Dialogmodellierung

Sitzung 01

SoSe 2019, Uni Potsdam
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Organisatorisches

- ab nächste Woche in H28-1.04

Sprachdialogsysteme / „Intelligente Assistenten"

- Welche kennen Sie? / Wo sind Sie schon SDS begegnet?

Kurswebseite

https://compling-potsdam.github.io/sose19-anw1-dialmod/

Diese Veranstaltung

- Dialog als sprachliches Phänomen.

- Dialog als technische Aufgabe.

Heute

- Dialog als sprachliches Phänomen

Ein Beispiel eines natürlichen Aufgaben-orientierten Dialogs

- Live

Hausaufgabe

- Fassen Sie auf max. 1 Seite zusammen, was Sie von der heutigen Sitzung mitnehmen. Haben sich Fragen ergeben?

- Bitte per email an mich, bis Ende Montag vor der nächsten Sitzung. (Also diesmal bis Ende 15.4.)

advertisement

- The CL Colloquium!
  https://github.com/compling-potsdam/sose19-cl-colloquium

Week	Date	Presenter(s)	Title / Abstract
01	2019-04-10	*no talk scheduled*	
02	2019-04-17	*David Schlangen*	*Information on getting credit for this course*
03	2019-04-24	CL students	Poster Slam
04	2019-05-01	*public holiday*	
05	2019-05-08	Alan Nichols (RASA)	tba
06	2019-05-15	Shlomi Hod (Potsdam)	tba
07	2019-05-22	Alan Akbik (Zalando)	tba
08	2019-05-29	*no talk scheduled*	
09	2019-06-05	*no talk scheduled*	
10	2019-06-12	Staffan Larsson (Gothenburg)	tba
11	2019-06-19	Feiyu Xu (Lenovo) *to be confirmed*	tba
12	2019-06-26	Milica Gasic (Düsseldorf)	tba
13	2019-07-03	Raquel Fernández (Amsterdam)	tba
14	2019-07-10	*no talk scheduled*	
15	2019-07-17	*no talk scheduled*	

Anhang

Etwas Hintergrundmaterial

Merkmale der face to face conv.

1	Copresence	DPs share same physical environment.
2	Visibility	DPs see each other.
3	Audibility	DPs hear each other.
4	Instantaneity	DPs perceive each other's actions at no perceptible delay.
5	Evanescence	Medium is evanescent; fades quickly
6	Recordlessness	DPs actions leave no record or artifact.
7	Simultaneity	DPs produce and receive at once and simultaneously.

Merkmale der face to face conv.

8	Extemporaneity	DPs formulate and execute their actions in real time.
9	Self-determination	The participants determine for themselves what actions to take and when.
10	Self-expression	The participants take actions as themselves.

Monologue vs. Dialogue

Discourse (monologue)

(1)   Peter went to John's party.
       He drank all the wine.   Elaboration

phenomena in discourse:

- (intersentential) anaphora

- coherence relations

Discourse (monologue)

(1) Peter went to John's party.
     He drank all the wine.

monologue:

- typical setting: written text
- communication aspect not stressed
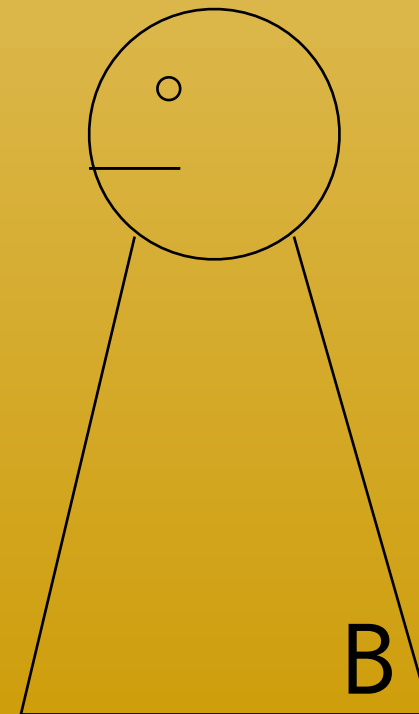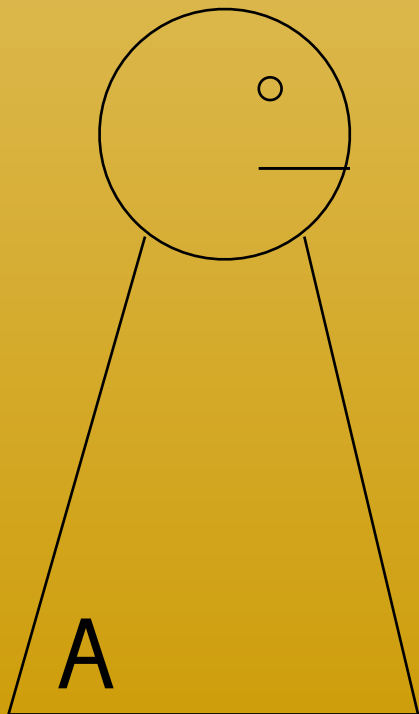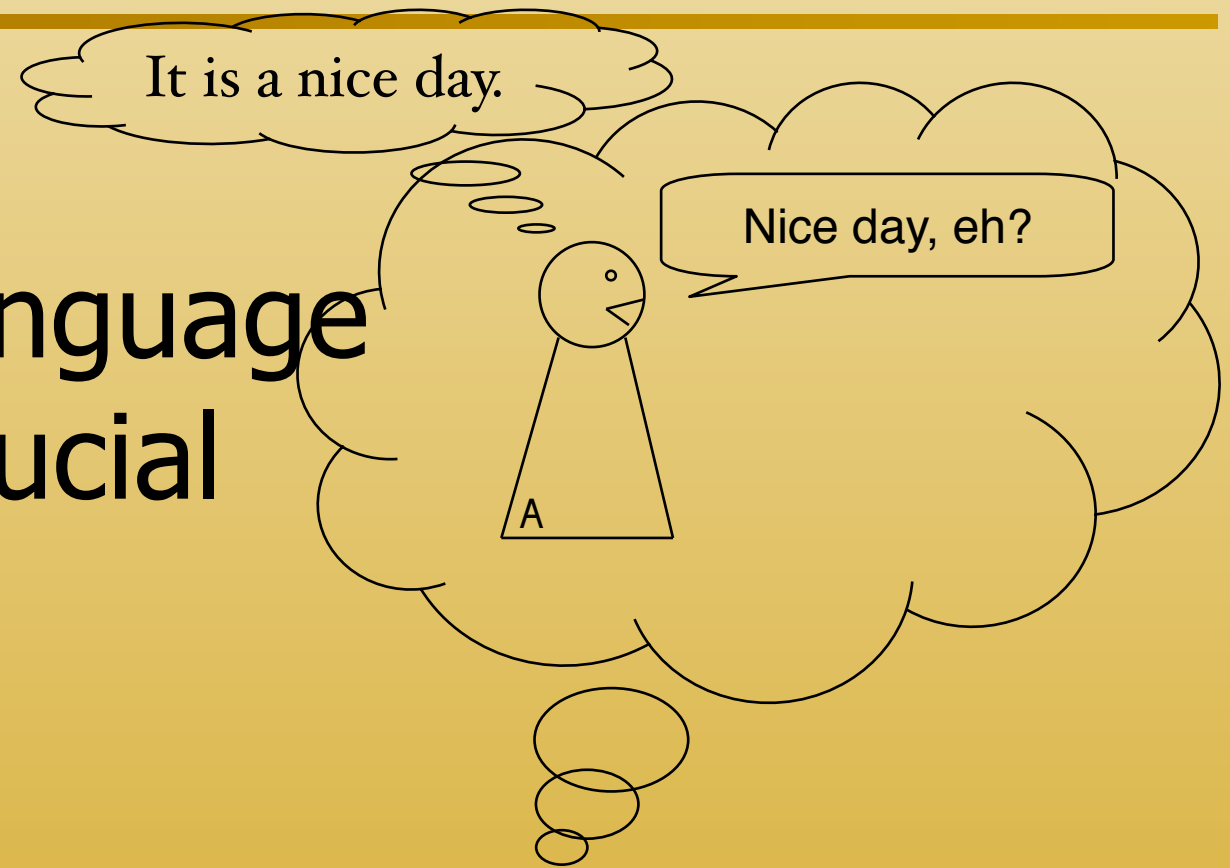- language as product, not process

