

Come and Go*

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1 Indexical Presuppositions of *Come* and *Go*

- *Come* and *go* describe movement of an **Entity/Theme** from a **Source** to a **Goal**.
- Rough semantics (to be refined):

$$(1) \quad \llbracket \text{Sergei came/went to London} \rrbracket^{g,c}(t)(w) = \exists e \left[\begin{array}{l} \text{MOVE}(e, w) \wedge \\ \text{THEME}(e, \text{Sergei}, w) \wedge \\ \text{GOAL}(e, \text{London}, w) \wedge \\ \tau(e, w) < t \end{array} \right]$$

($\tau(e, w)$ = the run time of e in w)

- *Come* and *go* have different **indexical restrictions** on the Goal (Fillmore 1997, Oshima 2006, 2007, Percus 2011):

- (2) *Indexical Restriction* (to be refined)
If the Goal is the Speaker or Hearer's **Home-Base (HB)**, *come* is used.
Otherwise *go* is used.
- (3) A location ℓ is an entity x 's **Home-Base (HB)** at t in w if
- x 's location at t in w is ℓ ; or
 - x is somehow associated with ℓ at t in w (e.g. x was born and grew up in ℓ in w , x 's close relative lives in ℓ at t in w , etc.).

I won't try to be clear about what counts as a HB in this talk. In particular the second clause (3b) seems to be highly context-dependent.¹

- **Example situation 1:** John is in London, Masa is in Tokyo, Sergei is in Moscow.
 - Speaker = John in London
 - Hearer = Masa in Tokyo
 - Entity = Sergei moving from Moscow

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

- (4) a. Sergei is **coming** to London next week.

*This is part of an on-going project with Lisa Bylinina and Eric McCready. I thank Laura Aldridge for English judgments. All errors are mine. (I corrected some small details after the workshop, though not all comments I got at the workshop have been implemented; this will be done in our ESSLLI course material)

¹I'm abusing the notion of 'home-base' here. Fillmore (1997) only means the latter case, and not the current location.

- #Sergei is **going** to London next week.
2. If Goal = Hearer's HB, then *come* or *go*:²
- Sergei is **coming** to Tokyo next week.
 - ?Sergei is **going** to Tokyo next week.
3. If neither, then *go* (unless a salient individual is in the Goal; more on this later):
- #Sergei is **coming** to Milan next week.
 - Sergei is **going** to Milan next week.

- Oshima (2006, 2007) and Percus (2011) analyse the indexical restrictions as presuppositions. I think this makes sense.

- **Presupposition failure:** I'm talking to Klaus on Skype.

(7) me: You should come to Göttingen.
Klaus: Wait, I didn't know that you are in Göttingen!!

(8) 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 Göttingen. (We'll talk about attitude contexts below)

- Klaus isn't coming to Göttingen.
- Is Klaus coming to Göttingen?
- If Klaus comes to Göttingen, we'll get trashed.

- First try:

(10) $\llbracket \text{Sergei came to London} \rrbracket^{g,c}(t)(w)$
a. Presupp: $\text{HB}(s_c, \text{London}, t_c, w) \vee \text{HB}(h_c, \text{London}, t_c, w)$
b. Asser: (1)

(11) $\llbracket \text{Sergei went to London} \rrbracket^{g,c}(t)(w)$
a. Presupp: $\neg \text{HB}(s_c, \text{London}, t_c, w) \wedge \neg \text{HB}(h_c, \text{London}, t_c, w)$
b. Asser: (1)

- I'll omit the presupposition that $\text{Source}(e, w) \neq \text{Goal}(e, w)$.

1.1 Reference Time

- There's one difference between *come* and *go*: *come* can refer to the reference time, *go* cannot (Fillmore 1997, Oshima 2006, 2007).

- **Example situation 2:** John in London, talking to Mary in London. Sergei lives in Moscow.

(12) I was in Paris from Friday to Sunday last week.

