

Pantomime and language evolution

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I. What is pantomime?

II. From apes to pantomime

III. From pantomime to language



I

What is pantomime?

LANGUAGE EVOLUTION



To

Do ... tev

(bMe ... sis)



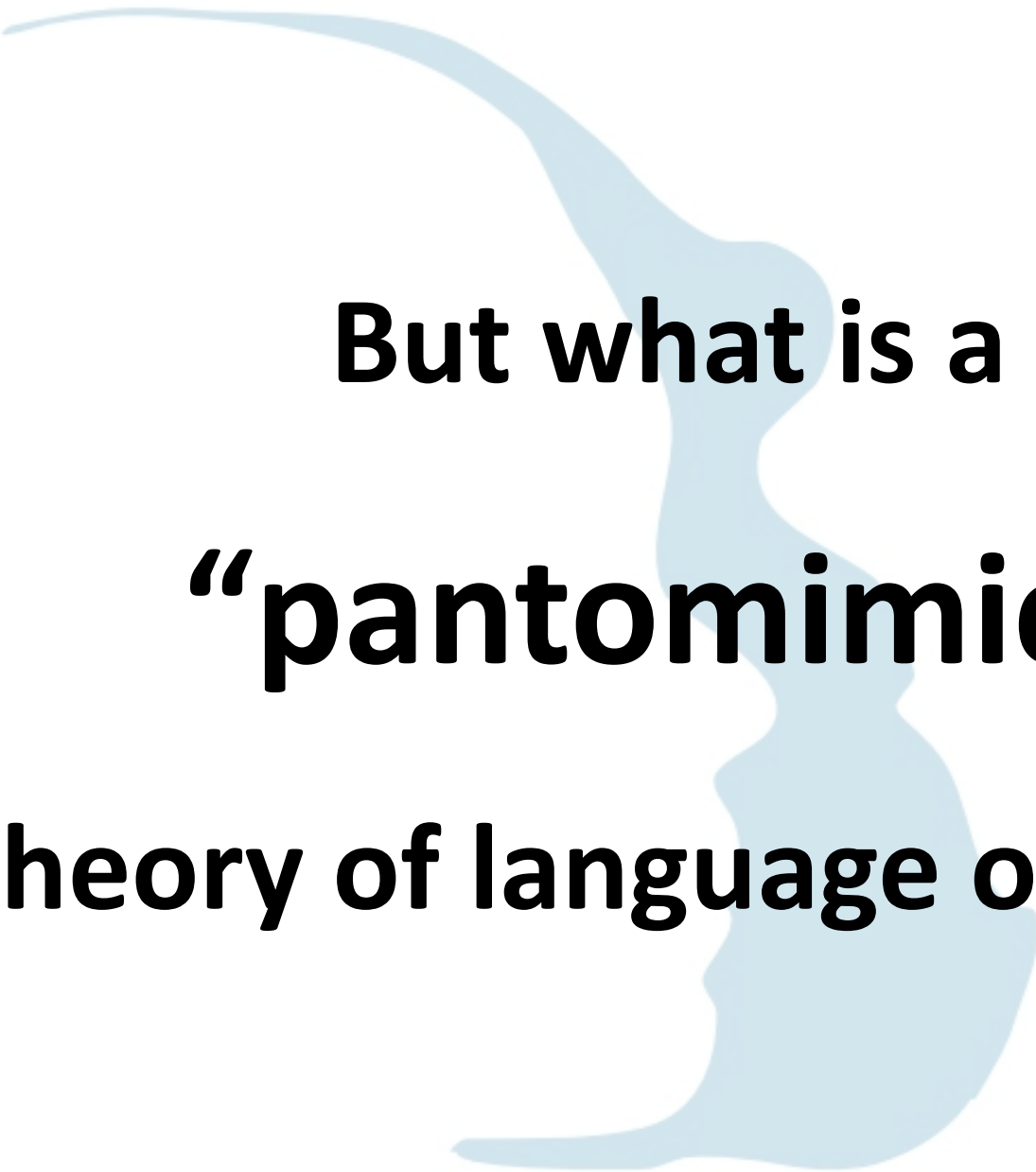
