

# Investigating the causal link between context triggers and context

Thanh Nyan

The University of Manchester

UK

## Context triggers:

linguistic elements that activate a process whereby

- Context as a knowledge source (***context<sub>k</sub>***) is accessed
  
- Bits of it are imported into in working memory to give rise to construct (***context<sub>c</sub>***) (set of assumptions used by interpretation)

**Long-term goal:**

**Link** between

**context triggers and**

**contextk**

**Research question:**

**What makes it possible** for  
a given **linguistic element** to provide  
access to **context<sub>k</sub>** ?

**Answer:**

***NOT*** in terms of the pathway that enables the activation to spread,

**BUT** in terms of the process which, overtime, caused this pathway to become established.

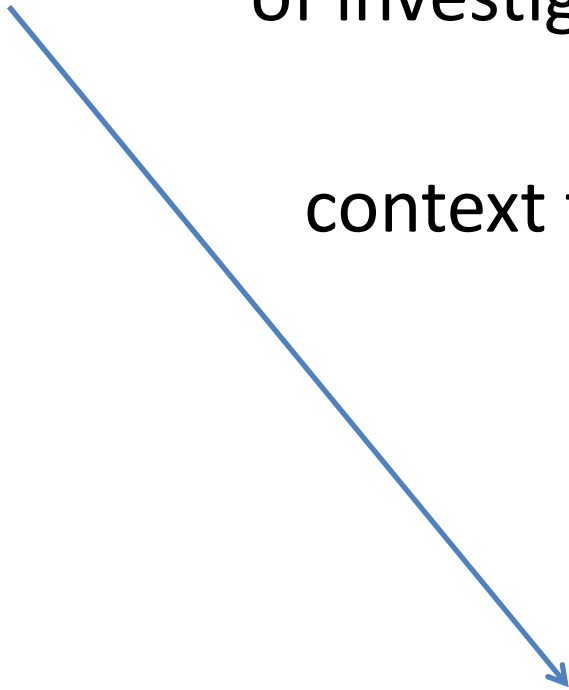
## **Working assumption:**

This linkage arises from a process whose function is yet to be determined.

# What this talk is about:

## Logistics

of investigating  
the link between  
context trigger and context



**WHY?**

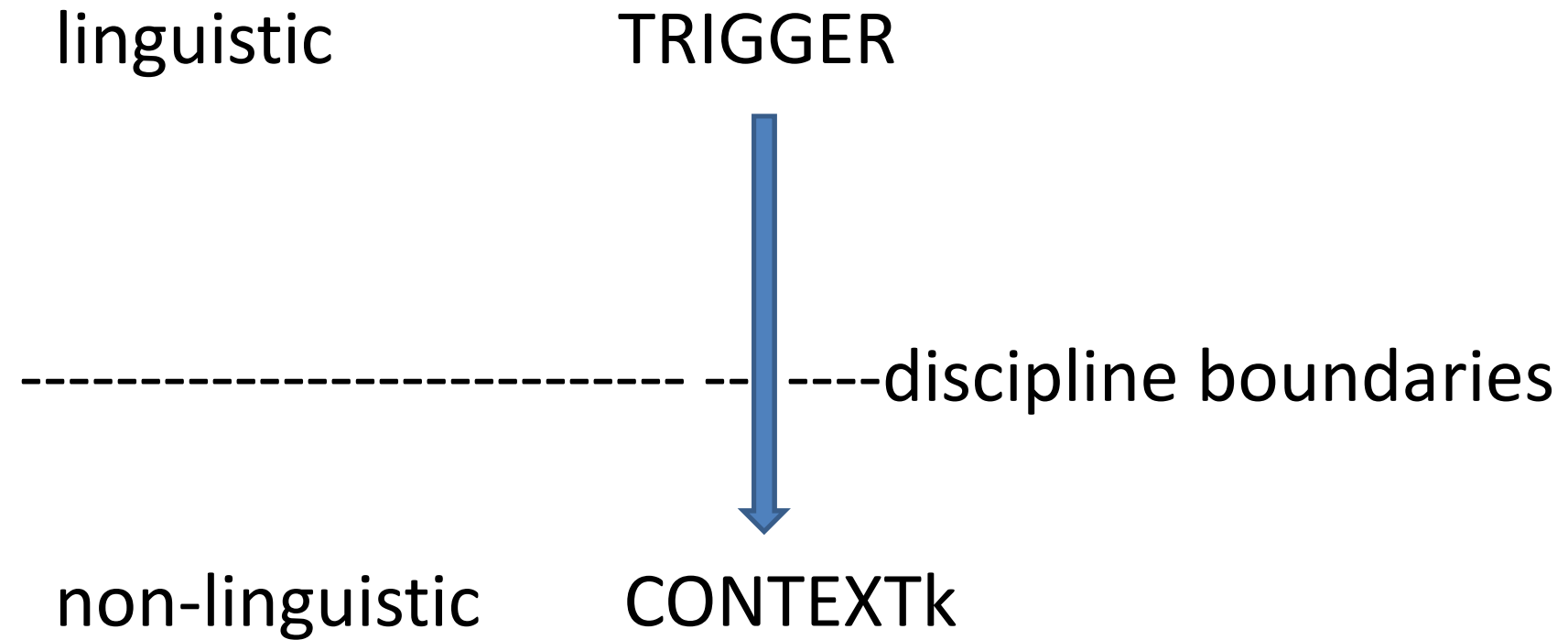
Such a link presupposes a **continuum** that cuts across discipline boundaries