Dialogue

dialogue:
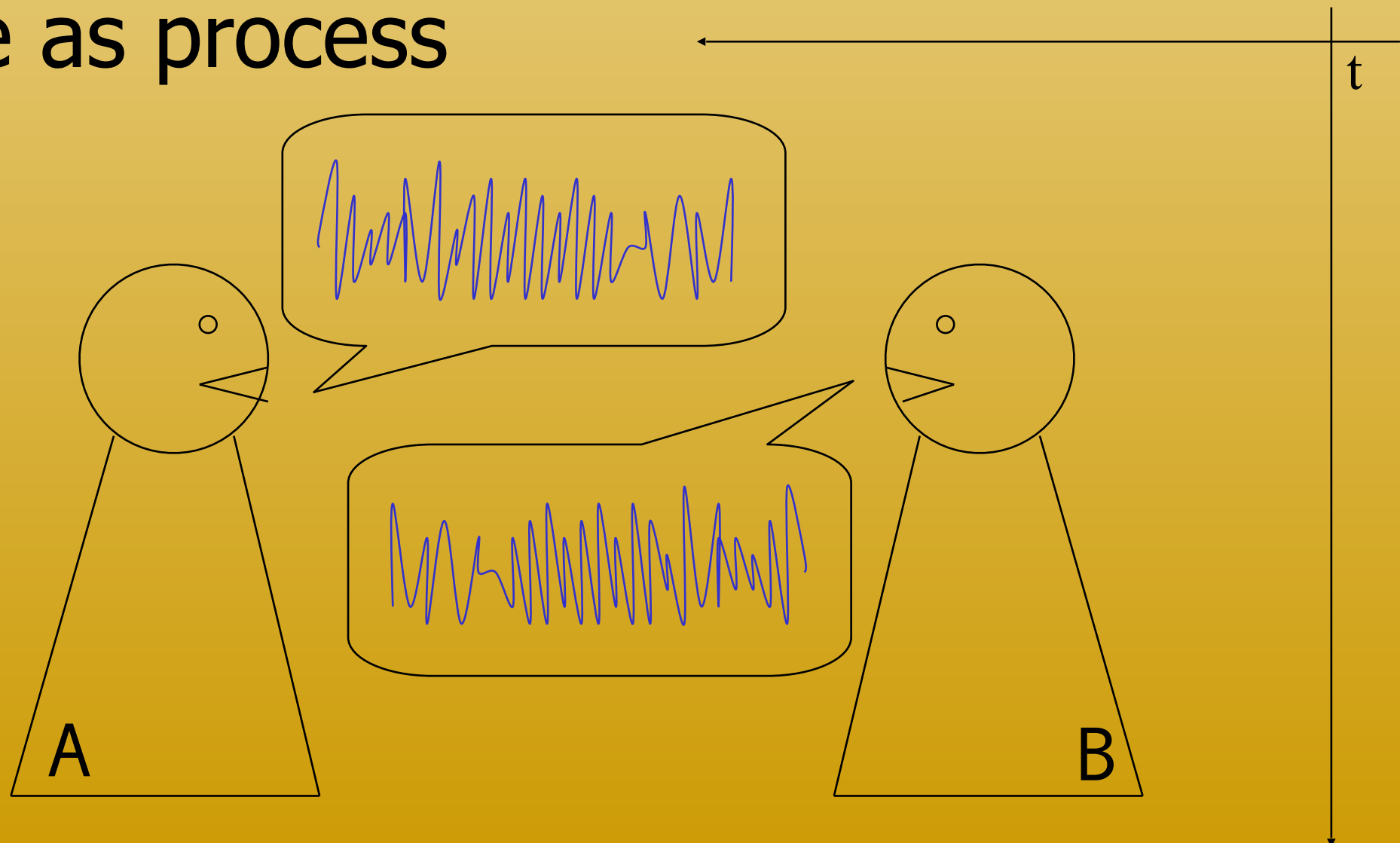- typical setting: spoken language
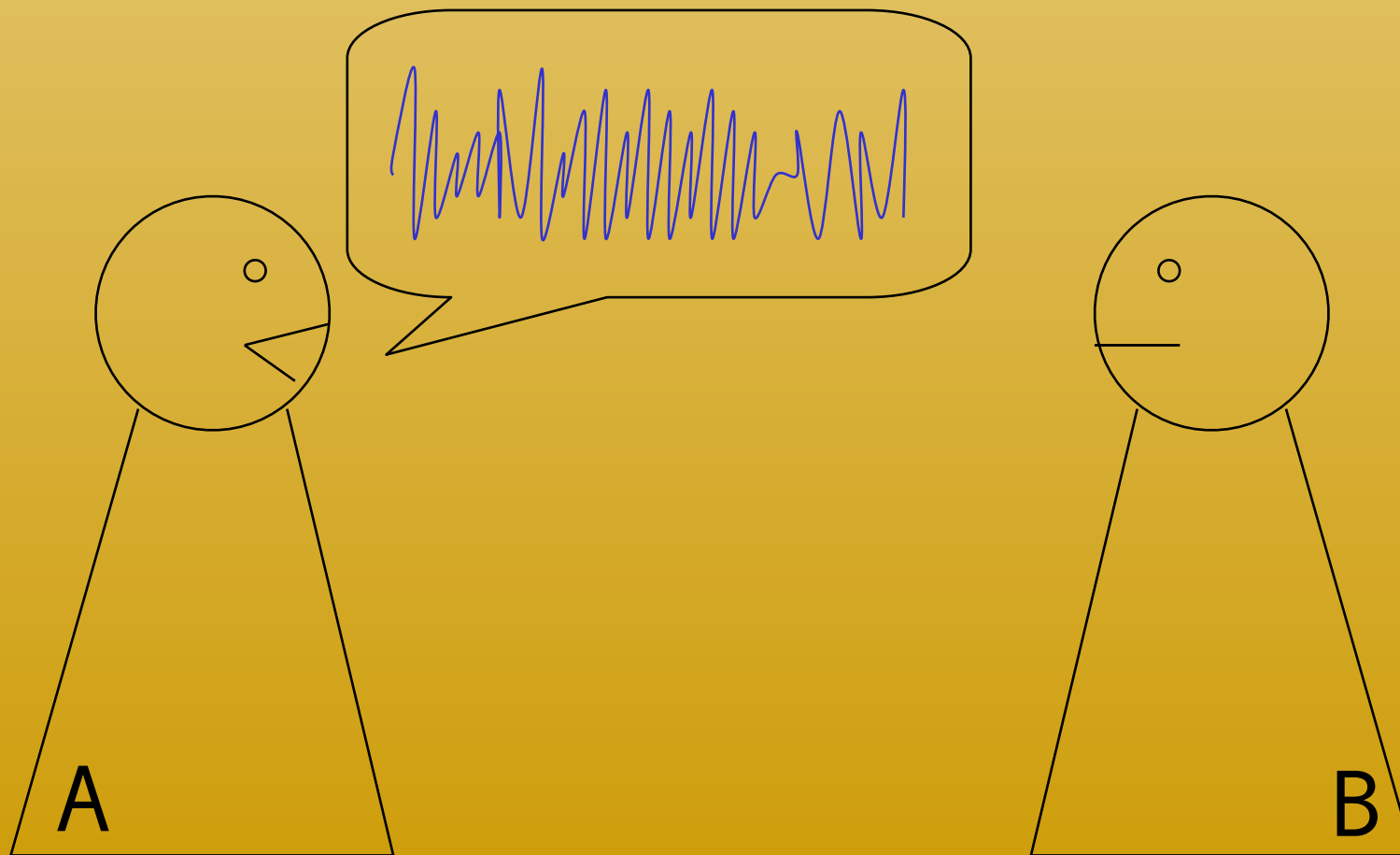
Dialogue

dialogue:
- typical setting: spoken language
- communication aspect crucial

Dialogue

dialogue:
- typical setting: spoken language
- communication aspect crucial
- language as process

Dialogue

Dialogue is

- a joint activity of at least two (but not much more than five)…

- autonomous agents with roughly the same conversational rights and capabilities…

- which communicate (mostly) through taking turns at producing spontaneous, (normally) spoken language, …

- (normally) in a face-to-face setting.

