

SYNTAX: FROM 'NAÏVE' TO 'THEORETICAL' CONCEPTS

(Giorgio Graffi – University of Verona)

Lost-in-linguistics, Oslo, 10-14 October 2011

PART 1: DEFINITION OF 'NAÏVE': NAÏVE₁ (= 'INGENUOUS') VS. 'NAÏVE₂' CONCEPTS

1. 'Naïve₁' concepts

- “Usha Goswami, a professor at the University of Cambridge, defines naïve physics as an intuitive understanding all humans have about objects in the physical world. Cognitive psychologists are delving deeper into these phenomena with promising results. Psychological studies indicate that certain notions of the physical world are innate in all of us” (from *Wikipedia*, s.v. “Naïve physics”). See Bozzi (1990); Goswami (2008).
- 'Naïve₁' = 'Ingenuous' in its etymological sense (see Graffi 1991).

2. Definition of 'ingenuous' (OED)

Etymology: < Latin *ingenu-us* native, inborn, free-born, having the qualities of a freeman, noble, frank (< *in-* (in- [prefix](#)²) + *gen-*, stem of *gignĕre* to beget) + *-ous* [suffix](#).

“1. Of free or honourable birth; free-born. (Chiefly in references to Roman History.)”

....

4. a. Honourably straightforward; open, frank, candid. (The current sense.)

....

†5. Native, natural. (*nonce-use*, repr. Latin *ingenuus*.) *Obs.*3.

3. 'Naïve₂' concepts

- The first development of [set theory](#) was a naïve set theory. It was created at the end of the 19th century by [Georg Cantor](#) as part of his study of [infinite sets](#).
- As it turned out, assuming that one can perform any operation on sets without restriction leads to [paradoxes](#) such as [Russell's paradox](#) and [Berry's paradox](#).
- [Axiomatic set theory](#) was developed in response to these early attempts to study set theory, with the goal of determining precisely what operations were allowed and when.

(From *Wikipedia*, s.v. “Naïve set theory”)

4. Naïve₁ vs. naïve₂

- We can label the concepts of ‘naïve physics’ ‘naïve₁’ (or ‘ingenuous’) concepts and the concepts of naïve set theory ‘naïve₂’ concepts.
- Naïve₁ concepts *cannot* be disposed of by any linguistic theory.
- Naïve₂ concepts can lead to paradoxes and therefore must be avoided.
- This can be obtained by constructing a network of ‘theoretical’ concepts.

PART 2: SOME 'NAÏVE₁' CONCEPTS: WORD, WORD CLASS (OR 'PART OF SPEECH'), WORD GROUP, VALENCY, TRANSFORMATION

1. Some possible objections

- 'Word': some linguists (e.g., Bally) state that this concept is only based on the orthographic conventions of Western languages.
- 'Word-group': some theories (e.g., Word Grammar) explicitly dispose of the notion of 'constituent'.
- 'Transformation' are typically 'theory internal' concepts (Harris and Chomsky). There exist many theories that explicitly reject the notion of transformation (e.g., LFG and GPSG).

2. Some general answers

- 'Naïve₁' (or 'ingenuous') does not mean 'self evident'.

- The fact that some ‘naïve₁’ concepts have been brought to light by different scholars does not change their status.
- E.g., ‘word’ dates back to Classical Antiquity; ‘word group’ (not even with this label) to 18th century. Nevertheless, they are both ‘ingenuous’ concepts.
- There exist a set of linguistic entities which are “psychologically real” and are independent of any theory: these are the ‘naïve₁’ or (‘ingenuous’) concepts. No linguistic theory can dispose of them, if it aims to be adequate.
- The reality of ‘naïve₁’ concepts can be demonstrated on the basis of (1) the analysis of the speakers’ behavior; (2) their actual employment even in theories which explicitly reject them.

