

Language

Cato A. Bjørkli
Psychologist

Aim of this lecture

- Overview the main features of the structure of language
- Overview the debate concerning language acquisition
- Have some thoughts on animal language
- Overview the principle of linguistic relativity
- Ask good questions

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Basis for this lecture

- Passer & Smith (2004) Psychology
 - Chapter 8
- Teigen (2004) En psykologihistorie
 - Here and there

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Psychology is the study and analysis of human thought and behavior

What is language?

The study of the invisible, as most of our everyday actions and thought are automated and seldom reflected upon explicitly

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"Language consists of a system of symbols and rules for combining these symbols in ways that can generate an indefinite number of possible messages and meanings"

Passer & Smith (2004)

Displacement refers to symbolic representation of events and object not physically present

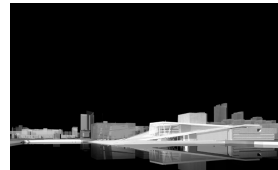
representation parts us from the immediate

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Rocknes Capsize
19th January 2004

The Operahouse in
Björvika, Oslo
Autumn 2008



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Language Structure

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Main Features of Language

- 1. Symbolic representation:**
Past, present, future
Correspondence beyond sensations
- 2. Rule-based and structured:**
Orderly arranged and composed
Coherent
- 3. Creative and generative:**
Adaptive to novelties
Incredible flexibility!

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Levels in Language

	Discourse	
Sentence	(Chains of Strings)	<i>The players was talking</i>
Phrases	(Strings of Chunks)	<i>The players was talking</i>
Words	(Chunks of Units)	<i>The players was talking</i>
Morphemes	(Units of Sound)	<i>The play er s was talk ing</i>
Phonemes	(Sounds)	<i>"de-pley-eer-z-v-aaz-tâ-k-i-n-g"</i>

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Surface and Depth

Surface

Rules of combination of symbols
Syntax -> rules of grammar

Depth

Underlying meaning of combined symbols
Semantics -> making sense

1. Different sentences may have the same meaning

2. The same sentence may have several meanings

3. Different sentences have different meanings

Language is the movement between surface and depth

Understanding others is going from syntax to semantics

Talking to others is to move from semantics to syntax

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Questions & Implications

How do we move from syntax to semantics, and finally to pragmatics?

How do we so easily move from sounds to words to sense? (or perhaps not easy: Foreign languages?)

To study is to go from surface to depth to the surface again (from the books to your heads and finally to sheets of paper during your exam!)

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Questions & Implications

It seems that words and sentences are loosely coupled to what they refer to and mean.

This leads to ambiguities ... but also flexibility and creativity.

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Houston, W. (1985) How Will I Know. *Whitney Houston*. Columbia Records.

How will I know (Don't trust your feelings)
 How will I know
 How will I know (Love can be deceiving)
 How will I know
 How will I know if he really loves me

I'm asking you what you know about these things
 How will I know if he's thinking of me
 I try to phone but I'm too shy (can't speak)

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The Problem of Knowing (Semiotics)

Ferdinand de Saussure (1857-1913)

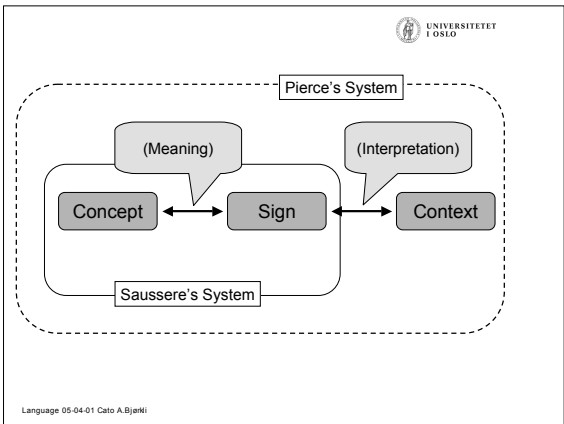
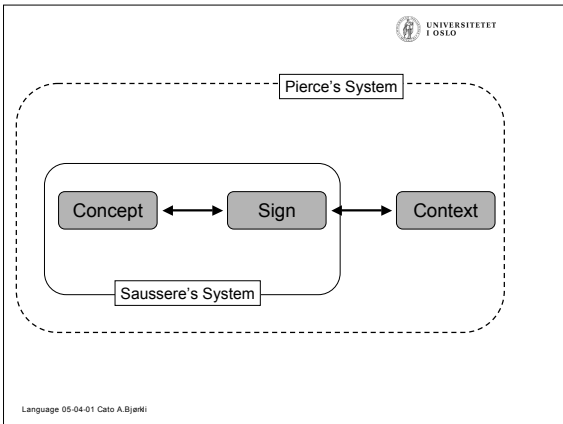
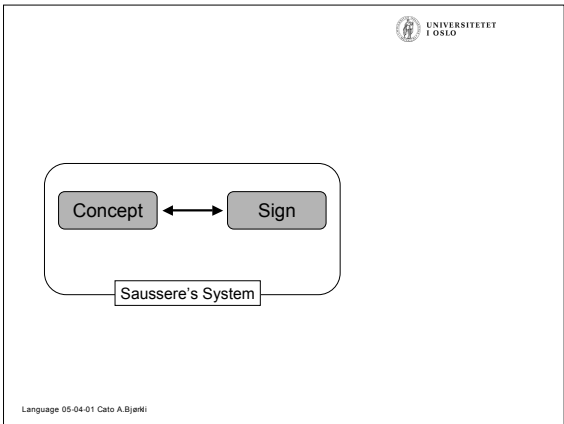
The Signified'	The Signifier'
(concept)	(sign)
(world)	(language)