A   B

Dialogue

Dialogue Participants (DPs)…

- … use spontaneous language to communicate;
- … have to collaborate on and…
- … coordinate their contributions.

A

B

Dialogue

Less prototypical settings for dialogues:

- telephone conversation (not face-to-face)
- chat on computer network (not f-t-f, not spoken)
- sign-language (not spoken, but f-t-f)
- interviews? (not equal rights, on scale from press interview through job interview to police interv.)
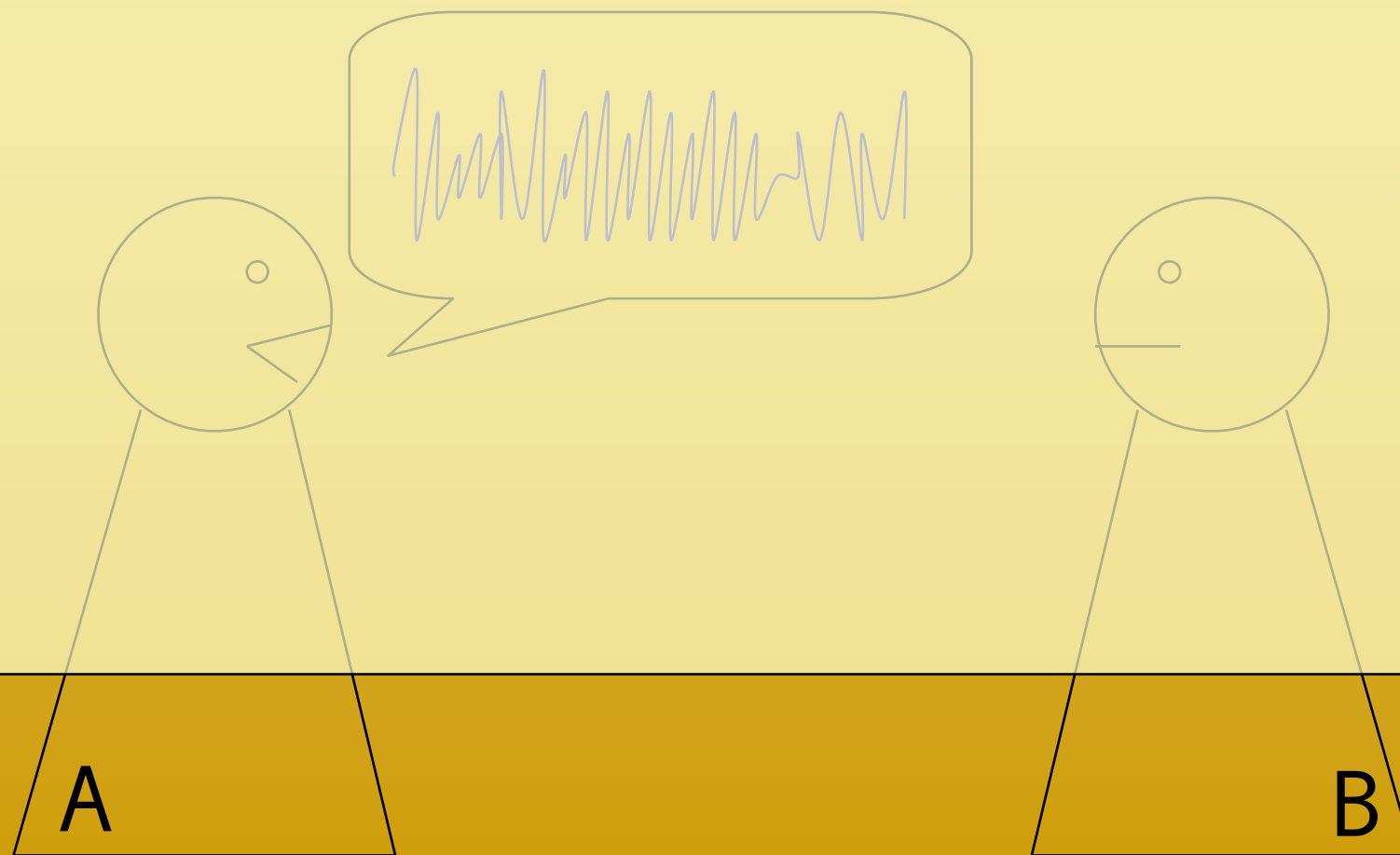
Not dialogues:

- group discussions (other turn-taking rules, for instance)
- performing a play (not spontaneous language)