3. Word

a) Bally vs. Jespersen (and Sapir)

- “If French were a savage language not yet reduced to writing, a travelling linguist, hearing the present tense of the verb *aimer* pronounced by the natives, would transcribe it in the following way: *jèm, tu èm, ilèm, nouzémon, vouzémé, ilzèm*. He would be struck particularly with the agglutination of the pronominal subject and the verb, and would never feel tempted to draw up a paradigm without pronouns: *aime, aimes, aime, aimons*, etc., in which the traditional spelling makes us believe. (...) he would rather, through a comparison of *ilèm* and *ilzèm*, be led to establish a tendency to incorporation, as the only sign of the plural is a *z* infixed in the verbal complex” (Bally 1913: 43; English translation in Jespersen 1922: 422-3).
- “Linguistic experience, both as expressed in standardized, written form and as tested in daily usage, indicates overwhelmingly that there is not, as a rule, the slightest difficulty in bringing the word to consciousness as a psychological reality. No more convincing test could be desired than this, that the naïve Indian, quite unaccustomed to the concept of the written word, has nevertheless no serious difficulty in dictating a text to a linguistic student word by word” (Sapir 1921: 33-4).

b) How to single out words? ‘Positional mobility’ and ‘uninterruptability’

- The terms ‘positional mobility’ and ‘uninterruptability’ were coined by Lyons (1968: 202). They however refer to criteria worked out by Jespersen (1922: 422 ff.; 1924: 93-4).
- According to ‘positional mobility’, a word can occur in different positions within a sentence.
- According to ‘uninterruptability’, a word cannot be interrupted by the insertion of other material.

Bally’s examples revisited. ‘Positional mobility’:

- (1) a. *il aime* (French)
‘he loves’
- (2) a. *Amat* (Latin)
‘he loves’
- (3) a. *aime-t-il?*
loves – he
‘Does he love?’
- (4) **tama?*

Bally’s examples revisited. ‘Uninterruptability’:

- (1) *Il l’aime* (French)
he – her/him – loves
‘He loves her/him’
- (2) *Amat eam/eum* (Latin)
loves – her/him
‘He loves her/him’
- (3) **amaeamt* / **amaeumt*

c) Conclusion about words

- Words are not “fictitious entities”, invented by the Western linguist, but they are ‘naive₁’ (or ‘ingenuous’) concepts, which no adequate theory can dispose of.

4. Word classes (‘parts of speech’)

- Linguistic theories differ regarding the number and the definitions of word classes they assume. Hence, a given *inventory* of parts of speech is a ‘theoretical’ concept.
- “A word grammar, as such, makes no reference to phrases, clauses, or sentences, either by these terms or by any other name, but this need not prevent us from using such words as part of our metalanguage” (Hudson 1984: 94).

5. Word groups

a) Different views about words groups

- Almost all linguists assume that words belong to different classes (labeled ‘parts of speech’ in the Classical grammar). This concept is surely a ‘naive₁’ concept.
- According to Hudson, therefore, ‘phrase’ or ‘clause’ are harmless terms, once it is clear that they do not have any scientific value. The only real scientific notion is ‘word’.
- “(...) it is more satisfactorily (and more accurate) to regard *constituents* and *categories* as having the status of *theoretical constructs*. That is to say, they are part of the grammatical apparatus which the linguists finds he needs in order to explain certain facts about language (just as ‘molecules’, ‘atoms’ and ‘subatomic particles’ are part of the apparatus which the physicists finds he needs in order to explain the nature of matter in the universe” (Radford 1988: 55).
- “We have presented a substantial body of empirical arguments in support of the key claim that sentences are hierarchically structured into word- and phrase-level constituents (...). (...) virtually any linguist working on Syntax will accept the need to recognise the existence of an abstract syntactic structure associated with sentences. Where linguists disagree with each other is over the question of just how many different categories there are in a particular language or universally – *not* over the question over there are categories” (id.: 84).

b) Conclusion about word groups

- Word group is an ‘naive₁’ (= ‘ingenuous’) concept, which no adequate theory can dispose of.
- On the contrary, a given analysis of a sentence into word groups (or constituent), as well as the specified inventory of constituents resorted to, depends on the *theory* the linguist is basing her/himself on.
- We therefore suggest to distinguish the **naïve₁** concept ‘word group’ from the **theoretical** one ‘constituent’.

