Morphosyntax and experimental studies on language

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2018-2019

HO.1

Calendar

March		April	
March		**April**	
Mo	4	Mo	8
Tu	5	Tu	9
We	6	We	10
		Mo	15
Mo	11	Tu	16
Tu	12 (Research seminar, cfr. Ciscl Events)	We	17
We	13		
Mo	18		
Tu	19 Philippe Prévost		
We	20 (" ")		
Mo	25		
Tu	26		
We	27		

The experimental approach.
Some general considerations

The experimental approach.

Different experimental methods of data gathering:

Behavioral studies
- ◦ **Grammaticality judgments** >> always minimally comparative

    possibly on a scale

    possibly on big populations

Grammaticality judgments are a precious source of knowledge on the functioning of the internal grammatical system as they provide information that is not otherwise available through the simple observation of naturalistic data:

They provide **Negative Information**

Schütze and Sprouse 2014 for re-discussion of the issue.

The experimental approach.
Some general considerations

From classical psycholinguistic tradition:

- **Comprehension** >>   picture/videos/scenarios
  to sentence matching tasks

- **Production** >>   eliciting the production of particular structures through some task; most typically through:

  - answering a question
  - completing a sentence
  - repeating a sentence (ore less; e.g. word repetition)

Online tasks/procedures:
- Reading time + accuracy
- Mesuring time in fulfilling the task
- Eye-tracking
- …………………….
- Types of neuroimaging (ERP, fMRI,…)

The experimental approach. Some general considerations

What is crucial in a good experiment, of any of the types mentioned, including grammaticality judgments, is:

- A well defined research question
- A well controlled design, with the conditions under study explicitly defined
- Changes in the sentences (stimuli) under investigations kept as minimal as possible to approximate as much as possible the optimal situation in which only the property under study is manipulated. (We will see several examples). This is at the core of the experimental scientific method since Galileo (The Galilean Method; cfr. e.g. Chomsky 2002, *On Nature and Language*, CUP). Experimental studies on language are no exception to that.
- Hence, some explicit theoretical hypotheses to put to test are necessary, they are a prerequisite for the beginning of the construction of an experimental task.

The experimental approach.
Some general considerations

The dialogue between theory and experimentation is crucial: Linguistic theory feeds the experimental work in generating research questions, which can be properly and explicitly formulated.

At the same time, results from well controlled experiments can illuminate linguistic theory by suggesting possible (re)formulations and precise implementations of the explanatory principle(s) which helped raising the research question. The work on the role of locality in accounting for developmental paths, which we will study in detail, has precisely this property.

We will also try to see other examples, e.g. the role of Binding principle C in guiding possible use and interpretations of lexical noun phrases.

The *Baseline*

The crucial role of the *Baseline.*

Any experiment must have a so called **Control group (CO)**.

No experimental result on any population, on any specific construction has a value *per se,* beside pure description. It acquires one only if **compared** to what is independently determined as the typical behavior of a defined population on the same construction. E.g.:

children of different ages in typical development (at 3 at 5 etc….)

children of different ages vs adults (to check for development)

children with (S)-SLI vs typically developing children of the same age (age –match)

children with (S)-SLI vs typically developing children of the same language level (language-match; determined through some standardized test)

agrammatic adults vs adults with no diagnosed pathology

monolingual children at age X vs bilingual children at the same age X

bilingual children at age X vs L2 children at age the same age X ………………

In conclusion, in order to identify some potential **deviation** or to spot a **developmental path** it is necessary to know what we can expect on the domain under investigation in the relevant population against which the experimental subjects will be studied.

A term of comparison is essential: the *Baseline.*

Contents

Main domain that will be investigated:

Language acquisition with some reference to different modes of acquisition, such as:

Monolingual, bilingual, L2, SLI, and other types of atypical language growth/ (or manifestations of problematic behavior through language, e.g. Dyslexia, HI), with some comparisons with other forms of language pathologies, such as e.g. (agrammatic) aphasia. (Although considerations on multilingualism will now be developed in some better detail in the new first year class).

General *leitmotif :* The role of the **internal grammar** in the process of language acquisition (grammar based approach).

◦ Presentations of results and discussions based on often current or anyway recent research.

