

## *Gesture, Lexis, and Grammar*

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Comedian Dane Cook, telling a funny story:

Those cops in Florida are in trouble. They shot at a guy eleven times because they claim the guy had a grenade. The guy was actually eating a pear! How do you screw that up? Unless he was eating a pear like...

those cops in Florida?  
they're in trouble,  
they shot at a guy eleven times,  
because they claim the guy,  
had a grenade.  
that's why they shot at him eleven times.  
the guy was eating a pear!  
how do you screw that up,  
unless he was eating a pear like  
<khkhwhw,  
braagh>!



- The degree to which communication is simultaneously audible and visible (for people who can hear and see)
- Contrast the bias towards written language in linguistics (Linell 2005)
  - implicitly monomodal view of language
  - sentence-based (versus based on intonation units)
- What about speakers' gestures?

## Speakers' gestures

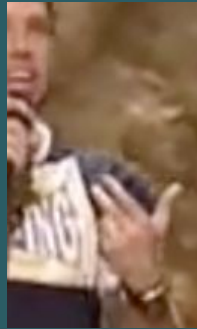
- In every known culture, speakers gesture (at least some of the time)
  - in ways coordinated with speech
- Speech and gesture production are linked
  - behaviorally
  - cognitively (Krauss et al. 2000; McNeill 1992)
- In what ways do gestures relate to
  - the lexicon?
  - grammar?

## Contrast: The formal view of language

- “The articulatory and perceptual systems, for example, require that expressions of the language have a linear (temporal, ‘left-to-right’) order at the interface” (Chomsky 2007: 65)
- sequential
  - e.g., we don't pronounce two morphemes at the same time

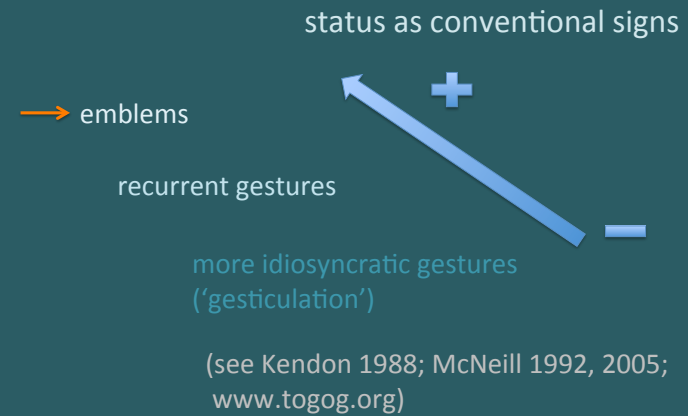


- Lexico-grammar in speech and writing as
  - sequential
  - analytic (segmental)
- Gesture as
  - not sequentially structured very much
    - often *simultaneous* (overlapping) with speech
  - global, wholistic imagery

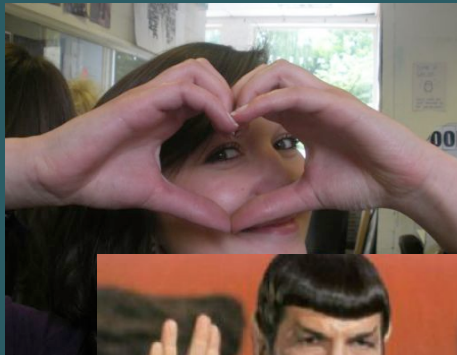


- Gesture as
  - not sequentially structured very much
    - often *simultaneous* (overlapping) with speech
  - global, wholistic imagery

## Adaptation of “Kendon’s Continuum”



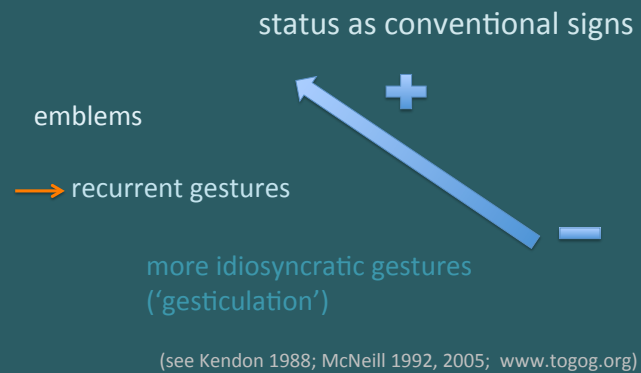
## Emblems



## Emblems (Efron 1941)

- Standardized form/meaning relationship
- Have fixed symbolic status within a culture
- Intentionally used

## Adaptation of “Kendon’s Continuum”



## Recurrent gestures

(Bressem & Müller 2014)


- Recurring group of forms, with limited variations
- Recurring set of related meanings

## Dane Cook on 'cheating' in a relationship



Stretched index finger  
held vertical  
→ attention  
(Bressem & Müller 2014)





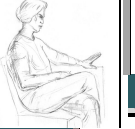


“and I’ll tell you something right now. I’m telling you/  
no matter what– even the message I just gave you, ...”



