)
    - (10) a. Klaus isn't coming to York.  
b. Is Klaus coming to York?  
c. If Klaus comes to York, we'll get wasted.
- When Goal = Hearer's HL, either *come* or *go*. The latter seems to be preferred, at least for some speakers.
  - (11) **Situation:** John in London is talking to Hanako in Tokyo. Natasha is in Moscow.
    - a. ?Natasha is coming to Tokyo next week.
    - b. Natasha is going to Tokyo next week.

I deal with this by using the notion of Speaker's associates in  $c$  (cf. Oshima 2006, 2007). In any context  $c$ ,  $\mathbf{Speaker}^+(c)$  is a set of individuals containing Speaker of  $c$  and whoever is associated with them in  $c$ . Hearer might or might not be in it.

## 1.1 First try

Given the above differences, the presuppositions of *come* and *go* can be stated as follows.

- The presupposition of an expression  $\alpha$  is denoted by  $((\alpha))$ .
  - I omit the presupposition  $\mathbf{Source}_w(e) \neq \mathbf{Goal}_w(e)$ .
  - $t_c$  is the time coordinate of the context  $c$ .
- (12)  $((\text{Natasha came to London}))^{g,c}(t)(w)$   
 $= t < t_c \wedge \exists x \in \mathbf{Speaker}^+(c)[\mathbf{HL}_w(x, \text{London}, t_c)]$   
 ( $t$  is before  $t_c$  and there is  $x \in \mathbf{Speaker}^+(c)$  whose Home-Location is London at  $t_c$  in  $w$ )
- (13)  $((\text{Natasha went to London}))^{g,c}(t)(w)$   
 $= t < t_c \wedge \neg \exists x \in \mathbf{Speaker}^+(c)[\mathbf{HL}_w(x, \text{London}, t_c)]$   
 ( $t$  is before  $t_c$  and there is no  $x \in \mathbf{Speaker}^+(c)$  whose Home-Location is London at  $t_c$  in  $w$ )

## 1.2 Reference Time

- The above analysis fails to capture one important difference between *come* and *go*: *come* can refer to the reference time, *go* cannot (Fillmore 1997, Oshima 2006, 2007).

- If Goal is Speaker<sup>+</sup>'s HL at the reference time but not at  $t_c$ , either *come* or *go*.
  - (14) **Situation:** John in London is talking to Mary in London. Natasha is in Moscow.
    - a. I'll go to Amsterdam next week. And Natasha will come there on Wednesday.
    - b. I'll go to Amsterdam next week. And Natasha will go there on Wednesday.
- If Goal is Speaker<sup>+</sup>'s HL at  $t_c$  but not at the reference time, *come*.
  - (15) **Situation:** John and Mary are in a pub in York for the first time.
    - a. Natasha came here with her friends yesterday.
    - b. #Natasha went here with her friends yesterday.
- Fillmore's (1997) example on the same point:
  - (16)
    - a. When are you going to come home?
    - b. When are you going to go home?
    - (16a) is appropriate if Speaker is at home now, or will be home when Hearer comes back.
    - (16b) is appropriate if Speaker is not at home now. # if Speaker is at home now, but will be somewhere else, when Hearer comes back.

### 1.3 Second try

- (17)  $((\text{Natasha came to London}))^{g,c}(t)(w)$   
 $= t < t_c \wedge \exists x \in \text{Speaker}^+(c)[(\text{HL}_w(x, \text{London}, t_c) \vee \text{HL}_w(x, \text{London}, t))]$   
 ( $t$  is before  $t_c$  and there is  $x \in \text{Speaker}^+(c)$  whose Home-Location is London at  $t_c$  or at  $t$  in  $w$ )
- (18)  $((\text{Natasha went to London}))^{g,c}(t)(w)$   
 $= t < t_c \wedge \neg \exists x \in \text{Speaker}^+(c)[\text{HL}_w(x, \text{London}, t_c)]$   
 ( $t$  is before  $t_c$ ) and there is no  $x \in \text{Speaker}^+(c)$  whose Home-Location is London at  $t_c$  in  $w$ )

- Analysis so far:
  - *Come* presupposes: Goal = HL of some  $x \in \text{Speaker}^+(c)$  at the current time ( $t_c$ ) or reference time ( $t$ ).
  - *Go* presupposes Goal = HL of no  $x \in \text{Speaker}^+(c)$  at the current time ( $t_c$ ).
 This is essentially what Oshima (2006, 2007) proposes (see also Fillmore 1997).