²The contrast here is probably not as sharp as in the previous case. But we simplify it here and assume that *go* is not felicitous. (I don't entirely believe this; see Oshima 2006, 2007 for an interesting take on this)

- a. Sergei **came** there on Saturday,
- b. Sergei **went** there on Saturday,

- c. #I am going to Moscow next week.
- d. Tomorrow, I'll go to the station to pick you up.

(12a) is relative to the Speaker and Hearer's location on last Saturday. (12b) is relative to the Speaker and Hearer's location now.

- (13) [John and Mary are in a restaurant]
- a. Sergei **came** here with his friends yesterday.
 - b. #Sergei **went** here with his friends yesterday.

(13a) references the current location. (13b) shows that *went* cannot be relative to the Speaker or Hearer's location yesterday.

Another example:

- (14) a. When are you going to come home?
 b. When are you going to go home? (Fillmore 1997)

- o (14a) is appropriate if the Speaker is at home now, or will be home when the Hearer comes back.
- o (14b) is appropriate if the Speaker is not at home now. Strange if the Speaker is at home now, but will be somewhere else, when the Hearer comes back.

• Let's revise our semantics as follows.

- (15) $\llbracket \text{Sergei came to London} \rrbracket^{g,c}(t)(w)$
- a. Presupp: $\left[\begin{array}{l} t < t_c \wedge \text{HB}(s_c, \text{London}, t_c, w) \vee \text{HB}(h_c, \text{London}, t_c, w) \vee \\ \text{HB}(s_c, \text{London}, t, w) \vee \text{HB}(h_c, \text{London}, t, w) \end{array} \right]$
 - b. Asser: $\exists e \left[\begin{array}{l} \text{MOVE}(e, w) \wedge \text{THEME}(e, \text{Sergei}, w) \wedge \\ \text{GOAL}(e, \text{London}, w) \wedge \tau(e, w) < t \end{array} \right]$

- (16) $\llbracket \text{Sergei went to London} \rrbracket^{g,c}(t)(w)$
- a. Presupp: $\neg \text{HB}(s_c, \text{London}, t_c, w) \wedge \neg \text{HB}(h_c, \text{London}, t_c, w)$
 - b. Asser: $\exists e \left[\begin{array}{l} \text{MOVE}(e, w) \wedge \text{THEME}(e, \text{Sergei}, w) \wedge \\ \text{GOAL}(e, \text{London}, w) \wedge \tau(e, w) < t \end{array} \right]$

• (When Speaker = Theme, because of the presupposition that **Source**(*e, w*) \neq **Goal**(*e, w*), it cannot be that the Speaker is in the Goal throughout the reference time. This is a good prediction.)

• **Example situation 3:** Yasu in East London, talking to Sergei in Moscow:

- (17) a. #I am coming to Barcelona in August.
 b. I came to London two years ago.
 c. I am coming to Moscow next week.
 d. Tomorrow, I'll come to the station to pick you up.

- (18) a. I am going to Barcelona in August.
 b. #I went to London two years ago.

1.2 Outlook

• **Summary so far:**

- o *Come* presupposes the Goal is the Speaker's or Hearer's Home-Base at the current time or reference time.
- o *Go* presupposes the Goal is neither the Speaker's nor Hearer's Home-Base at the current time.

This is close to what Oshima (2006, 2007) proposes (see also Fillmore 1997).

• **Claim:** This semantics needs to be refined a bit further. Especially, we need to factor in **perspective-shifting**.

• **Plan:**

- §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 Some more fun stuff to think about

2 Unmarkedness and anti-presuppositions

• **Claim:** *Go* actually has no indexical presupposition.

• **Example situation 4:** John talking to Mary in London about Sergei in Moscow.

1. Negative sentences:

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

- o Notice that (19a) entails Sergei didn't go to London! If *go* presupposed that the goal couldn't be London, this wouldn't be an entailment, because it'd be about distinct from the Speaker's and Hearer's HB.
- o In fact, we observe this projection pattern in (19b): It can only be used to talk about John's location now or locations at the reference time (e.g. John and Sergei were supposed to travel together, but Sergei didn't come along).