→ Multi-disciplinary approach?

→ problem of interface



*levels of description*



## Proposal: **adaptive perspective**

neo-Darwinian theory of evolution

Evolutionary Synthesis of the 1930s and 1940s  
(reconciles Darwin's theory of evolution with facts  
of genetics).

(Futuyma 1998; Mayr 1980)

# Relevant adaptive assumptions

1. The systems a living organism comprises

are **oriented towards survival**

(Cummins 1985:503)

and this includes the **language system**

## 2. Language is rooted in our neurobiology

What this entails:

→ a certain amount of **structure** and **subsystem sharing**

## Shared brain areas include :

- those mediating concepts (i.e., “the frontal, temporal and parietal lobes (exclusive of Broca’s and Wernicke’s areas)” ),
- “areas of the temporal cortex linked to basal ganglia and frontal cortex”, which sub-serve the “capacity for carrying out behaviors in serial order” (Edelman 1989:147)( Such capacity would have been responsible for the emergence of syntax).

Language being rooted in our neurobiology



*ACCESS*

concepts about 'nonlanguage interactions

environment, between the body and the

as mediated by varied sensory and motor systems'

## **Damasio et al.'s model of language processing:**

- Broca's & Wernicke's area

- Three sets of interacting structures:

(a) supports concepts arising from sensory and motor systems

(Damasio and Damasio 1992: 89)

(b) mediates 'the implementation of word form in eventual vocalization' (Tranel et al. 2001:656)

(c) acts as an intermediary between (a) and (b)

(Damasio et al. 2004:221)



# What can an adaptive perspective offer?

A **configuration of relationships** onto which  
context trigger,

context<sub>k</sub> and

the linkage

between them

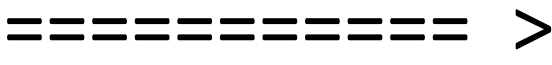
**can be mapped**

[linguistic concept]

TRIGGER

trait

process



pathway

trait

[non-linguistic conceptual source]

CONTEXTk

T1

T2

## Preliminary hypothesis (H<sub>0</sub>)

A linguistic element can function as a trigger for a context

because

the **concept it is associated** with

includes a **trait** that **arises**

from a **non-linguistic source**



Questions

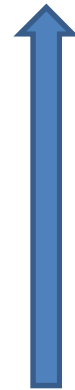
- 1. Kind of process is involved?**
- 2. Source of knowledge involved?**

*LINGUISTIC TRIGGER*



[linguistic concept]

[**trait**]



**PROCESS?**

[non-linguistic concept]

[**trait**]

**NON-LINGUISTIC SOURCE ?**

What **H<sub>0</sub>** entails in terms of the **optimal type of data**:

Linguistic element associated with

a concept containing a **trait**

**initially found in a non-linguistic**

**conceptual source** arising from a

non-linguistic system.