Palm down, open hand,  
movement from center to  
sides  
→ negation  
(Calbris 2003; Harrison 2009)

“without making any movements,  
without waking them whatsoever.”

### Recurrent gestures

Palm Up Open Hand (PUOH)		Shaking off		Throwing away	
Ring		Holding away			
	Cyclic gesture		Stretched index finger – held		

Bressem & Müller (2014)

### Adaptation of “Kendon’s Continuum”

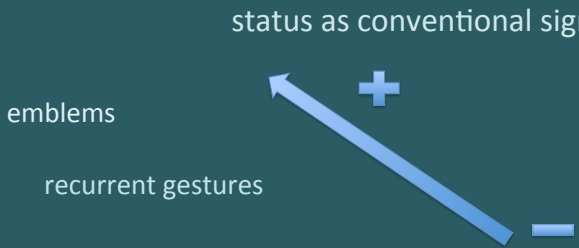
status as conventional signs

emblems


recurrent gestures

→ more idiosyncratic gestures  
(‘gesticulation’)

(see Kendon 1988; McNeill 1992, 2005; [www.togog.org](http://www.togog.org))



### More idiosyncratic gestures



“and I could just see,  
that their connection, that they had”

## More idiosyncratic gestures



“you go. you cheat.  
you do your cheat thing.”

## More idiosyncratic gestures (more context-dependent meaning)



“their connection”



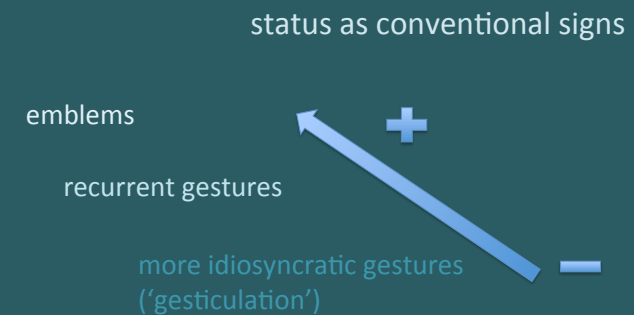
“your cheat thing”

## More idiosyncratic gestures (more context-dependent meaning)

- They are not conventionally linked to a particular meaning, but understood by virtue of:
  - Iconicity
  - Verbal context

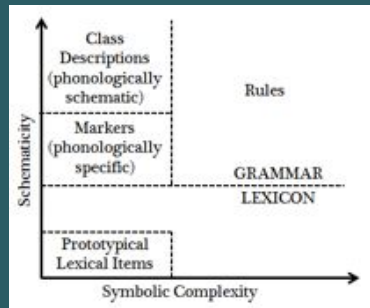
How can we (linguists) handle the complex relation between spoken language and gesture?

Let's take one particular theory of grammar:  
Cognitive Grammar (Langacker 1987, 1991, 2008, ...)



## Cognitive Grammar

- Lexicon and grammar form a continuum consisting in assemblies of symbolic structures (Langacker 1987, 1991, 2008 and elsewhere)



Langacker  
2008: 21

## Cognitive Grammar

- Lexicon and grammar form a continuum consisting in assemblies of symbolic structures (Langacker 1987, 1991, 2008 and elsewhere)

Lexical items <.....> Grammatical structures

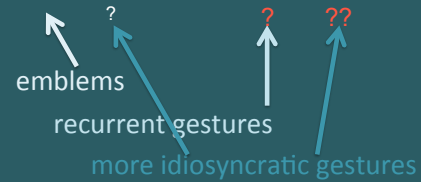
## Construction Grammar

- No strict distinction between syntax and lexicon (continuum)
  - Both of them are constructions, only differing in terms of degree of abstraction and complexity (Fillmore 1988; Croft 2001; Goldberg 1995, 2006; etc.)