PANTOMIME



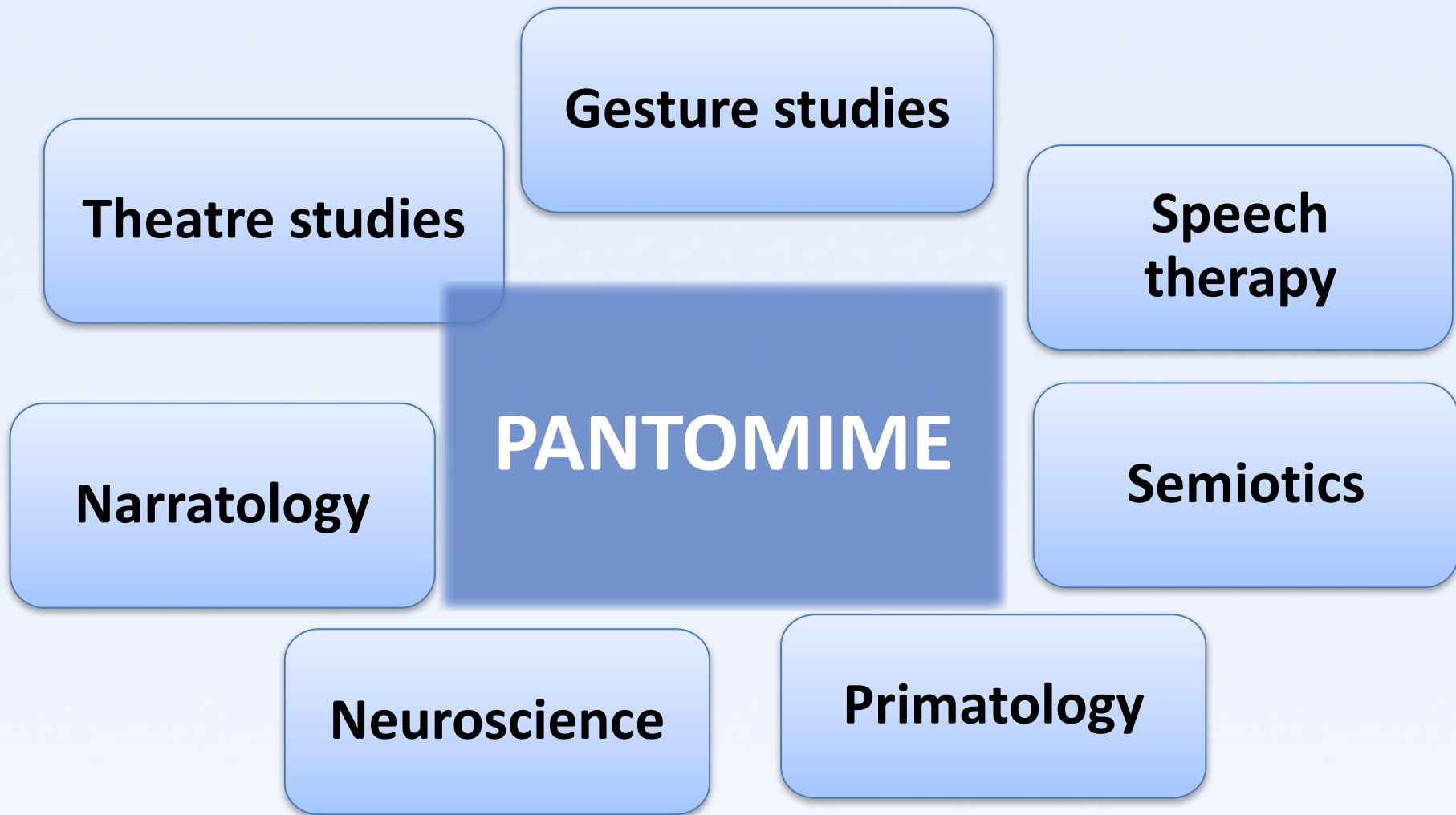
s 2014)

glossa
Condilla





**But what is a
“pantomimic”
theory of language origins?**



“...[pantomime] is difficult to define” (McNeill 2005: 2)
“...the lack of definition of pantomime.” (McNeill 2005: 6)