**Type of data** (see Argumentation Theory &....  
Marmaridou 2001)

Adjective with **inbuilt +/-judgement**



**constraint on continuation**  
[expressing a **+/- response**]

**(1) This editor is meticulous in his attention to language**

**→ (a) he is much appreciated by his colleagues.**

**→ (b) his colleagues can't stand him.**

Where (a) is the preferred type of continuation



(2) This editor is **nit-picky** in his attention to language

→ **(b) His colleagues can't stand him.**

→ **(a) he is much appreciated by his colleagues,**

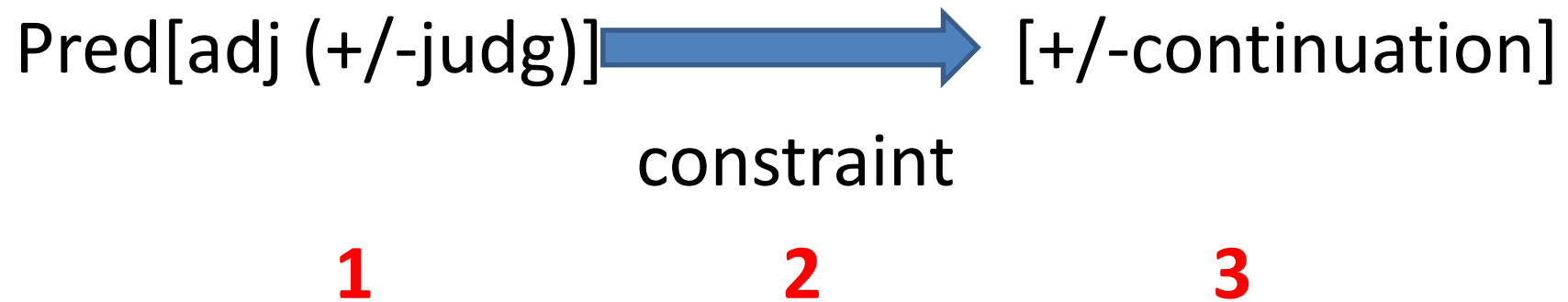
Where (b) is the preferred type of interpretation

According to **H<sub>0</sub>**, then,  
that kind of adjective can trigger  
the relevant **context<sub>k</sub>**, *because*

the linguistic concept involved includes

an **element E** that originated from that context

E= Discourse unit (**DU**)



→ (a) Given **E**, how do we go about **identifying context<sub>k</sub>**?

→ (b) What kind of **process is involved in the 'replication'** of that element at the linguistic level?

## **Criteria**

based on methods commonly used by  
evolutionary biology to identify adaptations

(Futuyma 1998: 356-360)

## Criterion (i)

E must exhibit a level of **complexity\* similar** to that of its presumed analogue in context<sub>k</sub>

\*Complexity in terms of  
**processing and/or structural details**

## **Underlying assumption:**

‘Complexity cannot evolve except by natural selection.’

(Futuyma 1998: 356)

See Pinker and Bloom (1990:710)’s discussion of the vertebrate eye

**Criterion (ii):**

**The emergence of E is construable as a  
response to**

**the same type of problem as**

**the one faced by the presumed analogue**



## Criterion (iii)

Its **function** is **similar** to that of this analogue

1<sup>st</sup> possible source for **E**:


**complex categories<sub>d</sub>\***

\*'d' for decision making

DU

pred[adj (+/-judg)]  [+/-continuation]  
constraint

-----  
COMPLEX CATEGORY<sub>d</sub>

[initial situations]  [appropriate actions]  
internal linkage

Further specification of CCsd:

[initial situations]  [appropriate actions]

internal linkage

  
consequences with **+/- somatic markers**

**CCsd** are (experience based) **templates for action selection**

within a **decision making** process.

Arise from the necessity to respond quickly to an adaptive situation

(Damasio 1994)

**DUs** may be seen as **templates for continuation selection**

Would have arisen from the **time constraint** imposed by **communicative needs**.

## Process involved in this 'replication'

39

→ **Recycling** of **pre-existing solutions** in response to similar problems.

Evolution's **tendency** to recycle solutions, rather than devise new ones


(Damasio 1994: *193* )

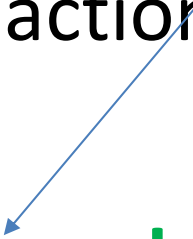
# DU

pred[adj **(+/-judg)**]  [+/-continuation]  
constraint

---

## COMPLEX CATEGORY<sub>d</sub>

[initial situations]  [appropriate actions]  
int. linkage

**+/-somatic markers** 



## **Difficulties facing this pairing of DUs and CCsd:**

- a) How did somatic markers get into the conceptual structure of adjectives?
- b) The constraints in question can be overridden.
- c) Initial situation in CCsd: too vague
- d) Why should continuations, as elements of text, have anything to do with appropriate action?

Alternative for context<sub>k</sub> : **complex categories<sub>m</sub>**

**CCsm : templates for movement selection**

**Jeannerod's model of intentional action**

in cases where the goal involves interaction with an object.

(Jeannerod 1994; 2006)

## CCm

Property of

Object \*



movement selection

(affordances)

(based on affordances)

1

2

3

### **\*Pragmatic mode of representation**

: in terms of properties (affordances) that determine how the object can be handled

# Jeannerod's model of intentional action production

## **motor representation**

[motor rules+ goals (incl. **pragmatic representation**)



*simulation of execution*

activation of pathways

## **motor execution**



completed action

## CCsm better source:

- Pragmatic representation//highlighting of a certain property of an object via adjective

(Emergence of DU *also*

construable as a response to the time constraint imposed by the communicative situation)

## Problems facing CCsm:

1) Source for +/- judgement?

