

The semantic behaviour of co-speech gestures and their role in demonstrative reference

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In this talk, we will...

- discuss the semantic – usually non-at-issue – contribution of gestures and locate their behaviour wrt. other well-known categories like implicatures and presuppositions (cf. Ebert & Ebert 2014; Schlenker 2016, to appear)
- show how taking the contribution of gestures seriously leads to a new (revived) view on demonstratives (à la Bühler 1934)
- speculate about the origin of the (default) non-at-issue contribution of gestures

some background

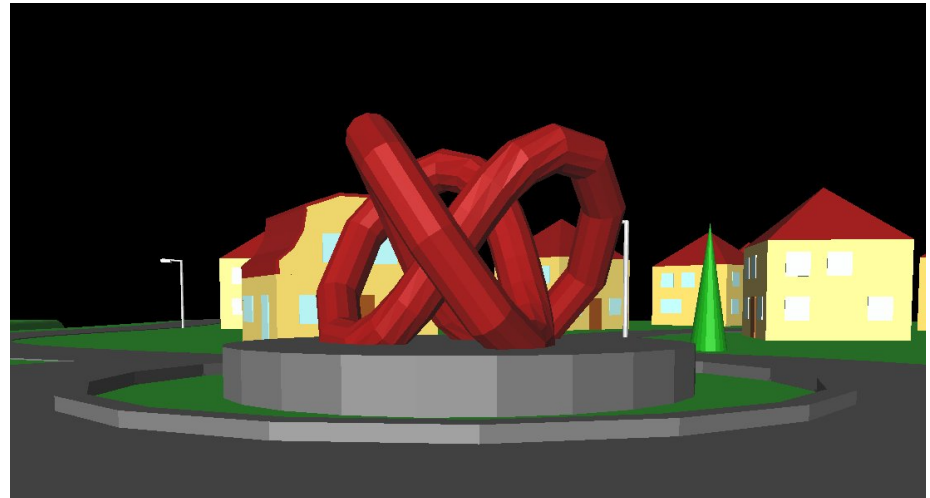
on gesture theory

Gestures

- Gesture:
communicative movements of hands and arms
transporting emotions, intentions, and thoughts
- Types of Gestures:
 - Iconic gestures
 - Pointing gestures
 - Emblematic gestures
 - Metaphoric gestures
 - Regulators
 - Beats

A Corpus Example

- Speech-accompanying iconic gesture
- From the Bielefeld Speech-and-Gesture-Alignment (SaGA) corpus of project B1 *Speech-gesture-alignment* of the SFB 673 *Alignment in Communication* (Lücking et. al 2013)



A Corpus Example



Interloc. right:

The sculpture, [what is there represented]^{+reg-g?}

Interloc. left:

It is on a [grey base made of concrete]^{+ic-g}.

Three meters high. And on it, there are [red tubes]^{+ic-g}.

Gesture Phases

Gesture phrase divides up into three phases
(Kendon 1980; McNeill 1992):

- Preparation phase
(preparation, pre-hold)
- Stroke
- Retraction phase
(post-hold, retraction)

Temporal Alignment

Gesture and speech are temporally aligned:

- **stroke and main accent**
(e.g. Pittenger, Hockett, & Danehey 1960; Loehr 2004)
stroke occurs just before or at the same time as
(but not later than) the nuclear accent
- **gesture phrases and 'tone groups'** (Kendon 1972)
(i.e. 'the smallest grouping of syllables over which a completed intonation tune occurs')
- **gesture phrases and 'information units'**
(Kendon 1988, cf. Halliday 1985)
- **gesture phrases and 'intermediate phrases'** (Loehr 2004)
- **gesture phrases and focus phrases** (Ebert, Evert & Wilmes 2011)

Semantic Contribution

- Gesture information adds semantic content to the utterance
- 'Gesture and speech work together to convey one thought' (cf. McNeill 1992, Kendon 1980)

semantic contribution

gestures systematically contribute non-at-issue meaning

Two Dimensions

- Gestures contribute non-at-issue information by default
- Approach fleshed out within the ‘multidimensional meaning’ frameworks: **at-issue** vs. **non-at-issue** material (e.g. Potts 2005)
- Words, phrases, and entire sentences contribute meanings in different ‘dimensions’ (cf. Grice 1975)
- Formal frameworks: Potts 2005, 2007; Gutzmann 2012; Koev 2013; AnderBois et al. 2015 among others

Two Dimensions within Speech

- Core phenomena:
 1. **expressives** like *damn* (or 'mixed items' like *cur*)
 2. **supplements** like appositive relative clauses or appositive NPs

Paul, the best horse riding instructor in the world, moved to Stuttgart recently.

- bring in information that is not at issue at the time of utterance, but sneaked in as 'secondary' information
- information is not for disposition, non-negotiable

Expressives and Emblems

- Expressives ≈ (co-speech) emblematic gestures
- Transmit attitudes and feelings, often negative ones, often offensive in an immediate fashion
(what Nouwen 2014 characterizes as '*toxic*')
- Potts (2012, p. 2532): expressives create 'a window into [the speaker's] underlying emotional state at the time of utterance'
- Recurring metaphor for gestures: a 'window to the mind'
(cf. the title of McNeill 2000, see also: McNeill 1992, 2005)

Expressives and Emblems

- Structural parallels between expressives and emblems
- Projection to entire proposition possible (ex. from Potts 2005)
 - (1a) *My sister has to mow the **damn** lawn.*
 - (1b) *My sister has to mow the [lawn].*
+ '*annoyance*' gesture
- No projection to entire proposition possible:
 - (1c) *My **damn** sister has to mow the lawn.*
 - (1d) *My [sister] has to mow the lawn.*
+ '*annoyance*' gesture
- Phenomenon not often discussed even within speech, but see Frazier, Dillon, Clifton (2014)

Supplements and Iconics

Appositives \approx (co-speech) iconic gestures

(2) Cornelia: *"Ich habe [eine Flasche Wasser] zum Talk mitgebracht." /*
"I brought [a bottle of water] to the talk."



Conveys roughly the same meaning as:

(3) Cornelia: *"Ich habe eine große Flasche Wasser zum Talk mitgebracht." /*
"I brought a big bottle of water to the talk."

Gestures' Semantic Contribution

- Gesture information adds semantic content to the utterance (cf. McNeill 1992, Kendon 1980)
- Questions:
 - **How** does gesture meaning combine with verbal meaning?
 - **What exactly** is the meaning contribution of the gesture?

Gesture Meaning is Non-at-issue

- Gestures contribute **non-at-issue meaning** (in the sense of Potts 2005)
- Speech-accompanying (iconic and pointing) gestures roughly behave like appositives (Ebert & Ebert 2014)
- Appositives (cf. Potts 2005):
 - (4) *Ludger Beerbaum, an outstanding show jumper, was accused of poling.*
 - (5) *Ludger Beerbaum, who is an outstanding show jumper, was accused of poling.*

Gesture Meaning is Non-at-issue

- Among other things, appositives have these properties:
 - they cannot be denied directly in discourse
 - they project, e.g. they cannot be the target of negation

Gesture Meaning is Non-at-issue

The direct denial test

speech & gesture

(6) *I brought [a bottle of water].*



Direct denial response:

(7) *#That's not true! You actually brought a small bottle.*

Discourse interrupting protest:

(8) *Hey, wait a minute! Actually, the bottle is not as big.*

speech only

(9) *I brought a big bottle of water.*

Direct denial response:

(10) *That's not true! You actually brought a small bottle.*

Gesture Meaning is Non-at-issue

The negation test

speech & gesture

(11) *I did not bring [a bottle of water] to the talk.*



Negation elaboration:

(12) *#A small one is enough for me.*

speech only

(13) *I did not bring a big bottle of water to the talk.*

Negation elaboration:

(14) *A small one is enough for me.*

Gesture Meaning is Non-at-issue

(2) "Ich habe [eine Flasche Wasser] zum Talk mitgebracht." /
"I brought [a bottle of water] to the talk."



How does gesture meaning combine with verbal meaning?