### 1.4 Roadmap

- **Claim:** This semantics needs further refinements. I claim that *go* actually has no indexical presuppositions, but is only felicitous when *come* cannot be used instead.
  - §2 The unmarkedness of *go* and anti-presuppositions
  - §3 Perspective-shifting in attitude contexts and monsters
  - §4 More shifting and a solution to the puzzle
  - §5 Conclusions and further issues

## 2 Unmarkedness and anti-presuppositions

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- **Claim:** *Go* actually has no indexical presupposition.
- **Situation:** John talking to Mary in London about Natasha in Moscow.
  1. Negative sentences:
    - (19) a. Natasha didn't **go** anywhere last summer.  
b. ??Natasha didn't **come** anywhere last summer.
    - (19a) entails Natasha didn't go to London!! If *go* presupposed that Goal couldn't be London, this wouldn't be an entailment.
    - In fact, we observe this projection pattern in (19b): It can only be used to talk about John's HL now or at the reference time (e.g. John and Natasha were supposed to travel together, but Natasha didn't come along).
  2. Questions:
    - (20) John: Do you know where Natasha is **going** this summer?  
Mary: She's actually coming to London!
    - (21) #Do you know where Natasha is **coming** this summer?
  3. In ignorance contexts like (22), it is not commonly believed that Goal is a HL for Speaker<sup>+</sup>(*c*), so *go* is felicitous (and *come* is not felicitous).
    - (22) [A is texting to B]  
A: I don't know where you are now, but I'm **going**/#**coming** to 1369 to have coffee soon.  
B: That's great. I'm actually at 1369 now!
- This difference between *come* and *go* can be understood in terms of **anti-presuppositions**.

### 2.1 A quick review of anti-presuppositions

- **Anti-presuppositions** are competition-based inferences (just like scalar implicatures) involving a pair of words such that one has a stronger presupposition than the other (Percus 2006, 2010, Sauerland 2008, Singh 2011, Schlenker 2012).
- **Example:** *Think* has no factive presupposition, but competes with *know* and generates the inference that the complement clause is not presupposed to be true:
  - (23) John thinks that Mary is pregnant.  
↔  $\neg CB(\text{Mary is pregnant})$   
(It is not commonly believed that Mary is pregnant)
- One way to understand this is that the use of a 'presuppositionally stronger' alternative is forced, *if everything else is equal* (Heim 1991).<sup>3</sup>
  - (24) **Maximize Presupposition (MP):**  
An utterance of sentence *S* is infelicitous in a (local) context *c* iff there is an alternative *S'* to *S* such that:
    - a. The assertoric contents of *S* and *S'* are contextually equivalent in *c*;
    - b. The presuppositions of *S* and *S'* are both satisfied in *c*;
    - c. The presupposition of *S'* is stronger than the presupposition of *S*.

<sup>3</sup>See Percus (2006, 2010), Sauerland (2008), Singh (2011), Schlenker (2012), Spector & Sudo (2014) for refinements

- By assumption (23) competes with the version of the sentence with *know*:
 

(25) John knows that Mary is pregnant.

  - (25) has a factive presupposition and is presuppositionally stronger than (23).
  - (23) and (25) mean (roughly) the same thing. So if they are both felicitous, they will be contextually equivalent.
  - Consequently, MP demands the use of (25), whenever possible. Or to put it differently, (23) can only be used when the presupposition of (25) is not satisfied, i.e. it is not commonly believed that Mary is pregnant. (including when it is commonly believed that Mary is not pregnant)

- ‘Epistemic Step’: In some cases a stronger reading is derived.

(26) John thinks that I speak German.  $\rightsquigarrow$  I don’t speak German

This competes with (27):

(27) John knows that I speak German.

MP says (26) is felicitous only if It is not commonly believed that I speak German. This inference is often strengthened to ‘it is commonly believed that I don’t speak German’ (see Chemla 2008 for details).

- Anti-presuppositions interact with operators:

1. Negative sentences:

- (28) [We all know that John won the race]
- None of the runners thinks that he won.
  - #None of the runners knows that he won.

(28b) has a universal presupposition that every runner won (which cannot be true), so consequently, (28a) is felicitous in contexts where it is not commonly believed that every runner won, which is trivially satisfied.