1) CCsm are about *movement* rather than  
action selection.

## 1) Possible source for +/- judgement:

**Associative learning** (Pulvermüller 2005:576):

Learner picks it from

linguistic and non-linguistic behavior of  
other people

## **Objection 2:**

CCsm are templates for movement selection,  
rather than action selection:

a matter of perspective



Various stages of action production and consciousness:

**Representation of object**



Movement selection [***NON-CONSCIOUS***]



**Completed action** [**conscious**]

In other words,

> We are **not conscious** of movement selection  
( i.e., of the **skills** involved)

only of **completed action**.

➔ In the process of generating intentional action, we normally conflate the two stages.

Objection (2) is due to

an **inability on our part to distinguish**

between these two stages,

to substitute

*action* for *underlying skills*

## Concluding remarks

What an adaptive perspective can offer:

- Criteria for identifying presumed context.
- Plausible account of how the linkage between trigger and context **MAY** have come about.

## What it can't do:

➤ rule out that things have come about and persisted 'by accident'

➔ **tendencies**, rather than principles,  
come with the territory.

**Interesting issue that has cropped up:**

Why does the **pragmatic representation** of an object (its affordances and the action they determine) appear to be activated at the **discourse level**?

- **References**

- Anscombe, Jean-Claude (ed.) 1995. *Théorie des topoï*. Paris: Editions Kimé.
- Anscombe, Jean-Claude.1995. "De l'argumentation dans la langue à la théorie des topoï." In *Théorie des topoï*, edited by Jean-Claude Anscombe. Paris: Editions Kimé : 11-47.
- Anscombe, J.-C.1995. "La nature des topoï." In *Théorie des topoï*, edited by Jean-Claude Anscombe. Paris: Editions Kimé: 49-83.
- Cummins, Robert. 1989. "Functional Analysis." In *Readings in the Philosophy of Science* (2nd ed.), edited by Baruch A. Brody and Richard E. Grandy. Englewood Cliffs, NJ: Prentice Hall: 495-512.
- Damasio, Antonio R. 1994. *Descartes' Error: Emotion, reason and the human brain*. New York: Grosset/Putnam.
- Damasio, Antonio R. 1996. "The somatic marker hypothesis and the possible function of the prefrontal cortex." *Phil.Trans. R.Soc. Lond.* B 351: 1413-1420.
- Damasio, Antonio R. 2010. *Self comes to mind*. New York: Pantheon.
- Deacon, Terrence.W. 1997. *The Symbolic Species*. New York: Norton
- Ducrot, Oswald. 1982. . "Note sur l'argumentation et l'acte Ducrot, Oswald. 1988. "Topoï et Formes topiques." *Bulletin d'Etudes de Linguistique Française* 22 : 1-14.
- Ducrot, Oswald. 1995b. "Topoï et formes topiques" In *Théorie des topoï*, edited by Jean-Claude Anscombe. Paris: Editions Kimé : 85-99.
- Futuyma, Douglas. J. 1998. *Evolutionary Biology*, 3<sup>rd</sup> edition, Sinaer Associates, Sunderland, MA.
- Gumperz, John. 1992. "Contextualization and understanding." In *Rethinking context: Language as an interactive phenomenon*, edited by Alessandro Duranti and Charles Goodwin. Cambridge: Cambridge University Press: 229-252.
- Jeannerod, Marc. 1994. "The representing brain: Neural correlates of motor intention and imagery". *Behavioral and Brain Science* 17, 187-245.
- Jeannerod, Marc 2006. *Motor Cognition*. Oxford: Oxford University Press.
- Kosslyn, Stephen and Olivier Koenig. 1995. *Wet mind*. New York: The Free Press
- Levinson, Stephen.1997. "Contextualizing 'contextual cues'." In *Discussing communication analysis 1: John J. Gumperz*, edited by S. Eermans, C. Prevignano and P. Thibault. Lausanne: Beta Press: 24-30.
- Mayr, Ernst. 1980. "Some thoughts on the history of the evolutionary synthesis." In *The Evolutionary Synthesis*, edited by Ernst Mayr and William B. Provine. Cambridge Mass. And London: Harvard University Press: 1-45.
- Nyan, Thanh. 2016. *Context construction as mediated by discourse markers*. Nijmegen: Brill
-