Foundations of Language Science and Technology (FLST)
Lecture 3 (27.10.2008)

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Linguistic Foundations

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What is Linguistics anyway

• Linguistics is the scientific study of human language

• So, for the rest of this part of the course eliminate the "value judgements" normally associated with discussions of language and study its rules and properties with objectivity

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What makes language interesting

• **Creativity:** we can automatically produce and understand entirely new utterances, whether they make sense or not

• **Seventeen and one half turtles wearing yellow hats with penguins on them began to simultaneously yodel as the blazing sun zigzagged in front of the food truck.**

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What makes language interesting

- How do we do this, though?

- By knowing the rules!

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Properties of language

- Knowing the rules also allows us to make **Infinite Use of Finite Means**:

  - A finite number of atoms (sounds, words)

  - Rules to combine them into infinite variety

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Properties of language

• **Recursive rules**: allow us to put phrases inside other phrases and sentences inside other sentences

• **Recursive rules**: are also why there is no „longest sentence" of English (or any other language)

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Grammaticality

• Knowing the rules of language allows us to know instictively which words and sentences are part of our language and which are not

• Obeys the rules = part of our language = **grammatical**

• Does not obey the rules = not part of our language = **ungrammatical**

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"Subconscious" Rules

• Notice: almost always the rules of the language that we speak are subconscious – we do not know that we know them!

• Who did you say that Russell tickled?

• *Who did you say that tickled Russell?

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The goal of linguistics

- The goal of linguistics is to discover the „subconscious" rules of language

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What do we know when we know a language?

- **Phonetics**: the sounds of a language; e.g., [b] is a sound of English

- **Phonology**: the rules and patterns of sound combinations; e.g., *blick* is a possible word of English, **lbick* is not

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What do we know when we know a language?

- **Morphology**: the rules to create words; e.g., If you tell me you **blick** your dog everyday, then I know…

  - yesterday you **blicked** your dog

  - sometime today you will be **blicking** your dog

  - dogs are **blickable**

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What do we know when we know a language?

• **Syntax**: the rules for combining words into phrases and sentences; e.g.,

  • *the hot pizza* is an English phrase, *__pizza hot the__ is not

  • **I saw Russell and Shane** is an English sentence, *__Who did you see Russell and?__ is not

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What do we know when we know a language?

- **Semantics**: the rules for getting meaning from sentences; e.g., compare:

  - John hammered the metal *flat.*

  - John hammered the metal *drunk.*

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What do we know when we know a language?

• **Pragmatics**: the rules for relating the meaning of sentences with how they are used in context; e.g., How come the sentence:

   •*Is it cold?*

   is sometimes a real question, and sometimes a way of getting someone to close the window?

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The scientific study of language

• Recall: Linguistics is the scientific study of language

• But what counts as language data for us to study?

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The scientific study of language

- A key distinction:

  - **Descriptive Grammar**: describes how people *do* use language

  - **Prescriptive Grammar**: dictates how people *should (not)* use language, according to an „authority"

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The scientific study of language

- **Prescriptive Grammar**:

    - identify speaker's socioeconomic class & education level

    - identify level of formality of a particular usage

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- **Descriptive Grammar**:

    - understand how people produce & understand language

    - identify similarities & differences across languages

    - development of language technologies

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The scientific study of language

- **Prescriptive Rules - Examples**:

    - infinitives are phrases **to** never **split**

    - do**n't never** use double negation

    - prepositions are not things to end sentences **with**

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The scientific study of language

- **Descriptive Rules - Examples**:

  - **the subject** <u>precedes</u> the verb

  - the object <u>follows</u> **the verb**

  - auxiliary verbs precede the subject in questions:

    - How <u>are</u> **questions** formed in English?

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Competence *vs*. Performance

- The Distinction:

    - Competence: knowledge of language

    - Performance: how the knowledge is used

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Competence *vs*. Performance

- Examples:

  - That Sandy left bothered me.

  - That that Sandy left bothered me bothered Kim.

  - The horse raced past the barn fell.

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Acceptability *vs*. Grammaticality

- A sentence is **acceptable** if native speakers say it sounds good

- A sentence is **grammatical** (with respect to a particular grammar) if the grammar licenses it

- Linguists are sometimes sloppy about the difference

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Some History

- Writings on grammar go back at least 3000 years

- Until 200 years ago, almost all of it was prescriptive

- Until 50 years ago, most linguistic work concerned sound systems (phonology), word structure (morphology), and the historical relationships among languages

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The Generative Revolution

• Noam Chomsky's work in the 1950s radically changed linguistics, making syntax central

• Chomsky has been the dominant figure in linguistics ever since

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Main Tenets of Generative Grammar

• Grammars should be formulated precisely and explicitly

• Languages are infinite, so grammars must be tested against invented data, not just attested examples

• The theory of grammar is a theory of human linguistic abilities

Some of Chomsky's Controversial Claims

- The superficial diversity of human languages masks their underlying similarity

- All languages are fundamentally alike because linguistic knowledge is largely innate

- The central problem of linguistics is explaining how children can learn language so quickly and easy

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Summary

- Prescriptive *vs*. Descriptive Rules

- Grammatical *vs*. easy to understand or common

- Competence *vs*. Performance

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