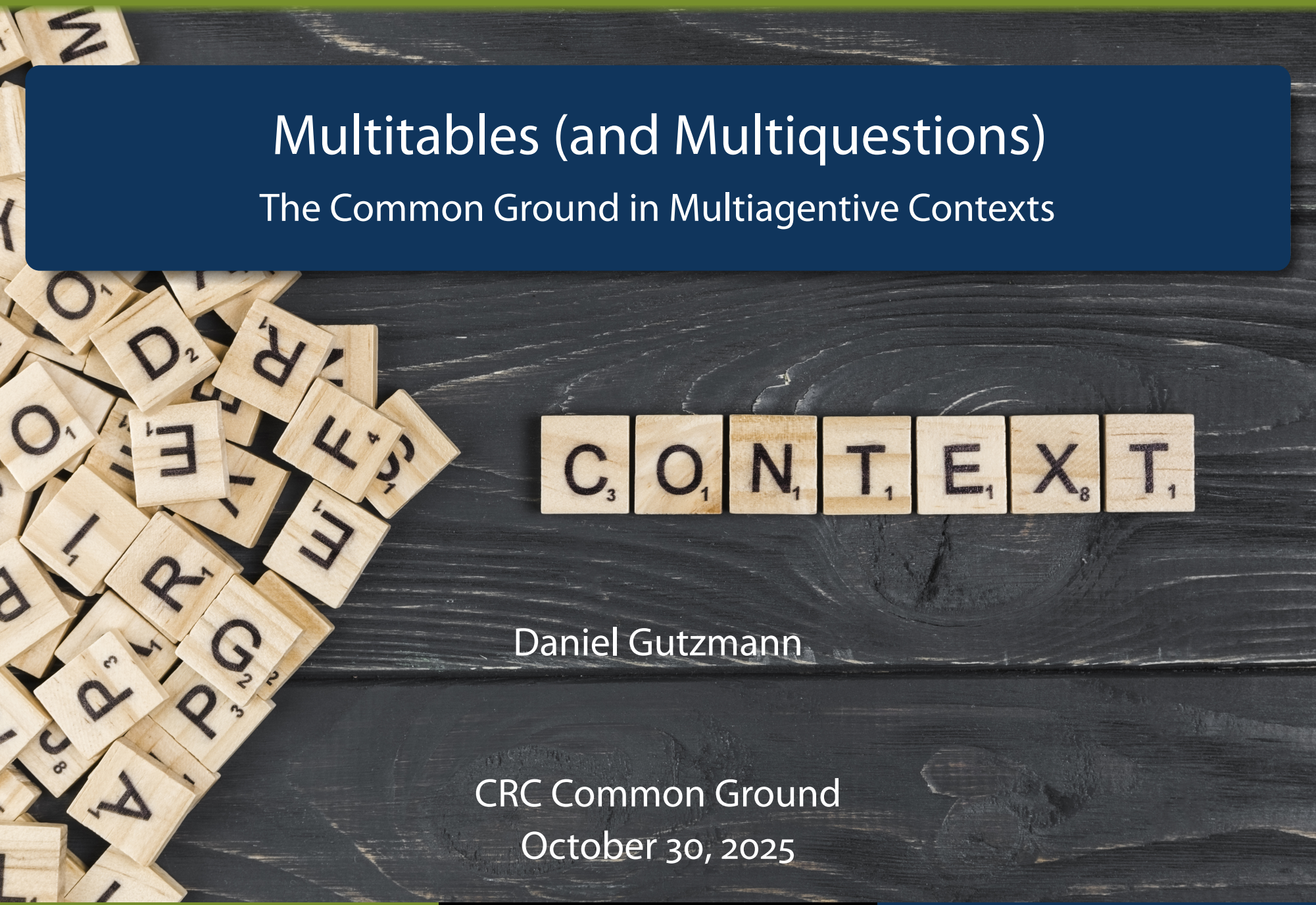
Multitables (and Multiquestions)

The Common Ground in Multiagentive Contexts



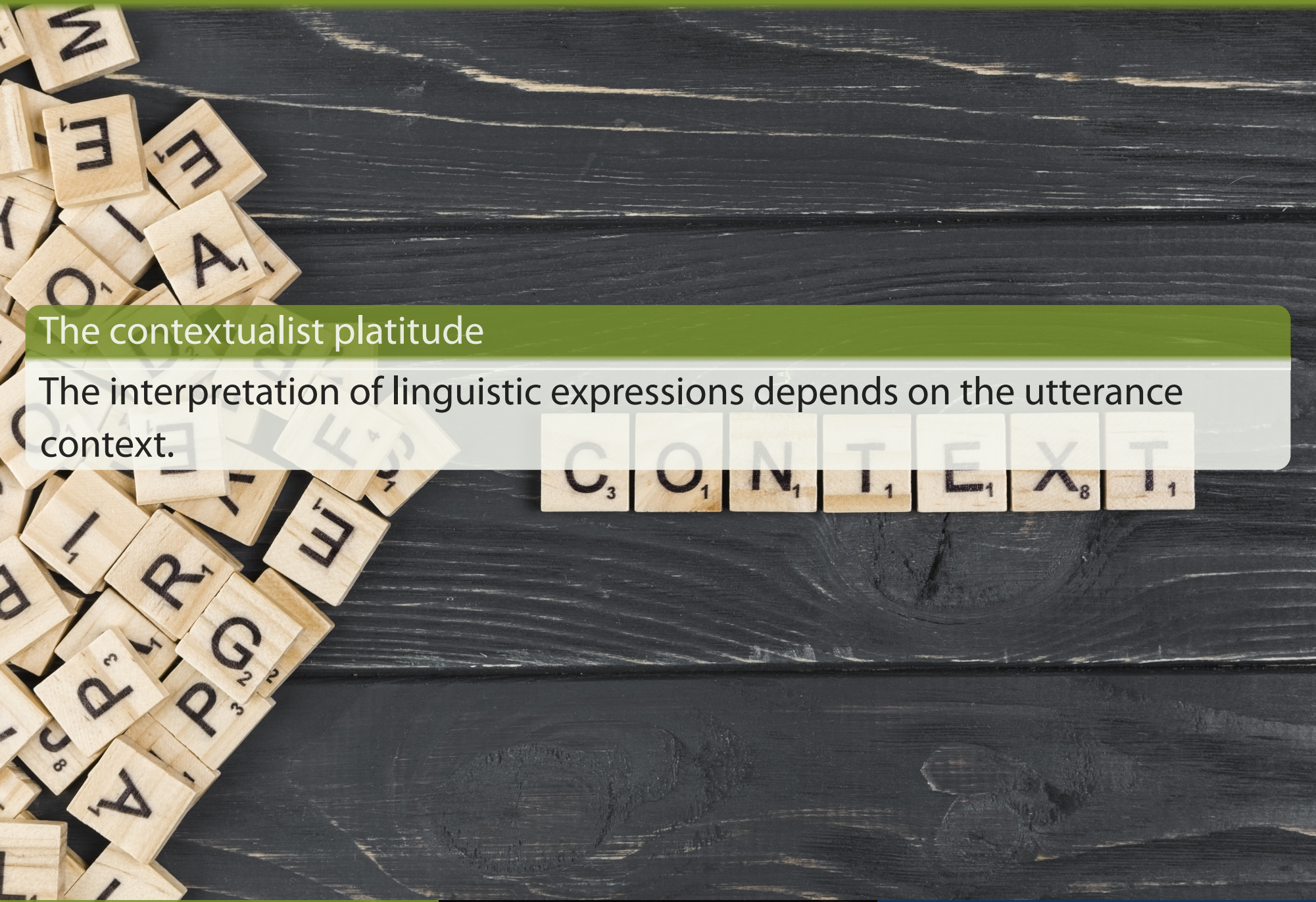
Daniel Gutzmann

CRC Common Ground
October 30, 2025

Joint work with Marius Wecker and Katharina Turgay

Joint work with Marius Wecker and Katharina Turgay

- There is an upcoming publication by Marius (»Der Common Ground in multiagentiven Gesprächssituationen«, revision submitted to *Linguistische Berichte*)
- There may be an upcoming project …



The contextualist platitude

The interpretation of linguistic expressions depends on the utterance context.

- The contextualist platitude is widely present in introductory textbooks on semantics and pragmatics.

- The contextualist platitude is widely present in introductory textbooks on semantics and pragmatics.

(1) Word **meanings** are clarified or restricted by **their context** of use in several different ways. (Kroeger 2022: 92)

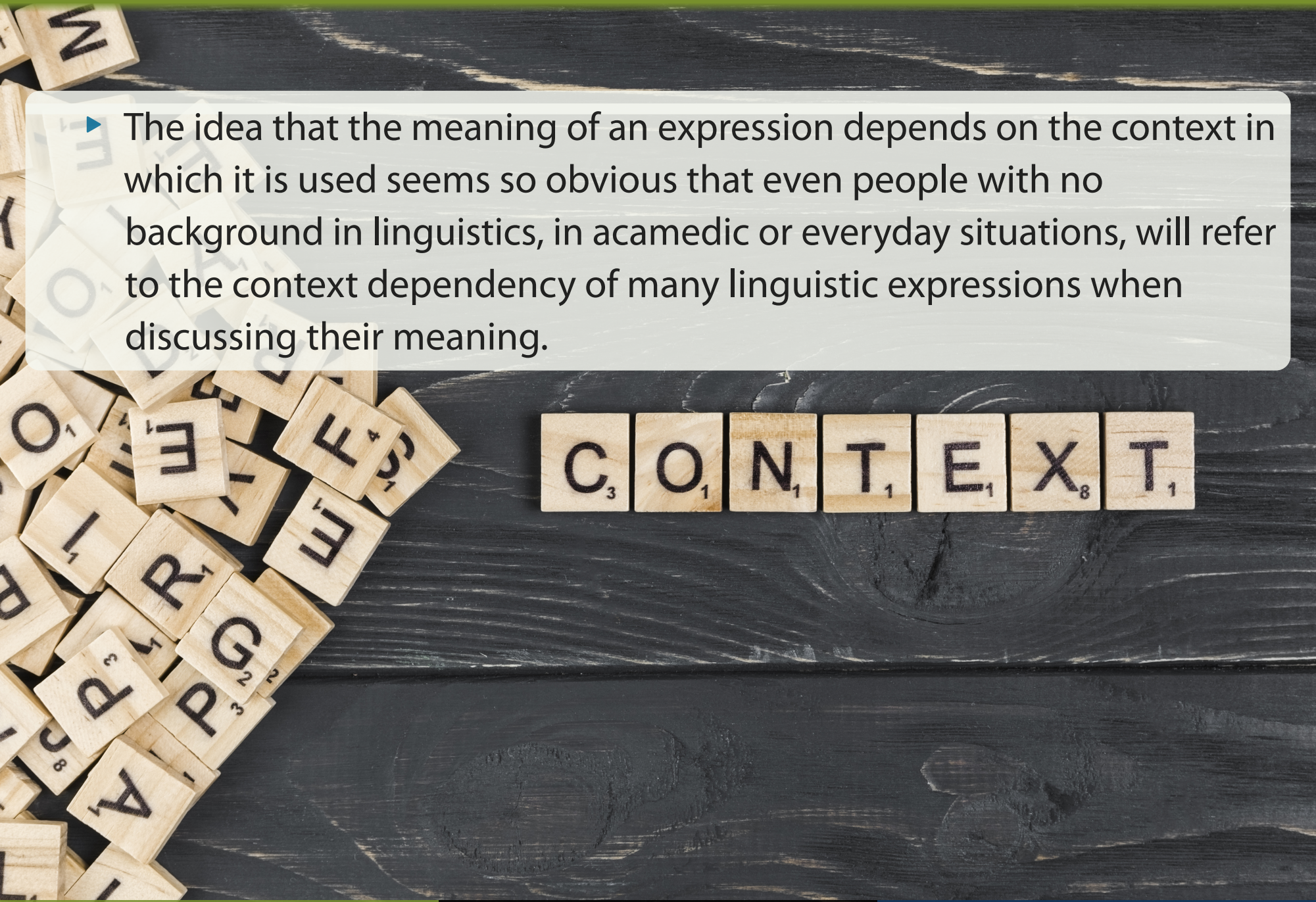
(2) **The utterance context** also determines the **meaning** of some words, such as *my cat*, when uttered by different speakers, refers to different animals. (Eckardt 2021: 2, my translation)

(3) And in any case, **the context** of use will usually pick out the intended reading. (Zimmermann & Sternefeld 2013: 15)

(4) […] words such as *I, you, this, that*, which were taken to provide the prime indicators of requiring denotations relative to **the context** of utterance. (Cann & Kempson & Gregoromichelaki 2009: 114)

(5) [P]ure indexical terms get their **denotation** from **the context** of utterance. (Coppock & Champollion 2024: 320)

(6) This additional **meaning** is not contained in the literal meaning of Berta's statement, but must be inferred from **the context**. (Meibauer 2001, my translation)



- The idea that the meaning of an expression depends on the context in which it is used seems so obvious that even people with no background in linguistics, in acamedic or everyday situations, will refer to the context dependency of many linguistic expressions when discussing their meaning.

