

April 24, 2003

CLASS 1: The Theory of Grammar

What is grammar?

When we talk about grammar we usually mean the two different, but inter-related fields of **morphology** (how words are formed out of smaller units, or *morphemes*: (1a)) and **syntax** (how words can be combined to form *phrases*: (1b), and *sentences*: (1c)). Beyond mere *formation* of words, phrases and sentences, grammar is also concerned with the *interpretation* of these: (1d-e).

- (1) a. anti-dis-establish-ment-arian-ism / walk – walk-s – walk-ed / *walked-s
- b. [[the] [[every] [nice]] [teacher]]] / *[very the teacher nice] / *[the walked]
- c. Who did you see Mary with? / *Who did you see Mary and?
- d. (Mary is a) wine-drinker / home-owner / man-eater
- e. (This sauce is) wine-based / home-made / man-made

Grammar can then be characterized as a **set of rules** that, taken together, yield a natural language (such as English). (Surely, beyond the morphological and syntactic rules, this set also comprises phonological rules, among others.) But these rules are part of our **tacit** (*subconscious*), rather than **explicit** (*conscious*) knowledge. Thus, while any native speaker is able to tell whether a positive statement like (2a) can be correctly negated according to the rules of English, as in (2b), or not, i.e. (2c-d), s/he is not likely to be able to tell you the specific rule (such as an answer on ‘How does one form negative sentences in English?’): *Human beings have no conscious awareness of the psychological processes involved in speaking and understanding a language.*

- (2) a. I like syntax.
- b. I don’t like syntax.
- c. * I no like syntax.
- d. * I like syntax not.

The tacit knowledge of grammar is also known as the **grammatical competence** in a speaker’s native language. This is opposed to the **performance**, i.e. what people actually say or understand by what someone else says on a given occasion. As Noam Chomsky puts it, competence is “the speaker-hearer’s knowledge of his language,” while performance is “the actual use of language in concrete situations” (Chomsky 1965:4; the first chapter of this book is a good introduction to the generative enterprise in general and the competence/performance distinction in particular).

We will be solely concerned with grammatical competence (leaving aside *performance errors*, like slips of the tongue, misunderstanding, misinterpretation etc.; cf. *psycholinguistics*). As such, we take a **cognitive** view of the nature of grammar, studying language as a cognitive system *internalized* within the human mind/brain — or *I-language* (see Chomsky 1986, another useful book!). But to study grammatical competence, tacit knowledge, we must find a way to tap it.

For this purpose, we define our **empirical field of inquiry** through native **speakers’ intuitions** about the *grammaticality* and *interpretation* of words, phrases, and sentences — a readily available pool of *empirical evidence* and as such the basis for a bona fide scientific approach.

Grammaticality judgements tell native speakers of English that the past tense forms in (3a) are incorrect, although they are often produced by children acquiring English. The same type of judgement tells native speakers also that the forms in (3b) are the correct ones. (For convenience, we use the star ‘*’ in front of an expression that it is ungrammatical and a hash mark ‘#’ that it is non-standard or limited, as in child data; the question mark ‘?’ indicates marginality.)

- (3) a. # goed / comed / seed / buyed etc. [typical child language errors]
- b. went / came / saw / bought etc. [Modern Standard English]

Apart from (in)correct morphological forms, native speakers’ competence (intuition) also judges the **grammaticality of sentences**, our main object of study: (4a) vs. (4b).

- (4) a. If you don’t know the meaning of a word, look it up in the dictionary.
- b. * If you don’t know the meaning of a word, look up it in the dictionary.

As we go along, we will see that a **theory of grammar** need not only make reference to the grammaticality of phrases and sentences, as traditional studies of grammar do, but also to their **ungrammaticality** (in order to explain why certain structures are ill-formed).

Another important aspect of the study of grammatical competence (*introspective evidence*) are native speaker intuitions about the **interpretation** of words, phrases and sentences. While native speakers would all judge (5) grammatical, they may **associate different interpretations**: (6a-b) are both *equally well-formed*; the exact interpretation may depend on the *context, intonation* etc.

- (5) Joy kisses me more cheerfully than Miss Emma.
- (6) a. Joy kisses me more cheerfully than Miss Emma kisses me.
- b. Joy kisses me more cheerfully than Joy kisses Miss Emma.

Native speaker *tacit knowledge of grammaticality* judges (5), and by extension (6), **well-formed**; their *intuitions about interpretation* choose (6a) or (6b) for (5), a decision which can be fostered or **disambiguated** through other factors (by means of context, plausibility, intonation etc.).

Theory of grammar

We now have an idea what a grammar is, i.e. what our line of inquiry will be. If a grammar of a language is a model of the competence of a fluent speaker of the language, and if competence is reflected in intuitions about grammaticality and interpretation, an important *criterion of adequacy* for a grammar of any natural language is that of **descriptive adequacy**. This is the first step towards a **theory of grammar**.