At-issue: semantic content of the speech signal

The speaker brought a bottle of water to the talk

Non-at-issue: 'semantic content' of the gesture (roughly):

The bottle is big

Gesture Meaning is Non-at-issue

Gesture meaning is non-at-issue

- Predictions:
 - gesture meaning is processed like other non-at-issue material (e.g. appositives)
 - gesture meaning is not treated like asserted material and does not enter truth conditions straightforwardly (but see Syrett & Koev 2014 and their results for the truth-conditional contribution of appositives)
- Rating experiment to test for these predictions (Ebert 2014)

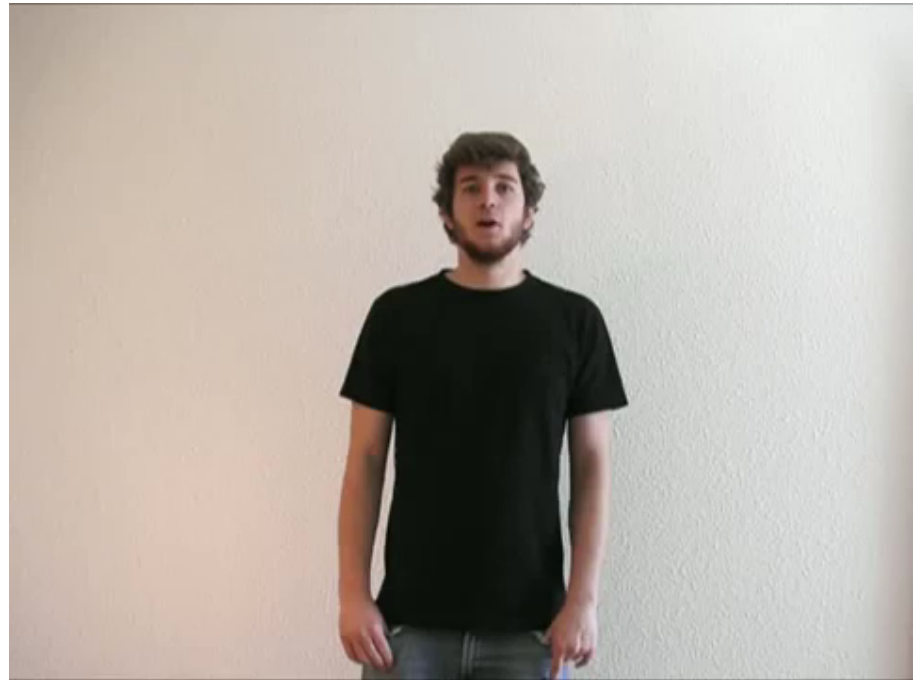
Gesture Meaning is Non-at-issue

rating study: influence of iconic gestures on truth-value judgements

①



②



*Auf diesem Bild ist eine Mauer mit [einem Fenster] zu sehen.
(In this picture, you see a wall with a window.)*

③

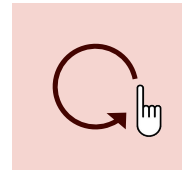
Does the description in the video fit the picture? 1 2 3 4 5

1 = not at all; 5 = perfectly

Gesture Meaning is Non-at-issue

rating study: influence of iconic gestures on truth-value judgements

Auf diesem Bild ist eine Mauer mit [einem Fenster] zu sehen...



Auf diesem Bild ist eine Mauer mit einem runden Fenster zu sehen...

gesture vs. adjective

match vs. mismatch

Gesture Meaning is Non-at-issue

Prestudy to decide on the gesture/adjective to be taken

- Pretest to test for the **typicality of the gestures for the NP concept**
- Worry: some gestures might be considered typical for the NP ('interpretantenbezogene Gesten' (*concept related gestures*), cf. Fricke 2012)
- Picture/gesture match might then be considered high, because gesture matches NP concept, not the concrete DP object
- Solution: choose gestures that are untypical for the NP concept

Gesture Meaning is Non-at-issue

- materials:

24 experimental items (48 fillers)

- independent variables:

MATCH: match vs. mismatch

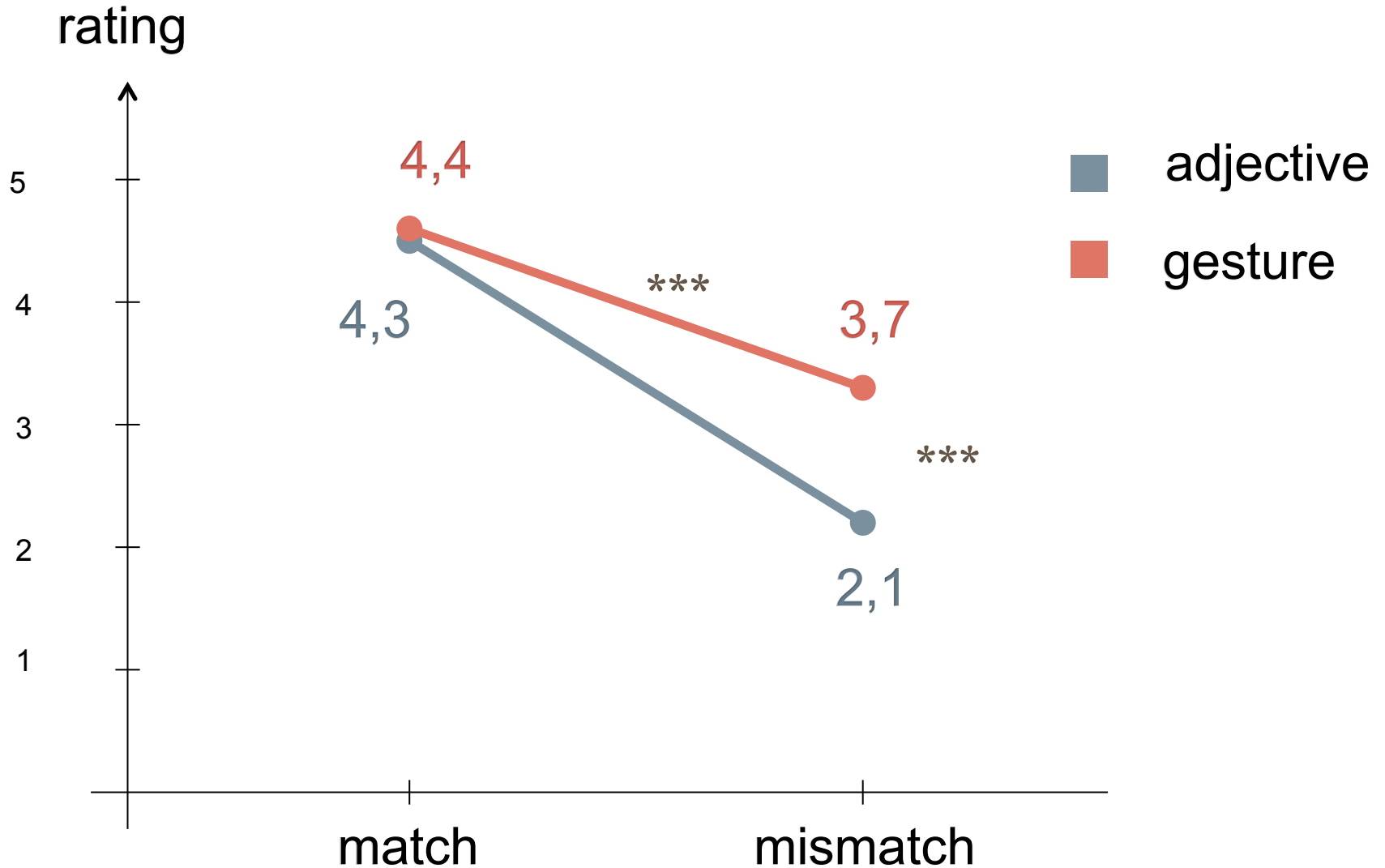
MODE: **gesture** vs. adjective

- participants:

40 students of the University of Stuttgart
native speakers of German

expectation: **gesture mismatch** >> adjective mismatch

Gesture Meaning is Non-at-issue



Gesture Meaning is Non-at-issue

- Predictions confirmed:
 - clear interaction effect: negative influence of mismatches much lower for gestures than for adjectives
 - gesture meaning does not enter truth conditions straightforwardly → not treated like asserted material
- Gesture meaning is not at-issue

Gesture Meaning Contributions

What exactly is the meaning contribution of the gesture?

- No difference between iconic and pointing gestures:

(15) *Philippe also brought [a bottle of water].*



But actually a big one.

- Continuation indicates:
pointing gesture makes non-at-issue contribution

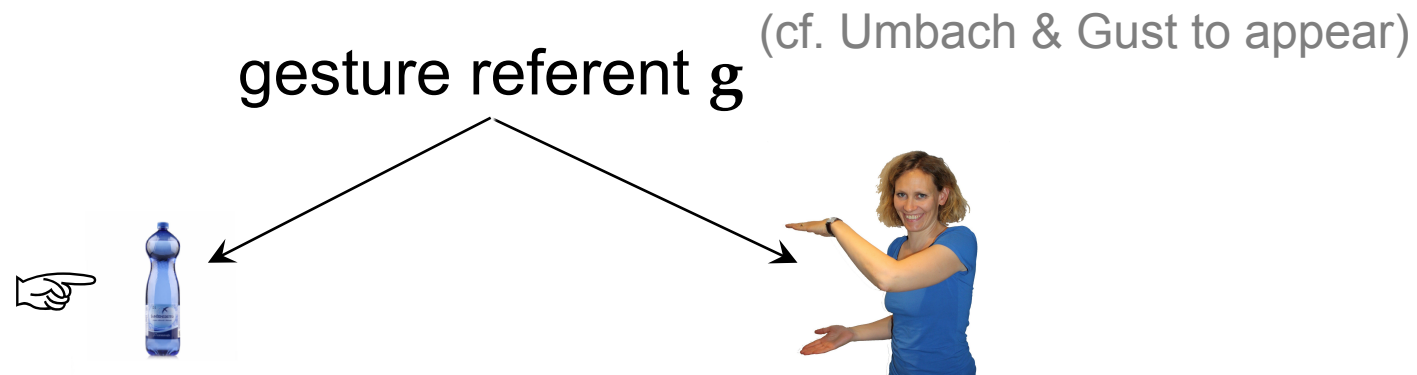
The bottle is small

in the same way as a corresponding iconic gesture

Gesture Meaning Contributions

'Lexical' meaning

- iconic and pointing gestures function alike
— both **refer to an individual**
- For iconic gestures: represented individual is **abstract** and carries at least the features crucial for comparison