- The idea that the meaning of an expression depends on the context in which it is used seems so obvious that even people with no background in linguistics, in acamedic or everyday situations, will refer to the context dependency of many linguistic expressions when discussing their meaning.

(7) National sovereignty seems to mean something clear and precise. It does not. […] Its **meaning depends on the context** in which it is used and the intention of the speaker.

(8) Today, there is no national, international or legal definition of a smart city. Its **meaning depends on the context** and the vantage point of country or stakeholder in question.

(9) Fairness [in data protection] is a vague concept. Its **meaning depends on the context** in which data is being processed.

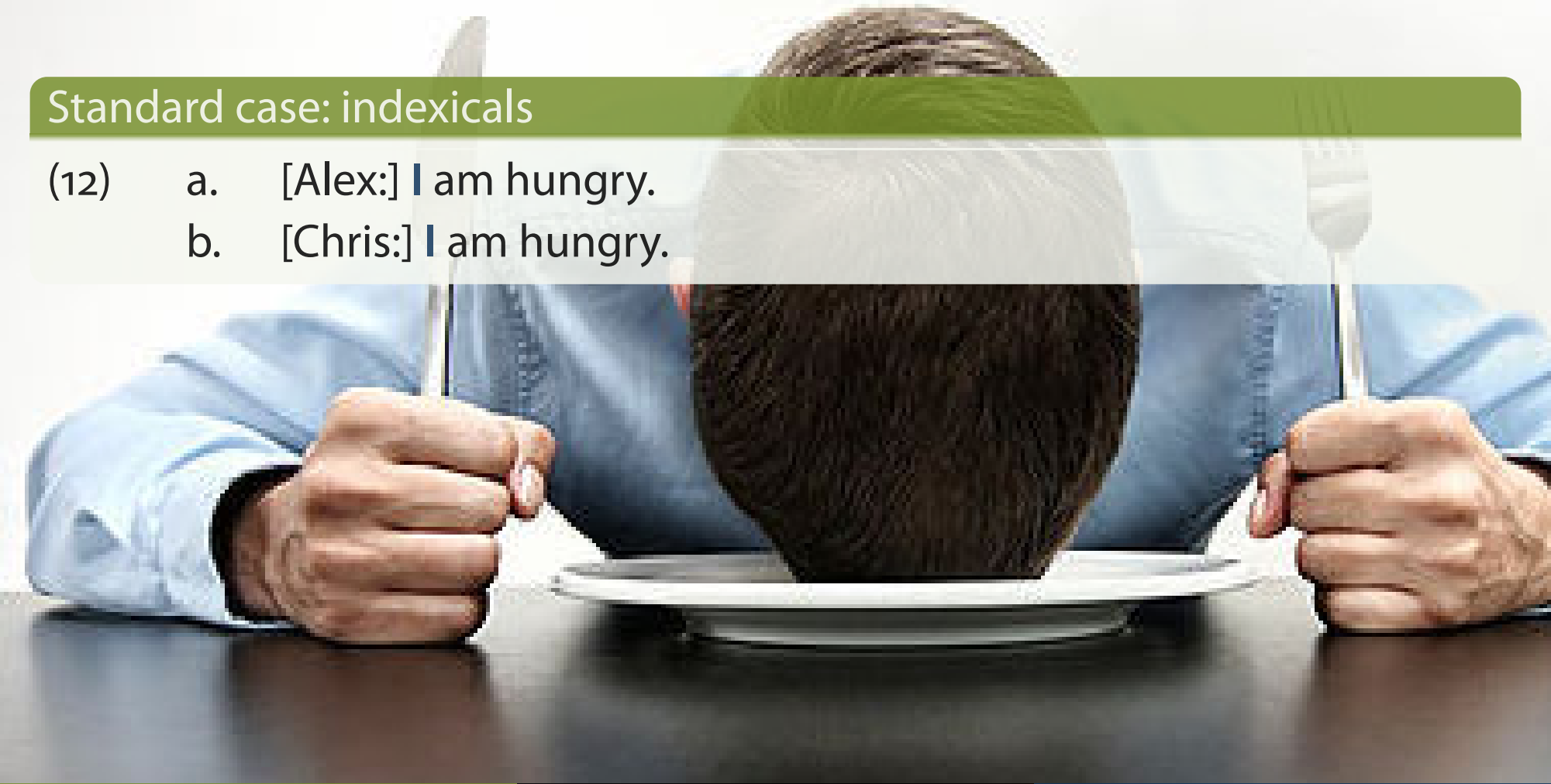
(10) The concept of diversity is a neutral one, devoid of normative features. Its **meaning depends on the context** and the value system in place in a given environment.

(11) A: What does »busted« mean in English, I saw this from the movie called »Charlie St. Cloud«, starred by Zac Efron
B: Normally it is used as slang, its **meaning depends on the context**.

Standard case: indexicals

(12) a. [Alex:] I am hungry.

b. [Chris:] I am hungry.

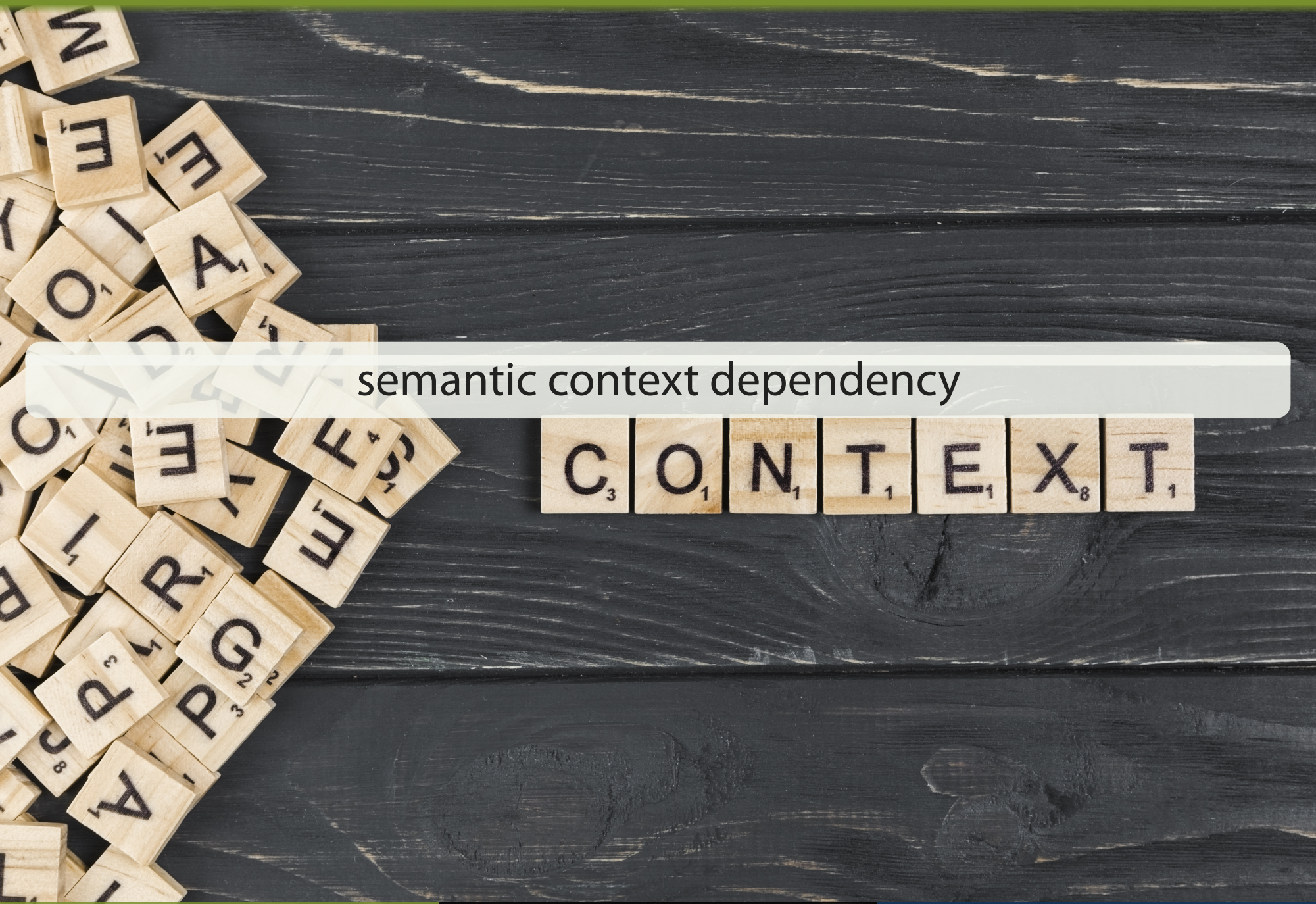


Standard case: indexicals

(12) a. [Alex:] I am hungry. $[\![\text{I}]\!]^{c_{(1a)}} = \text{Alex}$

b. [Chris:] I am hungry. $[\![\text{I}]\!]^{c_{(1b)}} = \text{Chris}$


conventional context dependency
CONTEXT


semantic context dependency
CONTEXT

Case 2: implicatures

(13) [at a party]

Alex: Where is Deniz?

Chris: Some people have already left.

+> Deniz may have left, too.

Case 2: implicatures

(13) [at a party]

Alex: Where is Deniz?

Chris: Some people have already left.

+> Deniz may have left, too.

(14) [at a party]

Alex: How do you like the party?