By theory of grammar we denote *the set of (abstract) rules in our minds/brains that have a natural language as their output*. This makes two related claims: all human beings start off with the **same “knowledge of language”** and the abstract grammar we’re talking about is **universal**.

This research enterprise is known as the theory of **Universal Grammar (UG)**.

Another criterion of adequacy is thus **universality**: a theory of grammar should enable us to describe the grammar of *any* natural language. Note that grammar, as understood here, purely denotes the set of rules that govern language — highly abstract and not language-specific (but universal). A theory of grammar complying to the two criteria of descriptive adequacy and universality will then help us on our way to the *ultimate goal*: **a theory of Universal Grammar**. (A particular language is the output of the set of rules combined with some extra stuff, which is language-specific: **parameters**, as we will discuss below.)

The last major criterion of adequacy relevant for us is that of **explanatory adequacy**: it is not enough to describe a/the grammar or list its properties (qua set of rules), but a theory of grammar (and a theory of UG) must seek to explain these properties. This conforms to standard notions of theoretical inquiry, namely the goal of *explanation* of the facts discovered. Explanatory adequacy governs our guiding question: **'Why do natural language grammars have the properties they do?'** Regarding the **nature of grammar**, we can make a first cut by only considering the properties of UG which, by definition, is unique to human beings. In other words, by looking at the properties of **natural language(s)**, we can ignore artificial languages (programming languages, invented languages etc.) or communication systems found elsewhere in nature (such as the tail-wagging dance of bees). There are *essential defining characteristics* of natural (human) language: (such as the *design features* sound signals, arbitrariness, duality, displacement, patterning, structure dependence, need for learning, creativity compiled by the American linguist Charles Hockett).

This leads us to another condition we have to impose on our theory of grammar/language: it must be maximally **restrictive**, constrained in its expressive power to only adequately describe and explain natural language.

Biology of language

Given the universality claim of our theory of language, something needs to be said on its origin. The leading hypothesis about UG is that *all human beings start off the same*, i.e. **UG is an invariant set of rules** that we're all fitted with at birth. Whatever the exact biological reality (UG is genetic, the language faculty is an organ etc.), it is clear that UG sits in a specified part in our minds/brains, which we can call the **language faculty** (just as there are faculties for vision, numbers and so on).

As such, our theory of language must account for the fact that young children acquire their native language in a remarkably short time, seemingly effortless and without instruction. The 'wonder' of **acquisition** must thus be on our list of desiderata, the phenomena we want to describe and explain with a theory of language. That means that yet another natural condition on our theory of language is that of **learnability**: whatever set of rules we come up (i.e. the technical devices to state UG), the net result must be a **learnable system**. As children do acquire language naturally and effortlessly, it is quite clear that natural language is learnable, and so must be our theory.

Basic issues in acquisition: all children go through roughly the same **stages in their acquisition process** at roughly the same time in all languages, pretty much regardless of environment. By endowing the human brain with UG, we make the specific assumption about the **innateness hypothesis**, that we are born with UG, facilitated by the **language acquisition device (LAD)**.

Principles of UG

To take a random (OK, classic) example to illustrate the importance of **structure** in language, consider the question how yes/no-questions are formed. We can gather random data like (7) and hypothesize that in order to form a yes/no-question, we simply *invert the first two words*.

- (7) a. Studying is a lot of fun. / Memories **will** fade away.
b. **Is** studying a lot of fun? / **Will** memories fade away?

Clearly, once we consider more data, such as (8), this hypothesis cannot hold. **Grammatical operations are not structure-independent**, but very much dependent on internal structure: (9).

- (8) a. Studying syntax is a lot of fun. / Memories of happiness will fade away.
b. * Syntax studying is a lot of fun? / Of memories happiness will fade away?

(9) Structure Dependence Principle

All grammatical operations are structure-dependent.

The rule for forming yes/no-questions is thus not a simple inversion of the first two words (or something like 'Move the second element in front of the first'). What is it then? In order to answer that and many other questions, we need to be more precise about **what structure is** and how structure dependence can be expressed.

We know that sentences are structured out of words and phrases, and both belong to a specific **grammatical category** (nouns, verbs, prepositions etc.), and their corresponding phrases serving a specific **grammatical function** (e.g. subject, object) in the sentence. We will look at these notions in detail in the course of this semester. Regarding the formation of yes/no-questions it suffices to say at this point that 'Move an auxiliary in front of a preceding noun expression which functions as its subject' is closer to the truth (see also Radford's discussion for more).

- (10) a. Down **will** come taxes.
b. * **Will** down come taxes?