- Deferred reference is possible (Nunberg 1993)

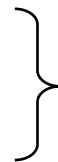
Gesture Meaning Contributions

'Constructional' meaning

- Gesture and speech are temporally aligned
(e.g. Pittenger, Hockett, & Danehey 1960; Loehr 2004)
- Our proposal (Ebert & Ebert 2014):

indefinite article

+  g



g is **similar** to verbal referent

(cf. Umbach & Gust to appear for such an analysis of similarity demonstratives)

name/definite article

+  g



g is **identical** to verbal referent

noun phrase

+  g



g **exemplifies** verbal concept

(cf. Fricke 2012, Lücking 2013)

Gesture Meaning Contributions

Illustrations via gesture mismatch:

- name + gesture → identity

(16) *[Philippe] is a professor in Paris.*



- definite article + gesture → identity

(17) *[The big bottle of water] is blue.*



- noun phrase + gesture → exemplification

(18) *Most [bottles] are made of plastic nowadays.*



A Formal Analysis

- Make use of ideas of Koev (2013) and AnderBois et. al. (2015) to account for at-issue/non-at-issue distinction in a uni-dimensional and dynamic system
- → accounts for anaphora/binding between different levels
 - Keep track of at-issue/non-at-issue content via propositional variables p and p^*
 - At-issue proposal: p^*
 - Non-at-issue imposition: p
- rough approximation of pragmatic use (cf. Farkas & Bruce, 2010)
 - p is on the table for discussion
 - p^* is on the table for discussion

A Formal Analysis

(4) *Ludger Beerbaum, an outstanding show jumper, was accused of poling*

$\exists x \wedge x = \text{ludger_beerbaum} \wedge \text{outstanding_show_jumper}_{p^*}(x) \wedge \text{accused_of_poling}_p(x)$

■ derives two propositions:

- At-issue proposal: Ludger Beerbaum is accused of poling
- Non-at-issue imposition: Ludger Beerbaum is an outstanding show jumper

A Formal Analysis

- in the formal system: variables such as x stand for an individual concept (i.e. they are of type $\langle s, e \rangle$)
- basic gesture meaning of $\text{☞ } \mathbf{g}$:
direct reference to gesture referent \mathbf{g} by means of a rigid designator, noted as $\ulcorner \text{☞ } \mathbf{g} \urcorner$:

for all possible worlds w : $\llbracket \ulcorner \text{☞ } \mathbf{g} \urcorner \rrbracket (w) = \mathbf{g}$

- coverbal performance of gesture $\text{☞ } \mathbf{g}$:

$\dots \exists z \wedge z = \ulcorner \text{☞ } \mathbf{g} \urcorner \dots$

A Formal Analysis

Combined meaning contributions of speech and gesture:

indefinite article
+ gesture

a

$\exists x$

similarity



$SIM_{p^*}(x, z)$

name/definite article
+ gesture

the

$\exists x$

identity



$x =_{p^*} z$

noun phrase
+ gesture

bottle

$bottle_p(x)$

exemplification



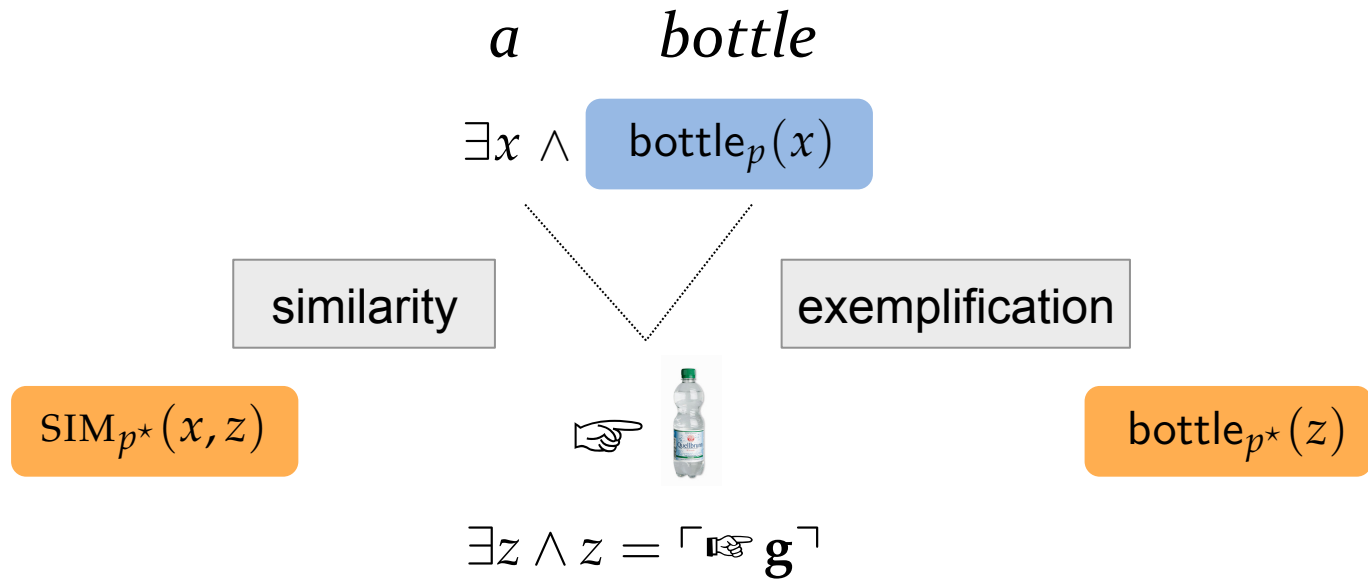
$bottle_{p^*}(z)$

+ presuppositions
(existence & uniqueness)

A Formal Example

(indefinite article + NP)

Combined meaning contributions of speech and gesture:



$$\exists z \wedge z = \lceil \text{pointing hand } g \rceil \wedge \exists x \wedge \text{bottle}_p(x) \wedge SIM_{p^*}(x, z) \wedge \text{bottle}_{p^*}(z)$$

A Formal Example

(indefinite article + NP)

(19) *Cornelia brought [a bottle].*



$$\exists z \wedge z = \ulcorner \text{hand} \text{ g} \urcorner \wedge \exists x \wedge \text{bottle}_p(x) \wedge \text{SIM}_{p^*}(x, z) \wedge \text{bottle}_{p^*}(z) \wedge \text{bring}_p(\text{cornelia}, x)$$

At-issue:

there is a bottle that Cornelia brought

Non-at-issue:

the gesture referent is similar to this bottle

the gesture referent is itself a bottle

A Formal Example

(definite article + NP)

- Definite descriptions come with presuppositions of existence and uniqueness:

the bottle

presuppositions:

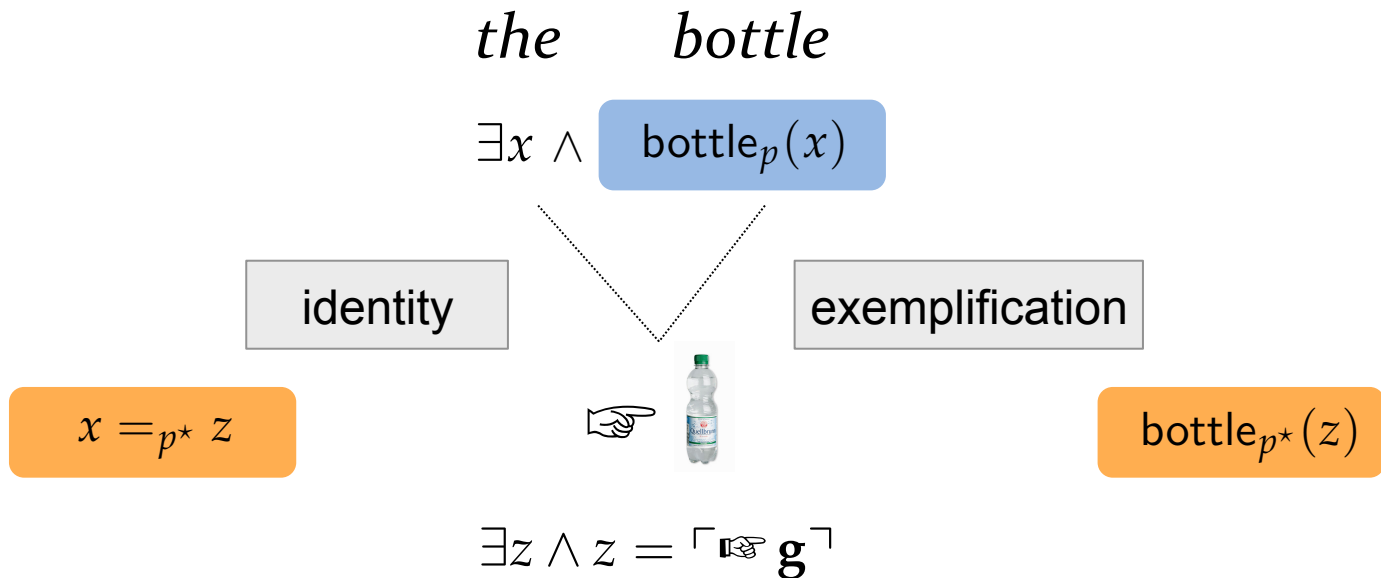
- there is a bottle
- there is not more than one salient bottle