A   B
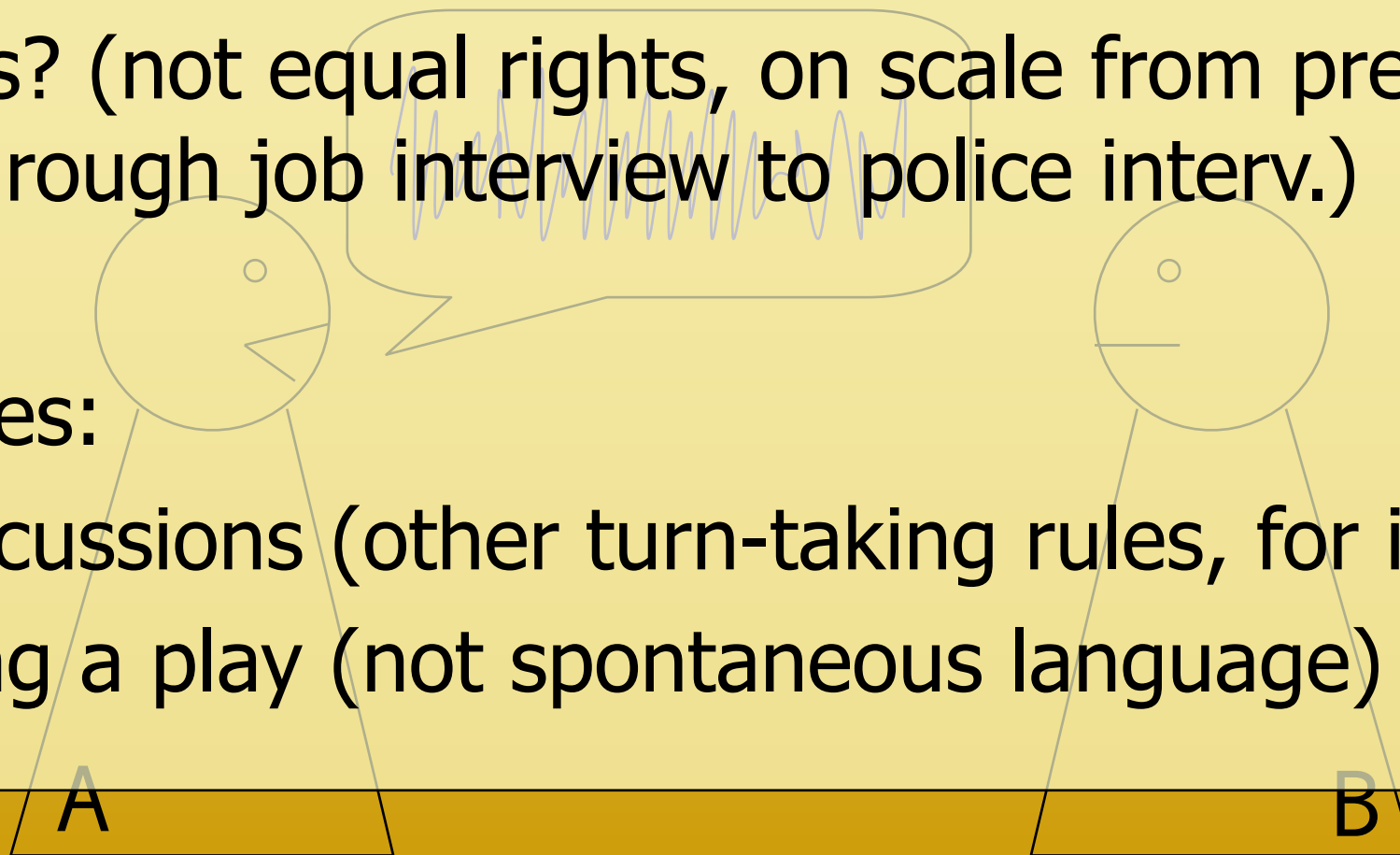
Dialogue

Dialogue…

… is a rule-governed activity.

A

B

Spontaneous spoken language

- what is the unit of analysis?
  - written monologue: sentence.
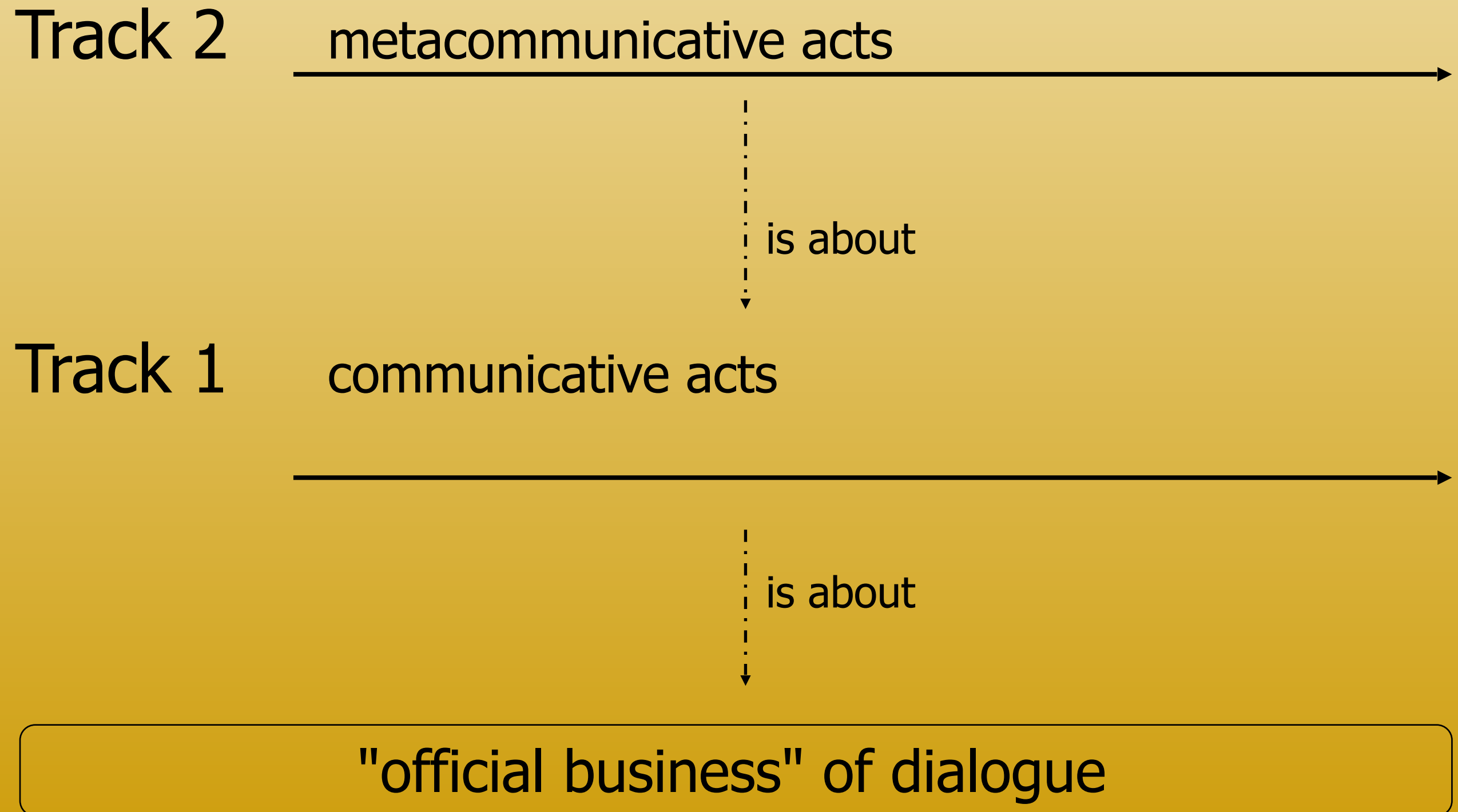 - dialogue? sentences?

  "um it'll be there it'll get to Dansville at three a.m. and then you wanna do you take tho-- want to take those back to Elmira so engine E two with three boxcars will be back in Elmira at six a.m. is that what you want to do?"

  Where are the sentences here?

Disfluencies: self-repairs

"until you're at the le I mean at the right exit"