2. Questions:

- (29) Q: Who thought he’d won the race?  
 Q’: #Who knew that he’d won the race?  
 —A: John actually knew that he’d won the race.

Presuppositions universally project through wh-phrases, so (29Q’) presupposes that everybody won the race. Then, (29Q:) is felicitous in contexts where it is not commonly believed that every runner won.

## 2.2 Come vs. Go

- **Idea:** *Go* to *come* is *think* to *know*. A sentence with *go* has no indexical presuppositions, but it competes with *come*, which presupposes Goal to be HL of some  $x \in \text{Speaker}^+(c)$ . MP dictates that *go* is infelicitous if the presupposition of *come* is satisfied.
- Simple sentences

- (30) **Situation** : John and Mary are in London. Natasha is in Moscow.
- #Natasha is going to London next week.
  - Natasha is coming to London next week.

(30b) is felicitous in this context, so (30a) is made infelicitous, although (30a) has no indexical presuppositions.

- (31) **Situation** : John and Mary are in London. Natasha is in Moscow.  
 a. Natasha is going to Boston next week.  
 b. #Natasha is coming to Boston next week.

(31b) is infelicitous, so (31a) is felicitous.

- Negative sentences

- (19) a. Natasha didn't **go** anywhere last summer.  
 b. ??Natasha didn't **come** anywhere last summer.

is infelicitous, so is felicitous. Notice in particular that has a universal presupposition that all the relevant places are HLs of some  $x \in \text{Speaker}^+(c)$  (which is the usual projection pattern of presuppositions in this context). So if the domain of quantification contains one place that is not, can be felicitously used.

- Questions

- (20) Do you know where Natasha is going this summer?  
 (21) #Do you know where Natasha is coming this summer?

The explanation here is analogous. (21) is infelicitous, because it presupposes that the domain of quantification only contains HLs of Speaker's associates'.

- In an ignorance context like (22), *come* is infelicitous, so *go* is used as the default option.

### 2.3 A Puzzle

- In some cases, either *come* or *go* can be used.

- (32) I was in Paris from Friday to Sunday last week.  
 a. Natasha **came** there on Saturday.  
 b. Natasha **went** there on Saturday.

- (33) a. I'll **come** to the station to pick you up.  
 b. I'll **go** to the station to pick you up.

- (34) a. She'll **come** there to meet you.  
 b. She'll **go** there to meet you.

(Fillmore 1997)

- If the presupposition of *come* is as in (17), *go* can only be used if it is not commonly believed that Goal is HL for no  $x \in \text{Speaker}^+(c)$  at the current time or at the reference time.
- This is violated in these contexts (as evidenced by the felicity of the (a)-examples).
- **Claim:** Anti-presuppositions are computed under one particular 'perspective', and that the current time vs. reference time distinction is a kind of **perspective-shifting**.

## 3 Perspective-Shifting in Attitude Contexts and Monsters

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- **Observation:** The indexical presuppositions **shift** in certain contexts.
- For example, in speech reports, the indexical presuppositions may be evaluated relative to the original utterance context (Oshima 2006, 2007, Percus 2011)
- **Situation:** John and Mary are talking in London. Natasha is in Moscow and Guillaume is in Paris.

1. Goal = current speaker's HL

- (35) a. Guillaume said that Natasha is **coming** to London next week.  
b. Guillaume said that Natasha is **going** to London next week.

- Unlike in (6b), *go* is possible here, because the indexical presupposition shifts to the reported context, where Guillaume was the speaker.
- Perspective shifting is optional. Without it *come* is fine.

2. Goal = original speaker's HL

- (36) a. Guillaume said that Natasha is **coming** to Paris next week.  
b. Guillaume said that Natasha is **going** to Paris next week.

Here, *come* is possible, because of shifting.

• Other shifting contexts (cf. Bylinina, McCready & Sudo 2014, 2015):

- *If*-clauses can be relative to the perspective of the subject of the consequent.

- (37) a. If Natasha **comes** to Paris, Guillaume will take her to the Louvre.  
b. If Natasha **goes** to Paris, Guillaume will take her to the Louvre.

- VP-internal material can be relative to the perspective of the subject.

- (38) a. Guillaume takes anyone who **comes** to Paris to the Louvre.  
(i) Guillaume takes anyone who **goes** to Paris to the Louvre.

- **Claim in §4:** Tense also optionally shifts the perspective to the reference time.