- presuppositions (not formally spelled out here) must be satisfied by the context set

A Formal Example

(definite article + NP)

Combined meaning contributions of speech and gesture:



$$\exists z \wedge z = \text{「} \text{☞} \mathbf{g} \text{」} \wedge \exists x \wedge \text{bottle}_p(x) \wedge x =_{p^*} z \wedge \text{bottle}_{p^*}(z)$$

A Formal Example

(definite article + NP)

(20) *(Consider all the things on the table.)*

Cornelia brought [the bottle].



$$\exists z \wedge z = \ulcorner \text{g} \urcorner \wedge \exists x \wedge \text{bottle}_p(x) \wedge x =_{p^*} z \wedge \text{bottle}_{p^*}(z) \wedge \text{bring}_p(\text{cornelia}, x)$$

Presupposition:

there is a unique (contextually salient) bottle

At-issue:

Cornelia brought that bottle

Non-at-issue:

the gesture referent is that bottle
the gesture referent is itself a bottle

gestures with demonstratives

demonstratives are 'dimension shifters'

German *so* as Dimension Shifter

The negation test

speech & gesture

(21) *Ich bringe niemals
[eine Flasche Wasser] mit zu
Vorträgen.*



*I never bring [a bottle of water]
to talks.*

Negation elaboration:

(22) *#Eine kleine reicht mir nämlich.
(A small one is enough for me.)*

speech + *so* & gesture

(23) *Ich bringe niemals
[SO eine Flasche Wasser] mit zu
Vorträgen.*



*I never bring [a bottle of water
like that] to talks.*

Negation elaboration:

(24) *Eine kleine reicht mir nämlich.
(A small one is enough for me.)*

German *so* as Dimension Shifter

- What happened here?

(25) *Ich bringe niemals [SO eine Flasche Wasser] mit zu Vorträgen.*
(I never bring [a bottle of water like that] to talks.)



is synonymous to

(26) *Ich bringe niemals eine große Flasche Wasser mit zu Vorträgen.*
(I never bring a big bottle of water to talks.)

- *so* shifted gesture meaning contribution (i.e. similarity) from the non-at-issue level to the at-issue level

Demonstratives as Dimension Shifters

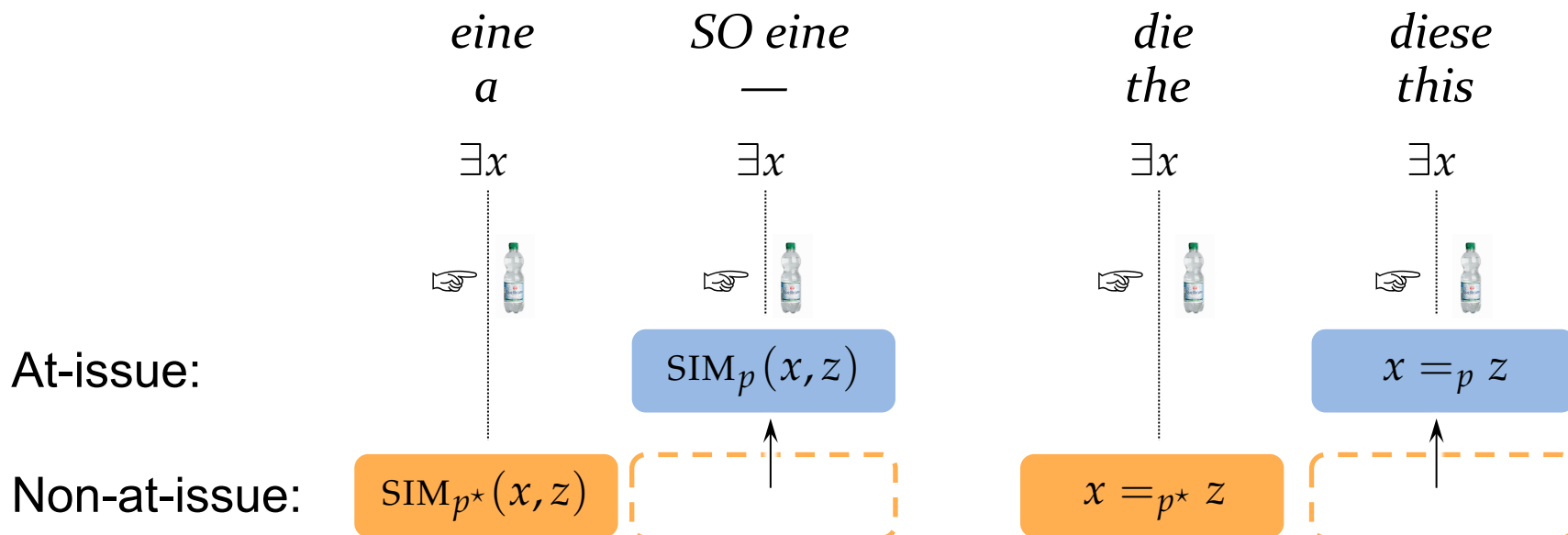
- Demonstratives make speech-accompanying gesture meaning **at-issue**
- Comes close to Tomasello's (1999) claim (in the spirit of Bühler 1934) that demonstratives are attention shifters and serve to create 'joint attention' (cf. Diessel 2006)
- Cf. Fricke 2012, Umbach & Ebert 2009, Streeck 2002 for placeholder-function of *so* (see also König 2012)
- Demonstratives function as **dimension shifters** from non-at-issue to at-issue (pace Potts 2005, 2007 and Gutzmann 2012)

Demonstratives as Dimension Shifters

- *diese/this* is the demonstrative version of the shifted definite article *die/the*, i.e.

diese = *so* + *die*

this = *so* + *the*

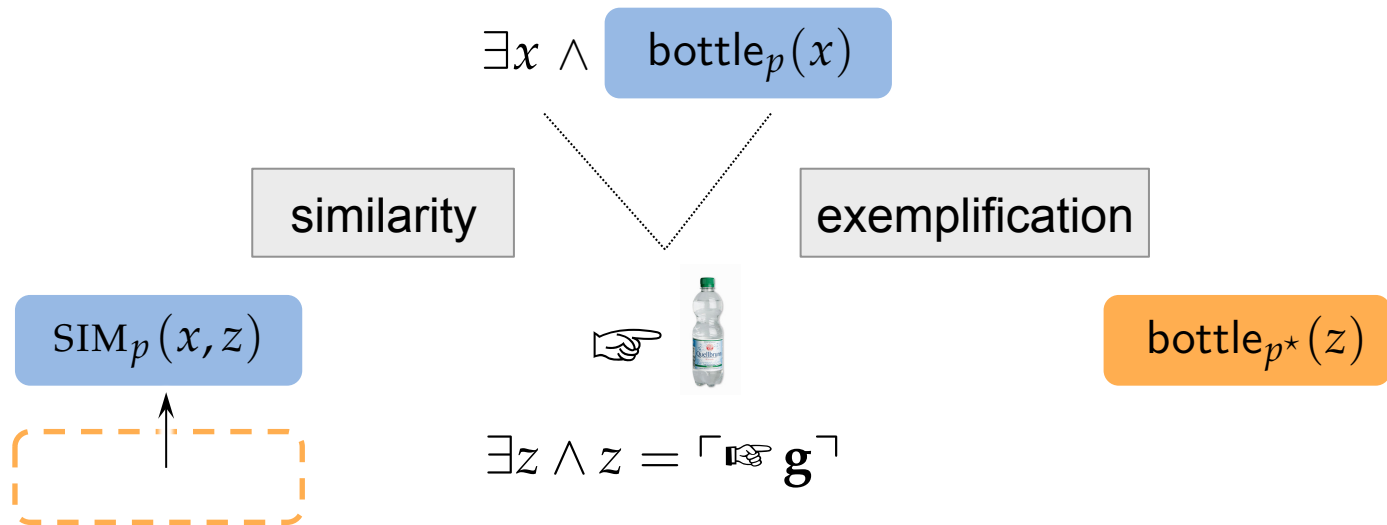


A Formal Example

(so + indefinite article)

Combined meaning contributions of speech and gesture:

SO eine Flasche



$$\exists z \wedge z = \lceil \text{hand icon } g \rceil \wedge \exists x \wedge \text{bottle}_p(x) \wedge \text{SIM}_p(x, z) \wedge \text{bottle}_{p^*}(z)$$

(cf. Umbach & Gust to appear)