## Syntax-lexicon continuum (Croft 2001: 17)

Construction type	Traditional name	Examples
Complex and (mostly) schematic	syntax	(We do not) Visit on (y) Day)
Complex and (mostly) specific	idiom	(pull the NP) (kg)
Complex but fixed	morphology	(Nouns of) (What are)
Atomic and schematic	syntactic category	(Dead), (Not)
Atomic and specific	modification	(Red), (green)

Lexical items <.....> Grammatical structures



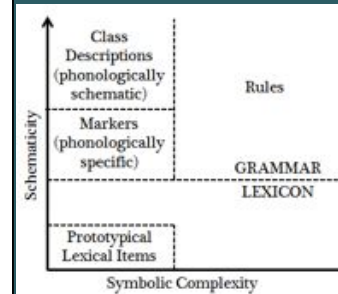
Properties of gesture in relation to grammatical distinctions (a proposal)

- Degree of **conventionality** of symbolic status
- Degree of **schematicity** of representation
- Gesture **movement quality**

Properties of gesture in relation to grammatical distinctions (a proposal)

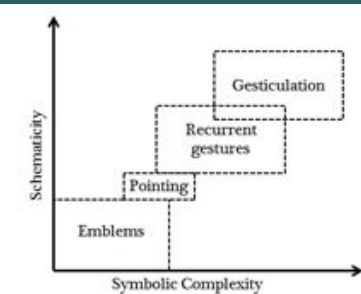
- Degree of **conventionality** of symbolic status

Verbal structures



Langacker 2008: 21

Gesture types



Kok & Cienki (under review)

(Kasper Kok's PhD project on gesture in relation to Cognitive Grammar and Functional Discourse Grammar)



## Relation to grammar

Analysis of 20 interviews from  
“The Ellen DeGeneres Show”

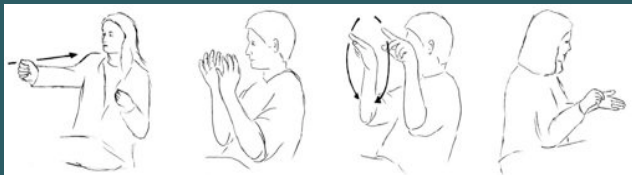
From **Suwei Wu**'s PhD project on the relation of gesture to  
transitivity and grammatical constructions

*He's a domestic cat*

*He's trying to unscrew the mike*

From **Suwei Wu**'s PhD project on the relation of gesture to  
transitivity and grammatical constructions

## Gestural modes of representation



*enacting*

re-enacting  
an everyday  
activity

*holding*

showing the  
shape of an  
object

*tracing*

outlining the  
shape of an  
object

*embodying*

transforming  
itself into an  
object

(Müller 1998, 2013)

*He's a domestic cat*

**Different Modes of Representation**  
(Müller 1998, 2013)

*He's trying to unscrew the mike*

From **Suwei Wu**'s PhD project on the relation of gesture to  
transitivity and grammatical constructions

Properties of gesture in relation to grammatical distinctions (in relation to verbs) (a proposal)

- Degree of **schematicity** of representation – how the Mode of Representation is used (correlation with transitivity types?)
  - detailed
    - e.g., enacting (and transitive actions)
  - schematic
    - e.g., tracing path (and intransitive motion event)
    - e.g., holding (and object oriented gestures with copula)

Properties of gesture in relation to grammatical distinctions (in relation to verbs) (a proposal)

- Degree of **conventionality** of symbolic status
- Degree of **schematicity** of representation
- Gesture **movement quality**

- “Aspects are different ways of viewing the internal temporal constituency of a situation” (Comrie 1976: 3)
  - English progressive vs. non-progressive (was doing vs. did, has been doing vs. has done)
  - Russian несовершенный vs. совершенный вид (делал vs. сделал, буду делать vs. сделаю)

## Aktionsarten

(Vendler 1967)

- **Accomplishment** - **durative**, telic  
e.g. *delivered the baby, baked the pizza*
- **Activity** – **durative**, atelic  
e.g. *ran, laughed, watched*
- **Achievement** – non-durative, telic  
e.g. *fell asleep, stumbled, cut*

- “Aspects are different ways of viewing the internal temporal constituency of a situation” (Comrie 1976: 3)
  - e.g., Accomplishments, Activities, Achievements
  - Speech and gesture arising from the same idea units or “growth points” (McNeill 1992)
  - Gestures as enacting mentally simulated actions (Hostetter & Alibali 2008)
- > Is there aspect in gesture?