2. Questions:

- (20) John: Do you know where Sergei is **going** this summer?
 Mary: He's actually coming to London!

- (21) #Do you know where Sergei is **coming** this summer?

3. Ignorance/Presupposition Failure:

- (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!

- The behaviour of *go* patterns like so-called **anti-presuppositions**.

2.1 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* generating the inference that the complement is not presupposed to be true:

- (23) John thinks that Mary is pregnant.
 ~→ We don't know whether Mary is pregnant.

- One way to understand this is that the use of a 'presuppositionally stronger' alternative is forced, *if everything else is equal*.

- (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:
- The assertoric contents of *S* and *S'* are contextually equivalent in *c*;
 - The presuppositions of *S* and *S'* are both satisfied in *c*;
 - The presupposition of *S'* is stronger than the presupposition of *S*.
- (Heim 1991; see Percus 2006, 2010, Sauerland 2008, Singh 2011, Schlenker 2012 for refinements)

- By assumption (23) competes with the version of the sentences 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)

- Side remark ('Epistemic Step'): In some cases we derive a stronger reading:

- (26) John thinks that I speak German.
 ~→ 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. Given that the speaker (usually) knows which languages they speak, 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]
 a. None of the runners thinks that he won.
 b. #None of the runners knows that he won.

Notice that (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 Puzzle about the Anti-Presupposition of *Go*

- **Idea:** *Go* to *come* is *think* to *know*. I.e. *Go* actually has no presuppositions, but because MP demands *come* to be used whenever possible, *go* is only felicitous when *come* cannot be used.
- For simple sentences like (30a), MP generates the anti-presuppositional inference based on (30b).

- (30) a. Sergei went to London.
 b. Sergei came to London.

(30b) presupposes that London is the Speaker's and/or Hearer's HB. So (30a) is only felicitous if this is not commonly believed (e.g. when London is not their HB).

- In ignorance contexts like (22), it is not commonly believed that the Goal is the Speaker's or Hearer's HB, so *go* is felicitous (and *come* is not felicitous).
- In negative contexts like (19), the presupposition of *come* becomes universal:

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

- (30b) presupposes that all the relevant places are the Speaker's or Hearer's HB (which is the source of the mild infelicity).

- So (30a) is used whenever it is not commonly believed that all the relevant places are the Speaker's or Hearer's HB, which includes cases where some of the places are neither the Speaker's nor Hearer's HB.
- The explanation is the same for questions like (20) (details omitted here).
- **Puzzle:** But then how come in some cases, either *come* or *go* can be used?
 - (31) I was in Paris from Friday to Sunday last week.
 - a. Sergei **came** there on Saturday.
 - b. Sergei **went** there on Saturday.
 - (32) a. I'll **come** to the station to pick you up.
b. I'll **go** to the station to pick you up.
 - (33) 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 (15), *go* can only be used if it is not commonly believed that the Goal is different from the speaker's HB or hearer's HB at the current time or at the reference time.
- This is violated in these contexts (as evidenced by the felicitous use of *come* in the (a)-examples).
- **Looking ahead:** I'll claim that the computation of anti-presuppositions is only under a particular 'perspective', and that the current time vs. reference time distinction is a kind of **perspective-shifting**. In cases like above, different perspectives are taken between the (a)- and (b)-examples.

3 Perspective-Shifting in Attitude Contexts and Monsters

- **Observations:** The indexical presuppositions **shift** in certain contexts. E.g. in speech reports, the indexical presuppositions are optionally evaluated relative to the original utterance context (Oshima 2006, 2007, Percus 2011)
- **Example situation 5:** John is in London, Masa is in Tokyo, Sergei is in Moscow, Gianni in Milan, Guillaume in Paris:
 - Current speaker = John in London
 - Current hearer = Masa in Tokyo
 - Original speaker = Gianni in Milan
 - Original hearer = Guillaume in Paris
 - Theme = Sergei moving from Moscow

1. Goal = the current speaker's HB

- (34) a. Gianni told Guillaume that Sergei is **coming** to London next week.