Problem

- The rise of interest in the so-called pantomimic scenarios of language origins is evident in the works of several of the most influential scholars in this field, including Michael Arbib (2005, 2008, 2009, 2012), Michael Tomasello (2008), or the mimesis theorists Merlin Donald (1991, 2001) and Jordan Zlatev (2008) (cf. McNeill, 2013 for an opposing view).
- But what is a PANTOMIMIC SCENARIO?
 - However, the proper classification and evaluation of the ‘pantomimic’ models of language origins depend as much on their fit with available multidisciplinary evidence (cf. Waciewicz and Żywicznyński 2015), as on proper definitional groundwork
- The underlying problem here is that the very notion of pantomime has not so far been analysed in much theoretical and empirical detail, and across a variety of disciplines is used in ways that are considerably diverse and rather intuitive than systematic. That this is so is testified to even by researchers directly concerned with pantomime, as in the case of

What we do in this talk

- Here, we take a look at how the notion of pantomime functions across a variety of fields, from teatrology to semiotics to primatology – with mostly terminological focus, to highlight the similarities but especially the areas of possible misunderstanding.
- We arrive at a definition of pantomime as a communication system that is non-conventional and motivated, (primarily) visual but potentially multimodal, mimetic (volitional and representational), using the whole body rather than exclusively manual, holistic and non-segmental, communicatively complex and self-sufficient, semantically complex, displaced, open-ended and universal.



**“Pantomime”
across the disciplines**

Theatre studies

panto-mimos: acting relying on masks, props and movement

*A dramatic form communicating through the use of **gesture and movement rather than words***

Peterson Royce 1992

But as a means of actors' expression: non-conventional

militaristic mime: the *Beni* and *Chama* dances

Gesture studies

*Pantomimes are **non-conventional and spontaneous** communicative movements ... performed in **absence of speech***

McNeill 2005, 2013

*Pantomime is a **re-enactment of actions** and their circumstances and of the actions themselves in a **fairly elaborated ... manner***

Kendon 2013

elicited pantomime: enacting simple transitive events, such as a man pushing a box

Goldin-Meadow et al. 2008 ; Meir et al. 2010 ; Gibson et al., 2013 ; Hall et al. 2013

Semiotics

Nonverbal text equipped with its own grammar often used in the company of music and dance

De Marinis 1993

semiotic— and specifically, **symbolic—analysis of costumes and props**

Wyles 2008

Experimental semiotics: **silent gesture** - silent, iconic depictions of individual concepts with one's hands and arms

Fay et al. 2013; 2014; Schouwstra 2012; Schouwstra and de Swart 2014

Therapy/Pedagogy

spontaneous gesturing, both manual and whole-body, of meanings are usually conveyed through words

exaggeration of communicative body movements to increase body awareness, used in affective disorders

reciprocal miming and miming to express emotions

Neuroscience

pretend tool use - standard diagnostic tool in apraxia

Hughlings Jackson 1893

pantomimes elicited by verbal commands – **imitation** by the participant observing someone else execute the action

Feyereisen 1999

distinct activation patterns for pantomimes, compared to signs of sign languages

Emmorey et al. 2010

Narratology

the representation of an event or a series of events, told not with words but gestures and related verbal and written work of literature