## Aspect Study 1

- Project developed in workshop on Empirical Methods in Cognitive Linguistics (EMCL) in Freiburg, Germany in 2011
  - Becker, R., Cienki, A., et al. (2011). Aktionsarten, speech and gesture. In C. Kirchhof (ed.), *Proceedings of GESPIN2011: Gesture and Speech in Interaction*

## Becker et al. (2011) production study

- 5 pairs (10 participants) in English
- Elicited narratives of different types
  - Tell about a time when you had difficulty in one of these situations:
    - dealing with bureaucracy; ordering dinner in a foreign country in a foreign language; or falling asleep
  - Tell about a time when you witnessed or experienced one of these situations:
    - an accident; winning a sporting event; a surprise party; or someone doing a good deed

## Results

- Primary difference:
  - salient pattern of gestures accompanying Achievements verbs (*non-durative* verbs)
    - *punctual* nature
  - no such punctual nature with the verbs expressing Accomplishments or Activities

- Gesture **movement quality**  
(? correlation with aspectual qualities ?)

### Comprehension study (Becker et al. 2011)

- Does it matter for comprehension of video clips with 'Achievement' utterances if you see gestures that match them or not?

### Method – comprehension study

- 26 Participants
- 28 videos
- 14 Match & 14 Mismatch

### Match



jumped on the tracks

## Mismatch



jumped on the tracks

## Results

- A reliable effect of condition: match >> mismatch
- The experiment showed a sensitivity to the mismatch of duration gesture in achievement-verb environments
- In other words:
  - If speech is accompanied by gesture and both communicative streams convey compatible event structures, comprehension is facilitated

If languages marks these categories differently, do speakers of the languages gesture differently when talking about different kinds of events?

What about languages like:

- French (*imparfait* vs. other past tenses)
- German (many types of Aktionsarten expressed with prefixes: *ver-*, *weg-*, *wieder-*, etc.)
- Russian (perfective vs. imperfective grammatical aspect; and Aktionsarten with affixes: *по-*, *вы-*, *пере-*, *-нуть*, etc.)

## Aspect Study 2

International research grant from the Russian Science Foundation (2014-16)

Team from Russia (Moscow State Linguistic U.):

I. Khaleyeva, O. Iriskhanova, M. Tomskaya  
E. Karpenko, V. Denisova, A. Petrov

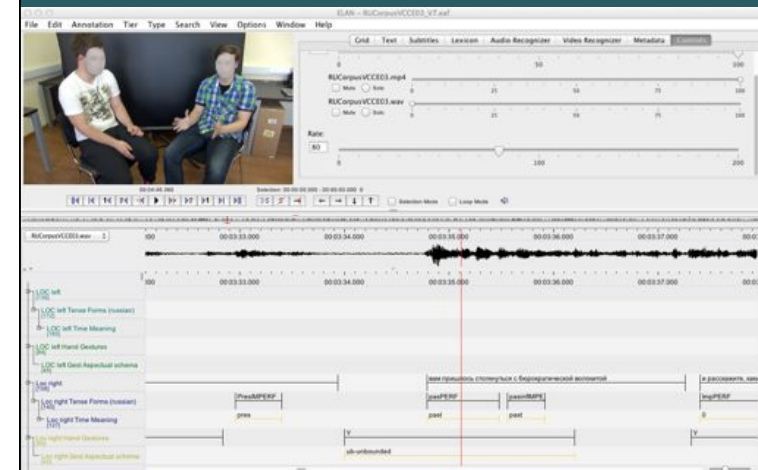
Team from abroad:

A. Cienki (Netherlands), principle investigator  
A. Morgenstern, D. Boutet (France)  
C. Müller, R. Becker, M. Gonzalez-Marquez (Germany)

## Aspect Study 2

- Elicited narratives like those in Aspect Study 1 in
  - France (in French)
  - Germany (in German)
  - Russia (in Russian)
- 10 pairs (20 participants) for each language
- approx. 10 minutes of talk per pair = 100 min. per language