Contents

◦ Slides of the classes available at:

http://www.ciscl.unisi.it/didattica.htm

◦ Basic reference:

◦ Belletti, A. & M.T. Guasti (2015) The Acquisition of Italian, John Benjamins

◦ and

◦ Guasti, M.T. (2017) Language Acquisition, MIT Press

◦ + some integrated references (later on, for presentations in class).

◦ Cfr. also some of the contributions in:

◦ Roberts, I. *The Oxford Handbook of Universal Grammar,* Oxford University Press, 2017

◦ Lidz, J., W. Snyder, J. Pater, *The Oxford Handbook of developmental Linguistics,* Oxford University Press, 2016

Contents

Research seminars:

Check the event listed on the ciscl website

(Tuesdays or Thursdays)

Themes

Types of object A'-dependencies and their acquisition:

-Relative clauses: Subject Relatives vs Object Relatives

-A different object A'-dependency: Object-topicalization in ClLD

- Aspects of the acquisition of (types of) passive, also in comparison with ClLD and the syntax of causatives and its relation with passive

-On a-marking of direct objects in a comparative perspective: Differential Object Marking/DOM and Left peripheral (a)-topics

-Poverty of the stimulus and children's grammatical creativity

-The proper mastering of principle C vs discourse principle(s) governing the use of referential expressions

➢ Theoretical hypotheses at the base of the research questions are supported and refined through experimental results (beyond grammaticality judgments)

Production and comprehension: some relevant considerations

➤ In production, speakers have '**choices**': their internal grammar may take (automatic) decisions which may be due to:

◦ Choice of the 'optimal' solution in the well functioning system (cfr. use of PORs instead of ORs by Italian speaking adults)

◦ Choice of computations 'avoiding' the insurmountable difficulty in the malfunctioning system (cfr. use of DP instead of clitic; different types of ORs in Hebrew speaking children with SLI)

➤ In comprehension, speakers are faced with material which is presented to them and which their internal grammar must analyze. Hence, '**no choices**'.

➤ Whereas the role of **external** factors – such as e.g. time pressure – may be more prominent in production than in comprehension yet the null assumption is that the speaker's **internal** grammar is equally directly involved in both. This **grammar-based** assumption naturally leads to the expectation that production and comprehension should give the same comparable results, once potentially relevant external conditions and the grammatical factors leading to optimal choices or avoidance are factored out. Whence the importance of always comparing production and comprehension.

➤ Under the (null) assumption just described that both production and comprehension are **grammar-based**, the comparison between production and comprehension may also be especially revealing of the properties of the functioning of the internal system and the principles operating in it (e.g. why some solution appears to be 'optimal, simpler, favored ….).

➤ Moreover, the comparison may reveal specific properties of a malfunctioning or delayed system.

Measuring (the planning of) production

How do we plan our productions?

Time measures are hard to obtain in order to value the time of planning in production. In contrast, they are currently used in comprehension studies, as mentioned.

E.g.: Do we first decide on V and its arguments? Or do we start with the nominal arguments and then associate them to a V?

- ◦ Is there a difference between associating a nominal DP-object to V compared to a nominal DP-subject?

Very interesting recent studies based on a V-final language like Japanese (by C. Phillips and colleagues) seem to suggest that **OV is accessed to faster than SV**. This is somehow consistent with the linguistic analysis (see h.o. of first year), according to which the relation between V and its Internal Argument/IA is stricter than the one between V and the External Argument/EA (the subject of the clause).

The theoretical analysis appears to be directly reflected in actual production.

Different experimentations, same dialog theory-experimentation: Merge

List of words vs sentences

"According to most linguists, the syntactic structure of sentences involves a tree-like hierarchy of nested phrases, as in the sentence [happy linguists] [draw [a diagram]]. Here, we searched for the neural implementation of this hypothetical construct. Epileptic patients volunteered to perform a language task while implanted with intracranial electrodes for clinical purposes. While patients read sentences one word at a time, neural activation in left-hemisphere language areas increased with each successive word but decreased suddenly whenever words could be merged into a phrase. This may be the neural footprint of "merge," a fundamental tree-building operation that has been hypothesized to allow for the recursive properties of human language."