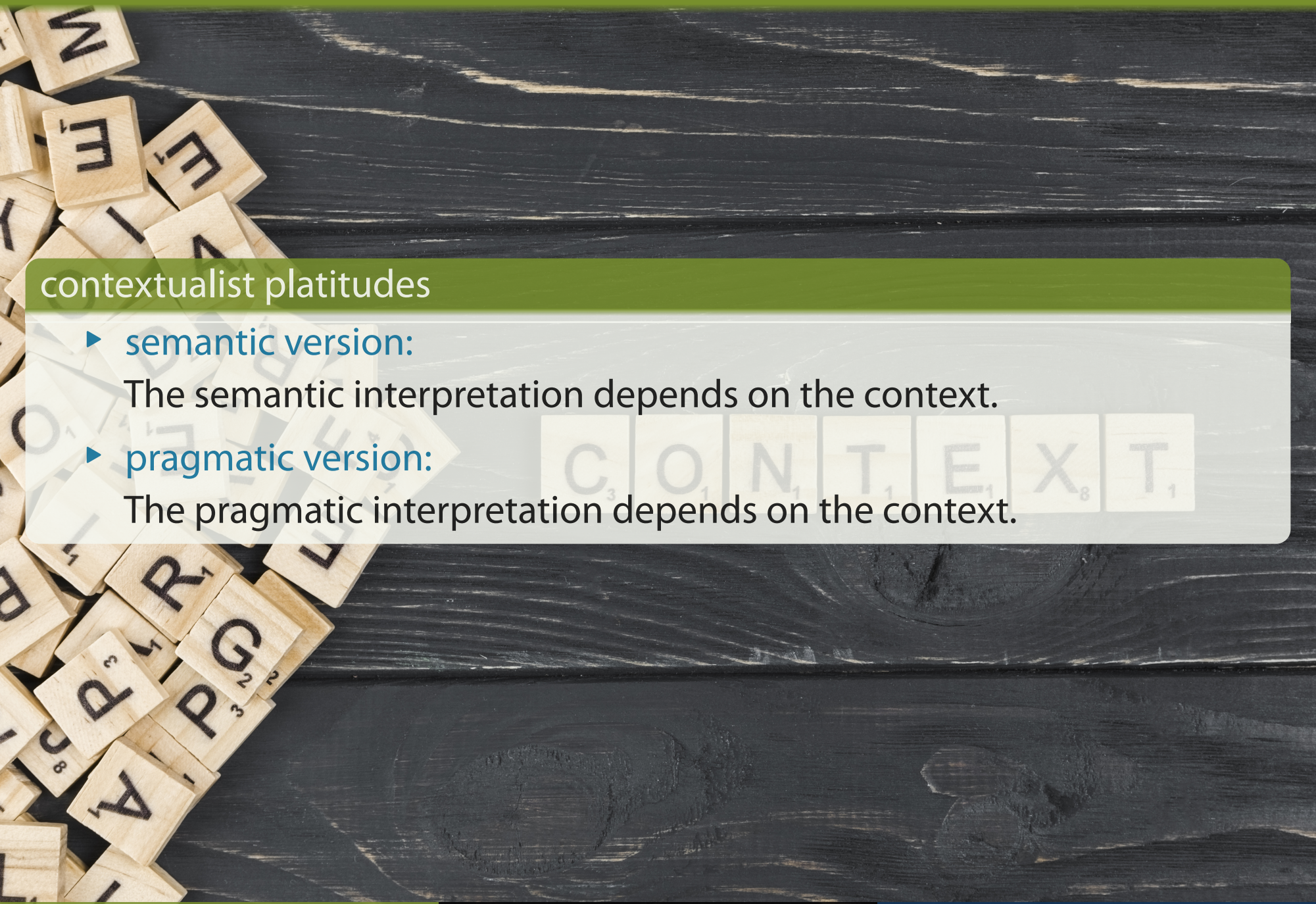
Chris: Some people have already left.

~~+> Deniz may have left, too.~~

+> The party is boring.


conversational context dependency
CONTEXT

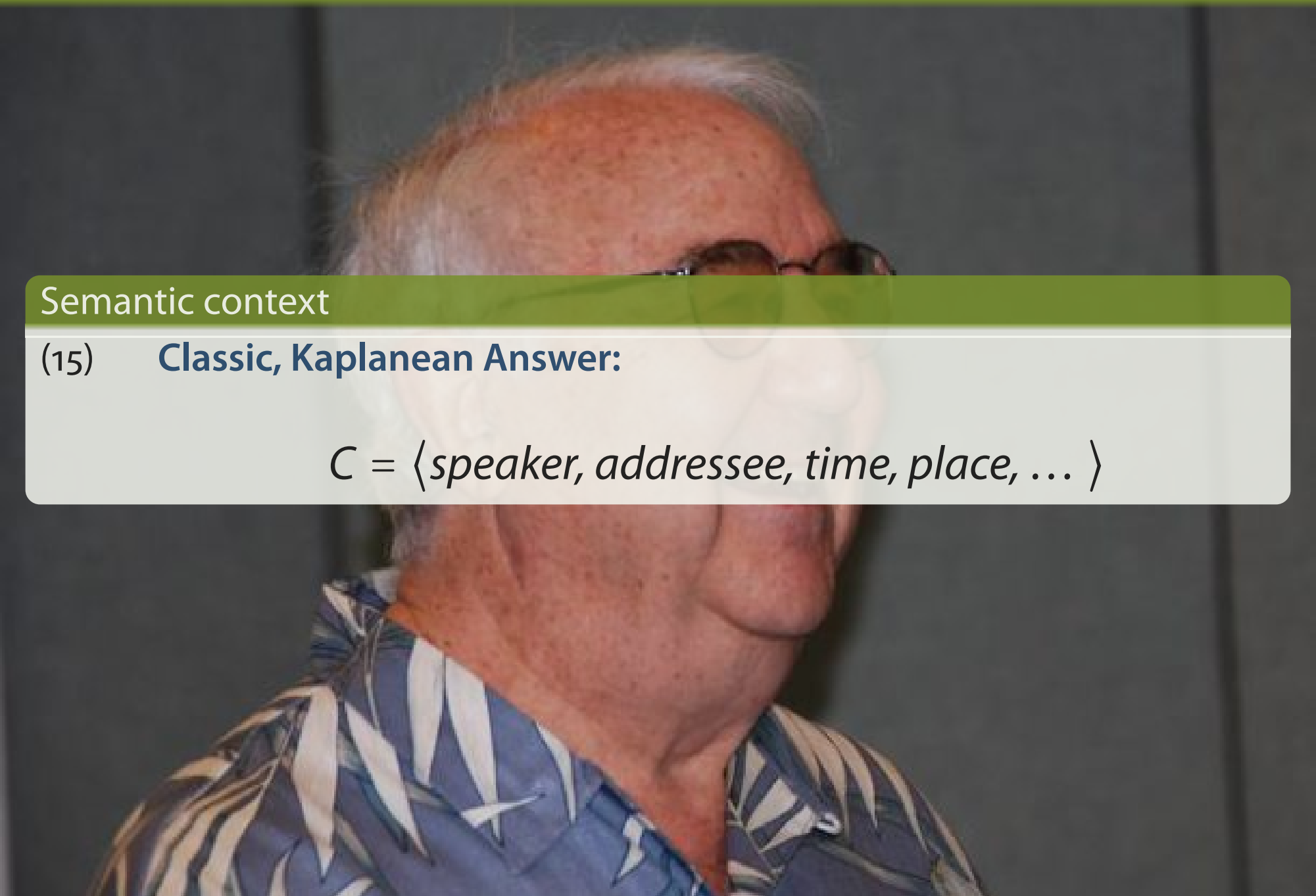

pragmatic context dependency
CONTEXT



contextualist platitudes

- semantic version:
  The semantic interpretation depends on the context.
- pragmatic version:
  The pragmatic interpretation depends on the context.

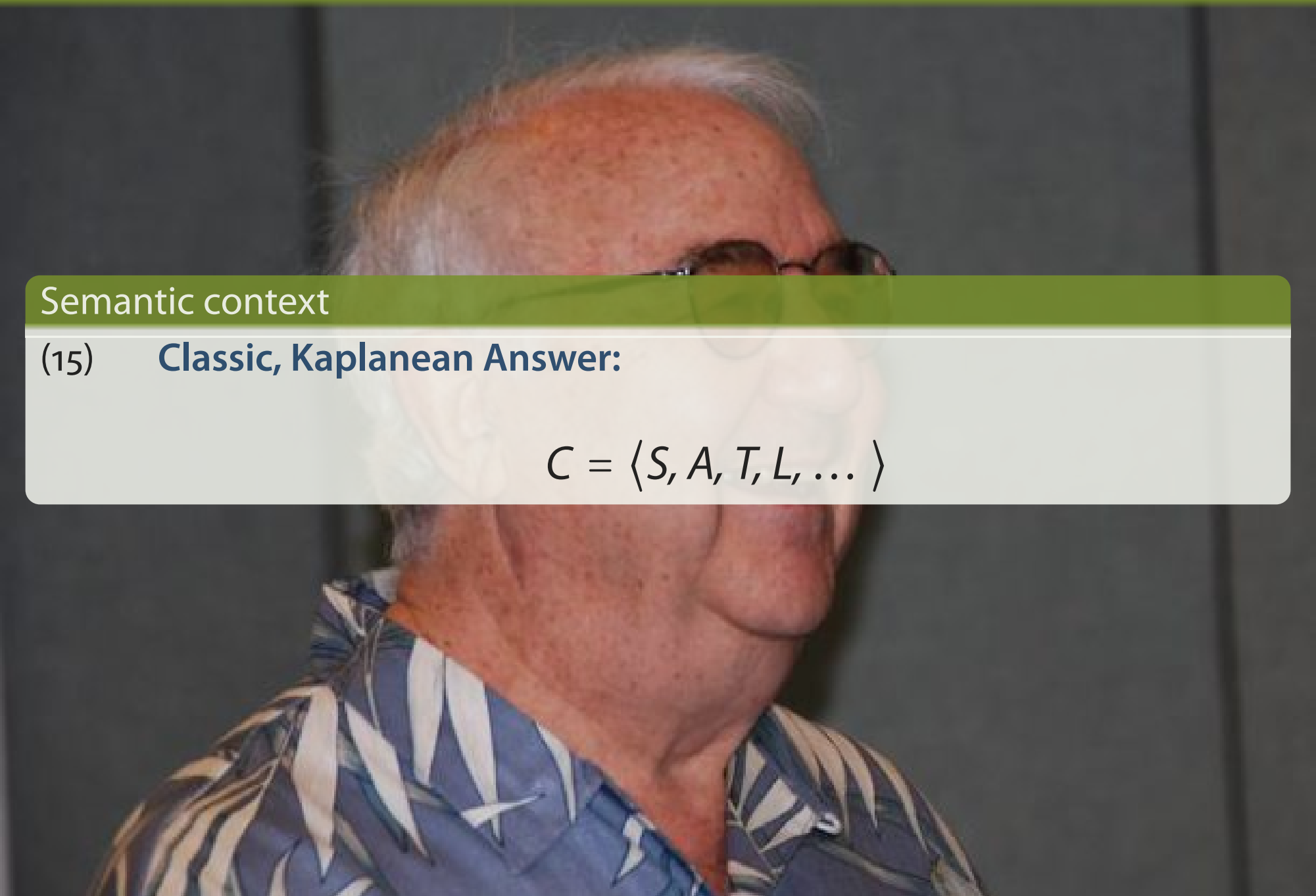
What is a context?