• Previous analyses of the shifting behaviour of *come* and *go* in attitude contexts:

- Oshima (2006, 2007) analyses perspective-shifting as a result of presupposition projection. He assumes that attitude predicates are sometimes presupposition holes. This is an interesting hypothesis, but it makes problematic predictions about presuppositions in attitude contexts (cf. Percus 2011). Also it's unclear how to extend his account to other shifting environments.<sup>4</sup> This is not very useful for our purposes.

- Percus (2011) likens perspective-shifting to **indexical-shifting**. I'll pursue this route and extend his analysis to non-attitude cases.

### 3.1 A Quick Review of Indexical-Shifting

- In some languages (though not in English or German), indexical expressions like *me, you, here now* are not always evaluated against the current conversational context (Schlenker 1999, 2003, Anand & Nevins 2004, Anand 2006, Sudo 2012, Podobryaev 2014, Shklovsky & Sudo 2014).

- E.g. In the following Uyghur sentence, [1sg] is interpreted as Ahmet (indexical-shifting is obligatory in Uyghur).

- (39) Ahmet [ *pro*<sub>Ahmet</sub> kim-ni jaxshi kör-imen ] didi?  
Ahmet [ *pro* who-acc well see-imperf.1sg ] said  
'Who did Ahmet say that he likes?'

In languages like English, first person is always the current speaker, so (40) doesn't mean the same thing as (39).

- (40) Who did Ahmet say that I like?

<sup>4</sup>Oshima seems to think that attitude contexts and other shifting contexts should be given separate accounts (Oshima 2006:123, Oshima 2007:fn.4), and does not give an explicit account of the latter.

- Anand & Nevins (2004) and Anand (2006) on indexical-shifting:
  - A possible context  $c$  (of type  $k$ ) is a tuple  $(s_c, h_c, t_c, w_c)$  (Speaker, Hearer, Time, World).
  - The semantics-pragmatics interface demands that  $c$  represents the current context of utterance (in normal conversational contexts):

(41) When a speaker  $s$  utters  $\phi$  to  $h$  at  $t$  in  $w$  (with assignment  $g$ ), the assertoric content of  $\phi$  is evaluated as  $\llbracket \phi \rrbracket^{g,(s,h,t,w)}(s, h, t, w)$  and the presupposition of  $\phi$  as  $((\phi))^{g,(s,h,t,w)}(s, h, t, w)$ .

- Indexical pronouns refer to a coordinate of  $c$ :

(42) a.  $\llbracket \text{me} \rrbracket^{g,c} = s_c$       b.  $\llbracket \text{you} \rrbracket^{g,c} = h_c$

- By assumption English has no operator that shifts the context index, so indexical pronouns are always evaluated relative to the current context of utterance, no matter where they appear.
- Languages like Uyghur have an operator ( $\mathcal{M}$ ) that shifts the context index. Such an operator is called a (Kaplanian) **monster**.

(43)  $\llbracket \mathcal{M} \alpha \rrbracket^{g,c} = \lambda k. \llbracket \alpha \rrbracket^{g,k}(k)$

By assumption  $\mathcal{M}$  only appears in (a subset of) attitude contexts. To simplify, I ignore tense in this section.

- Embedded clauses denote functions of type  $(k, t)$  (alt.: generalised centred worlds), with or without  $\mathcal{M}$ . With  $\mathcal{M}$ , the referents of indexicals shift.

(44)  $\llbracket \text{that I like you} \rrbracket^{g,c}(k) = \text{like}_{w_k}(s_c, h_c, t_k)$

(45)  $\llbracket \mathcal{M} \text{ that I like you} \rrbracket^{g,c}(k) = \text{like}_{w_k}(s_k, h_k, t_k)$

- Attitude predicates take functions of type  $(k, t)$ .

(46)  $\llbracket \text{John said that I like you} \rrbracket^{g,c}(c') = \text{SAY}_{t_{c'}, w_{c'}}(j)(\lambda k. \text{like}_{w_k}(s_c, h_c, t_k))$

(47)  $\llbracket \text{John said } \mathcal{M} \text{ that I like you} \rrbracket^{g,c}(c') = \text{SAY}_{t_{c'}, w_{c'}}(j)(\lambda k. \text{like}_{w_k}(s_k, h_k, t_k))$

The definition of **SAY** is a little convoluted (to take care of attitude *de se*).