- b. Gianni told Guillaume that Sergei is **going** to London next week.

- Unlike in (4b), *go* is possible here. We understand this as shifting of the indexical presupposition to the original reported context. London is neither Gianni nor Guillaume's HB, so *go* is possible.
- Since the shifting is optional, *come* is also an option here.

2. Goal = the current hearer's HB

- (35) a. Gianni told Guillaume that Sergei is **coming** to Tokyo next week.
b. Gianni told Guillaume that Sergei is **going** to Tokyo next week.

- *Go* is possible here, because Tokyo is neither Gianni nor Guillaume's HB.
- *Come* is used if the shifting of the perspective doesn't take place.

3. Goal = the original speaker's HB

- (36) a. Gianni told Guillaume that Sergei is **coming** to Milan next week.
b. Gianni told Guillaume that Sergei is **going** to Milan next week.

Here, *come* is possible, because of shifting. Similarly for (37).

4. Goal = the original hearer's HB

- (37) a. Gianni told Guillaume that Sergei is **coming** to Paris next week.
b. Gianni told Guillaume that Sergei is **going** to Paris next week.

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

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

(38) a. If Sergei **comes** to Milan, Gianni will have a meeting with him.
b. If Sergei **goes** to Milan, Gianni will have a meeting with him.
- VP-internal material can be relative to the perspective of the subject.

(39) a. Gianni will meet with any linguist who **comes** to Milan.
b. Gianni will meet with any linguist who **goes** to Milan.
- **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. I think this is an interesting hypothesis, but it has potentially problematic consequences (cf. Percus 2011). Also it's not clear how to extend his account to other shifting environments.³ This is not very useful for our purposes.
 - Percus (2011) likens the shifting of *come* and *go* to **indexical-shifting**. I'll pursue this route and extend his analysis to non-attitude cases.

³Oshima 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.

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).

(40) Ahmet [*pro*_{Ahmet} 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 (41) doesn't mean the same thing as (40).

(41) Who did Ahmet say that I like?

- Anand & Nevins (2004) and Anand (2006) on indexical-shifting:
 - The interpretation function $\llbracket \]$ is relativized to an assignment g , and a possible context c .
 - 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):

(42) When a speaker s utters ϕ to h at t in w (with assignment g),
 a. ϕ 's presupposition is satisfied iff the presupposition of $\llbracket \phi \rrbracket^{g,(s,h,t,w)}(s, h, t, w) = 1$
 b. ϕ is true iff the assertoric content of $\llbracket \phi \rrbracket^{g,(s,h,t,w)}(s, h, t, w) = 1$.

- Indexical pronouns refer to a coordinate of c :

(43) 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 that shifts the context index (a Kaplanian monster \mathcal{M}).

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

It is assumed that \mathcal{M} appears only in (a subset of) attitude contexts (to simplify, I ignore tense here).

- Embedded clauses denote functions of type (k, t) (generalised centered worlds):

(45) $\llbracket \text{that I like you} \rrbracket^{g,c}(k)$ (46) $\llbracket \mathcal{M} \text{ that I like you} \rrbracket^{g,c}(k)$
 a. Presupp: \top a. Presupp: \top
 b. Asser: $\text{like}(s_c, h_c, w_k)$ b. Asser: $\text{like}(s_k, h_k, w_k)$

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

(47) $\llbracket \text{John said that I like you} \rrbracket^{g,c}(c')$
 a. Presupp: \top
 b. Asser: $\text{SAY}(j, w_{c'}) (\lambda k. \text{like}(s_c, h_c, t_k, w_k))$

(48) $\llbracket \text{John said } \mathcal{M} \text{ that I like you} \rrbracket^{g,c}(c')$
 a. Presupp: \top
 b. Asser: $\text{SAY}(j, w_{c'}) (\lambda k. \text{like}(s_k, h_k, t_k, w_k))$

The definition of **SAY** is a little convoluted (to take care of attitude *de se*). See Percus (2011) and Hazel's work for details.