Returning briefly to the **acquisition** aspect of language, we can picture the process in oversimplified terms (yet surprisingly close to the truth) and schematize it as follows:

- (11) Experience of L → UG → Grammar of L

The above-mentioned **language faculty** is the part in our brains responsible for language. We can think of it housing UG, the center of grammar. Now, the goal of the acquisition process is the mastering of the child's native language L. In other words, **equipped with UG**, the child/learner will end up with **knowledge of the grammar of L**. Clearly, **experience of L** is relevant: the linguistic environment in which the child grows up governs which L s/he will acquire. If the environment is English s/he'll end up with English, if it's Chinese s/he will acquire Chinese and so on. Think of UG as a *meat grinder*: you feed it data and it churns out the desired grammar. However, not all aspects of the grammatical structure of languages is innate. We can distinguish **lexical learning** (the vocabulary of L) from **structural learning** (L-particular structures).

Principles and parameters

But what are the language-specific structures, or properties in general? If UG, knowledge of grammar, is innate how come we ever end up with a particular language? How do the thousands of languages arise, and what makes them different from UG? The answer we're going to explore is to take UG as a set of rules or **principles** of grammar, some *fixed, universal properties* (such as that all languages have structure, words make up phrases, these phrases are structured and so on, or the inventory of grammatical categories and functions). Specific languages arise through the setting of language-specific **parameters**, values that need to be set on or off, something like a switchboard (oversimplified, again). What we will do is explore these parameters and thus come up with an adequately description of particular languages (like English or Chinese) that differ from one another not in their principles, but in their particular parameters. This is the **Principles and Parameters Theory** of grammar, the **minimalist program** being one approach.

Null Subject Parameter: languages may allow/disallow dropped or **null subjects** (Ø).

- (12) a. **Maria** parla francese. [Italian]
Maria speaks French
 b. **Ø** Parla francese.
 (13) a. **Mary** speaks French. [English]
 b. * **Ø** Speaks French.

Wh-Parameter: Languages may move a **Wh-phrase** or leave it in situ.

- (14) a. **What** did John buy? [English]
 b. **What** do you think he will say?
 (15) a. Zhangsan mai-le **shenme**? [Chinese]
Zhangsan buy-ASP what
 b. Ni xiangxin ta hui shuo **shenme**?
you think he will say what

Head Parameter: Languages have **complements** follow or precede their heads.

- (16) a. **close** the door [English]
 b. **desire for** change
 (17) a. moonul **dadala** [Korean]
door close
 b. byunhwa-*edaehan* **kalmang**
change-for desire

What are we going to do in this class?

We will study **syntactic theory** within the Principles and Parameters approach. In order to understand better and appreciate the above parameters (and more), we will pick our way up from the **smaller units** (words, categories) to **bigger ones** (phrases, sentences) and then apply these concepts to **particular phenomena**, such as empty categories, various types of movement etc.

Homework: Exercise 1

- A. Read **chapter 1** of Chomsky (1986). [*Handapparat*]
 B. Read **chapter 1** of Tallerman (1998). [*Handapparat*]
 C. Carefully read **chapter 1** of Radford (1997). [*Get a copy!*]
 D. Prepare next class by reading **chapter 2** of Radford.
 E. Think about **exercises 2, 4 and 5** in Tallerman: pp. 26-28.
 F. Solve **exercise 1** in Tallerman: p. 25 in a paragraph or two.
 G. Solve **exercise 3** in Tallerman: p. 26 (no more than half a page).
 H. Solve **exercise 1** in Radford: pp. 24-25 (do this in ca. 1-2 pages).

A NOTE ON YOUR HOMEWORK EXERCISES:

I want you to typewrite all assignments and either email them to me or drop them off in the folder on my office door by 12pm on Wednesday before next class. Please note the following:

- 1 All text in your assignments/homework exercises must be composed in full sentences.
- 2 Proof-read for spelling, expression, and typographical consistency before handing it in.
- 3 You are encouraged to illustrate your points with examples; list all sources consulted.

References

Chomsky, Noam. 1965. *Aspects of the Theory of Syntax*. Cambridge, Mass.: MIT Press.
 Chomsky, Noam. 1986. *Knowledge of Language. Its Nature, Origin and Use*. New York: Praeger. [I put chapter 1 in the *Handapparat*.]

Additional Literature

[Feel free to browse through any of these (or other) syntax textbooks.]

- Aarts, Bas. 2001. *English Syntax and Argumentation*. Basingstoke: Palgrave. [2nd edition; Anglistik; Inventarnummer 02/179 — lokale Signatur G/HA/1997/1a]
 Borsley, Robert D. 1991. *Syntactic Theory*. Edward Arnold. [Anglistik: 99/474, G/HA/1991/1a]
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 Tallerman, Maggie. 1998. *Understanding Syntax*. London: Edward Arnold. [This book does not seem to exist in local libraries; I put chapter 1 in the *Handapparat*.]