(48)  $\text{SAY}_{t_{c'}, w_{c'}}(x)(p)$  iff in  $w_{c'}$ , by virtue of what  $x$  said at  $t_{c'}$  in  $w_{c'}$ ,  $x$  characterises their own context of utterance as a context  $k$  such that  $p(k) = 1$ .

- **Punchline:** Indexicals refer to the context index  $c$ . The monster  $\mathcal{M}$  shifts it to a different one which the attitude verb requires to represent the reported context.

### 3.2 Percus on Perspective-Shifting under Attitude

- **Idea:** Perspective-sensitive items like *come* refer to another context index.
- I'll reconstruct Percus's system with modifications.
- Interpretation is relativized to an assignment  $g$ , and *two* possible contexts  $c_1, c_2$ .
- Indexical pronouns refer to the first context.

(49) a.  $\llbracket \text{me} \rrbracket^{g,c_1,c_2} = s_{c_1}$       b.  $\llbracket \text{you} \rrbracket^{g,c_1,c_2} = h_{c_1}$

- *Come* refers to the second context  $c_2$ :

(50)  $((\text{Natasha came to London}))^{g,c_1,c_2}$   
 $= \lambda k. \exists x \in \text{Speaker}^+(c_2)[\text{HL}_{w_{c_2}}(s_{c_2}, \text{London}, t_{c_2})]$



- It's crucial (50) only refers to the coordinates of  $c_2$ . In particular,  $t_{c_2}$  and  $w_{c_2}$  come from  $c_2$ . As we will see, this derives the projection facts right.
- The reference time is not mentioned in the presupposition. I'll account for this by the perspective-shifting operator later.

- The semantics-pragmatics interface ensures that at the utterance level, both context indices are the utterance context:

(51) When a speaker  $s$  utters  $\phi$  to  $h$  at  $t$  in  $w$  (with assignment  $g$ ), evaluate the assertoric content of the sentence as  $\llbracket \phi \rrbracket^{g,(s,h,t,w),(s,h,t,w)}(s, h, t, w)$  and the presupposition as  $\llbracket (\phi) \rrbracket^{g,(s,h,t,w),(s,h,t,w)}(s, h, t, w)$ .

- The reason why we need two context indices is because indexical pronouns don't shift in English, but the indexical presupposition of *come* does shift.
- Perspective-shifting is enabled by shifting the second index. Let's postulate two monsters,  $\mathcal{M}_1$  and  $\mathcal{M}_2$ .

(52)  $\llbracket \mathcal{M}_1 \alpha \rrbracket^{g,c_1,c_2} = \lambda k. \llbracket \alpha \rrbracket^{g,k,c_2}(k)$

(53)  $\llbracket \mathcal{M}_2 \alpha \rrbracket^{g,c_1,c_2} = \lambda k. \llbracket \alpha \rrbracket^{g,c_1,k}(k)$

- $\mathcal{M}_1$  is used for indexical-shifting, only available in languages like Uyghur.
- $\mathcal{M}_2$  is used for perspective-shifting, available in (probably) all languages.
- We account for the behaviour of indexical presuppositions in speech reports with  $\mathcal{M}_2$ .
- Following Heim (1992), we assume that attitude predicates are presupposition filters. (see also Sudo 2014; we won't go into the details here)

(54) 'X believes/said/hopes  $\phi$ ' presupposes that X believes the presuppositions of  $\phi$  to be true.

(55) Han is saying that Natasha quit smoking.  
 $\rightsquigarrow$  Hans believes that Natasha used to smoke.

- Non-shifted interpretation of *come* (without  $\mathcal{M}_2$ ):

(56) a.  $\llbracket (\text{Hans is saying that Natasha came to London}) \rrbracket^{g,c_1,c_2}(c')$   
 $= \text{DOX}_{t_{c'},w_{c'}}(h)(\lambda k. \exists x \in \text{Speaker}^+(c_2)[\text{HL}_{w_{c_2}}(x, \text{London}, t_{c_2})])$

b.  $\llbracket \text{Hans is saying that Natasha came to London} \rrbracket^{g,c_1,c_2}(c')$   
 $= \text{SAY}_{t_{c'},w_{c'}}(h) \left( \lambda k. \exists e \left[ \begin{array}{l} \text{MOVE}_{w_k}(e) \wedge \text{THEME}_{w_k}(e, \text{Natasha}) \wedge \\ \text{GOAL}_{w_k}(e, \text{London}) \end{array} \right] \right)$

(57)  $\text{Dox}_{t_{c'},w_{c'}}(x)(p)$  iff in  $w_{c'}$ , by virtue of what  $x$  believes at  $t_{c'}$  in  $w_{c'}$ ,  $x$  characterises their own context of utterance as a context  $k$  such that  $p(k) = 1$ .