(49) $\text{SAY}(j, w_{c'}) (p_{(k,t)})$ iff in $w_{c'}$, by virtue of what j said in $w_{c'}$, j characterises his 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 context (which the attitude verb quantifies over).

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 some modifications (so that it's more like Nevins±Anand's system).
- The interpretation function $\llbracket \]$ is relativized to an assignment g , and *two* possible contexts c_1, c_2 .
- Indexical pronouns refer to the first context.

(50) 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 :

(51) $\llbracket \text{Sergei came to London} \rrbracket^{g,c_1,c_2}(c')$
 a. Presupp: $\text{HB}(s_{c_2}, \text{London}, t_{c_2}, w_{c_2}) \vee \text{HB}(h_{c_2}, \text{London}, t_{c_2}, w_{c_2})$
 b. Asser: $\exists e \left[\text{MOVE}(e, w_{c'}) \wedge \text{THEME}(e, \text{Sergei}, w_{c'}) \wedge \text{GOAL}(e, \text{London}, w_{c'}) \wedge \tau(e, w_{c'}) < t_{c'} \right]$

- It's crucial that the presupposition only refers to the coordinates of c_2 . In particular, the intensional parameters 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:

- (52) When a speaker s utters ϕ to h at t in w (with assignment g),
- ϕ 's presupposition is satisfied iff the presupposition of $\llbracket \phi \rrbracket^{g,(s,h,t,w),(s,h,t,w)}(s, h, t, w) = 1$
 - ϕ is true iff the assertoric content of $\llbracket \phi \rrbracket^{g,(s,h,t,w),(s,h,t,w)}(s, h, t, w) = 1$.

- 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 .

$$(53) \quad \llbracket \mathcal{M}_1 \alpha \rrbracket^{g,c_1,c_2} = \lambda k. \llbracket \alpha \rrbracket^{g,k,c_2}(k)$$

$$(54) \quad \llbracket \mathcal{M}_2 \alpha \rrbracket^{g,c_1,c_2} = \lambda k. \llbracket \alpha \rrbracket^{g,c_1,k}(k)$$

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

- (55) 'X believes/said/hopes ϕ ' presupposes that X believes the presuppositions of ϕ .

- (56) $\llbracket \text{Hans is saying that Sergei came to London} \rrbracket^{g,c_1,c_2}(c')$
- Presupp: $\text{DOX}(h, t_{c'}, w_{c'}) (\lambda k. \text{HB}(s_{c_2}, \text{London}, t_{c_2}, w_{c_2}) \vee \text{HB}(h_{c_2}, \text{London}, t_{c_2}, w_{c_2}))$
 - Assert: $\text{SAY}(h, t_{c'}, w_{c'}) \left(\lambda k. \exists e \left[\text{MOVE}(e, w_k) \wedge \text{THEME}(e, \text{Sergei}, w_k) \wedge \text{GOAL}(e, \text{London}, w_k) \wedge \tau(e, w_k) < t_k \right] \right)$

Crucially, since the presupposition of *come* is indexical, (56a) is true just in case $\text{HB}(s_{c_2}, \text{London}, t_{c_2}, w_{c_2}) \vee \text{HB}(h_{c_2}, \text{London}, t_{c_2}, w_{c_2})$. So effectively the presupposition projects out. This is a good result, because the sentence doesn't presuppose that Hans believes that London is the Speaker's HB.