Semantic context

(15) **Classic, Kaplanean Answer:**

$$C = \langle speaker, addressee, time, place, \ldots \rangle$$



Semantic context

(15) **Classic, Kaplanean Answer:**

$$C = \langle S, A, T, L, \ldots \rangle$$

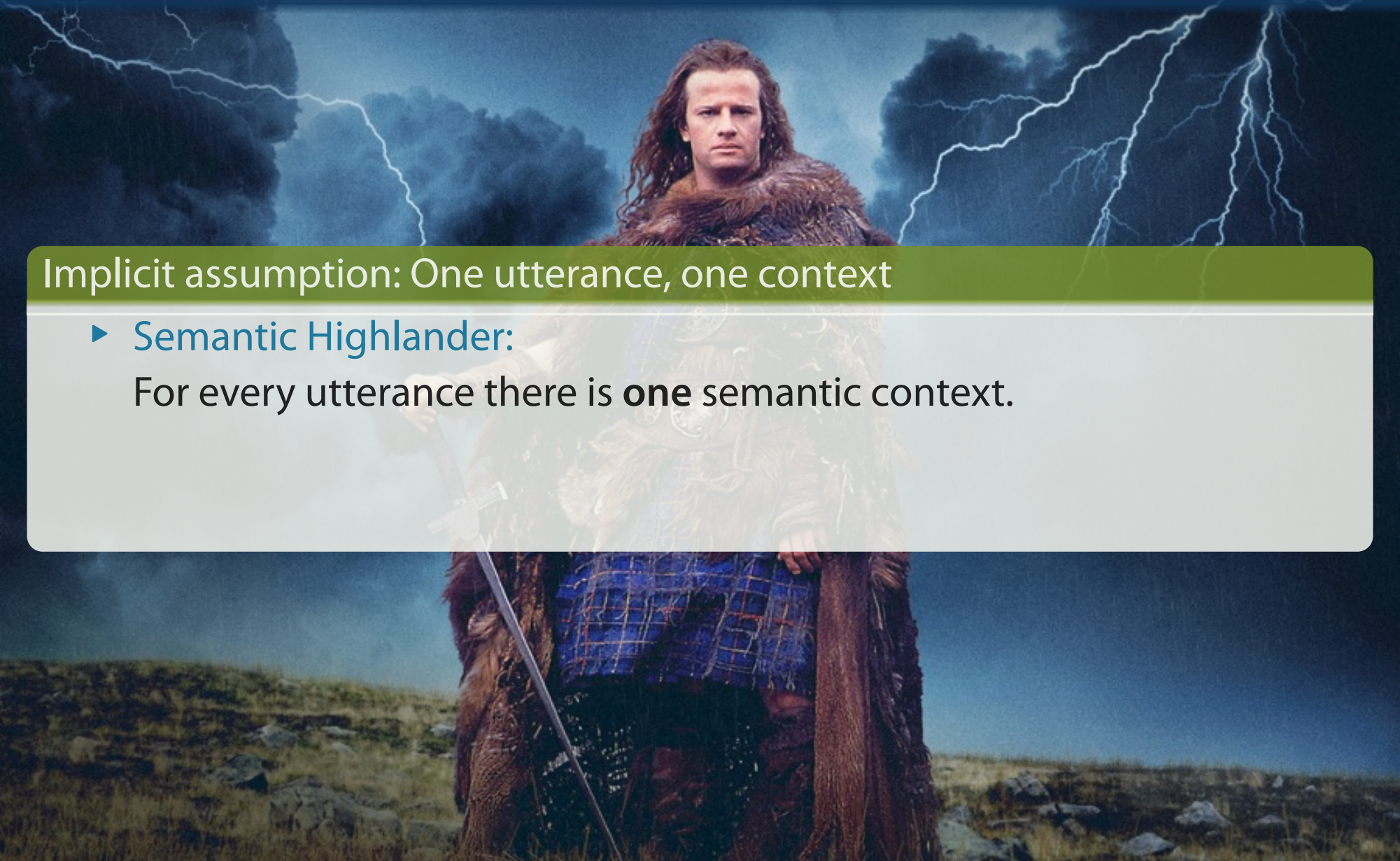
Pragmatic context

(16) A pragmatic content *k* involves a semantic context *c* as well as an additional set of parameters, which at least include the world and situation knowledge of the discourse participants, their knowledge of previous conversations, their shared common beliefs, the question(s) that their conversations tries to solve.

The Highlander

Implicit assumption: One utterance, one context

The Highlander

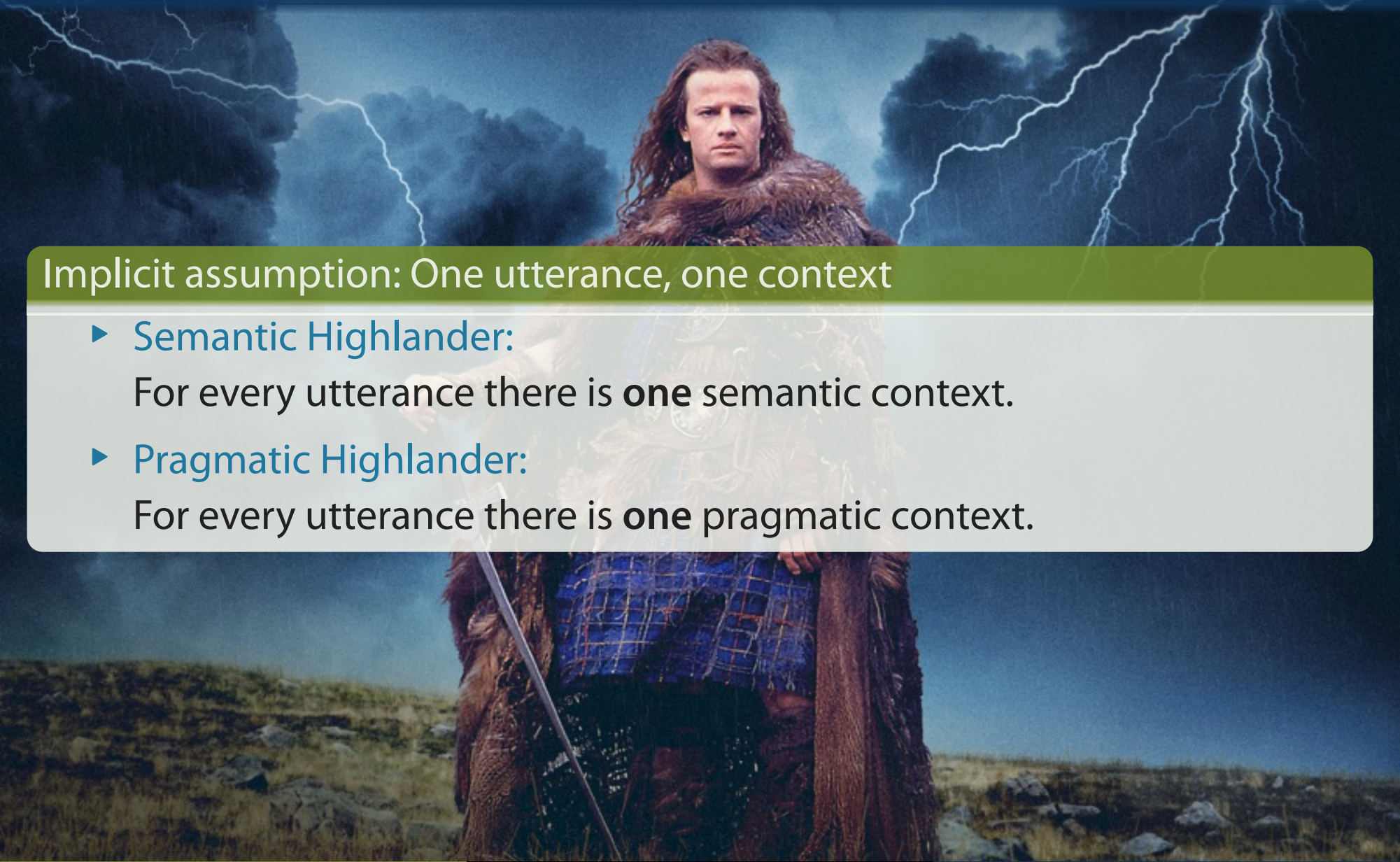


Implicit assumption: One utterance, one context

- Semantic Highlander:

  For every utterance there is **one** semantic context.

The Highlander



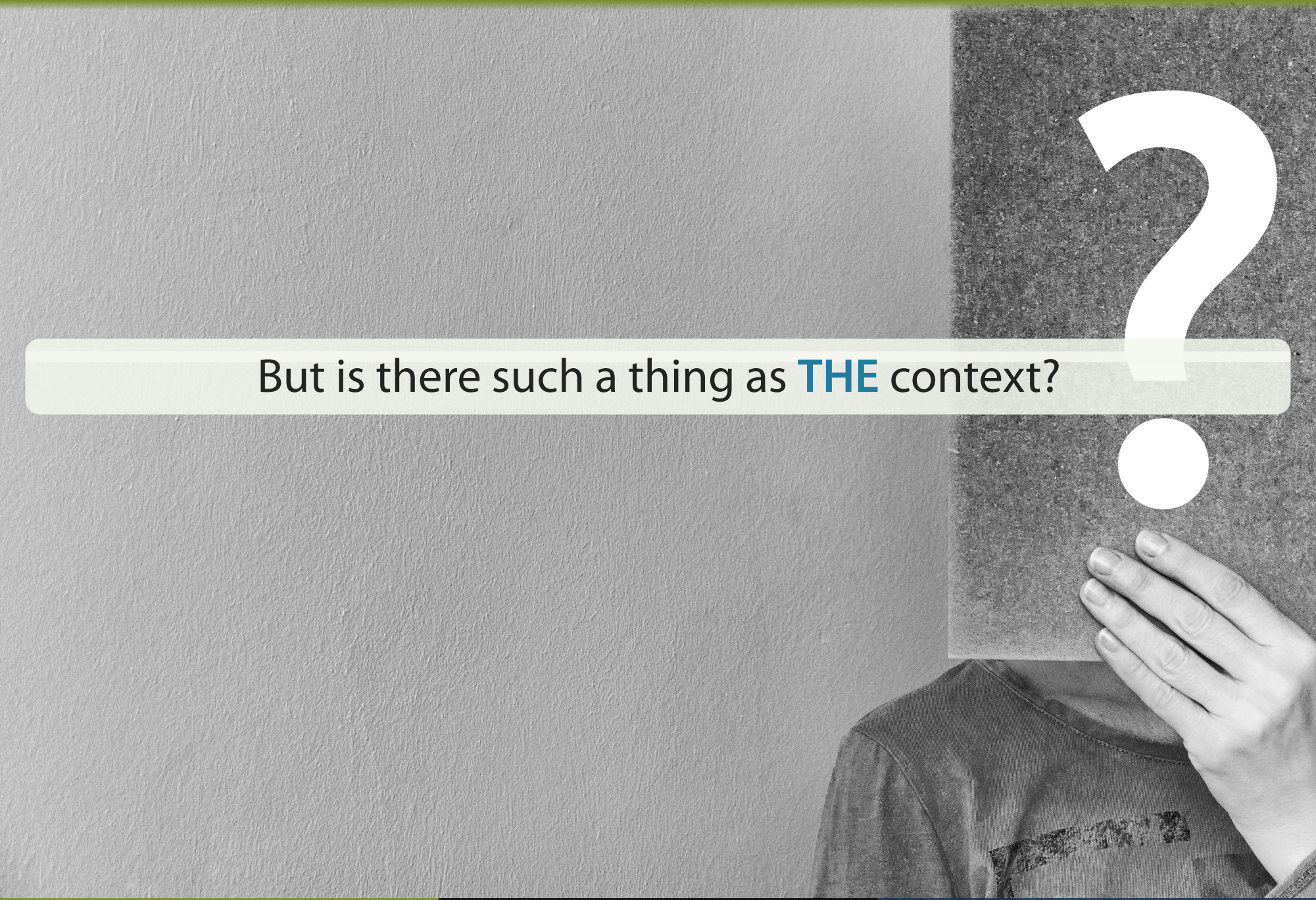
Implicit assumption: One utterance, one context

- Semantic Highlander:
  For every utterance there is **one** semantic context.
- Pragmatic Highlander:
  For every utterance there is **one** pragmatic context.

~~The Highlander~~ Monocontextualism

Implicit assumption: One utterance, one context

- Semantic ~~Highlander~~ **Monocontextualism:**
  For every utterance there is **one** semantic context.
- Pragmatic ~~Highlander~~ **Monocontextualism:**
  For every utterance there is **one** pragmatic context.



But is there such a thing as **THE** context?