Crucially, since the presupposition of *come* is indexical, (57a) is true just in case  $\exists x \in \text{Speaker}^+(c_2)[\text{HL}_{w_{c_2}}(x, \text{London}, t_{c_2})]$ . So effectively the presupposition projects out. This is a good result, because the sentence doesn't presuppose that Hans believes that London is HL for some  $x \in \text{Speaker}^+(c_2)$ .

- Shifted interpretation (with  $\mathcal{M}_2$ ):

(58) a.  $\llbracket (\mathcal{M}_2 \text{ that Natasha came to London}) \rrbracket^{g,c}$   
 $= \lambda k. \exists x \in \text{Speaker}^+(k)[\text{HL}_{w_k}(x, \text{London}, t_k)]$

$$\begin{aligned} \text{b. } & \llbracket \mathcal{M}_2 \text{ that Natasha came to London} \rrbracket^{g,c}() \\ & = \lambda k. \exists e \left[ \begin{array}{l} \mathbf{MOVE}(e, w_k) \wedge \mathbf{THEME}(e, \text{Natasha}, w_k) \wedge \\ \mathbf{GOAL}(e, \text{London}, w_k) \end{array} \right] \end{aligned}$$

The presupposition is now relative to  $c'$  just as the assertoric content. DOX is no longer vacuous.

$$\begin{aligned} (59) \quad \text{a. } & ((\text{John is saying that Natasha came to London}))^{g,c_1,c_2}(c') \\ & \mathbf{DOX}_{t_{c'},w_{c'}}(j)(\lambda k. \exists x \in \text{Speaker}^+(k)[\mathbf{HL}_{w_k}(x, \text{London}, t_k)]) \\ \text{b. } & \llbracket \text{John is saying that Natasha came to London} \rrbracket^{g,c_1,c_2}(c') \\ & \mathbf{SAY}_{t_{c'},w_{c'}}(j) \left( \lambda k. \exists e \left[ \begin{array}{l} \mathbf{MOVE}_{w_k}(e) \wedge \mathbf{THEME}_{w_k}(e, \text{Natasha}) \wedge \\ \mathbf{GOAL}_{w_k}(e, \text{London}) \end{array} \right] \right) \end{aligned}$$

In words, this presupposes that John believes that London is HL for he himself and/or his associates at the time and world of his utterance.

- **Punchline:** We have two context indices, one for indexical items and one for perspectival items, both of which are shifted by monsters.

## 4 Solution to the Unmarkedness Puzzle

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### 4.1 Shifting to the Reference Time

- I'll extend the above system to other shifting contexts. In particular, I assume that tense optionally shifts the temporal parameter of  $c_2$  to the reference time.
- Here I assume the pronominal theory of tense (Partee 1973, Heim 1994, Abusch 1997, Sharvit 2014).<sup>5</sup>

$$(60) \quad \begin{aligned} \text{a. } & ((\text{PRES}_i))^{g,c_1,c_2} = g(i) \circ t_{c_1} \quad (g(i) \text{ overlaps with } t_{c_1}) \\ \text{b. } & \llbracket \text{PRES}_i \rrbracket^{g,c_1,c_2} = g(i) \end{aligned}$$

$$(61) \quad \begin{aligned} \text{a. } & ((\text{PAST}_i))^{g,c_1,c_2} = g(i) < t_{c_1} \quad (g(i) \text{ precedes } t_{c_1}) \\ \text{b. } & \llbracket \text{PAST}_i \rrbracket^{g,c_1,c_2} = g(i) \end{aligned}$$

- The unshifted interpretation looks like (62). The content of the indexical presupposition is essentially the same as before.

$$\begin{aligned} (62) \quad \text{a. } & ((\text{Natasha PAST}_i \text{ come}))^{g,c_1,c_2}(k) \\ & = g(i) < t_{c_1} \wedge \exists x \in \text{Speaker}^+(c_2)[\mathbf{HL}_{w_{c_2}}(x, \text{London}, t_{c_2})] \\ \text{b. } & \llbracket \text{Natasha PAST}_i \text{ come} \rrbracket^{g,c_1,c_2}(k) \\ & = \exists e \left[ \begin{array}{l} \mathbf{MOVE}_{w_k}(e) \wedge \mathbf{THEME}_{w_k}(e, \text{Natasha}) \wedge \\ \mathbf{GOAL}_{w_k}(e, \text{London}) \wedge \tau_{w_k}(e) \subseteq g(i) \end{array} \right] \end{aligned}$$