- On the other hand, with the perspective-shifting operator \mathcal{M}_2 :

- (57) $\llbracket \mathcal{M}_2 \text{ that Sergei came to London} \rrbracket^{g,c}(c')$
- Presupp: $\text{HB}(s_{c'}, \text{London}, t_{c'}, w_{c'}) \vee \text{HB}(h_{c'}, \text{London}, t_{c'}, w_{c'})$
 - Assert: $\exists e \left[\text{MOVE}(e, w_{c'}) \wedge \text{THEME}(e, \text{Sergei}, w_{c'}) \wedge \text{GOAL}(e, \text{London}, w_{c'}) \wedge \tau(e, w_{c'}) < t_{c'} \right]$

the presupposition is now relative to c' just as the assertoric content. When the attitude predicate takes this, it will binding into the presupposition:

- (58) $\llbracket \text{John is saying that Sergei came to London} \rrbracket^{g,c_1,c_2}(c')$
- Presupp: $\text{DOX}(j, t_{c'}, w_{c'}) (\lambda k. \text{HB}(s_k, \text{London}, t_k, w_k) \vee \text{HB}(h_k, \text{London}, t_k, w_k))$
 - Assert: $\text{SAY}(j, t_{c'}, w_{c'}) \left(\lambda k. \exists e \left[\text{MOVE}(e, w_k) \wedge \text{THEME}(e, \text{Sergei}, w_k) \wedge \text{GOAL}(e, \text{London}, w_k) \wedge \tau(e, w_k) < t_k \right] \right)$

In words, this presupposes that John believes that either he himself and/or his addressee is in London 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

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).⁴

- (59) $\llbracket \text{PRES}_i \rrbracket^{g,c_1,c_2}$
- Presupp: $g(i) \circ t_{c_1} (g(i) \text{ overlaps with } t_{c_1})$
 - Assert: $g(i)$
- (60) $\llbracket \text{PAST}_i \rrbracket^{g,c_1,c_2}$
- Presupp: $g(i) < t_{c_1}$
 - Assert: $g(i)$

- This is of course very simplistic. In particular, we won't be concerned with Sequence-of-Tense.
- Future is a bit complicated, so I won't try to formalise it today.
- The unshifted interpretation looks like (61). The content of the indexical presupposition is essentially the same as before.

- (61) $\llbracket \text{Sergei PAST}_i \text{ come} \rrbracket^{g,c_1,c_2}(k)$
- Presupp: $g(i) < t_{c_1} \wedge (\text{HB}(s_{c_2}, \text{London}, t_{c_2}, w_{c_2}) \vee \text{HB}(h_{c_2}, \text{London}, t_{c_2}, w_{c_2}))$
 - Assert: $\exists e \left[\text{MOVE}(e, w_k) \wedge \text{THEME}(e, \text{Sergei}, w_k) \wedge \text{GOAL}(e, \text{London}, w_k) \wedge \tau(e, w_k) \subseteq g(i) \right]$

- We assume that an optional operator \mathcal{M}_t shifts the tense-coordinate of the second context index (cf. Schlenker's 2014 super-monsters).⁵

⁴I don't deny other theoretical possibilities, but it needs to be worked out how to implement the current idea in other theories of tense.

⁵Here we depart from Kaplan's ontology of possible contexts, which assumes each possible context (s, h, t, w) 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.

$$(62) \quad \llbracket \mathcal{M}_t \alpha \rrbracket^{g, c_1, c_2} = \lambda t'. \llbracket \alpha \rrbracket^{g, c_1, (s_{c_2}, h_{c_2}, t', w_{c_2})} (t')$$

This operator derives the interpretation relative to the reference time:

$$(63) \quad \llbracket \text{Sergei PAST}_i \mathcal{M}_t \text{ come} \rrbracket^{g, c_1, c_2} (k)$$

a. Presupp:
 $g(i) < t_{c_1} \wedge (\text{HB}(s_{c_2}, \text{London}, g(i), w_{c_2}) \vee \text{HB}(h_{c_2}, \text{London}, g(i), w_{c_2}))$

b. Assert: $\exists e \left[\begin{array}{l} \text{MOVE}(e, w_k) \wedge \text{THEME}(e, \text{Sergei}, w_k) \wedge \\ \text{GOAL}(e, \text{London}, w_k) \wedge \tau(e, w_k) < g(i) \end{array} \right]$

The indexical presupposition is shifted to $g(i)$.