NEIN

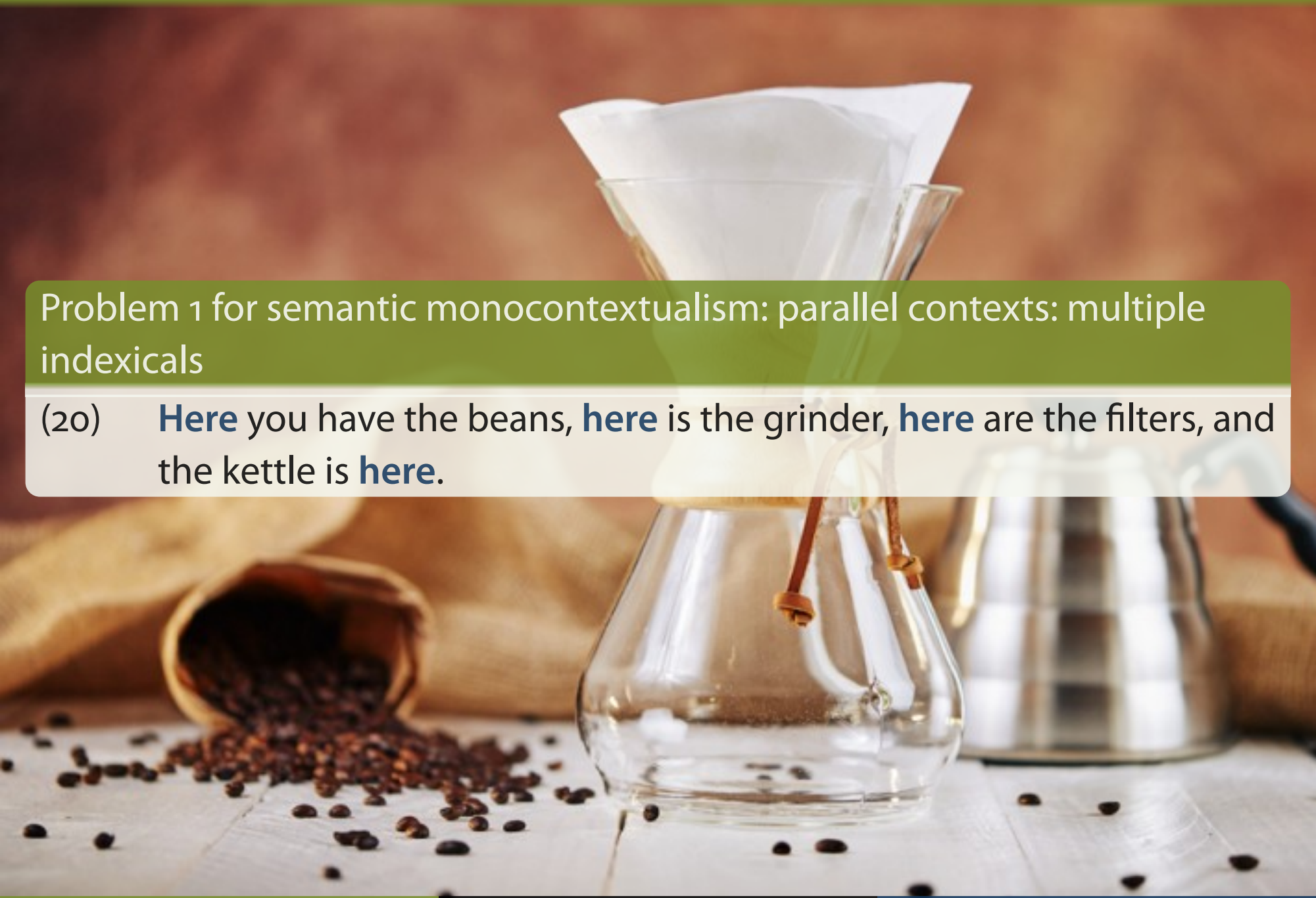
Problem 1: multiple indexicals

(17) Okay, let's split up. **You** are coming with me, **you** are going with Dustin, and **you** are staying here with Mike.

Problem 1: multiple indexicals

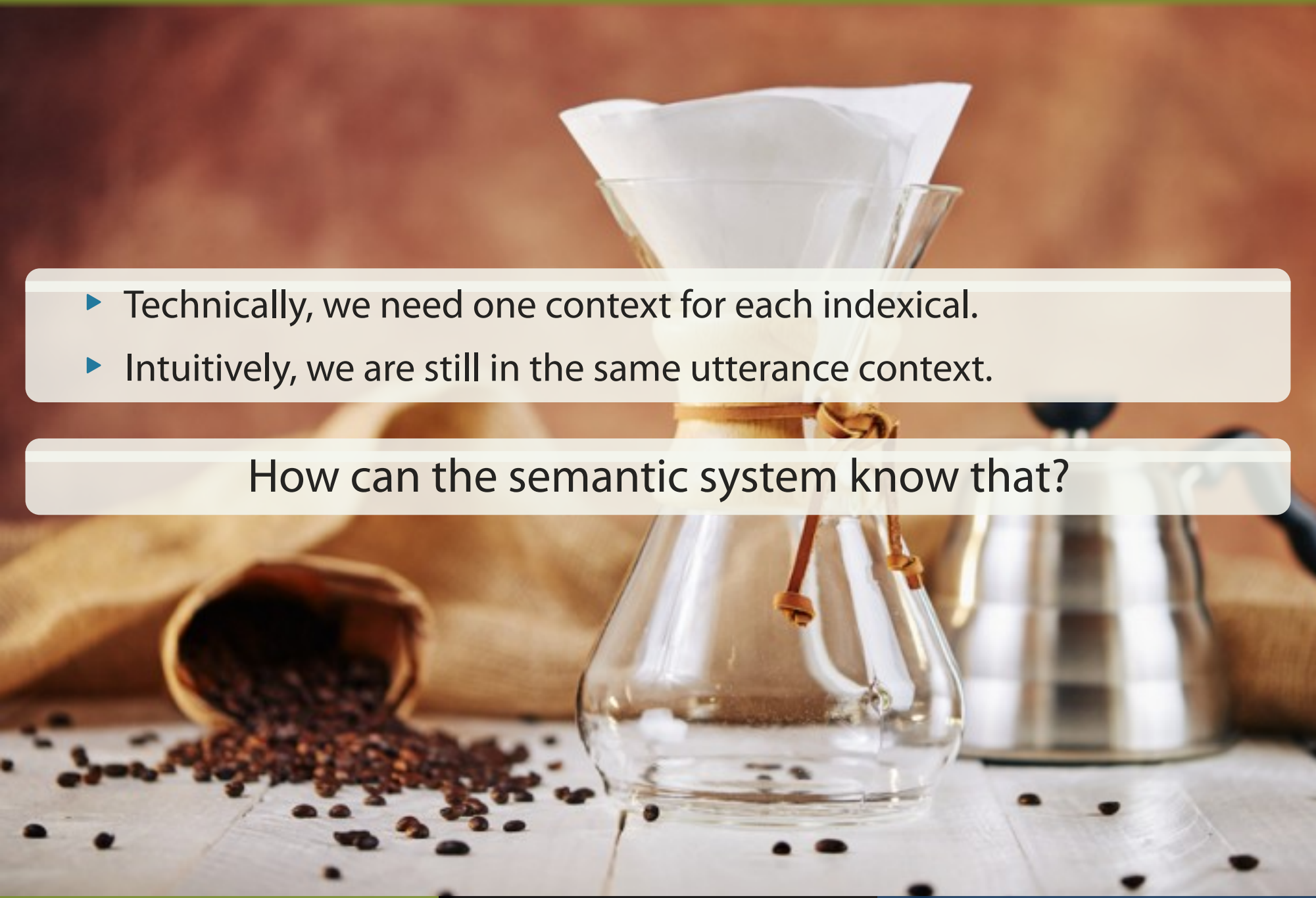
(18) **You** hide behind and **you** under the sofa.

(19) Okay, let's split up. **You, you, and you** are going with Dustin.



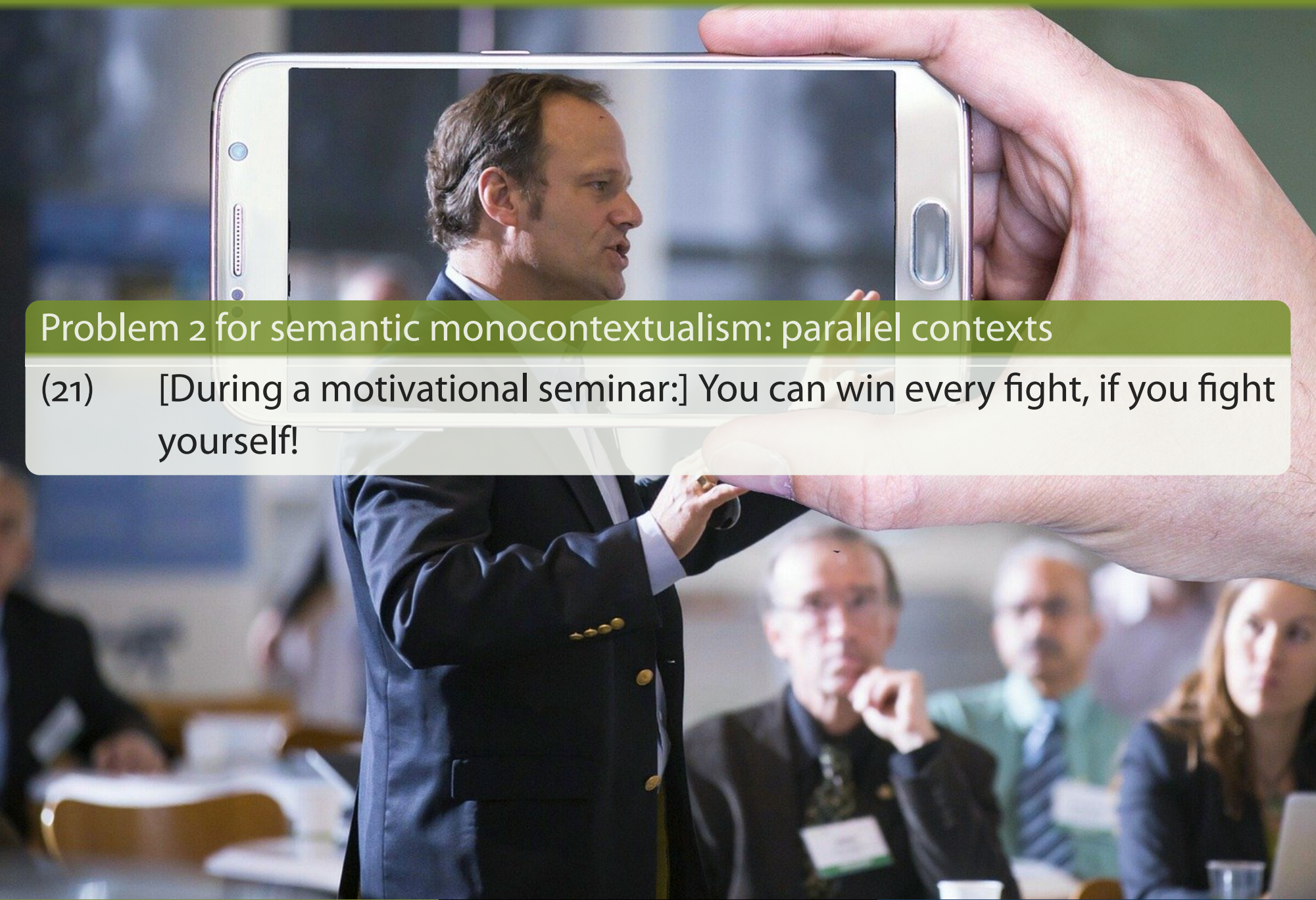
Problem 1 for semantic monocontextualism: parallel contexts: multiple indexicals

(20) **Here** you have the beans, **here** is the grinder, **here** are the filters, and the kettle is **here**.



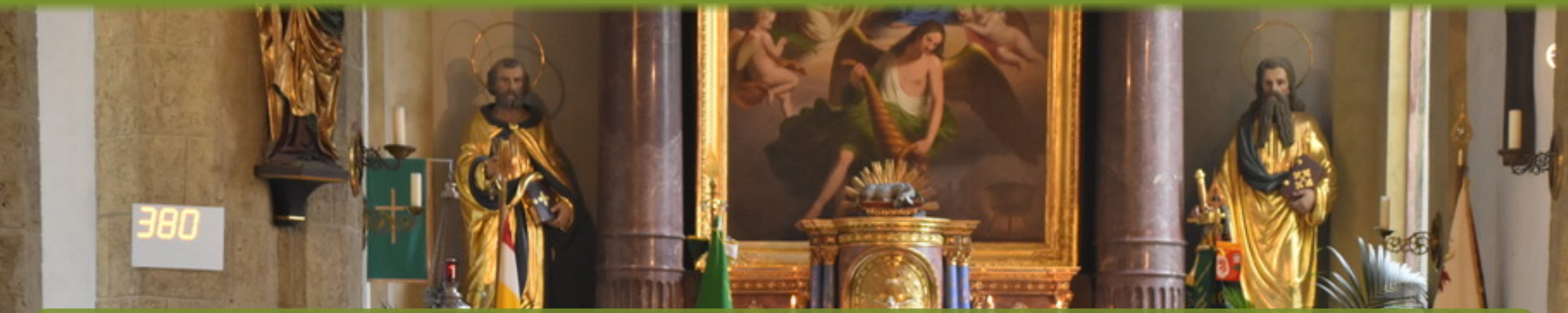
- Technically, we need one context for each indexical.
- Intuitively, we are still in the same utterance context.