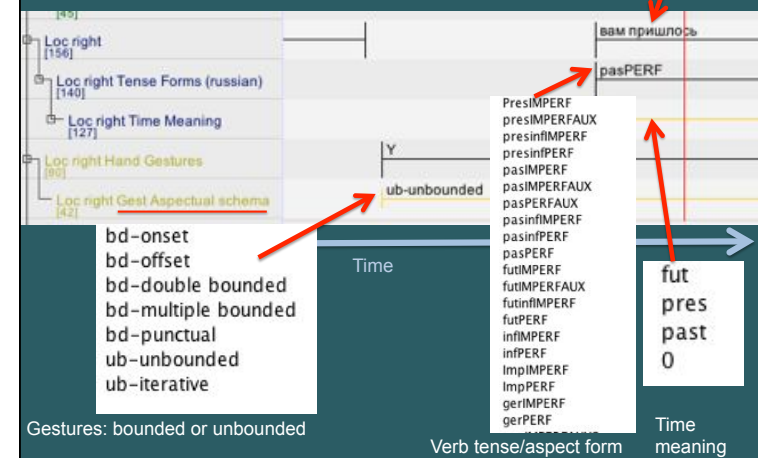
## Coding in ELAN



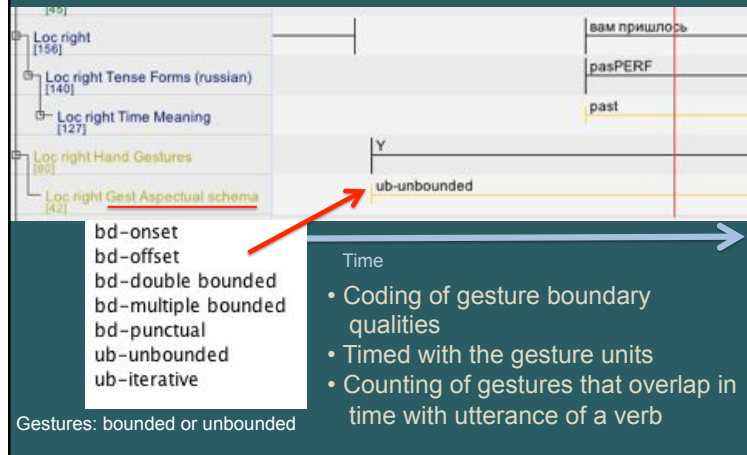
## Coding in ELAN



## Coding in ELAN



## Coding in ELAN



## Coding in ELAN

Boundary schemas adapted from Müller (1998)

Bounded (pulse of effort in movement)

onset |-----  
offset -----|  
double bounded |-----|  
multiple bounded -|--|--|  
punctual -----|-----

bd-onset  
bd-offset  
bd-double bounded  
bd-multiple bounded  
bd-punctual  
ub-unbounded  
ub-iterative

Unbounded  
unbounded  
iterative

-----  
-^--^--^

Gestures: bounded or unbounded

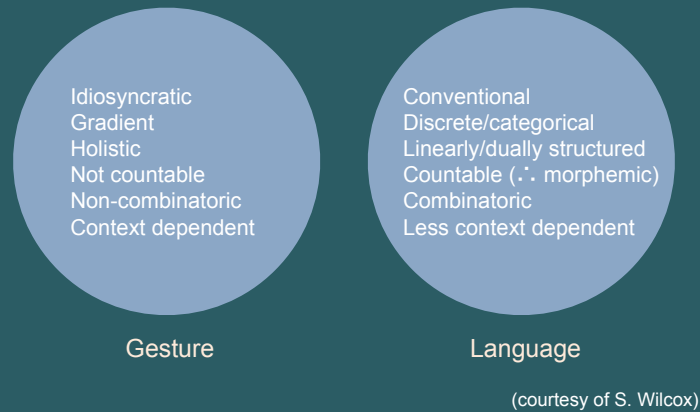
Properties of gesture in relation to grammatical distinctions (in relation to verbs) (a proposal)

- Gesture **movement quality** (correlation with aspectual qualities ?)  
– e.g., bounded or unbounded event?  
– relation to physiological properties of gestures?

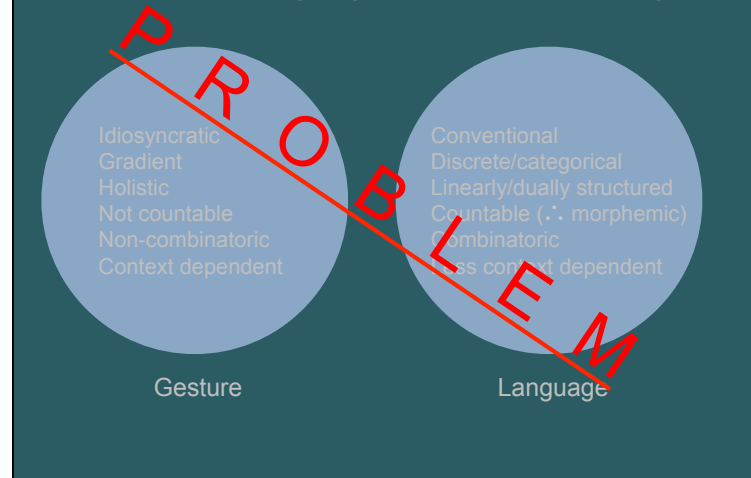
Properties of gesture in relation to grammatical distinctions (in relation to verbs) (a proposal)