4.2 Other Shifting Contexts (and some open problems)

- Other shifting environments can be given similar analyses (Bylinina et al. 2014).

$$(64) \quad \llbracket \mathcal{M}_s \alpha \rrbracket^{g, c_1, c_2} = \lambda x. \llbracket \alpha \rrbracket^{g, c_1, (x, h_{c_2}, t_{c_2}, w_{c_2})} (x)$$

This accounts for shifting to the subject:

$$(65) \quad \text{Gianni } \mathcal{M}_s \text{ meets with any linguist who comes to Milan.}$$

- This actually requires some more refinements, because if this were available in the position indicates in (65), the verb could be relative to the subject's perspective. This is wrong, e.g. (4b) is infelicitous.
- Rather the shifting to the subject's perspective can only take place within a sub-constituent 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 subject to some kind of Binding Theory.

$$(66) \quad \llbracket \mathcal{M}_{s,i} \alpha \rrbracket^{g, c_1, c_2} = \llbracket \alpha \rrbracket^{g, c_1, (g(i), h_{c_2}, t_{c_2}, w_{c_2})}$$

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

- The conditional data (38) is in principle amenable to the same analysis with some syntactic assumptions (see Chierchia 1995 for related discussion).

4.3 Competition under a Perspective

- Recall that in some contexts both *come* and *go* are available.

$$(67) \quad \begin{array}{l} \text{a. I'll come/go to the station to pick you up.} \\ \text{b. Sergei came/went to Paris, when I was there.} \end{array}$$

These are all (optional) perspective-shifting contexts.

- **Idea:**

- The perspective based on the current context is used when the perspective-shifting doesn't happen. A shifted perspective is used when the perspective-shifting happens.
- The competition between *come* vs. *go* is only computed under one perspective at a time.

- **Examples:**

$$(68) \quad \text{I'll go to the station to pick you up.}$$

This doesn't involve \mathcal{M}_t , so the perspective is based on the current utterance context. In the current context, (it is commonly known that) neither the Speaker nor the Hearer is at the station, so *go*.

$$(69) \quad \text{I'll } \mathcal{M}_t \text{ come to the station to pick you up.}$$

This does involve \mathcal{M}_t and the perspective is shifted to the future time, and it is commonly known that at that time the Hearer will be at the station, so *come*.

- 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.

$$(70) \quad \# \text{Sergei PAST go here yesterday.}$$

Since it is commonly known that the Speaker (and Hearer) is in the Goal location, MP requires *come* to be used. If MP would be satisfied with (71), but this parse is not possible, due to the vacuous use of \mathcal{M}_t .

$$(71) \quad * \text{Sergei PAST } \mathcal{M}_t \text{ go here yesterday.}$$

Consequently, *go* is always evaluated against the current context.

- 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.

5 Some More Fun Stuff

- There's some interesting cross-linguistic variation on the use of *come* and *go*.
- In some languages motion towards the Speaker's HB and motion towards the Hearer's HB are expressed by distinct verbs, e.g. in Palauan (Austronesian) (Nakazawa 2007):

$$(72) \quad \begin{array}{ll} \text{a. } me & \text{towards the Speaker} \\ \text{b. } eko & \text{towards the Hearer} \\ \text{c. } mo & \text{if neither } (\approx go) \end{array}$$

I do not know if *mo* competes with *me* and *eko* at the same time.

- Cross-linguistic variation on the conditions on shift to the addressee (Nakazawa 1990, 2007, Oshima 2006, 2007).
 - In English (and German, Italian, etc.), when the speaker is moving towards the hearer, *come*:
(73) I'll **come**/#**go** to your office later.
 - In Japanese and Korean, *go* in such contexts.
(74) atode ofisu-ni #ki/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.
(75) Sergei is **coming** to your office now.
In Mandarin Chinese, Thai and Shibe (Altaic), it must be *go* in such cases (Nakazawa 2007).
 - 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*.

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