How can the semantic system know that?



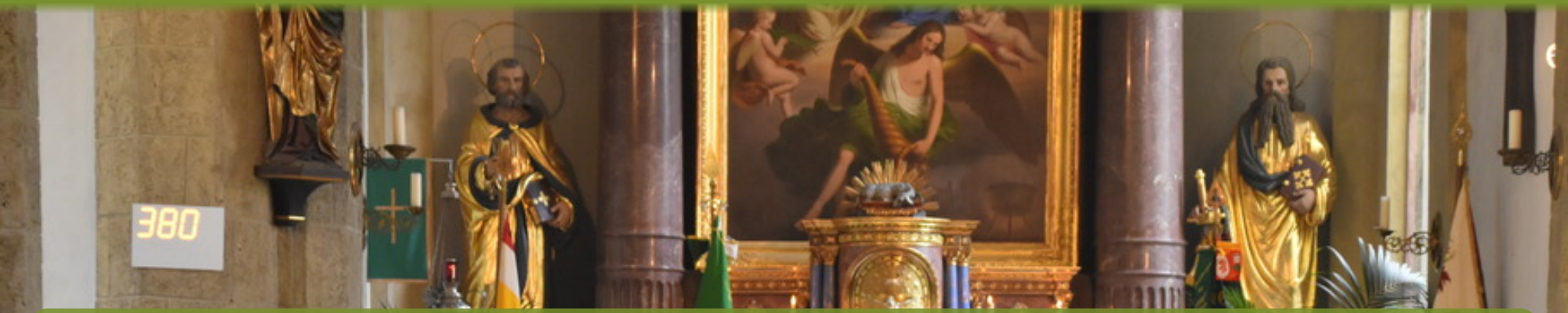
Problem 2 for semantic monocontextualism: parallel contexts

(21) [During a motivational seminar:] You can win every fight, if you fight yourself!



Problem 2 for semantic monocontextualism: parallel contexts

(22) [During a sermon:] Jesus loves **you**, so love yourself!



Problem 2 for semantic monocontextualism: parallel contexts

(22) [During a sermon:] Jesus loves **you**, so love yourself!

Problem 2 for semantic monocontextualism: parallel contexts

(22) [During a sermon:] Jesus loves **you**, so love yourself!

- Common in informal speeches, in sermons (or on the radio or on YouTube).

- In one sense: one utterance context
- In the sense of interpretation: multiple contexts

Problem 1 for pragmatic monocontextualism: parallel contexts: polyphonic irony

(23) [Alex to Chris:] These are some nice socks that you have!
[Chris:] Oh, thanks!
[Danny:] (giggles secretly)

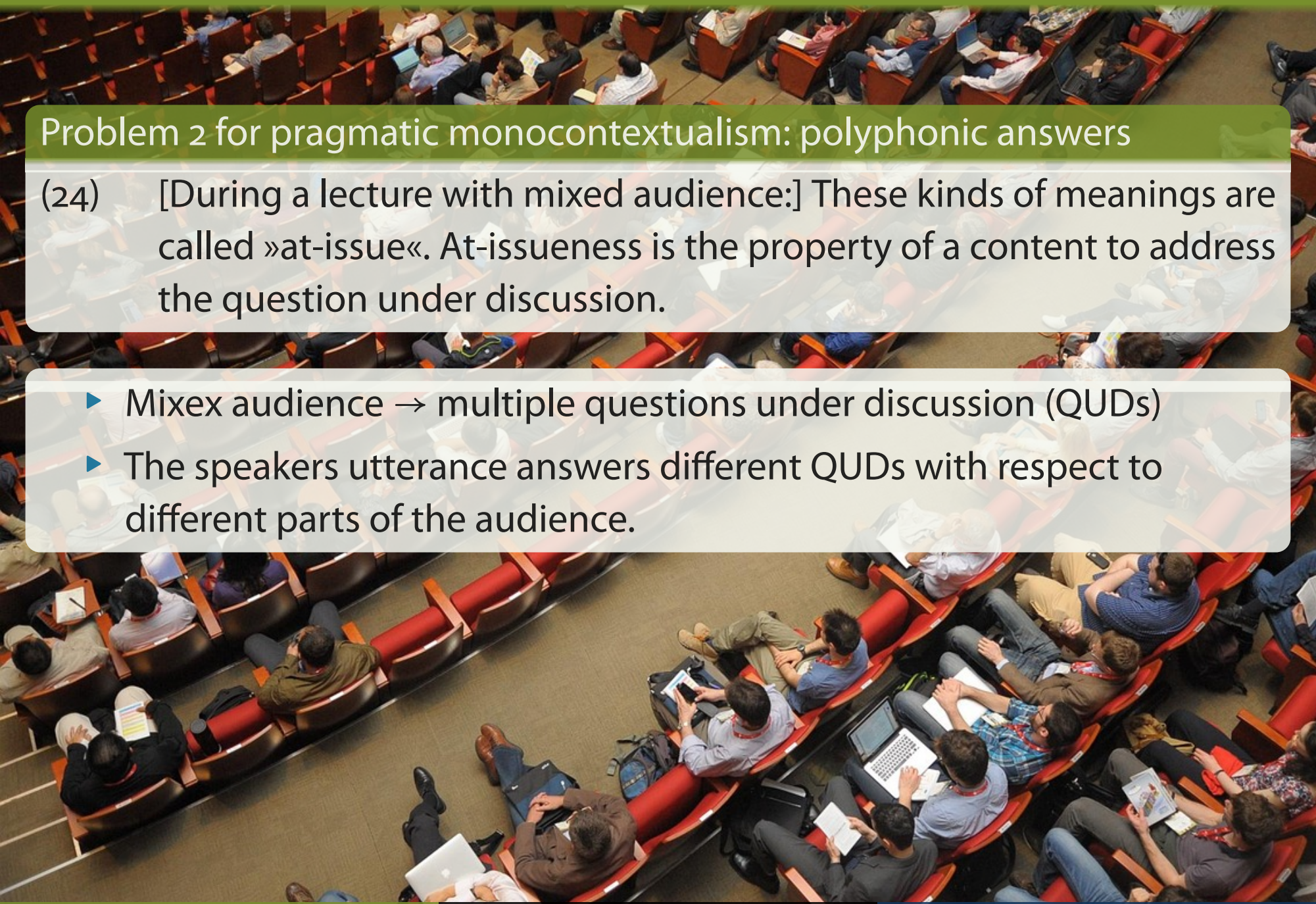
Problem 1 for pragmatic monocontextualism: parallel contexts: polyphonic irony

(23) [Alex to Chris:] These are some nice socks that you have!
[Chris:] Oh, thanks!
[Danny:] (giggles secretly)

- multiple addressees (= multiple contexts)
- multiple common grounds!
- different, intended interpretationens for each addressee

Problem 2 for pragmatic monocontextualism: polyphonic answers

(24) [During a lecture with mixed audience:] These kinds of meanings are called »at-issue«. At-issueness is the property of a content to address the question under discussion.



Problem 2 for pragmatic monocontextualism: polyphonic answers

(24) [During a lecture with mixed audience:] These kinds of meanings are called »at-issue«. At-issueness is the property of a content to address the question under discussion.

- Mixex audience → multiple questions under discussion (QUDs)
- The speakers utterance answers different QUDs with respect to different parts of the audience.

Problem 2 for pragmatic monocontextualism: polyphonic answers

(24) [During a lecture with mixed audience:] These kinds of meanings are called »at-issue«. At-issueness is the property of a content to address the question under discussion.

- Mixex audience → multiple questions under discussion (QUDs)
- The speakers utterance answers different QUDs with respect to different parts of the audience.

Multiquestions

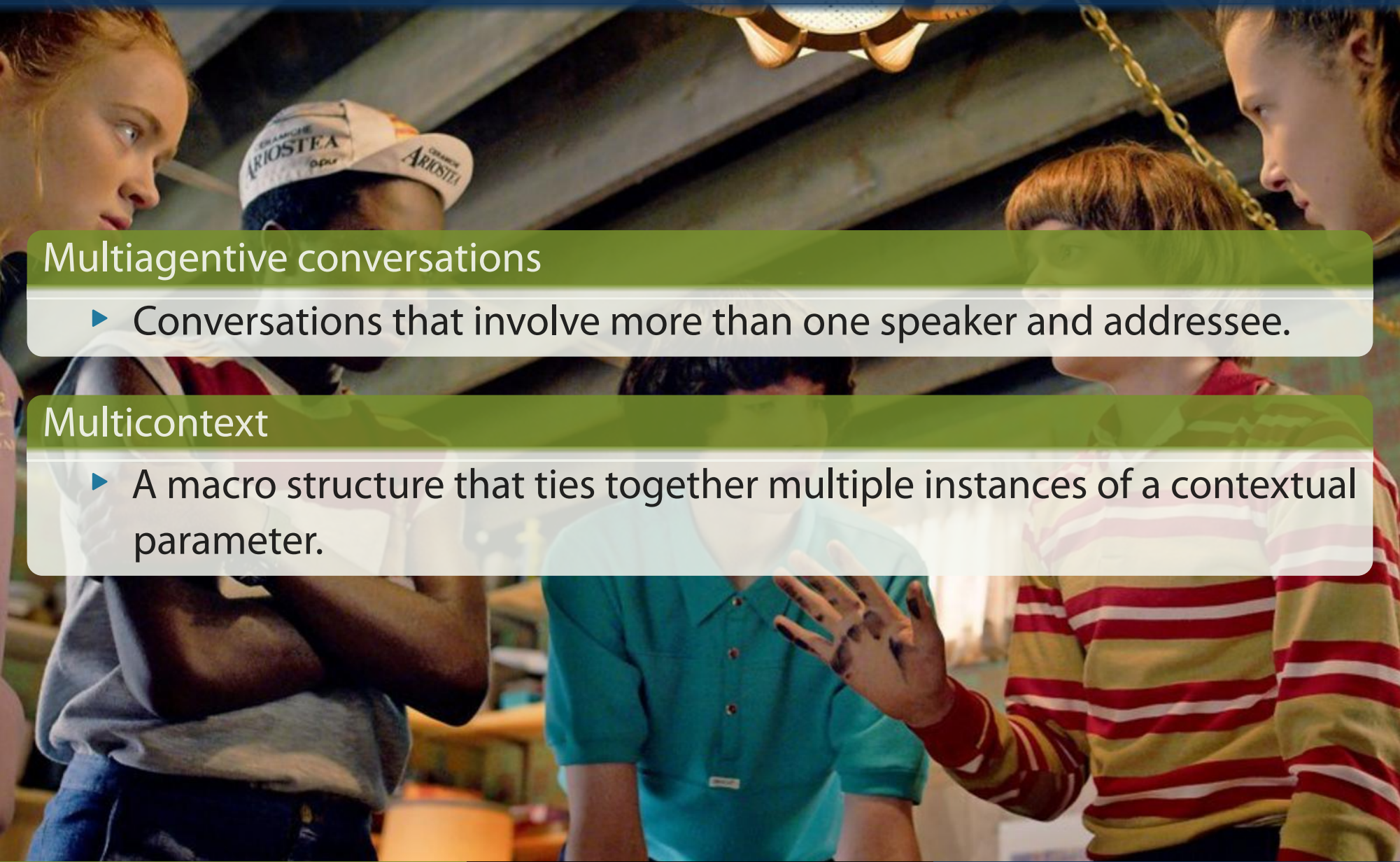
- $\text{QUD}_{\text{students}}$: »What is at-issueness?«
- $\text{QUD}_{\text{experts}}$: »Which notion of at-issueness do you assume here?«

What these cases have in common

Multiagentive conversations

- Conversations that involve more than one speaker and addressee.