6. Valency: the ‘naive₁’ concept

- The term ‘valency’ is due to Tesnière. However, no syntactic theory aiming to be adequate can avoid to remark that only sentence (1) is grammatical, while (2) is not:

(1) The butcher will introduce the baker

(2) *The butcher will introduce

Chomsky (1965) dealt with this problem in terms of ‘strict subcategorization’ rules. In later works (e.g., Chomsky 1981) he resorted to a notion closer to valency, i.e. ‘theta-grid’.

7. Transformation

a) Some excerpts from the history of the concept

- Wundt 1912[1900] II: 267 (*sprachliche Umformungen*). E.g., ‘Cæsar crossed the River Rubicone’ and ‘The River Rubicone was crossed by Cæsar’.
- Frei (1929: 139): “the transformation of one syntagmatic category into another. For example that of a predicate into a determiner: *la maison est à moi* (‘the house is mine’) > *ma maison* (‘my house’)”.

- Benveniste (1974: 120): a ‘transformation’ relates *Pierre marche bien* (‘Peter walks good’) and *Pierre est un bon marcheur* (‘Peter is a good walker’).
 - Therefore, both the *concept* and the *term* of ‘transformation’ are employed by linguists wholly independent from Harris or Chomsky.
- b) A typical case for transformations: the ‘unbounded dependencies’
1. Who did you see?
 2. Who do you think that John saw?
 3. Who do you think that Bill said that John saw?
- c) Conclusion about transformations
- ‘Transformation’ is a common label covering different (however related) ‘naïve₁’ (or ‘ingenuous’) concepts, among which: paraphrase relations among different sentences, unbounded dependencies.
 - Any syntactic theory aiming at adequacy works out mechanisms in order to deal with such phenomena.
 - The notions of ‘movement’ and ‘trace’ are *theory-internal* to the “Chomskian model”.
- d) Naïve concepts and levels of adequacy
- Chomsky (e.g., 1964: 28-9) distinguishes between ‘observational adequacy’, ‘descriptive adequacy’ and ‘explanatory adequacy’ of a theory. The first level is achieved “if the grammar presents the observed primary data correctly”. The second one is achieved “when the grammar gives a correct account of the linguistic intuition of the native speaker”. The third one is achieved “when the associated linguistic theory provides a general basis for selecting a grammar that achieves the second level of success over other grammars consistent with the relevant observed data that do not achieve this level of success”.
 - ‘Observational adequacy’ = the *discovery* of ‘naïve₁’ concepts (i.e., not the concepts themselves, which have an existence independent from any theory).
 - ‘Descriptive adequacy’ = hypotheses on the structure to which ‘naïve₁’ concepts belong. Descriptive concepts become ‘naïve₂’ if their theoretical foundations are not clarified.
 - ‘Explanatory adequacy’ = ‘theoretical concepts’.

PART 3: FROM ‘NAÏVE₁’ TO ‘THEORETICAL’ CONCEPTS: SOME EXAMPLES

1. The analysis of constituent structure

2. The notion of ‘c-command’

- Tree diagrams, originally conceived as visual representations of naïve₁ concepts, become the source of theoretical notions, such as ‘c-command’.
- “Node A c(onstituent)-commands node B if neither A nor B dominates the other and the first branching node which dominates A dominates B” (Reinhart 1976: 32).

3. The ‘antisymmetry of syntax’.

- “X asymmetrically c-commands Y iff X c-commands Y and Y does not c-command X” (Kayne 1994: 4).
- Asymmetric c-command relation is *locally linear*: “(...) in a binary branching tree, if Y asymmetrically c-commands X and Z (distinct from Y) also asymmetrically c-commands X, then it must be the case that either Y c-commands Z or Z asymmetrically c-commands Y” (Kayne 1994: 4-5).
- The locally linear relations between non-terminal nodes is matched by a linear ordering relation between the terminal nodes they dominate.
- “Let X, Y be nonterminals and x, y terminals such that X dominates x and Y dominates y. Then if X asymmetrically c-commands Y, x precedes y” (Kayne 1994: 33). “A word x precedes a word y if and only if a node X dominating x asymmetrically c-commands a node Y dominating y” (Moro 2000: 2).