- Degree of **conventionality** of symbolic status
- Degree of **schematicity** of representation – how the Mode of Representation is used  
– (correlation with transitivity types)
- Gesture **movement quality** – how the gesture is produced  
– (correlation with aspectual qualities ?)  
– embodied expression of construal of event

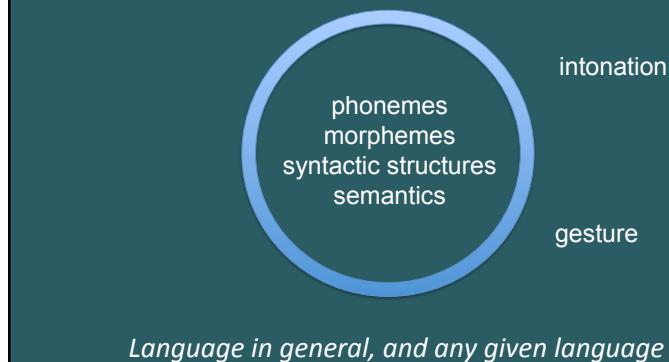
### Maybe this is an old-fashioned view of Gesture and Language



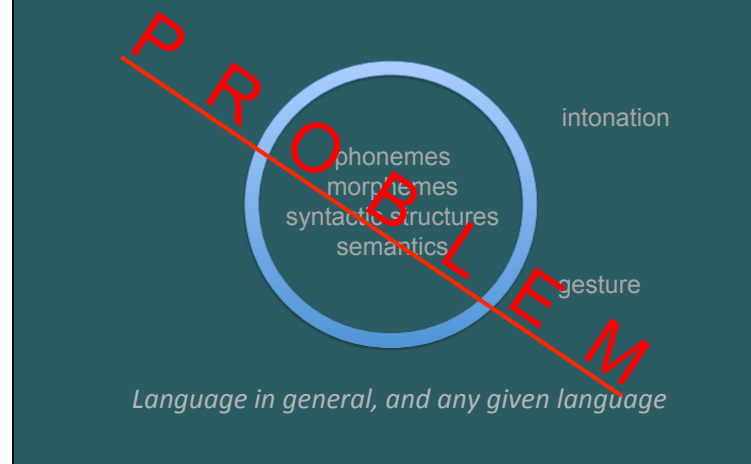
### Gesture and Language as Classical Categories



### The problem of the classical category view of *language*



### Classical category view of *language*





- Compare the role of gesture in sign language (жестикуляция в языке жестов):
  - determining whether any combination of behaviors in a particular usage event of communication is “language” or “gesture” is a matter of categorization by users in that event (Sherman Wilcox and colleagues)

- Categories are “a matter of both human experience and imagination — of perception, motor activity, **and culture**” Lakoff (1987: 8)

- Direct speech is used with co-verbal behaviors indicating viewpoint switch
  - “Fictive interaction” (Pascual 2014)
  - Compare indirect speech in languages without a written tradition (Kombai [West Papua, New Guinea])

*Ya imimo kharabuma-no khe fenemora*  
 They all be.astonished-3PL.NFUT he how  
*ma-khe-y-e-ne*  
 do.3SG.NF-Q-TRAN-CONN-QUOT.SG  
 Lit. ‘They were all astonished that: “how did he do this?”’  
 ‘They were all astonished because of the things he did’

(de Vries 1993: 98)

## Conclusions

- Language as a category which overlaps with other semiotic modes & codes to varying degrees, along various time scales, and variably by context

## Conclusions

- Rather than “language” and “gesture”  
Kendon (2004) proposes the terms:
  - utterance-dedicated audible bodily action
  - utterance-dedicated visible bodily action

## Acknowledgements

- Russian Science Foundation grant #14-48-00067
- Moscow State Linguistic University for establishing the PoliMod Lab
- Amsterdam Gesture Center at VU Amsterdam
- Netherlands Scientific Research Organization (NWO) for funding Kasper Kok’s PhD project
- China Scholarship Council for supporting Suwei Wu’s PhD project
- Dane Cook and “The Ellen DeGeneres Show” on YouTube