- The tense monster  $\mathcal{M}_t$  shifts the tense-coordinate of the second context index (cf. Schlenker's 2014 super-monsters).<sup>6</sup>

$$(63) \quad \llbracket \mathcal{M}_t \alpha \rrbracket^{g,c_1,c_2} = \lambda t'. \llbracket \alpha \rrbracket^{g,c_1,(s_{c_2},h_{c_2},t',w_{c_2})}(t')$$

This operator combines with AspP and shifts the indexical presupposition to the reference time  $g(i)$ :

<sup>5</sup>I don't deny other theoretical possibilities, but it needs to be worked out how to implement the current idea in other theories of tense. I'll also ignore Sequence-of-Tense and future.

<sup>6</sup>Here we depart from Kaplan's ontology of possible contexts, which assumes each possible context to represent a possible conversational context. As far as I can see, this is a purely ontological issue and does not cause much empirical trouble, though it's not an unimportant issue.

- Example: Unlike in (62), the indexical presupposition of (64) is relative to the reference time  $g(i)$ .

$$(64) \quad \begin{aligned} \text{a.} & \quad ((\text{Natasha PAST}_i; \mathcal{M}_t \text{ come}))^{g, c_1, c_2}(k) \\ & = g(i) < t_{c_1} \wedge \exists x \in \text{Speaker}^+(c_2) [\mathbf{HL}_{w_{c_2}}(x, \text{London}, g(i))] \\ \text{b.} & \quad \llbracket \text{Natasha PAST}_i; \mathcal{M}_t \text{ come} \rrbracket^{g, c_1, c_2}(k) \\ & = \exists e \left[ \begin{array}{l} \mathbf{MOVE}(e, w_k) \wedge \mathbf{THEME}(e, \text{Natasha}, w_k) \wedge \\ \mathbf{GOAL}(e, \text{London}, w_k) \wedge \tau(e, w_k) \subseteq g(i) \end{array} \right] \end{aligned}$$

## 4.2 Competition under a Perspective

- Recall the puzzle: in some contexts either *come* and *go* can be used.

$$(65) \quad \begin{aligned} \text{a.} & \quad \text{I'll come/go to the station to pick you up.} \\ \text{b.} & \quad \text{Natasha came/went to Paris, when I was there.} \end{aligned}$$

- **Idea:**

- The perspective based on the current time is taken when  $\mathcal{M}_t$  is not there.
- The perspective based on the reference time is taken when  $\mathcal{M}_t$  is there.
- The competition between *come* vs. *go* is computed under one perspective at a time.

- **Examples:**

$$(66) \quad \text{I'll go to the station to pick you up.}$$

This doesn't involve  $\mathcal{M}_t$ , so the perspective is based on the current utterance context. Since Speaker nor their associates are at the station now, *go* is licensed.

$$(67) \quad \text{I'll } \mathcal{M}_t \text{ come to the station to pick you up.}$$

This does involve  $\mathcal{M}_t$  and the perspective is shifted to a future time. It is commonly known that Hearer, an associate of Speaker (cf. the discussion at the end), will be at the station at the future time, so *come*.

- So optionality is only apparent. In (66) *go* must be used, and in (67) *come* must be used.

## 4.3 Ban on vacuous uses of monsters

- Recall also that *go* cannot be relative to the reference time.
  - Assumption: Utterances with *go* never involve  $\mathcal{M}_t$ .
  - Rationale: Since *go* has no indexical presupposition,  $\mathcal{M}_t$  would have no direct semantic effects on *go* itself. Such vacuous occurrences are banned.

- **Examples:**

$$(68) \quad \# \text{Natasha PAST go here yesterday.}$$

It is commonly known that Speaker and Hearer are in Goal at the current time, so MP requires *come* to be used.

$$(69) \quad * \text{Natasha PAST } \mathcal{M}_t \text{ go here yesterday.}$$

MP would be satisfied in (69), but this parse is not possible, due to the vacuous use of  $\mathcal{M}_t$ .