- A hierarchic structure as the following cannot bring about a linear order of the two terminal nodes e e f , since the two non-terminal nodes E and F are in relation of mutual (symmetric) c-command. Therefore, it is impossible to decide if the linear order will be ef or fe .
- As a result: all syntactic structures are necessarily *asymmetric*.

PART 4: FROM 'NAÏVE₁' TO 'NAÏVE₂' CONCEPTS: SOME EXAMPLES

1. The nature of NP constituent.

a) M. Gross' (1975) remarks

- (1) Paul n'a vu aucun défaut
'Paul did not see any defect'
- (2) Aucun défaut n'a été vu par Paul
'No defect has been seen by Paul'
- (3) *C'est aucun défaut que Paul n'a vu
'It is no defect that Paul has not seen'
- (4) *Ce n'est aucun défaut que Paul a vu
It is not no defect that Paul has seen
- (5) De nombreux invités sont arrivés
'Many guests have arrived'
- (6) * Ce sont de nombreux invités qui sont arrivés
'It are many guests that have arrived'
- (7) Paul travaille avec enthousiasme
'Paul works with excitement'

b) NP as a 'naïve₂' concept

- According to M. Gross (1975), the above quoted facts show that "the notion of NP raises several problems". He therefore does not employ it in his syntactic analyses, only resorting to the label N "in an informal way".
- In our view, Gross' problems originate from a lack of theory: as in set theory 'naïve₁' concepts lacking any theoretical foundation lead to paradoxes (hence becoming 'naïve₂' concepts), the same happens in syntax.
- NP in Gross' usage is no more than a descriptive label for a 'naïve₁' concept: the singling out of a word group. If such concept is treated as a theoretical one lacking a general theory of syntax, it becomes a 'naïve₂' concept.
- The ungrammaticality of sentences (3) and (4) vs. (2) could be accounted for by assuming that negative elements cannot occupy a focus position. Analogously, (6) would be ungrammatical since indefinite phrases cannot occupy a focus position.
- The fact that in (7) a common noun occurs without a determiner, while this is impossible in the most cases, could be accounted for by resorting to an adequate theory of the category DP.

c) Conclusion about Gross' problems

- Gross, instead of avoiding the danger of 'naïve₂' concepts by working out a theoretical systems, prefers not to resort to any theory and to only employ 'naïve₁' concepts. However, such latter concepts are not self-evident: hence, the attempt to directly catch them leads to "naivety₂", with its insuperable difficulties.

2. The nature of parts of speech and their inventory.

a) 'Parts of speech' vs. 'syntactic category' (Rauh 2010)

- According to Rauh (2010: 396), "parts of speech not only have a prototypical structure like the cognitive categories investigated by Rosch (...) but are cognitive categories".