Abbott 2008

...communicates a **limited repertoire** of events sequences or stories, as they unravel in real time *cannot* be re-arranged into *flashbacks* or *flashforwards*

Ryan 2012

dependence on verbal, or general cultural, resources

Primateology

(rich): representational, symbolic, narrative, productive, compositional, systematic, triadically comm., multimodal, reenactive of past events, communicatively versatile
(Russon and Andrews 2010, 2011)

lean:

- “type of iconic gesturing in which the referent or goal is intentionally re-enacted” (Douglas & Moscovice 2015)
...but note at one point: “**potentially iconic!**”
- “behavior in which actors act out their message” (Russon, in press.)

Functions of pantomime

- information-donation
- pedagogy
- expression (emotional, artistic)
- ritualistic



TAKING STOCK

family resemblance category

huge **variability** in use

little or **no conventionality**

exaggerated movements

communicates an **action** / event



DEFINING PANTOMIME

DEFINITION



1. **Mimetic**
2. Motivated and **non-conventional**
3. Improvised
4. (Primarily) **visual**, but potentially multimodal
5. Using the **whole body**
6. **Holistic**

DEFINITION ctd:
constraints from language origins

7. Communicatively **complex** and **self-sufficient**
8. Semantically advanced:
displaced,
open-ended and
semantically universal



MIMETIC

- intentional
- imitative
- representational

pantomime \approx **bodily mimetic** communication

Donald (1991), Zlatev (2008)

...but not synonymous (different traditions)

MOTIVATED

ICONIC

NON-CONVENTIONAL

(emergence of conventions = major explanatory target!)

→ universal
→ not culture-specific

IMPROVISED

impromptu, spontaneous, one-off
“ad hoc”, “artless”, “naïve” (Arbib 2013)

→ creative

→ open-ended semantics

→ not normative, unstandardized

→ online invention & interpretation (cf. Poggi 2007)

→ low replication fidelity, low efficiency

→ pressures for conventionalisation

VISUAL

primarily **visual**
(at least for referential meanings)

...but potentially **multimodal**
(vocalization for nonreferential, e.g. emotional meaning)

multimodal pantomime
→ “division of labour” visual/vocal?
→ “more than sum of parts” effects?

WHOLE-BODY

integrated movement of **multiple body parts**

manual gestures, body movements, facial expressions,
voluntarily enacted mannerisms

→ energetically costly!
→ honesty
→ pressures for efficiency

HOLISTIC

stream of movement:
no (obvious) **onsets / terminations**

does not naturally decompose
into easily isolable component parts

refers to **whole events** or sequences of events

SELF-CONTAINED

complex, **stand-alone** communicative acts
(*propositions, speech acts, steps in a language game*)

comprehensible even w/o other semiotic resources
(e.g. if there is no language at all)

→ if no context provided, still comprehensible

RICH & SOPHISTICATED

displaced

open-ended

semantically universal

→ is it possible to square these with the previous criteria?



What's NOT pantomime?

Co-speech gesturing, language-slotted gestures



Co-present with **fully fledged language!**

Expressive power
too limited

Emblems, signs, etc.

Conventional!

Manual-only

Non-holistic (compositional)

Tic-tac signs: domain-specific (no semantic universality)



Charades



Conventional!!! (cf. e.g. Arbib 2012)

On-stage miming



WROCŁAWSKI TEATR PANTOMIMY



DYREKTOR I KIEROWNIK ARTYSTYCZNY - J.P. GAWLIK

Dyrektor i Kierownik Artystyczny - HENRYK TOMASZEWSKI

XVIII PROGRAM

w reżyserii i choreografii

Henryka Tomaszewskiego

SYN MARNOTRAWNY

scenografia

ZOFIA de INES-LEWCZUK

muzyka

Johann Sebastian Bach, Claude Debussy, Orlando Gibbons, Gerard Hoffnung
oraz Bogdan Dominik



Przedstawienie w dniach od 25 do 28 lutego 1985 r. o godz. 19.00 oraz 27 lutego o godz. 15.00 w sali Teatru Dramatycznego m. st. Warszawy.
Bilety w kasie Teatru Dramatycznego (PKiN).