- In previous studies the difference between *come* and *go* about whether their indexical presuppositions can refer to the reference time was merely a lexical stipulation. Our unmarked semantics for *go* together with the ban on vacuous uses of monsters achieves a deeper explanation. In particular it makes a prediction that in all languages *go* (the unmarked one) cannot refer to the reference time.

- But there's a remaining puzzle. *Go* does shift in attitude contexts.

- (70) a. Guillaume said that Natasha is coming to London.  
 b. Guillaume said that Natasha is going to London.

So we need to say that the attitude monster  $\mathcal{M}_2$  is not subject to the ban on vacuous uses.

#### 4.4 Other Shifting Contexts (and some open problems)

- Other shifting environments can be given similar analyses (Bylinina et al. 2014). (71) accounts for shifting to the subject, as in (72).

$$(71) \quad \llbracket \mathcal{M}_s \alpha \rrbracket^{g, c_1, c_2} = \lambda x. \llbracket \alpha \rrbracket^{g, c_1, (x, h_{c_2}, t_{c_2}, w_{c_2})}(x)$$

(72) Natasha  $\mathcal{M}_s$  takes anybody who comes to Moscow to GMU.

- This actually requires some more refinements, because if this were available in the position indicates in (72), the verb could be relative to the subject's perspective. This is wrong, e.g. (6b) is infelicitous.
- Rather the shifting to the subject's perspective can only take place within a subconstituent of the VP-internal material, e.g. a relative clause on the object.
- One possibility is to assume that  $\mathcal{M}_s$  is a pronominal referring back to the subject, and its distribution is somehow restricted.

$$(73) \quad \llbracket \mathcal{M}_{s,i} \alpha \rrbracket^{g, c_1, c_2} = \llbracket \alpha \rrbracket^{g, c_1, (g(i), h_{c_2}, t_{c_2}, w_{c_2})}$$

I leave this issue open here (see Bylinina et al. 2014, 2015 for some discussion).

- Unlike the tense monster and like the attitude monster, the subject monster is not subject to the ban on vacuous uses.

- (74) a. Guillaume threw a farewell party for a friend of his who was coming to London in September.  
 b. Guillaume threw a farewell party for a friend of his who was going to London in September.

- The conditional data (37) is in principle amenable to the same analysis with some syntactic assumptions (see Chierchia 1995 for related discussion).

## 5 Conclusions

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- Claims and Conclusions:
  - *Come* has an indexical presupposition, but *go* doesn't.
  - *Go* competes with *come*. *Go* can be felicitously used only if *come* cannot be felicitously used instead.
  - The indexical presupposition of *come* shifts with monster operators (perspective shifting).

- Cross-linguistic variation on the use of *come* and *go*:
  1. In some languages motion towards the Speaker's HL and motion towards the the Hearer's HL are expressed by distinct verbs, e.g. in Palauan (Austronesian) (Nakazawa 2007):
    - (75) a. *me*      if Goal = Speaker's HL
    - b. *eko*      if Goal = Hearer's HL
    - c. *mo*      if neither ( $\approx$  *go*)

Remaining question: Does *mo* competes with *me* and *eko* at the same time?
  2. Cross-linguistic variation on the conditions on shift to the addressee (Nakazawa 1990, 2007, Oshima 2006, 2007).
    - In English (and German, Italian, etc.), when Speaker is moving towards Hearer, *come* is preferred.
      - (76) a. I'll **come** to your office later.
      - b. #**go** to your office later.
    - In Japanese and Korean, *go* in such contexts (some dialects of Japanese work like English, apparently):
      - (77) atode ofisu-ni {#ki / <sup>ok</sup>iki} masu.  
       later office-to {#come / go} polite  
       'I'll come to your office later.'
    - In English, German, Japanese and Korean, when a third person is moving towards the hearer, **come** is at least a possibility.
      - (78) Natasha is **coming** to your office now.

In Mandarin Chinese, Thai and Shibe (Altaic), it must be *go* in such cases (Nakazawa 2007).
  3. Nakazawa (2007) also observes that in Shibe, *come* can only refer to the Speaker's location at the utterance time, while in Mandarin Chinese, *come* can refer to the Speaker's HB at the utterance or reference time. So in Shibe, *come* is completely indexical. I don't know if it shifts at all.
- *Bring vs. take*, benefactives in Japanese, etc. also shift like *come vs. go* (Fillmore 1997).

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