- On the contrary, syntactic categories (like INFL, etc.) are “Aristotelian” categories, namely they are defined in terms of necessary and sufficient conditions (which do not apply to “cognitive” categories).
 - But then it could be asked: if syntactic categories are not cognitive categories, to which kind of categories do they belong?
- b) Parts of speech as ‘prototypical’ categories
- “That the manageable portions amount to more or less eight parts of speech is particularly instructive in the light of the investigations by Miller (1956). (...) His results suggest that it is roughly this number of objects – more specifically plus or minus two – which humans can remember and represent in their minds without difficulty. Since the number of parts of speech generally identified is within this range, this is further evidence for the claim that they represent cognitive categories. (...) In conclusion, it can be said that parts of speech represent cognitive categories developed in a particular cultural area during the course of general education. (...) Given this characterization the pervasive use of the parts of speech in linguistic analyses can be explained” (Rauh 2010: 398-9).
- c) Parts of speech and the two kinds of ‘naïve’ concepts
- Rauh implicitly assumed that traditional grammar always stated that their number amounts to eight (plus or minus two). But this is not true: e.g., Sanctius (Francisco Sánchez de las Brozas, 16th century Spain), possibly influenced by Arab grammarians, maintained that the parts of speech are no more than three. In the 20th century, Jespersen (1924, p. 91) lists only five parts of speech: ‘substantives’, ‘adjectives’, ‘pronouns’, ‘verbs’ and ‘particles’.
 - In our terms, Rauh considers both the parts of speech and their inventory as ‘naïve₁’ concepts. Namely, the speaker would intuitively recognize that parts of speech belong to different categories and, furthermore, that the number of these categories amount to eight (plus or minus two).
 - Our view: the only ‘naïve₁’ concept is that words belong to different classes. On the contrary, their number (eight, plus or minus two) is an ‘naïve₂’ concept: it takes as a real fact what is nothing more than a theoretical hypothesis, held by many linguists, but not all, and which is not shared by every linguistic tradition.
- d) ‘Cognitive’ vs. ‘syntactic’ categories, or ‘naïve₂’ vs. ‘theoretical’ concepts?
- The traditional inventory of parts of speech (eight, more or less two) and syntactic categories of modern formalized grammars are not to be distinguished in terms of “cognitive” vs. “not cognitive” categories.
 - Rather, they have a different epistemological status: the former classification is a kind of ‘naïve₂’ concept, the second of ‘theoretical concept’.

BIBLIOGRAPHICAL REFERENCES

- Bally, Charles. 1913. *Le langage et la vie*. Zürich: Nihans.
- Benveniste, Émile. 1974. *Problèmes de linguistique générale*, 2. Paris: Gallimard.
- Bozzi, Paolo. 1990. *Fisica ingenua*. Milano: Garzanti.
- Chomsky, Noam. 1964. *Current Issues in Linguistic Theory*. The Hague: Mouton.
- ----- . 1965. *Aspects of the Theory of Syntax*. Cambridge, Mass.: The MIT Press.
- ----- . 1981. *Lectures on Government and Binding*. Dordrecht: Foris.
- Frei, Henri. 1929. *La grammaire des fautes*. Paris & Genève: Geuthner.
- Goswami, U. 2008. *Cognitive Development: the learning brain*. New York, NY: Psychology Press.
- Graffi, Giorgio. 1991. “Concetti ‘ingenui’ e concetti ‘teorici’ in sintassi”. *Lingua e stile* 26.347-64.
- Gross, Maurice. 1975. *Méthodes en syntaxe*. Paris: Hermann.
- Hudson, Richard A. 1984. *Word Grammar*. Oxford: Blackwell.

- Jespersen, Otto. 1922. *Language*. London: Allen & Unwin.
- -----, 1924. *The Philosophy of Grammar*. London: Allen & Unwin.
- Kayne, Richard S. 1994. *The Antisymmetry of Syntax*. Cambridge, Mass.: The MIT Press.
- Lyons, John. 1968. *Introduction to Theoretical Linguistics*. Cambridge: Cambridge University Press.
- Miller George A. 1956. "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information". *The Psychological Review* 63. 81-97.
- Moro, Andrea. 2000. *Dynamic Antisymmetry*. Cambridge, Mass.: The MIT Press.
- Radford, Andrew. 1988. *Transformational Grammar. A First Course*. Cambridge: Cambridge University Press.
- Gisa Rauh. 2010. *Syntactic Categories. Their Identification and Description in Linguistic Theories*. Oxford: O.U.P.
- Reinhart, Tanya. 1976. *The Syntactic Domain of Anaphora*. Ph. D. Dissertation: MIT.
- Sapir, Edward. 1921. *Language*. New York: Harcourt, Brace & World.
- Wundt, Wilhelm. 1912[1900]. *Völkerpsychologie. I. Die Sprache*. 3rd ed. Leipzig: Wilhelm Engelmann