Imitated instrumental gestures

isolated

mostly-manual

expressive power

embedded (not stand-alone)



“Silent gesture”

isolated (not holistic)

Simple

(equivalents of lexical units, not propositions)

Mostly-manual
(not whole-body)



What's not pantomime?

emblems and *signs* of a signed language

Tic-tac signs (cf. Waterman 1999)

charades (a point observed by Arbib 2012)

miming as a theatrical performance relies on conventional signals to an unexpectedly large degree.

Co-speech gesturing

Language-slotted gestures

Imitation of instrumental actions, esp. tool-use, commonly called pantomimes in the neuroscientific literatures (see above)

silent gesture

What's not pantomime?

Examples are *emblems* and *signs* of a sign language, which – even if having detectable iconicity – are clearly conventional (also: isolated rather than holistic, and mostly manual-only). Such is also the case with *Tic-tac signs* (cf. Waterman 1999) and other similar domain-specific systems (also: isolated, not semantically universal, and mostly manual-only), and less obviously, activities such as *charades* (a point observed by Arbib 2012). There are also reasons to believe that most contemporary *miming* as a theatrical performance relies on conventional signals to an unexpectedly large degree. *Co-speech gesturing* might again contain identifiable iconicity, but is not self-contained in requiring obligatory presence of speech, and also there are limits as to its volitionality, representationality and semantic-referential potential. *Language-slotted gestures*, which McNeill (2013 in contrast to McNeill 1992) takes as instantiating “pantomimes”, are likewise dependent on co-present speech. Imitation of instrumental actions, esp. tool-use, commonly called pantomimes in the neuroscientific literatures (see above) are isolated, mostly manual-only, communicatively simple and not self-sufficient. A particularly interesting example is *silent gesture*, increasingly common in the experimental research on language origins to the point of becoming a paradigm (e.g. Fay et al. 2013, 2014). It is also sometimes referred to as “pantomime” (Kirby 2015), but is mostly isolated and simple (gestures usually denote lexical concepts, not utterances) as well as exclusively manual –



What is pantomime?
SUMMARY

Definition

NON-CONVENTIONAL

VISUAL
(primarily)

MIMETIC

HOLISTIC

WHOLE-BODY

COMPLEX AND SELF-SUFFICIENT

SEMANTICALLY RICH & ADVANCED

Taking stock

definition needed

unified, unequivocal

rich, not lean!