Conversational tracks

Track 2   metacommunicative acts

is about

Track 1   communicative acts

is about

"official business" of dialogue

Conversational tracks

Track 2 →

Track 1 until you're at the le- →

"official business" of dialogue

Conversational tracks

Track 2   I mean

Track 1   until you're at the le-

"official business" of dialogue

Conversational tracks

Track 2   I mean

Track 1   until you're at the le-   right exit

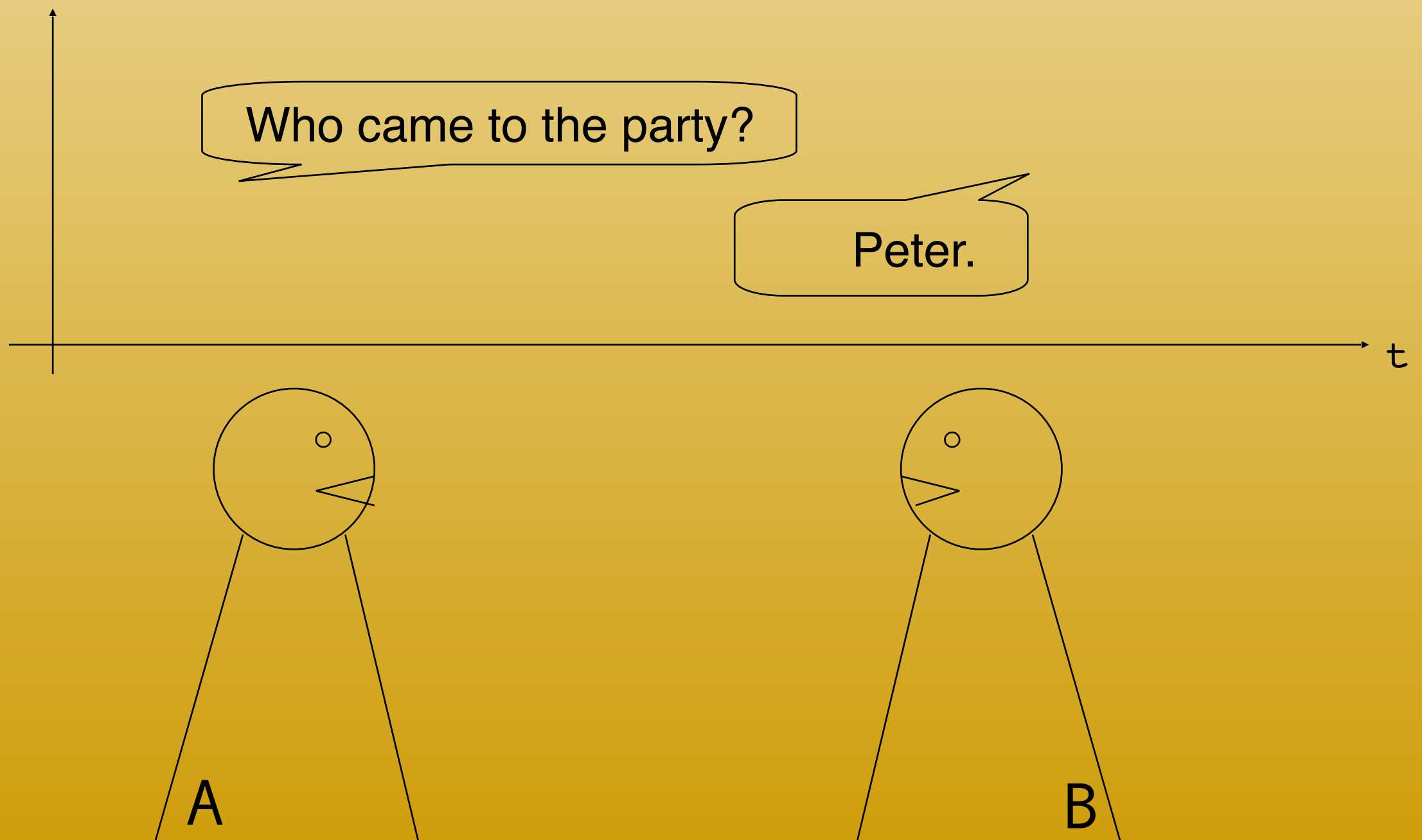"official business" of dialogue

Conversational tracks

- contributions can be about official business as well as about conversation itself (even at same time)
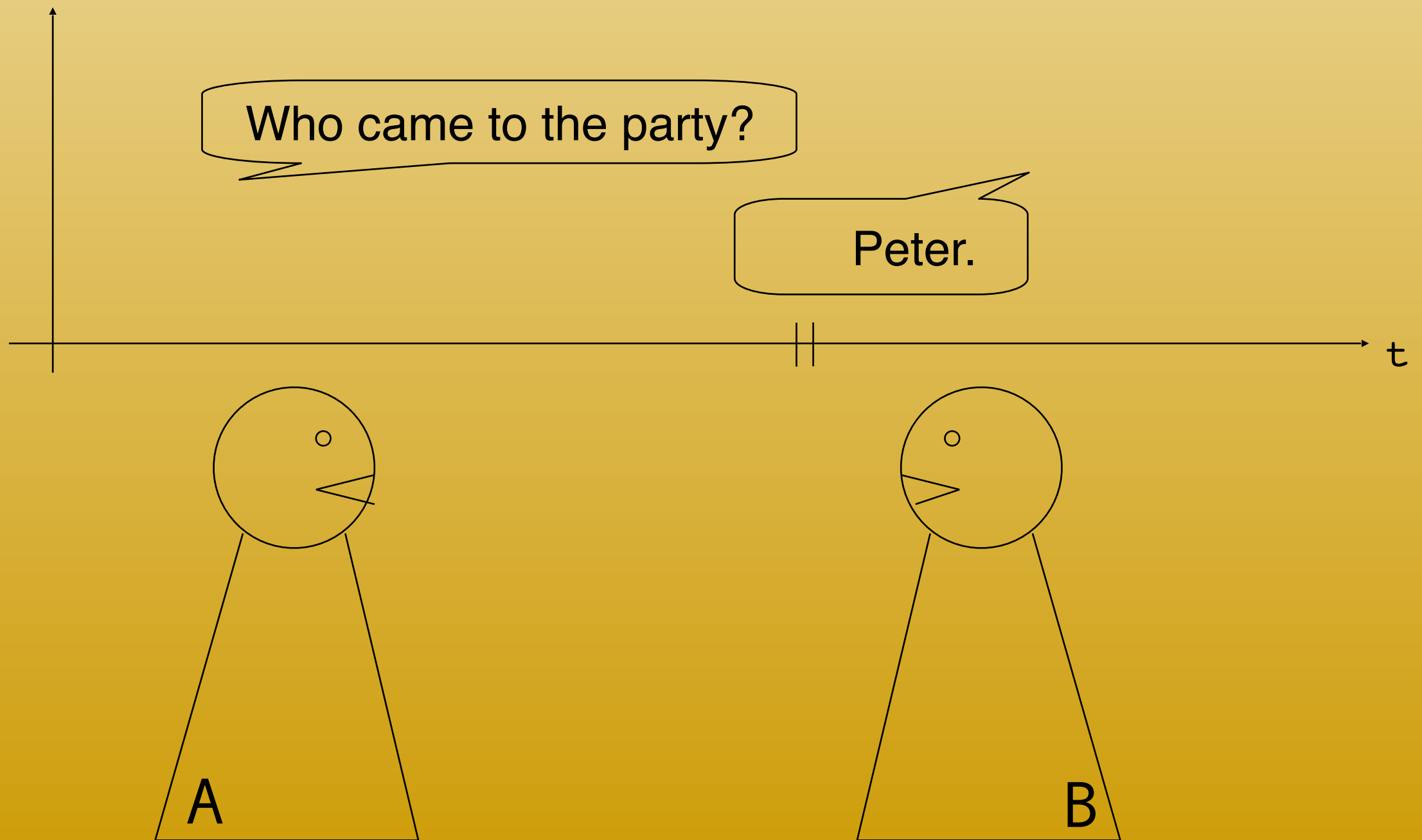- here: within an utterance, initiated by same speaker