What these cases have in common



Multiagentive conversations

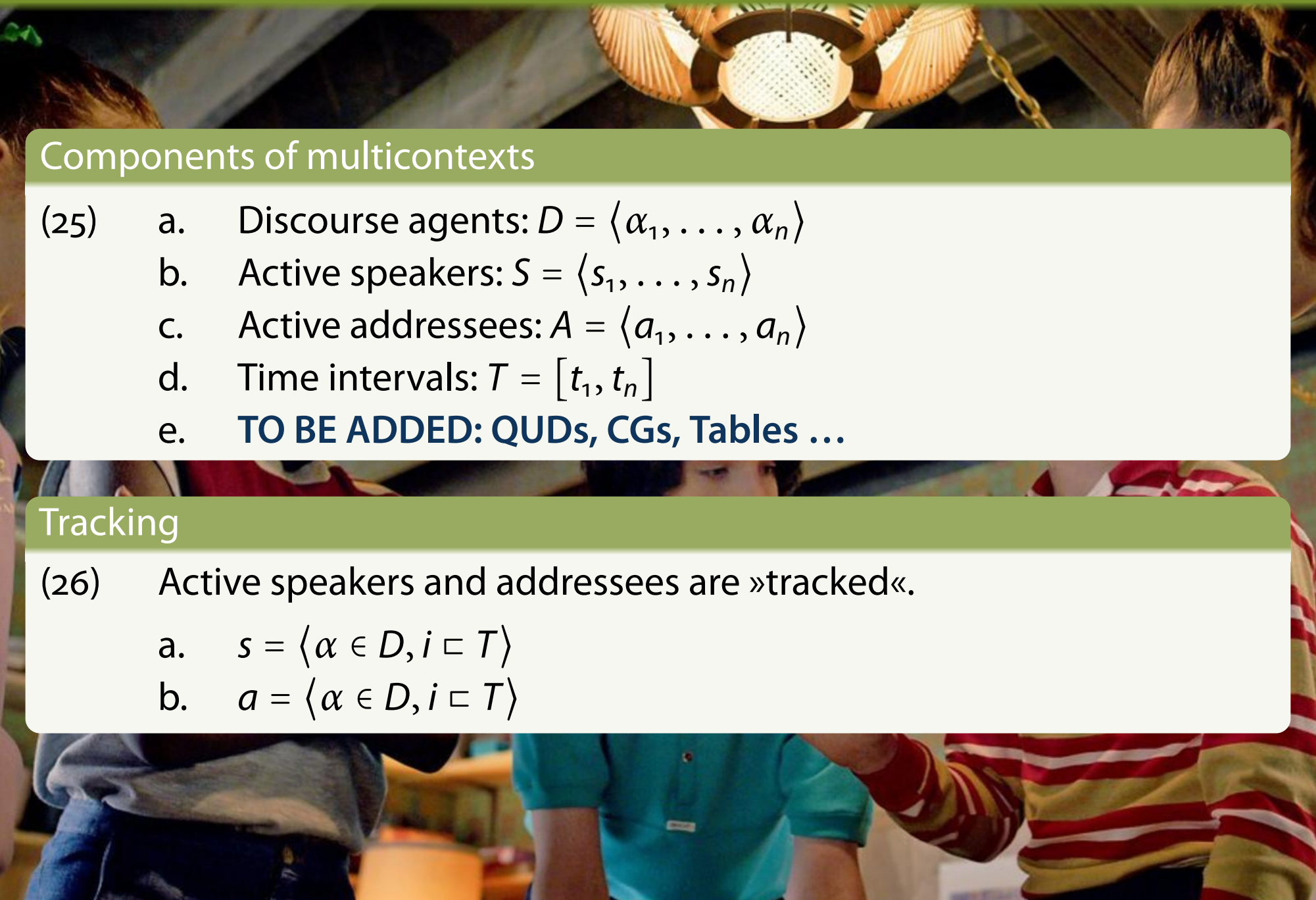
- Conversations that involve more than one speaker and addressee.

Multicontext

- A macro structure that ties together multiple instances of a contextual parameter.

Components of multicontexts

(25)
a. Discourse agents: $D = \langle \alpha_1, \ldots, \alpha_n \rangle$
b. Active speakers: $S = \langle s_1, \ldots, s_n \rangle$
c. Active addressees: $A = \langle a_1, \ldots, a_n \rangle$
d. Time intervals: $T = [t_1, t_n]$
e. **TO BE ADDED: QUDs, CGs, Tables …**



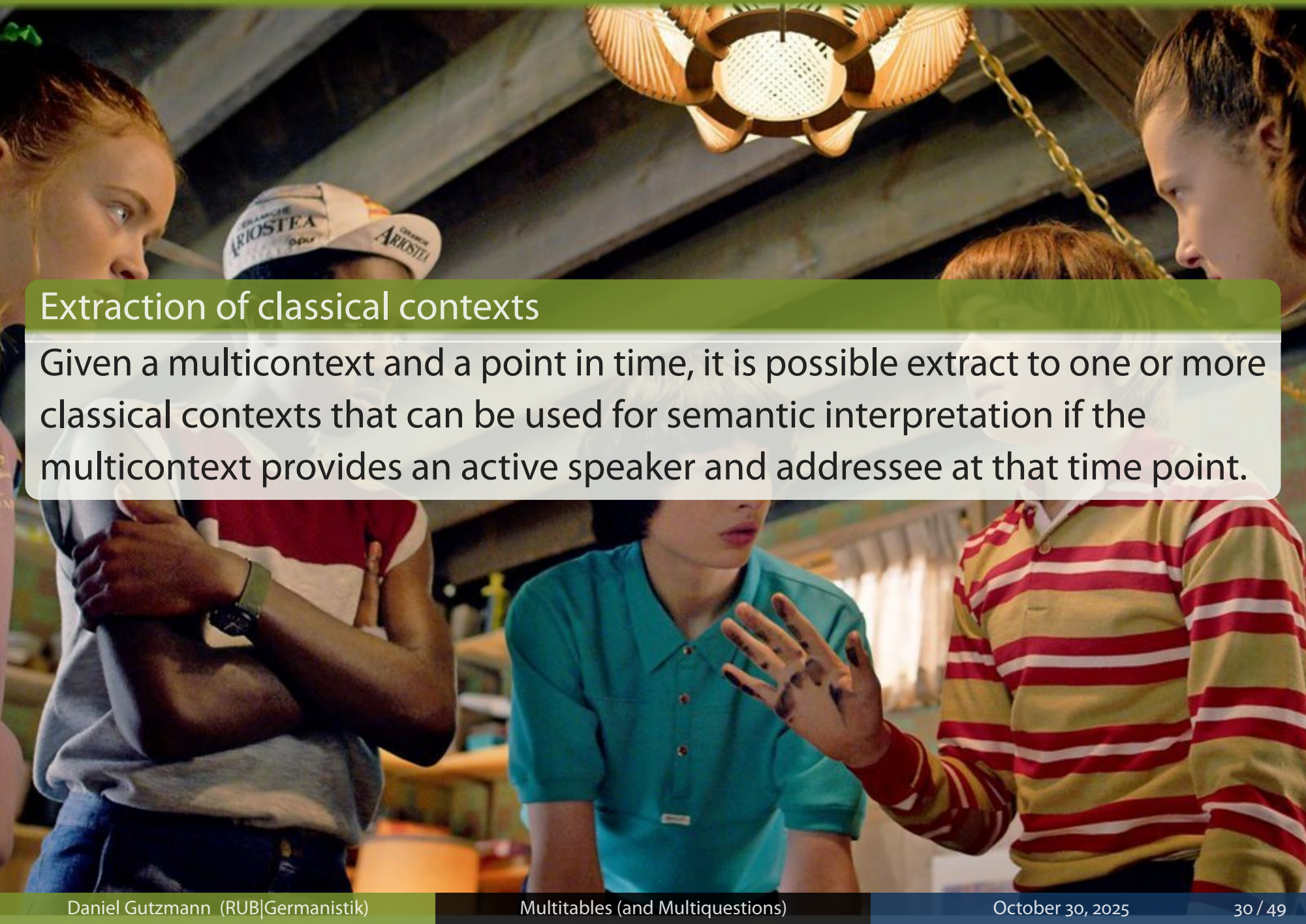
Components of multicontexts

(25)
a. Discourse agents: $D = \langle \alpha_1, \ldots, \alpha_n \rangle$
b. Active speakers: $S = \langle s_1, \ldots, s_n \rangle$
c. Active addressees: $A = \langle a_1, \ldots, a_n \rangle$
d. Time intervals: $T = [t_1, t_n]$
e. **TO BE ADDED: QUDs, CGs, Tables …**

Tracking

(26) Active speakers and addressees are »tracked«.

a. $s = \langle \alpha \in D, i \sqsubset T \rangle$
b. $a = \langle \alpha \in D, i \sqsubset T \rangle$



Extraction of classical contexts

Given a multicontext and a point in time, it is possible extract to one or more classical contexts that can be used for semantic interpretation if the multicontext provides an active speaker and addressee at that time point.

A multicontext

(27) $MC = \langle D = \langle d, m, w \rangle,$
$S = \langle \rangle,$
$A = \langle \rangle,$
$T = [00{:}00, 00{:}01],$
$L = \langle l_1, \ldots, l_5 \rangle \rangle$

Extension during discourse

[00:00]–[00:01]

A multicontext

(27) $MC = \langle D = \langle d, m, w \rangle,$
$S = \langle \langle w, [\textbf{00:02}, \textbf{00:05}], P \rangle \rangle,$
$A = \langle \langle d, [\textbf{00:2}, \textbf{00:05}], P \rangle, \langle m, [\textbf{00:02}, \textbf{00:05}], P \rangle \rangle,$
$T = [00{:}00, \textbf{00:05}],$
$L = \langle l_1, \ldots, l_5 \rangle \rangle$

Extension during discourse

[00:00]–[00:01]

[00:02]–[00:05] Will: Okay, let's split up.

A multicontext

(27) $MC = \langle D = \langle d, m, w \rangle ,$
$S = \langle \langle w, [00{:}02, 00{:}07], P \rangle \rangle ,$
$A = \langle \langle d, [00{:}02, 00{:}07], P \rangle , \langle m, [00{:}02, 00{:}05], P \rangle \rangle$
$T = [00{:}00, 00{:}07],$
$L = \langle l_1, \ldots, l_5 \rangle \rangle$

Extension during discourse

[00:00]–[00:01]

[00:02]–[00:05] Will: Okay, let's split up.

[00:06]–[00:07] You stay here.

A multicontext

(27)
$$MC = \langle D = \langle d, m, w \rangle ,$$
$$S = \langle \langle w, [00{:}02, \mathbf{00{:}09}], P \rangle \rangle ,$$
$$A = \langle \langle d, [00{:}02, 00{:}07], P \rangle , \langle m, [00{:}02, 00{:}05], P \rangle , \langle m, [\mathbf{00{:}08}, \mathbf{00{:}09}], P \rangle \rangle$$
$$T = [00{:}00, \mathbf{00{:}09}],$$
$$L = \langle l_1, \ldots, l_5 \rangle \rangle$$

Extension during discourse

[00:00]–[00:01]

[00:02]–[00:05] Will: Okay, let's split up.

[00:06]–[00:07] You stay here.

[00:08]–[00:09] You come with me.

A multicontext

(27) $MC = \langle D = \langle d, m, w \rangle ,$
$S = \langle \langle w, [00{:}02, 00{:}09], P \rangle \rangle ,$
$A = \langle \langle d, [00{:}02, 00{:}07], P \rangle , \langle m, [00{:}02, 00{:}05], P \rangle , \langle m, [00{:}08, 00{:}09], P \rangle \rangle$
$T = [00{:}00, 00{:}09],$
$L = \langle l_1, \ldots, l_5 \rangle \rangle$

Extension during discourse

[00:00]–[00:01]

[00:02]–[00:05] Will: Okay, let's split up.

[00:06]–[00:07] You stay here.

[00:08]–[00:09] You come with me.