challenges

integrate existing multidisciplinary research

launch new empirical studies



II

From apes to pantomime



Cognitive preconditions

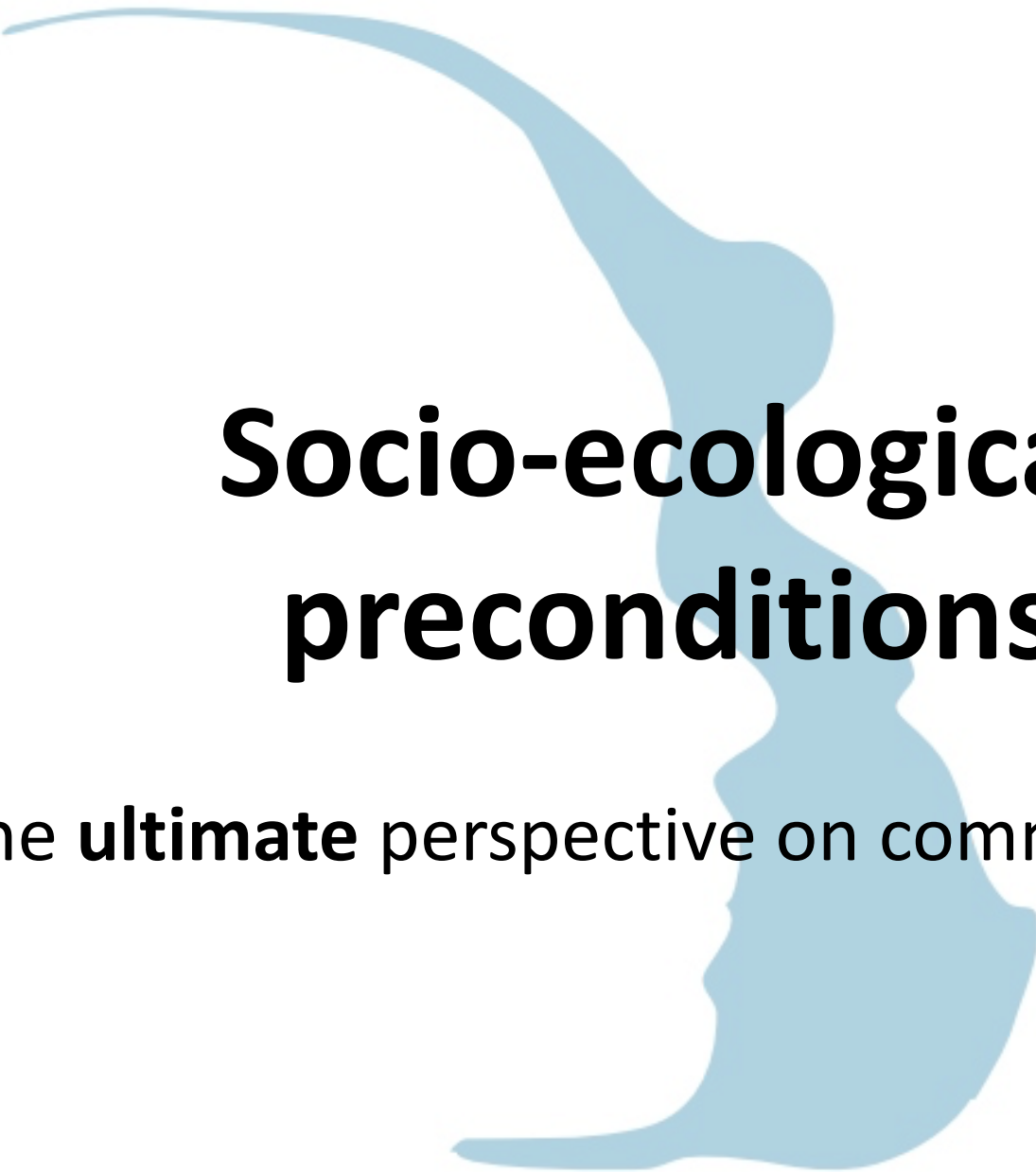


Cognitive preconditions

...

Pantomime in apes

- **no pantomime** in apes (Zuberbuhler 2013)
 - and almost **no iconicity** (but see Tanner & Byrne 1996)
 - existing cases likely do not involve "cognitive" iconicity (Perlman et al. 2014)
- **well, isolated cases (ca. 60)** (Russon, in press)
 - very few if any in the wild (Douglas & Moscovice 2015?)
 - dyadic; common ground & history of interaction crucial, embedded in a history of recurring events: stereotyped and scripted (Russon, pc)
 - mostly imperative, sometimes affiliative, rarely declarative
- not cognitive but **motivational** limitations? (e.g. Genty and Zuberbühler 2015)



Socio-ecological preconditions

(the **ultimate** perspective on communication)

Platform of trust

socioecological conditions in which
cooperation (in communication)
consistently pays off more than defection

→ precondition for
all information donation!

Communication: ultimate perspective

Proximate
(how)

Mechanism

Ontogeny

Ultimate
(why)

Adaptive
function

Phylogeny

Communication: ultimate perspective

Proximate
(how)

Mechanism

Ontogeny

Ultimate
(why)

Adaptive
function

Phylogeny

Communication: ultimate perspective

Ultimate = “fitness consequences”

(Scott-Phillips et al. 2011)

= What does selection say?