A Formal Example

(so + indefinite article)

(27) *Cornelia hat [SO eine Flasche] mitgebracht.*
Cornelia brought [a bottle like that].



$$\exists z \wedge z = \ulcorner \text{hand pointing} \urcorner \wedge \exists x \wedge \text{bottle}_p(x) \wedge \text{SIM}_p(x, z) \wedge \text{bottle}_{p^*}(z) \wedge \text{bring}_p(\text{cornelia}, x)$$

At-issue:

there is a bottle **which is similar to the gesture referent** that Cornelia brought

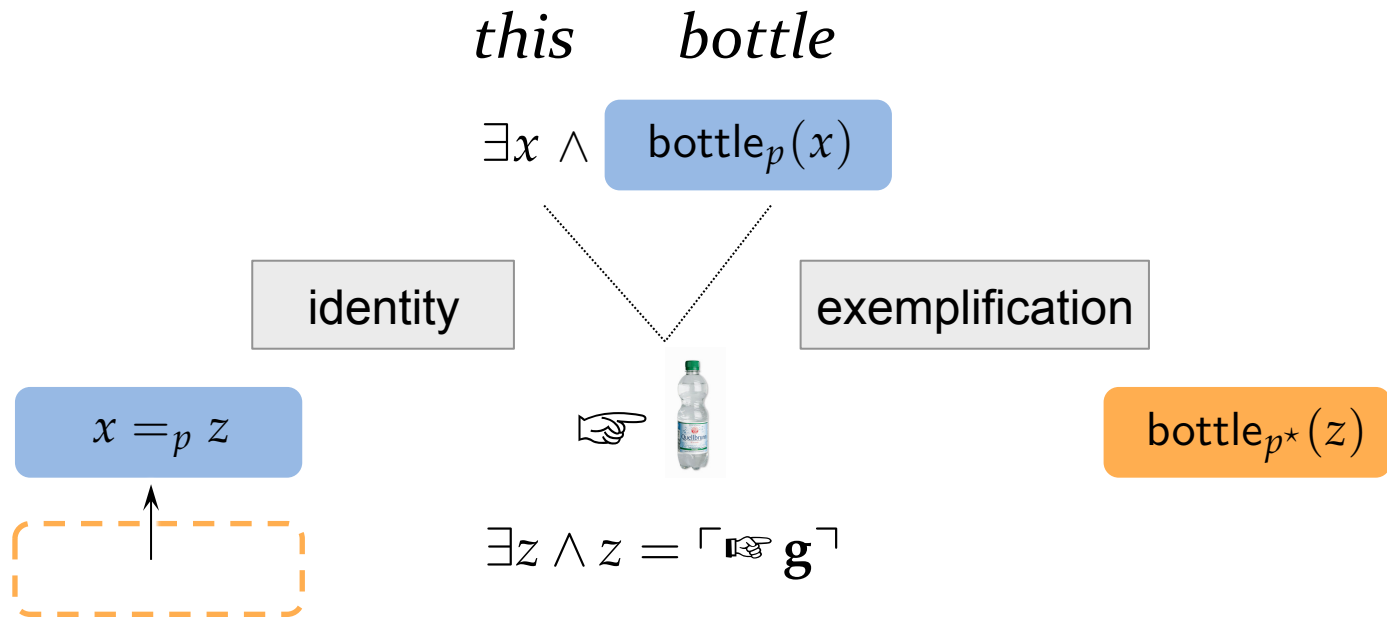
Non-at-issue:

the gesture referent is itself a bottle

A Formal Example

(this)

Combined meaning contributions of speech and gesture:



$$\exists z \wedge z = \lceil \text{point} \ g \rceil \wedge \exists x \wedge \text{bottle}_p(x) \wedge x =_p z \wedge \text{bottle}_{p^*}(z)$$

A Formal Example

(this)

- Since the identity $x =_p z$ is at issue it becomes part of the description relevant for the presuppositions of the definite.

this bottle presuppositions:

- there is a bottle **which is identical to the gesture referent**
 - there is not more than one salient bottle **which is identical to the gesture referent**
- presuppositions are satisfied if there is a unique bottle pointed at

A Formal Example

(this)

(28) *Cornelia brought [this bottle].*



$$\exists z \wedge z = \ulcorner \text{pointing hand } \mathbf{g} \urcorner \wedge \exists x \wedge \text{bottle}_p(x) \wedge x =_p z \wedge \text{bottle}_{p^*}(z) \wedge \text{bring}_p(\text{cornelia}, x)$$

Presupposition:

there is a unique (contextually salient) bottle **which is identical to the gesture referent**

At-issue:

Cornelia brought that bottle and **that bottle is identical to the gesture referent**

Non-at-issue:

the object pointed at is itself a bottle

Rigidity

- The gesture is directly referential to *g* and determined by the utterance situation.

(29) ^F *If the two bottles changed places, [this bottle] would be blue.*



- This mirrors Kaplan's (1989a) crucial observation for 'true demonstratives' as directly referential concepts.
- Compare this to:

(30) ^T *If the two bottles changed places, [the bottle on the right] would be blue.*



discussion

- supplemental or presuppositional?
- timing of gesture and speech
- source of non-at-issueness

Supplemental or Presuppositional?

- Schlenker (2016) argues that co-speech gestures do not behave like supplements, but rather like a special kind of presupposition, i.e. like *cosuppositions*.

(31) a. *John [helped] his son.*



entails:

John helped his son by lifting him.

b. *John didn't [help] his son.*



entail:

If John (had) helped his son,
he would have done so by lifting him.

c. *Did John [help] his son?*



Supplemental or Presuppositional?

- At-issue readings are derivable via local accommodation, in particular in contrastive contexts (Esipova 2016).

(32) *I did not bring [a bottle], I brought [a bottle].*



SMALL

- Recall (11):

(11) *I did not bring [a bottle] to the talk.*



where an at issue-readings is impossible.

- Why?

Supplemental or Presuppositional?

- Contrastive context:

(33) ?*No philosopher brought [a bottle of champagne] to the party.*



They all brought piccolo bottles.

- Compare to:

(34) *No philosopher brought [a bottle of champagne] to the party.*

NORMAL-SIZE

Yet, the party was a success.

- Do cosuppositions really exhibit the expected local accommodation behaviour?

Co- vs. Post-speech gestures

- Schlenker (2016): co-speech gestures receive a presuppositional interpretation and post-speech gestures a supplemental one.

(35) a. *Some/No philosopher brought [a bottle of beer] yesterday.*



b. *Some/#No philosopher brought a bottle of beer yesterday. []*



Co- vs. Post-speech gestures

Schlenker (2016):

- co-speech (= cosuppositional)

with *some*: some philosopher brought a big bottle of beer

with *no*: if a philosopher brings a bottle of beer, it will be big

- post-speech (= supplemental)

with *some*: some philosopher brought a bottle of beer, which was big

with *no*: # (no philosopher brought a bottle of beer, which was big)

Co- vs. Post-speech gestures

- Ebert & Ebert (2014): co-speech gestures receive a supplemental interpretation

(36) a. *Some/#No philosopher brought [a bottle of beer] yesterday.*



- tentatively: post-speech are interpreted at issue and require a discourse referent for anaphoric reference.

b. *Some/#No philosopher brought a bottle of beer yesterday. []*



Co- vs. Post-speech gestures

Ebert & Ebert (2014):

- co-speech (= supplemental)

with *some*: some philosopher brought a big bottle of beer

with *no*: # (no philosopher brought a bottle of beer, which was big)

- post-speech (= gesture at issue with anaphoric reference)

with *some*: Some philosopher brought a bottle of beer. This bottle was big.

with *no*: # (No philosopher brought a bottle of beer. This bottle was big.)

Co- vs. Post-speech gestures

- Envisaged rating experiment with a 2x2 design with two conditions: POSITION (co- vs. post-speech) and POLARITY (positive vs. negative).
- Presuppositions ok in negative environments, supplements not.
- Schlenker (2016) predicts post-speech gestures to be infelicitous in negative environments, while co-speech gestures should be ok.
- Ebert & Ebert (2014) predict that also co-speech gestures are infelicitous in negative contexts.

Co- vs. Post-speech gestures

(37) a. *One child managed to cut out [a geometrical form].*



b. *No child managed to cut out [a geometrical form].*



c. *One child managed to cut out a geometrical form. []*



d. *No child managed to cut out a geometrical form. []*



Note: the gesture does not correspond to an alleged prototypical gesture for the NP concept *geometrical form*. No concept-related reading is available.

Sources for Non-at-issueness

What is the source of the non-at-issueness of the gestures we have seen so far?