Turn-taking

# Turn-taking

Turn-taking

Turn-taking

- Observations to account for:
  - overlaps are fairly rare in dialogue (less than 5%)
  - pauses between turns are very short (around 200ms) --- shorter than motor-planning of new utterance!
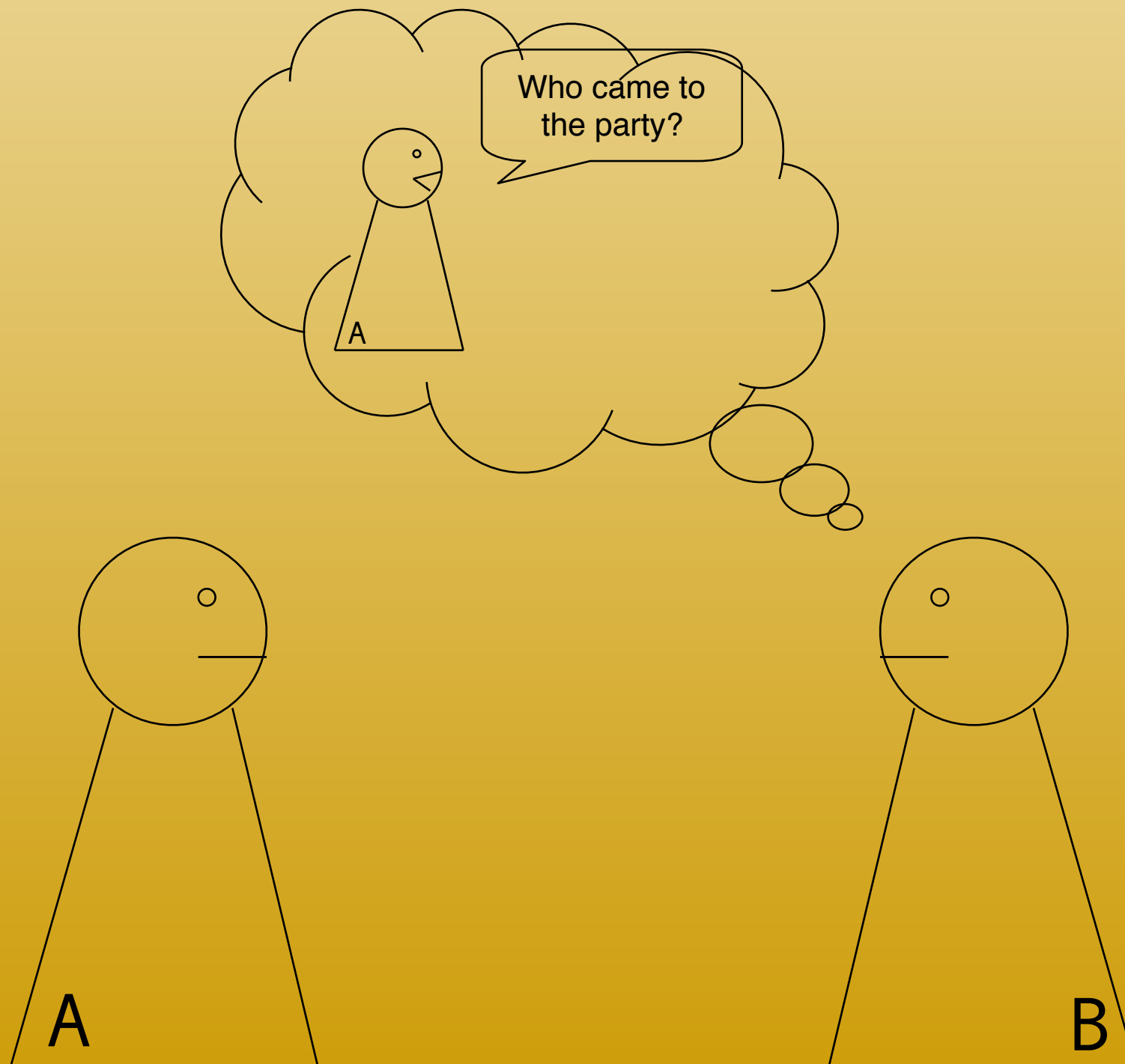
Grounding