Some classic contexts of this multicontext

(28) a. $CC_1(00{:}06) = \langle w, d, 00{:}06, \ldots \rangle$

b. $CC_2(00{:}08) = \langle w, m, 00{:}08, \ldots \rangle$

A multicontext

(27) $MC = \langle D = \langle d, m, w \rangle ,$
$S = \langle \langle w, [00{:}02, 00{:}09], P \rangle \rangle ,$
$A = \langle \langle d, [00{:}02, 00{:}07], P \rangle , \langle m, [00{:}02, 00{:}05], P \rangle , \langle m, [00{:}08, 00{:}09], P \rangle \rangle$
$T = [00{:}00, 00{:}09],$
$L = \langle l_1, \ldots, l_5 \rangle \rangle$

Extension during discourse

[00:00]–[00:01]

[00:02]–[00:05] Will: Okay, let's split up.

[00:06]–[00:07] You stay here.

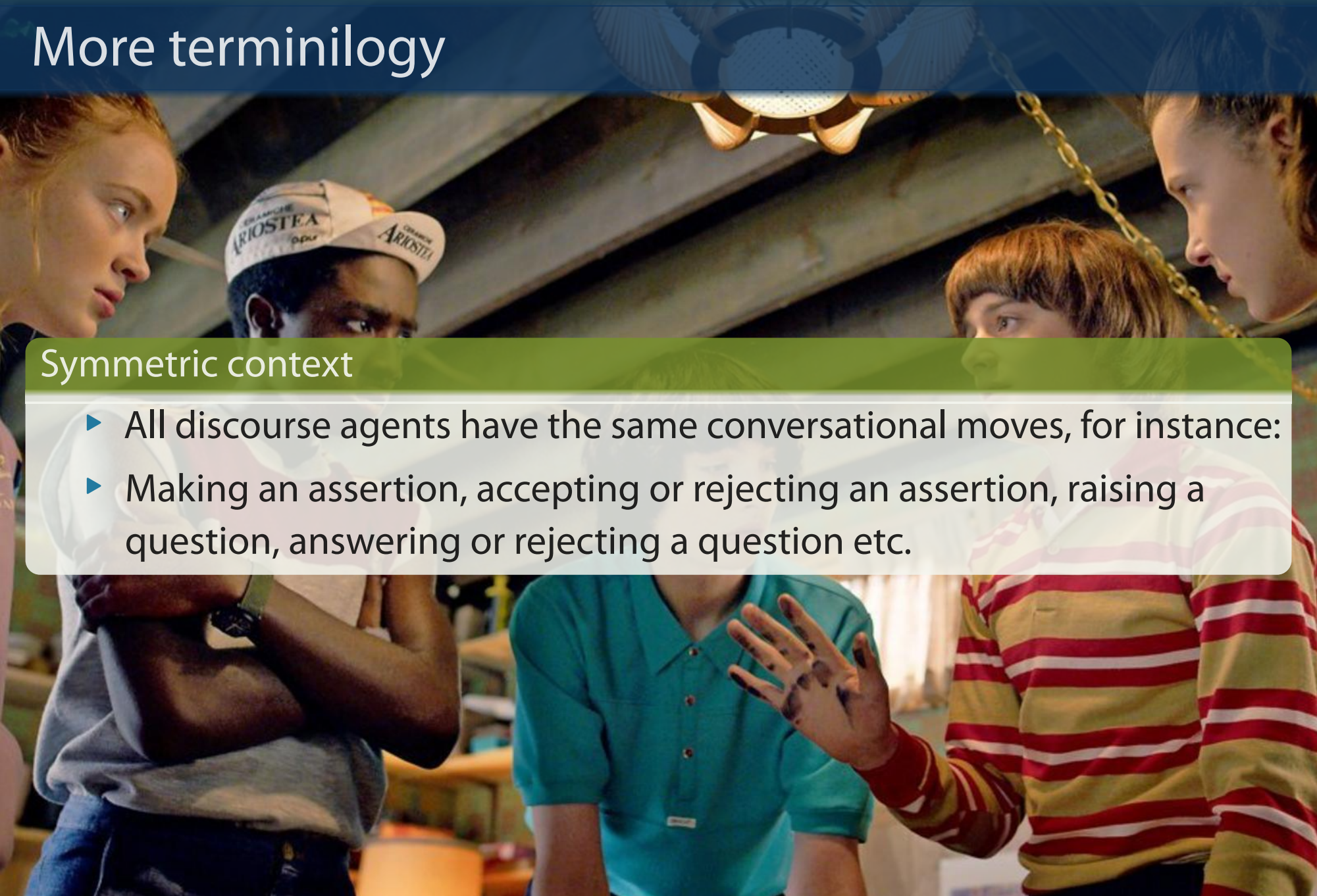
[00:08]–[00:09] You come with me.

Some classic contexts of this multicontext

(28) a. $CC_1(00{:}06) = \langle w, d, 00{:}06, \ldots \rangle$ $[\![\text{you}]\!]^{cc_1} = \text{Dustin}$

b. $CC_2(00{:}08) = \langle w, m, 00{:}08, \ldots \rangle$ $[\![\text{you}]\!]^{cc_2} = \text{Mike}$

More terminilogy



Symmetric context

- All discourse agents have the same conversational moves, for instance:
- Making an assertion, accepting or rejecting an assertion, raising a question, answering or rejecting a question etc.

More terminilogy

Asymmetric context

- Not all discourse agents have the same conversational moves, for instance:
- Only a subset of discourse agents can make assertions, some addressee(s) cannot accept or reject assertions, etc.
- Examples: Public speeches, sermons, political talkshows, TV or radio speeches, YouTube videos etc.

More terminilogy

Asymmetric context

- Not all discourse agents have the same conversational moves, for instance:
- Only a subset of discourse agents can make assertions, some addressee(s) cannot accept or reject assertions, etc.
- Examples: Public speeches, sermons, political talkshows, TV or radio speeches, YouTube videos etc.

Challenges

- Asymetric contexts pose special challenges to interactive models of communicative interaction and common ground update, because the discourse moves that the theories expect are not always available in such contexts.

Background: The table model (Farkas & Bruce 2010)

The table

A		B
DC_A commitments made by A	The table	DC_B commitments made by B
CG The common ground		*PS* The projected set

Background: The table model (Farkas & Bruce 2010)

o: Empty table

A		B
DC_A		DC_B
CG_o		$PS_o = \{CG\}$

Background: The table model (Farkas & Bruce 2010)

1: A asserts sentence *S* with content *p*

A		B
$DC_A = \{p\}$	$\langle S, p \rangle$	DC_B
$CG_1 = CG_0$		$PS_1 = \{CG_0 \cup \{p\}\}$

Background: The table model (Farkas & Bruce 2010)

2: B agrees

A		B
$DC_A = \{p\}$	$\langle S, p \rangle$ $\langle \text{Yes!}, p \rangle$	$DC_B = \{p\}$
$CG_2 = CG_1 = CG_0$		$PS_2 = \{CG_0 \cup \{p\}\}$

Background: The table model (Farkas & Bruce 2010)

3: Table is cleared

A		B
DC_A		DC_B
$CG_3 = CG_0 \cup \{p\}$		$PS_3 = \{CG_3\}$

Symmetric context: Polyphonic irony

(29) [Alex to Chris:] These are some nice socks that you have!
[Chris:] Oh, thanks!
[Danny:] Indeed!

Symmetric context: Polyphonic irony

(29) [Alex to Chris:] These are some nice socks that you have!
[Chris:] Oh, thanks!
[Danny:] Indeed!

- In cases like these, we have to distinguish at least two common ground:
- $CG_{\{A,C,D\}}$: The common ground between all three agents. (CG^*)
- $CG_{\{A,D\}}$: The common ground between Alex and Danny (»the bullies«).

Background: The table model (Farkas & Bruce 2010)

Two conversations

- There are basically two conversations happening at once: a literal one (between A, B, D) and a ironic one (between A and D).

Background: The table model (Farkas & Bruce 2010)

Two conversations

- There are basically two conversations happening at once: a literal one (between A, B, D) and a ironic one (between A and D).
- For the »literal« conversation, the table works as before.

Literal table

A		B	C
$DC_A = \{p\}$	$\langle$Nice socks!, $p\rangle$ $\langle$Thanks!, $p\rangle$ $\langle$Indeed!, $p\rangle$	$DC_B = \{p\}$	$DC_C = \{p\}$
$CG_2 = CG_1 = CG_0$		$PS_2 = \{CG_0 \cup \{p\}\}$	

- But this only captures one side of what is going on.
- In the ironic conversation, neither A and B are making a commitment toward *p*.
- In fact, p is incompatible with their private common ground.
- This is why an alternative proposition *q* (i.e. the socks are absolutely not cool) is put on the table.
- This is also what D agrees on with his acceptance (which thus plays a double role as well).
- This means that we do not just need two common grounds, but also multiple DCs for each person.

Relativized commitment

- A DC is a **relation**: A persons makes a commitment **to another person** (or persons).
- $DC_{\langle A,\{C,D\}\rangle}$: The commitments made by A to C and D. (DC^*_A)
- $DC_{\langle A,\{D\}\rangle}$: The commitments made by A only to D.

A multitable

A		B	C
$DC_A^* = \{p\}$	$\langle$Nice socks!, $p\rangle$ $\langle$Thanks!, $p\rangle$ $\langle$Indeed!, $p\rangle$	$DC_B^* = \{p\}$	$DC_C^* = \{p\}$
$DC_{\langle A,\{D\}\rangle} = \{q\}$	$\langle$Nice socks!, $q\rangle$ $\langle$Indeed!, $q\rangle$		$DC_{\langle D,\{A\}\rangle} = \{q\}$
$CG_2^* = CG_1^* = CG_0^*$		$PS_2^* = \{CG_0^* \cup \{p\}\}$	
$CG_{\{A,D\},2} = CG_{\{A,D\},1} = CG_{\{A,D\},0}$		$PS_{\{A,D\},2} = \{CG_{\{A,D\},0} \cup \{q\}\}$	

A multitable

A		B	C
DC_A^*	$\langle$Nice socks!, $p\rangle$ $\langle$Thanks!, $p\rangle$ $\langle$Indeed!, $p\rangle$	DC_B^*	DC_C^*
$DC_{\langle A,\{D\}\rangle}$	$\langle$Nice socks!, $q\rangle$ $\langle$Indeed!, $q\rangle$		$DC_{\langle D,\{A\}\rangle}$
$CG_3^* = CG_0^* \cup \{p\}$		$PS_3^* = \{CG_3^*\}$	
$CG_{\{A,D\},3} = CG_{\{A,D\},0} \cup \{q\}$		$PS_{\{A,D\},3} = \{CG_{\{A,D\},3}\}$	

A few thought about asymmetric multicontexts

- For asymmetric multicontext, the picture is more complicated.
- Some addressees cannot really accept the answers; thus the table cannot be cleared and nothing becomes ground in the standard table model.
- Maybe we can still use the table model with a different concept of the CG:
- If the table represents the addressee's POV, then we can still work with standard CG updates.

- However, even if not: The speaker is still making commitments, even if the table cannot be cleared.
- This is, for instance, particularly interesting in political talkshows:
- Combination of a symmetric context and an asymmetric one.
- In the symmetric conversation, the goal is rarely an update of the common ground, because political opponents rarely agree.
- This means that the table cannot be cleared.
- In this case, the commitments still remain.
- And these may even be the more interesting component: Commitments as political stance taking.

- This also connects to the idea of multiquestions:
- Beside the QUD that is addressed in the symmetric context, the conversation takes place in a bigger »discourse« (in Foucaultian sense): There are many »pre-made« subject positions that an agent can themself align with.
- This can be thought of as another QUD (»Which subject positions do you align with«) that assertions in a political talkshows address (maybe more often than the »local« QUD).

- All of this still at an early stage and there are many open questions:
- Relativization: What has to be relativized and multiplied?
  - New notion of assertion: relativized assertion
  - Projected set: relativized or more elements?
  - Multiple stacks of QUDs?
- Are there linguistic means that can be used to indicate that more than one question is addressed?
- Asymmetric contexts:
  - Can we really use the table model here?
  - What does that mean for the notion of common ground?
  - In general: What is the epistemic status of the table model (if any)?
- How can the table model (and QUDs) be transfered to traditional notion of »discourse analysis«?
- How can multitables and multiquestions properly be formalized with the *semantic* framework of multicontexts?


Thank you, you, and you
for the attention!
T1 H4 A1 N1 K5 S1