→ payoffs

Communication

- up until 1960s:
“(Helpfully) update others’ knowledge”
cooperative model
→ donate information
- esp. after Krebs & Dawkins 1978, 1984:
“Maximise fitness”
cynical model
→ manipulate

Communication

When is communication information donation?

Alignment of interests

- interests aligned
--> cooperative model
- interests disaligned
--> cynical model

Cooperation (**ultimate** perspective)

1. “To co-operate is to work together for a joint benefit” (Brinck and Gärdenfors, 2003)
2. “A cooperator is someone who pays a cost, c , for another individual to receive a benefit, b ” (Nowak, 2006).

Cooperation (**ultimate** perspective)

1. Benefit – Benefit → mutualism
2. “A cooperator is someone who pays a cost, c , for another individual to receive a benefit, b ” (Nowak, 2006).

Cooperation (**ultimate** perspective)

1. Benefit – Benefit → mutualism
2. Cost – Benefit → cooperation

...that's why in nature, the **default** is
Defection, not Cooperation!

... and at least information donation is
cooperation in this sense

“Language is cooperative...”

1. Using the same language
“playing tennis as opposed to not showing up to the game” (Hurford 2007)
2. Low-level logistics of conversation
proxemic alignment, backchannels, etc.
3. **Deception = exception not default**
4. Gricean Maxims
5. Preference organisation in CA
6. Collaborative face maintenance

Language

AS IF people had aligned interests

- people do not have aligned interests

Language

AS IF people had aligned interests

- people do not have aligned interests!!!
- and yet in language they behave AS IF they did

Platform of trust

“language is cooperative”=

Platform of trust

PoT is an explanatory target, not a given!

(Hurford 2007, Tomasello 2008, Fitch 2010, Dor et al. 2014,
Wacewicz 2015, Burkart et al. 2009, Rossano in prep.)

Platform of trust

pantomime is honest **information donation**



pantomime requires the **platform of trust**

Platform of trust

What's the 'ontological status' of PoT?

a social "niche"

→ so it's not cognitive

→ but proximately, implemented in minds/brains

example:

- *Mitteilungsbedürfnis* (Fitch 2010) in the signaller
- a counterpart in the receiver!

Ontogenetic ritualisation

This assumes a **common goal** / joint goal
(**aligned interests** → PoT)

→ may work in dyads based on **kinship**
(cf. Fitch 2002, Laland 2017)

→ difficult to scale up beyond the dyad

Language needs a society!

Ontogenetic ritualisation

This assumes a **common goal** / joint goal
(**aligned interests** → PoT)

→ may work in dyads based on **kinship**
(cf. Fitch 2002, Laland 2017)

→ difficult to scale up beyond the dyad

Language needs a society(-wide PoT)!

Platform of trust

Where does PoT come from?

- from *within* social interaction itself
 - (e.g. Waciewicz et al 2017)?
- from the outside (more ‘*hardwired*’)
 - many theories (e.g. Zlatev 2014)
 - esp. **cooperative breeding**
 - e.g. Tomasello et al. (2012) “interdependence”
 - Tomasello & Gonzalez-Cabrera (2017) “composite model”



From apes to pantomime
SUMMARY

Preconditions for pantomime

1. Some extended cognitive capacities.
- 2. Platform of trust.**



III

From pantomime to language

Pantomime à la McNeill

Cf. pantomime for pedagogy Gärdenfors 2017

The mimer performs the movements of the actions involved in the task without actually performing the actions.