- contributions become commoun ground between DPs.. / DPs must reach mutual understanding about what was said.
- (Clark & Schaefer 1987):
  - Grounding Criterion: The speaker and addressees mutually believe that the addressees have understood what the speaker meant to a criterion sufficient for the current purposes.
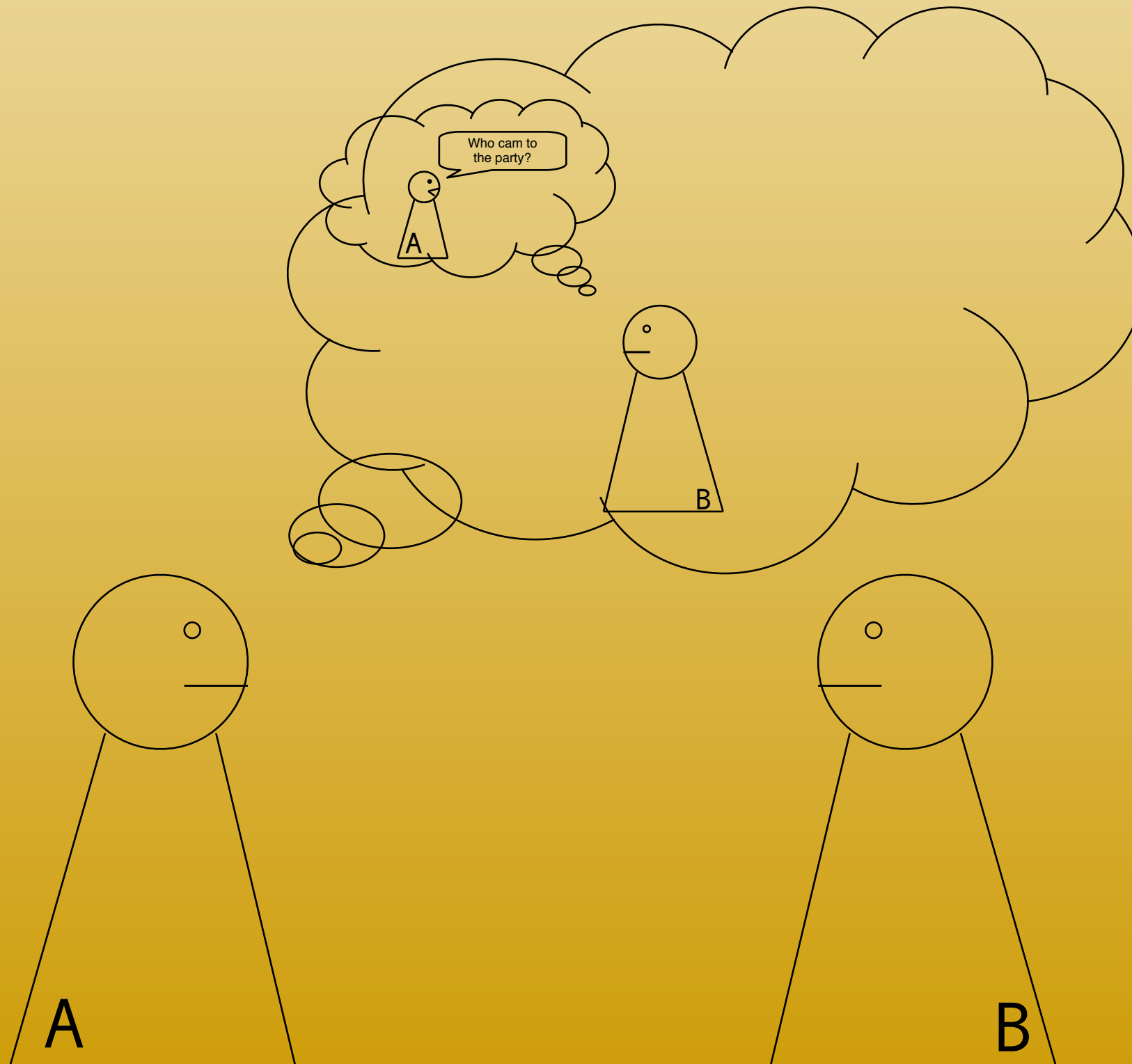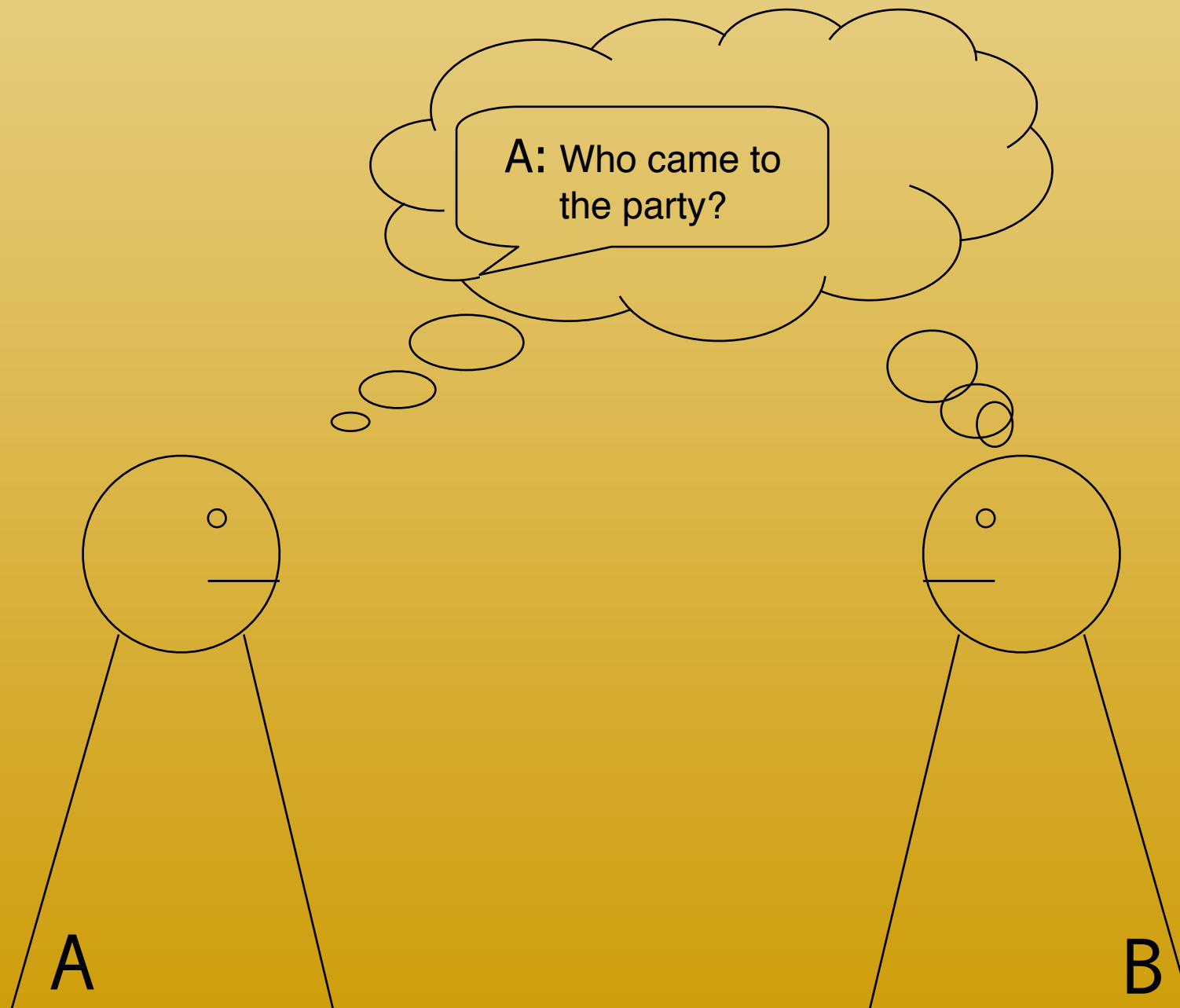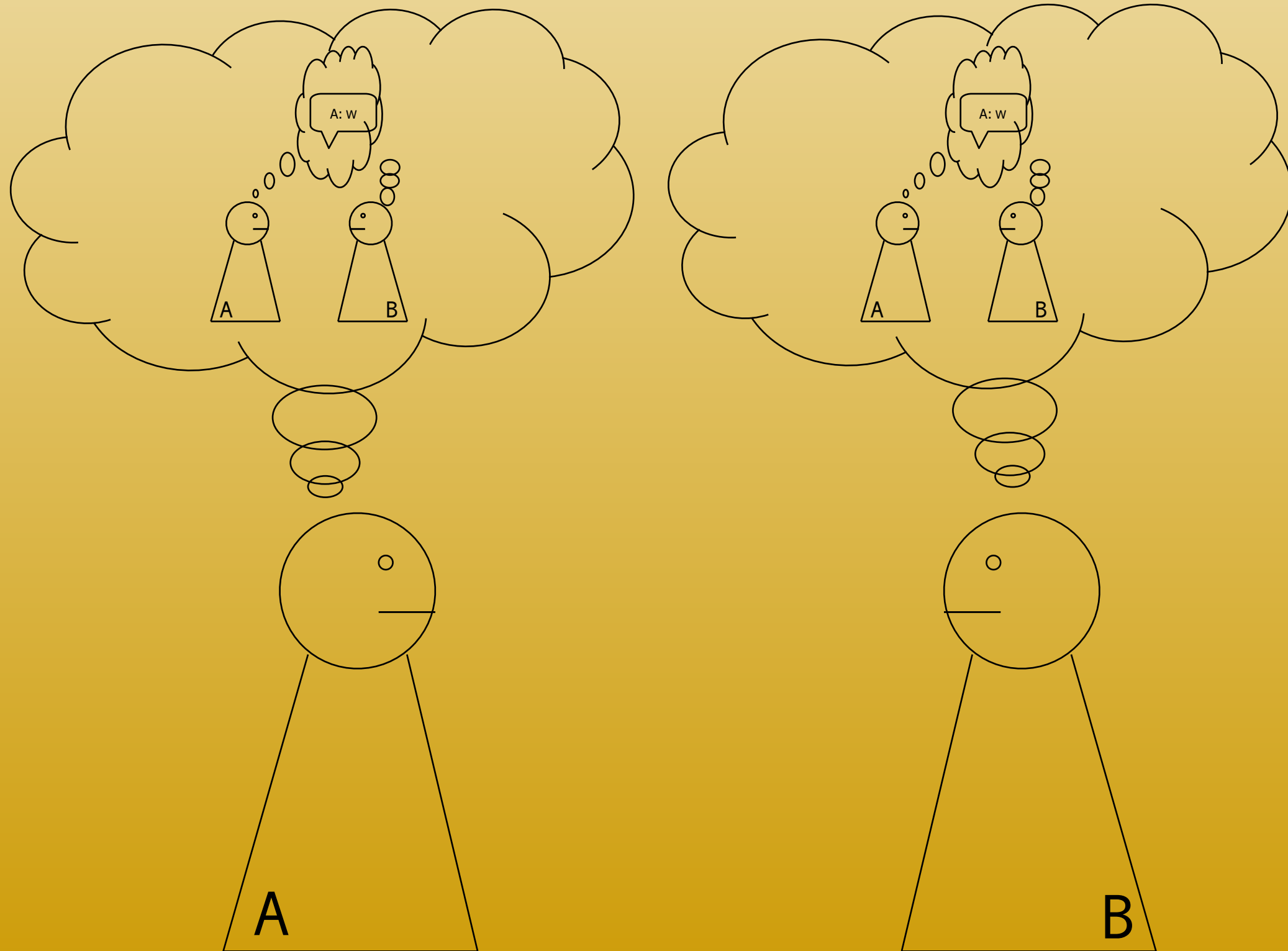
Grounding
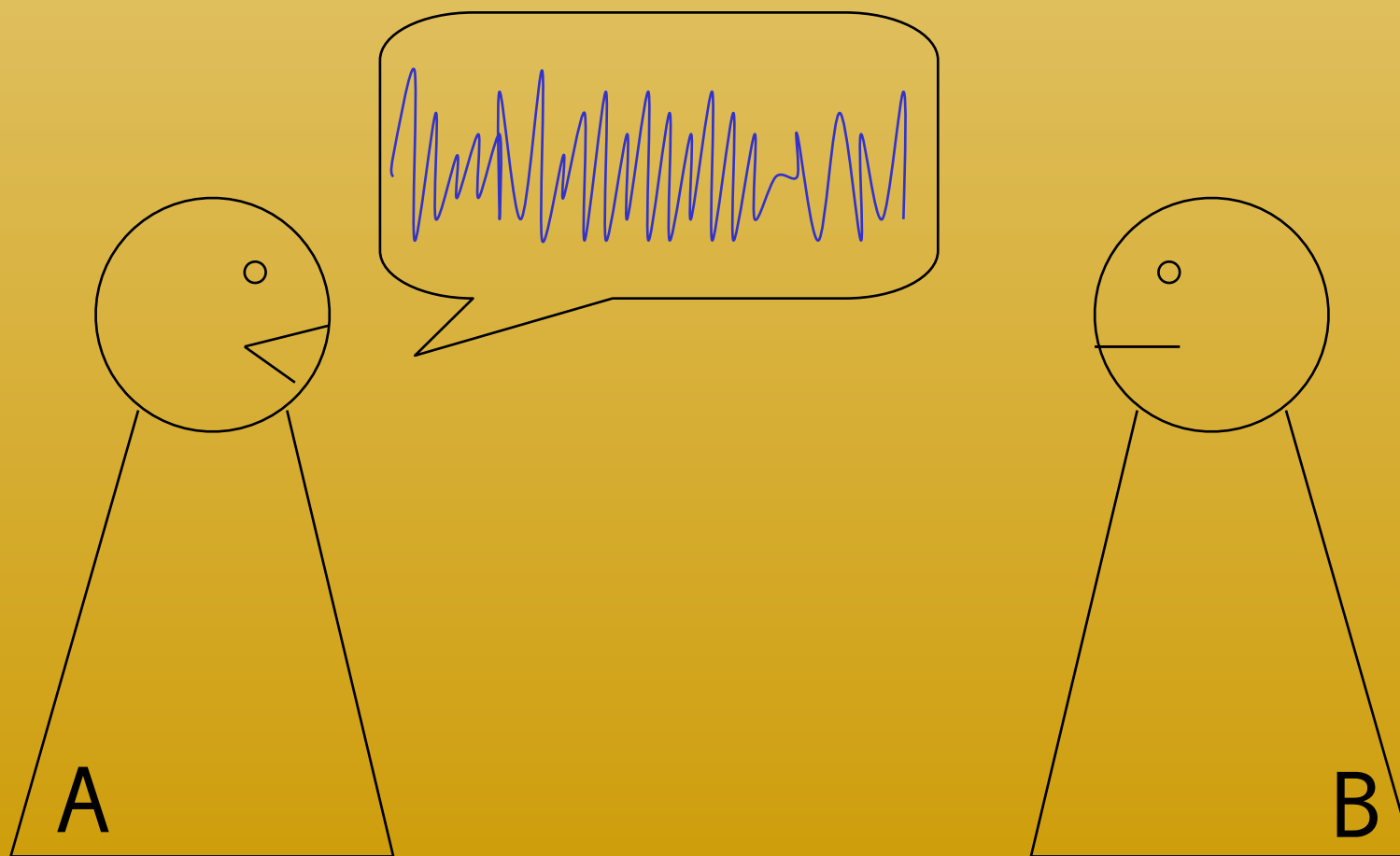
Grounding