3 hypotheses:

- a) the nature of gesture as such
- b) their iconic character
- c) the fact that they are speech-accompanying

Sources for Non-at-issueness

The nature of gesture as such

- Are gestures non-at-issue because they are gestures?
- Not tenable: post-speech gestures above;
Ladewig (2012): speech-replacing gestures capable of conveying meaning on their own without speech, they are often not emblematic, but what Müller (1998) calls 'referential'
- Meaning of speech-replacing gestures enters at-issue dimension

(38a) A: *Have you met Paul recently?*

B: *shakes head.*

(38b) *Can you pass me the []? + iconic 'shape' gesture*

(38c) *Have you been []? + iconic 'swim' gesture*

Sources for Non-at-issueness

Iconicity

- Is iconicity the driving force for non-at-issue interpretation?
(p.c. with Klaus von Heusinger)
- Different kinds of gestures should behave differently: iconic, metaphoric, emblematic, pointing gestures on the one side, regulators and beats on the other?
- Other test cases:
other types of iconic signs like **ideophones** within spoken languages (p.c. with Manfred Krifka) and **iconic signs in sign languages** (p.c. with Philippe Schlenker)
Prediction: they contribute non-at-issue

Sources for Non-at-issueness

Iconicity

- Iconicity plays an important role in sign languages: many productive non-conventionalized signs and expression types
- One example: *GROW* in DGS (see Schlenker to appear-b for a related example in ASL)
- Depending on what grows, the sign looks different
- Also, iconic realization possibilities: *The group grew*
 - signer can vary distance between the endpoints and speed
 - small and slow movement = minor and slow growing process
 - big and quick movement = quick growing process
- A matter for intensive research whether these iconic meaning components can be interpreted at issue or not

Sources for Non-at-issueness

Iconicity

- Ideophones (Dingemanse): ‘marked words that vividly evoke sensory events’ like *splish-splash*
- Play a far more significant role in many African and Asian languages (Dingemanse 2012)
- Can be seen as vocal gestures (e.g., they often have onomatopoeic, i.e. iconic, properties, cf. also phonaesthemes, Firth 1964)
- Fixed inventory or productive? Are they non-at-issue??
 - (39a) *something came creeping splish, splash, splish, splash, up the marble staircase (the Frog-King)*
 - (39b) A: *How did it come up the marble stairs?* B: *??? Splish-splash.*

Sources for Non-at-issueness

Iconicity

- Could be (partly) responsible for non-at-issueness
- But we have seen examples of at-issue contributions of iconic gestures (if accompanied by demonstratives or speech-replacing)
- To be investigated more closely:
ideophones, iconic elements in sign languages, non-iconic gestures like beats

Sources for Non-at-issueness

Speech-accompanying character

- Because they come in a different mode, speech-accompanying gestures are naturally 'secondary'
- Could be (partly) responsible for non-at-issueness (except when they accompany demonstratives)
- Further investigation needed

Thank you

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References

- AnderBois, S., A. Brasoveanu & R. Henderson (2015): At-issue proposals and appositive impositions in discourse. *Journal of Semantics*. 32 (1): 93-138.
- Bühler, K. (1934): *Sprachtheorie: Die Darstellungsfunktion der Sprache*. Jena: Fischer.
- Deichsel, Annika (2013). The Semantics and Pragmatics of the Indefinite Demonstrative *dieser* in German. PhD Dissertation. Manuscript. University of Stuttgart.
- Diessel, H. (2006): Demonstratives, joint attention, and the emergence of grammar. *Cognitive Linguistics* 17: 463-489.
- Donnellan, K. (1966): Reference and Definite Descriptions. In A.P. Martinich. *The Philosophy of Language*. New York, 265–277.
- Ebert, Ch. & C. Ebert (2014): Gestures, Demonstratives, and the Attributive/Referential Distinction, slides of talk given at *Semantics and Philosophy in Europe 7*, ZAS, Berlin, June 2014. semanticsarchive.
- Farkas, D. & K. Bruce (2010): On reacting to assertions and polar questions. *Journal of Semantics* 27(1): 81–118.
- Fodor, J.A. & I. Sag (1982): Referential and Quantificational Indefinites, *Linguistics and Philosophy* 5, 355-398.
- Frazier, L., B. Dillon, C. Clifton (2014): A note on interpreting damn expressives: transferring the blame, in *Language and Cognition* 6(4), DOI: <http://dx.doi.org/10.1017/langcog.2014.31>.

References

- Fricke, E. (2012): Grammatik multimodal. *Wie Wörter und Gesten zusammenwirken*, de Gruyter, Berlin/Boston.
- Geach, P.T. (1962): Reference and Generality. Cornell University Press.
- Gutzmann, D. (2012): *Use-conditional meaning. Studies in multidimensional semantics*. Doctoral dissertation. Institute of Linguistics, University of Frankfurt.
- Kaplan, D. (1989a): Demonstratives. In J. Almog, J. Perry & H. Wettstein (eds.), *Themes from Kaplan*, 481-564. Oxford: Oxford University Press.
- Kaplan, D. (1978): Dthat, in *Syntax and Semantics*, vol. 9, ed. P. Cole, New York: Academic Press.
- Kaplan, D. (1989b): Afterthoughts. In J. Almog, J. Perry & H. Wettstein (eds.), *Themes from Kaplan*, 481-564. Oxford: Oxford University Press.
- Kaplan, D. (1973): Bob and Carol and Ted and Alice, in: J.Hintikka et al. (eds.), *Approaches to Natural Language*, Reidel.
- Kendon, A. (1980): Gesticulation and speech: Two aspects of the process of utterance. In Mary Ritchie Key (Ed.), *The Relationship of Verbal and Nonverbal Communication*. The Hague: Mouton.
- König, E. (2012): Le rôle des déictiques de manière dans le cadre d'une typologie de la deixis, *Bulletin de la Société des Linguistique des Paris CVII*.
- Koev, T. (2013): *Apposition and the Structure of Discourse*. Rutgers University.

References

- Kripke, S. (1977): Speaker's Reference and Semantic Reference. In P. A. French, T. E. Uehling, Jr., & H. K. Wettstein (eds.), *Midwest Studies in Philosophy* vol. II: *Studies in the Philosophy of Language*, 255-276. Morris, MN: University of Minnesota.
- Linsky, L. (1963): Reference and Referents, in: Ch. E. Caton (ed.), *Philosophy and ordinary language*, 74–89. University of Illinois Press, Urbana.
- Loehr, D. (2004). *Gesture and Intonation*. PhD thesis, Georgetown University, Washington.
- Lücking, A. (2013): *Ikonische Gesten. Grundzüge einer linguistischen Theorie*, De Gruyter, Berlin/Boston.
- Marti, G. (2008): Direct Reference and Definite Descriptions. *dialectica* 62:43-57.
- McNeill, D. (1992). *Hand and Mind: What gestures reveal about thought*. The University of Chicago Press, Chicago and London.
- Nunberg, G. (1993): Indexicality and deixis. *Linguistics & Philosophy* 16:1–43.
- Pittenger, R., Hockett, C., Danehey, D. (1960). *The First Five Minutes: A Sample of Microscopic Interview Analysis*. Ithaca, NY.
- Potts, Ch. (2007): The expressive dimension, *Theoretical Linguistics* 33(2): 165-197.
- Potts, Ch. (2005): *The Logic of Conventional Implicatures*. Oxford University Press.
- Reimer, M. (1991): Do Demonstrations have Semantic Significance. *Analysis* 51(4):177-183.

References

- Schlenker, P. (2016): Gesture Projection and Cosuppositions, ms.
- Schlenker, P. (to appear): Iconic Enrichments: Signs vs. Gestures. Commentary on Goldin-Meadow and Brentari's target article, to appear in Behavioral and Brain Sciences.
- Schlenker, P. (to appear-b): Anaphora: Insights from Sign Language. *Proceedings of the International Congress of Linguists*, Geneva, 2013.
- Streeck, J. (2002): Grammars, words, and embodied meanings. On the evolution and uses of so and like. *Journal of Communication* 52(3): 581-596.
- Tomasello, M. (1999): *The Cultural Origins of Human Cognition*. Cambridge, MA: Harvard University Press.
- Umbach, C. & C. Ebert (2009): German demonstrative 'so' - intensifying and hedging effects. *Sprache und Datenverarbeitung* 1-2/2009: 153-168.
- Umbach, C. & H. Gust (erscheint): Similarity Demonstratives, *Lingua*.

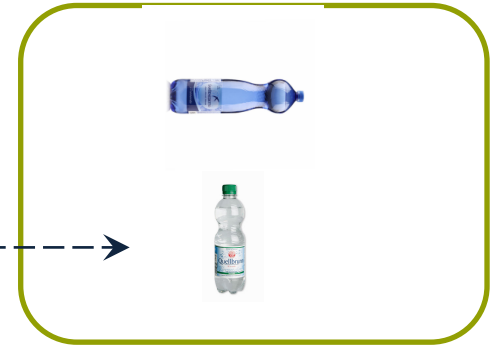
appendix

referential readings are gesture at-issue readings

Discussion

Crucial mismatch scenario I: definite

(31) A: *[The blue bottle] is tipped over.*



(32) B: True. But this is not it/not the blue bottle.

(32') B: True. But this is not a blue bottle.