*The mimer makes sure that the learner **attends** to the series of actions.*

*The mimer's **intention** is that the learner can perceive the right actions in the correct sequence.*

*The mimer **exaggerates** and slows down some of the actions in order to facilitate for the learner to perceive important features.*

Pantomimic story telling

EVENT 1 + EVENT 2 + ... + EVENT N

global coherence (Ferretti et al. 2017)

Traditional
narratives



Conventionalisation

unstandardised

- high cost (energy, time, cognitive resources)
- low communication efficiency, low replication fidelity

→ pressures for conventionalisation

(Hutto 2008: 269, Arbib 2012: 219, Corballis 2014: 185, 2015: 91)

Source of pressure for conventionalisation

Interactivity

i.e. turn-taking regime (Wacewicz & Zywczyński in press):

- alternation,
- synchrony (online timing),
- conditional relevance,
- egalitarian role-reversibility

Alternation in Linguistic TT

The minimal requirement of TT: interacting parties must execute their appropriate actions in a coordinated fashion.

- appropriate for many examples of **non-linguistic turn-taking** (games, including competitive sports games)
- highlights Sacks and colleagues “turn-taking” rules:
 - a. If C[urrent speaker] selects N[ext speaker] in current turn, then C must stop speaking, and N must speak next, ...
 - b. If C does not select N, then any (other) party may self-select, first speaker gaining rights to the next turn
 - c. If C has not selected N, and no other party self-selects under option (b), then C may (but need not) continue ...
(Sacks et al., 1978)

Synchrony

(fast-paced temporal coordination)

TT results from the interaction between two pressures – to **minimise gaps** between interactants' respective turns and to **avoid overlaps** between these turns (Sacks et al., 1974).

- turn-onsets appear faster than it takes to plan a turn-contribution (>500 ms. vs. 600 ms. latencies for planning a single lexeme)
- TT signals and cues: lexico-syntactic (e.g. Ruiter et al., 2006), prosodic signals (e.g. Couper-Kuhlen and Setling, 1996), visually transmitted (gestures, Kendon, 2004; adaptors, Zywiczynski et al., 2017; gaze, Ho et al., 2015; posture, Schegloff, 1998)

Conditional relevance

Why does linguistic turn-taking constitute an explanatory target?

Not because turn-responses come so fast - but because they come so fast even though they need to be planned so as to make sense.

Due to the semantically open-ended nature of language, linguistic turn-taking is possible because conversants are able to interpret each others' contributions in an online fashion – both their length and type, and adjust their responses accordingly.

Egalitarian role reversibility

The core ecological niche for language: face-to-face conversational interaction (Torreira et al., 2015)

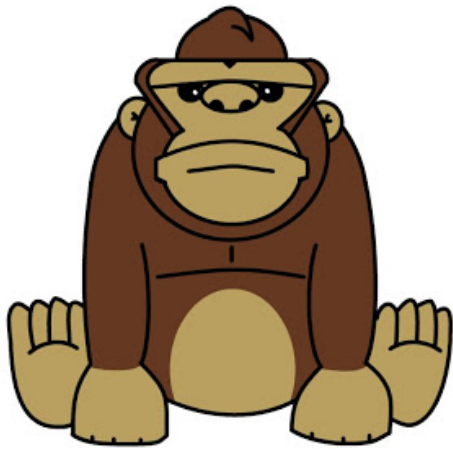
The most **prototypical** type of face-to-face conversational interaction: casual as opposed to institutional interaction (Drew and Heritage, 1992).

The defining characteristics: no stable ascription of interactional roles in conversation, which leads to the egalitarian reversibility of the speaker/hearer roles

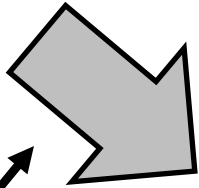
Conversational interaction is regulated (primarily) by conversation specific rules (TT rules) and not by social variable, such as status or kinship.



TAKING STOCK



**Platform
of
trust**



Interactivity



“ ” punctuation
! adjective ;
Language
= noun verb

EvoLang 12

16-19 April 2018 in **Toruń**, Poland



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THANK YOU!