Grounding

Grounding

Grounding

Grounding

Track 2   *Do you understand this?*

Track 1   "Who came to the party?"

"official business" of dialogue

Grounding

Track 2   *Do you understand this?   ---   Yes*
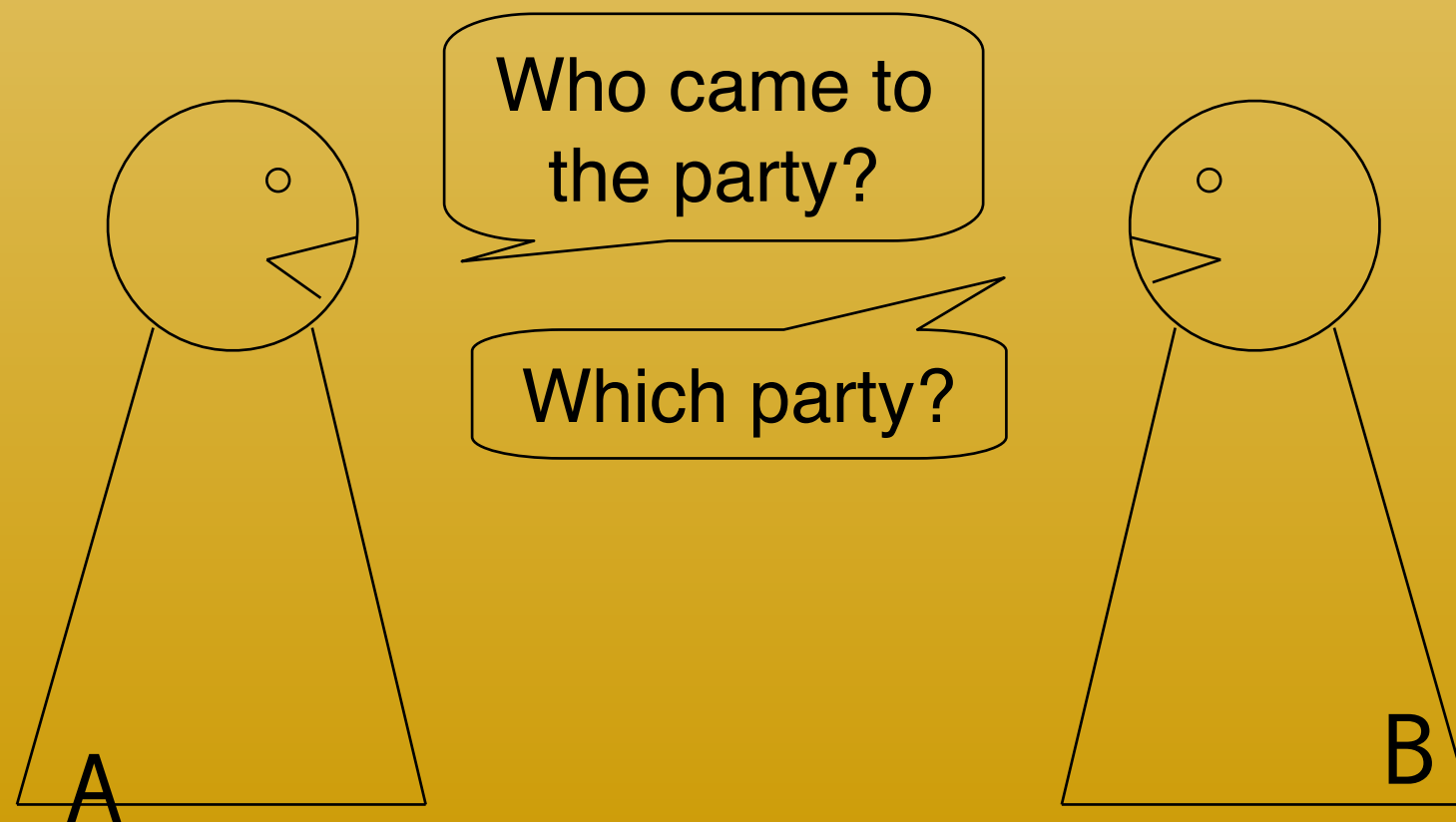
Track 1   "Who came to the party?" ---- "Peter."

"official business" of dialogue

Grounding - Clarification Requests

- … or signal non-understanding, and request repair:

Doing things with words

- autonomous agents: can't intend other agent to do something.
- only can intend to do something that makes other agent intend something.
- two ways: let other agent notice intention or not.
- speech acts work by letting hearer recognise the intention.

Doing things with words

- three aspects of **speech acts:**
  - locutionary act: the act of uttering something
  - illocutionary act: what is performed in uttering something, e.g. informing, warning, requesting.
  - perlocutionary act: what is performed by uttering something. E.g. through informing I can frighten.

Doing things with words

- classifying / recognising speech acts isn't trivial:

"Do you know the time?"
looks like an ask-inform-act, but is normally request for being told the time.

"It's cold."
looks like an inform-act, but could be request to do something (e.g. turn down the airconditioning)

Doing things without words

- in face-to-face settings, DPs also use gestures, facial expression, other modes..
  - symbolic gestures:
    - emblems (V for victory)
  - non-symbolic gestures:
    - iconic gestures (depict by the form of the gesture some feature of the action or event being described)
    - metaphorical gestures
    - deictic gestures (pointing)
    - beat gestures (emphasise new information)

Doing things without words

- facial expressions, gaze
  - looking at hearer, away from hearer, etc..
- nodding
- drawing, singing (?)

- non-linguistic contributions possible on both "tracks", official business (propositional content) as well as coordination-functions.

Doing things without words

- Of course, dialogue also works w/o face-to-face contact (telephone, e.g.), ….

- … but various studies show: w/ non-verbal channels more efficient. (cf. video conferencing)

- Difficult to get right, and very bad if gotten wrong..

- … but there are systems now that are embodied, i.e. show animation or even control robot.