Presupposition: there is a unique (contextually salient) blue bottle

$$\exists z \wedge z = \text{「} \text{hand icon} \text{」} \wedge \exists x \wedge \text{blue-bottle}_p(x) \wedge \cancel{x =_{p^*} z} \wedge \text{blue-bottle}_p(x) \wedge \text{tip_over}_p(x)$$

Discussion

Crucial mismatch scenario II: demonstrative

(33) A: *[This bottle] is tipped over.*



(34) B: *False, the object you are pointing at is not tipped over.*

Presupposition:

there is a unique (contextually salient) bottle which is identical to the gesture referent

$$\exists z \wedge z = \ulcorner \text{hand} \text{ g} \urcorner \wedge \exists x \wedge \text{bottle}_p(x) \wedge \cancel{x =_p z} \\ \wedge \text{bottle}_{p^*}(z) \wedge \cancel{\text{tip_over}_p(x)}$$

Attributive vs. Referential

Another mismatch scenario:

(35) A: *[The bottle of Christian] is transparent.*



(36) B: Yes, THIS (bottle) is transparent.
But this is not Christian's bottle.

This is the **referential reading** of the definite (Donellan, 1966)

$\exists z \wedge z = \ulcorner \text{pointing hand} \urcorner \wedge \exists x \wedge$ ~~bottle_of_ch_{p*}(x)~~ \wedge $x =_p z$

\wedge ~~bottle_of_ch_{p*}(z)~~ \wedge transparent_p(x)

(cf. Gutzmann & McCreedy t.a., where also in the referential reading the DP's descriptive material is non-at-issue)

Attributive vs. Referential

General idea:

The bottle of Christian ----- x ----->



----- z ----->



- Two distinct referential concepts: verbal x and (possibly covert) gestural z
- only one can be at-issue, the other must be non-at-issue

at-issue verbal concept x

bottle_of_ch _{p} (x)

$x =_{p^*} z$

attributive reading

at-issue gesture concept z

bottle_of_ch _{p^*} (x)

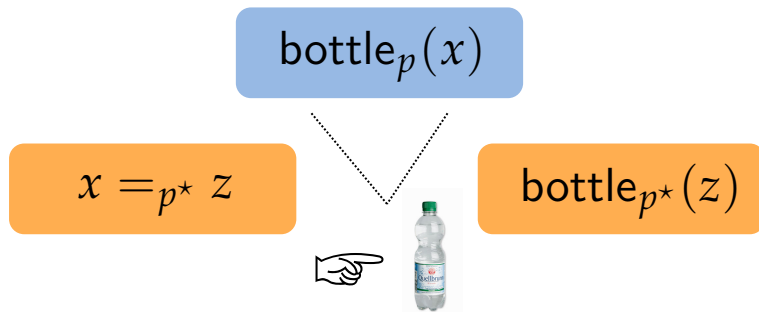
$x =_p z$

referential reading

Attributive vs. Referential

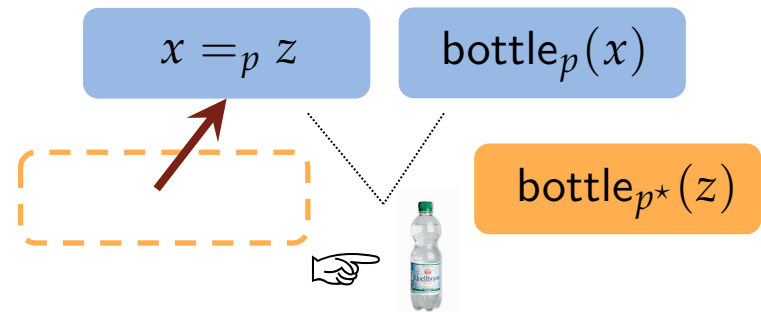
attributive reading

the bottle



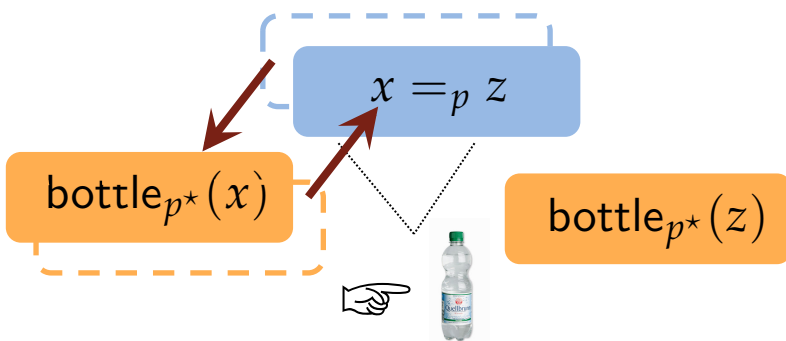
demonstrative reading

this bottle



referential reading

the bottle



Due to at-issue identification

$$x =_p z$$

definite treated as a rigid
designator or name-like

(see Kaplan 1989a,b; Marti 2008)

Attributive vs. Referential

Kaplan (1989a, p. 561):

the act of utterance (as in “Hi-ya, Beautiful”). What is important here is that the speaker intends to be creating a meaning for the expression in question rather than following conventions. Dubbings, whether aimed

Marti (2008):

irrespective of whether the individual satisfies the description. The model that seems correct is that of a nonce-use, in which the speaker lacks the intention to use the description’s conventional meaning, intending instead to use the description as a convenient label to (directly) pick out the intended referent.¹³

Attributive vs. Referential

Kaplan (1978, p. 223):

possibility of a demonstrative analysis of descriptions. *If pointing can be taken as a form of describing, why not take describing as a form of pointing?* Note

Marti (2008):

⁵ The distinction between attributes operating as part of search mechanisms that determine reference, and attributes operating as background factors to be exploited in referring, is a subtle one and not easy to draw with precision, but it is extremely important for

Attributive vs. Referential

(mistaken identity)

Mistaken identity cases (speaker's/semantic reference)
(Kripke 1977 based on Linsky 1963)

Verbal concept at-issue/attributive interpretation/semantic referent:

(37) A: *Her husband is kind to her.*

(38) B: *No, he [= her husband] isn't.*

The man you are referring to isn't her husband. (Kripke 1977, p. 90)

husband_of_p(*x*, *y*)

~~$x =_p z$~~

~~kind_p(*x*, *y*)~~

Her husband (who is, by the way, identical to the object I'm pointing to) is kind to her.



Attributive vs. Referential

(mistaken identity)

Gestural concept at-issue/referential interpretation/
speaker's referent:

(37) A: *Her husband is kind to her.*

(38') B: *HE* [= the man referred to by the speaker
via gesture] *is kind to her. But he isn't her husband.*
(Kripke 1977, p. 90, our emphasis)



~~husband_of~~ $p^*(x, y)$

$x =_p z$

$kind_p(x, y)$

This object (which is, by the way, her husband) is kind to her.

Attributive vs. Referential

Marti (2008):

constituent. Referential uses of definite descriptions are understood on the model of demonstratives: in a room full of people the famous philosopher Aston-Martin is standing in a corner nursing a glass filled with transparent liquid and an olive. The speaker wants to say to her friend something about Aston-Martin. Nothing makes the famous philosopher obviously salient; there seems to be no polite way to put Aston-Martin on Kaplan's virtual demonstration platform. So, what does the speaker do? She uses a description in lieu of a demonstration. Whereas an utterance of 'that' is usually accompanied by a non-verbal demonstration, the description plays here the role of a verbalized demonstration.

Attributive vs. Referential

Kaplan (1989b, p. 583):

... to which the original speaker would have to reply, "The man with the martini." So he shortens the dialogue and uses the description "the man with the martini" as a substitute for the demonstration. Here the speaker might equally well have said, "Who is that man with the martini?" or, "Who is that?" followed by an appositive, parenthetical, whispered "(the man with the martini)."

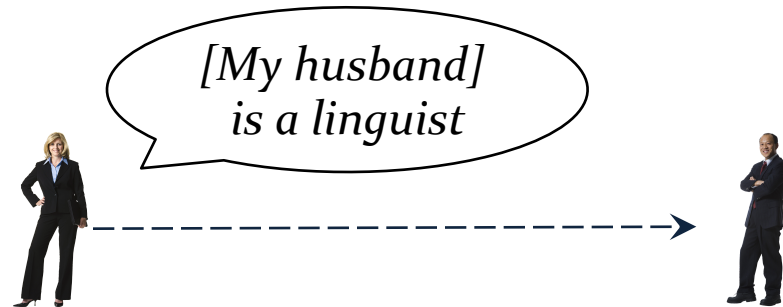
Attributive vs. Referential

At-issueness of concept can be determined by questions:

(39) A: *What does your husband do?*

→ at-issue **verbal concept**

→ **attributive reading**



*my husband is a
linguist*

*my husband is the
guy over there*

$\text{husband_of}_p(x, \text{speaker})$

$\text{linguist}_p(x)$

$x =_{p^*} z$

$\text{husband_of}_{p^*}(z, \text{speaker})$

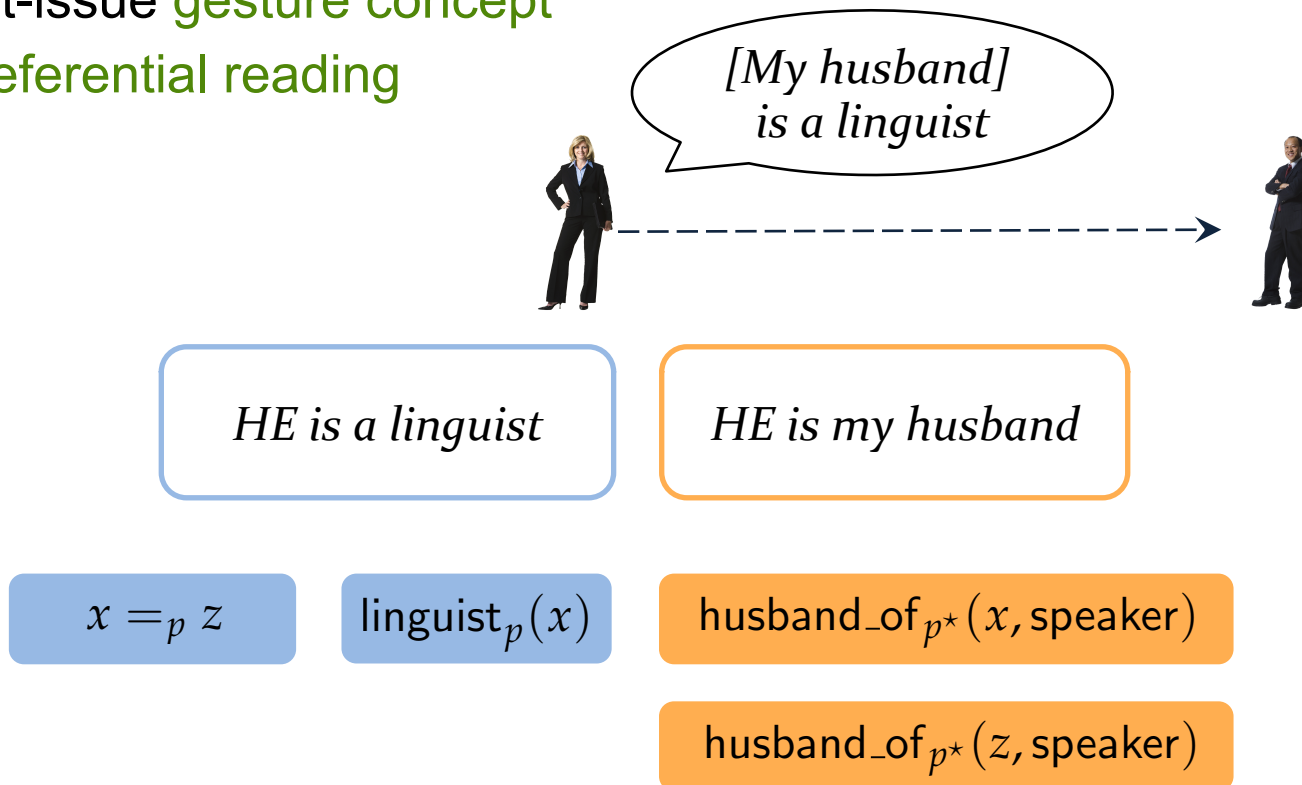
Attributive vs. Referential

At-issueness of concept can be determined by questions:

(40) A: *What does HE [= the guy over there] do?*

→ at-issue **gesture concept**

→ **referential reading**



Attributive vs. Referential

Donnellan (1966, p. 288):

this: when a definite description is used referentially, not only is there in some sense a presupposition or implication that someone or something fits the description, as there is also in the attributive use, but there is a quite different presupposition; the speaker presupposes of some *particular* someone or something that he or it fits the description. In asking, for example, “Who is the man drinking a

Donnellan (1966, p. 289):

is presupposing that that person is Smith’s murderer. Now the more particular presuppositions that we find present in referential uses are clearly not ones we can assign to a definite description in some particular sentence in isolation from a context of use. In

Attributive vs. Referential

Donnellan (1966, p. 298):

Using a definite description referentially, a speaker may say something true even though the description correctly applies to nothing. The sense in which he may say something true is the

Attributive vs. Referential

Donnellan (1968, p. 206):

(1) S will have referred to e whether or not e is in fact φ .

(2) S will have said something true or false about e whether or not e is in fact φ (provided that everything is in order concerning the remainder of the speech act).

(3) S , in using “the φ ” to refer to e , will have presupposed or implied that e is φ .

(4) In reporting S 's speech act, it will be correct to say that he stated something about e and in reporting this to use expressions to refer to e other than “the φ ” or synonyms of it.⁶

Speaker's Reference

Doubly mistaken identity cases:

at 8 a.m.:



"Pookie",
the fish hunter

Peter's cat:



at 2 p.m.:



speaker's referent

z



x

*Peter's cat already
angered the fish
this morning*

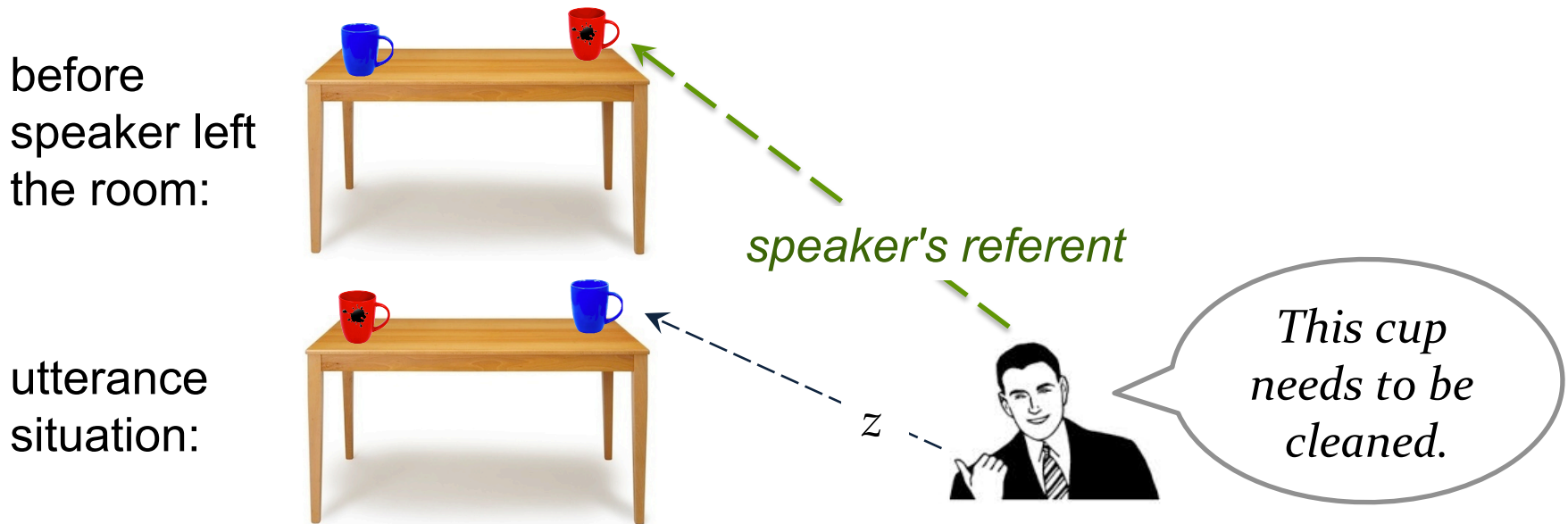
No possibility to arrive at interpretation with speaker's reference. Anaphoric reference only to verbal or gesture referent, not speaker's referent (against Kripke 1977):

(41) B: # *Yes, HE* [speaker's referent] *did*.

But he [speaker's referent] *is not Peter's cat*.

Speaker's Reference

Semantic meaning is determined by – speech and gesture – conventions (cf. Kaplan 1973, 1989; Reimer 1991):



Referent determined by gesture conventions, not by speaker's intentions → sentence is false

Attributive vs. Referential

Kaplan (1973, p. 500):

There are conventions governing what is demonstrated when I point. I cannot aim my finger at you and thereby refer to myself. Even though you and the rest of my auditors know that I have mistaken you for your twin, I cannot aim my finger at you and thereby refer to your twin. **But in cases**

Outlook

('what the speaker has in mind')

(Possibly covert) pointing to a salient object, given

- either situationally (**Demonstratio ad oculos**, Bühler 1934)
 - Kripke's (1977) example
Her husband is kind to her.
- within the speaker's mind (**Deixis am Phantasma**, Bühler 1934):
 - Referentially used definites (Geach 1962, p.31):
The fat old humbug we saw yesterday has just been made full professor.
 - Specific indefinites (e.g. Fodor & Sag 1982):
Peter met an old friend from school yesterday.
 - Indefinite use of demonstratives (see Deichsel 2013):
Peter met this old friend from school yesterday.

Outlook

(different identification strategies within speech)

- So far: two different identification strategies
 - Speech concept
 - Pointing

- Other possibility: both strategies within speech

Sissi's husband, Graf Andrassy, is kind to her.

- Strategies can be combined

→ possibility for multiply mistaken identity

[Sissi's husband, Graf Andrassy,] is kind to her.