Charles Pierce (1839-1914)

The Signified	The Signifier	The Context
(Concept)	(Sign)	(Situation)

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Questions & Implications

... To infer practical meaning we must share something with our conversational partner, such as knowledge, culture, impressions, and so forth.


... Language is thus not just coherence, but correspondence - Language point to the common life of the speakers of a language.

... Syntax, Reference, Pragmatics

For the pro's: Wittgenstein (1921 vs 1953)

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"The lights are switched on"

Correct?	(syntax)
Meaningful?	(semantics)
Practical?	(pragmatics)

(Structure, Reference, Value)

Language is the act of producing utterances understandable against the common ground of shared experience between participants.

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"She was in Paris yesterday"


"She was in Paris yesterday" (Emphazise "she")

"I **was** in Paris yesterday" (Emphazise "was")

"I was **in Paris** yesterday" (Emphazise "in Paris")

"I was in Paris **yesterday**" (Emphazise "yesterday")


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Important concepts when describing aspects of language


Representation	Phonemes
Surface Structure	Morphemes
Deep Structure	Words
Syntax	Phrases
Semantics	Sentences
Pragmatics	Discourse

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Language Acquisition

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Language Acquisition

How come everybody learn language?

How can children potentially learn any kind of language?

How do children know every phoneme from birth, but select the relevant ones during their development?

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Language Acquisition

The difference between 'language acquisition' and 'language development':

Acquisition: Descriptions of linguistic knowledge

Development: Descriptions of linguistic abilities at different ages during children's development.

(This is a question of the nature of language, not the process of learning as such)

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Language Acquisition



The acquisition of language was the source of a major controversy between two of the giants of psychology:

Skinner versus Chomsky

(1957)	(1959)
(Environment)	(Genes)
(Behaviorism)	(Cognitivism)
(S-R relationships)	(Innate L-system)

Hint: s.279, Teigen / s.209, Passer / s.230, Passer / s.12, Passer

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A classic debate in psychology: Nature vs Nurture






Phenotype : The observable traits of an individual organism
Ontogenesis : Development of an individual organism

Genotype : The genetic constitution of an individual organism.
Phylogenesis : Origin of a species apart from other species

The big question is how we relate to these two aspects. Do we see them as close and tightly coupled or do we see them as mediated and influenced by environmental factors?

Ex: Language, personality, intelligence, attachment, pathology

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**B.F. Skinner
(1904-1990)**



B.F. Skinner (1904-1990)



Radical behaviourism
Observable variables
Refinement of Watson (1913)
Focus on 'functional relationships'

"Language is learned like everything else"
Verbal Behaviour (1957)
Language is reinforced, gradually

<http://www.bfskinner.org/audio.asp>

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B.F. Skinner (1904-1990)



Language is learned through the same process as animal learning of simple tasks in laboratories.

Behavior operates in the environment in order to produce consequences: The organism is active.

Functional relationships specify how behaviors are selected by conditions of reinforcement.

Reinforced behaviors are continued, whereas non-reinforced behaviours are extinct.

Hint:
s.193 / s.210 Teigen
s.210 Passer

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B.F. Skinner (1904-1990)



Children producing sounds are reinforced by their parents, thus shaping the verbal activity of the child into language.

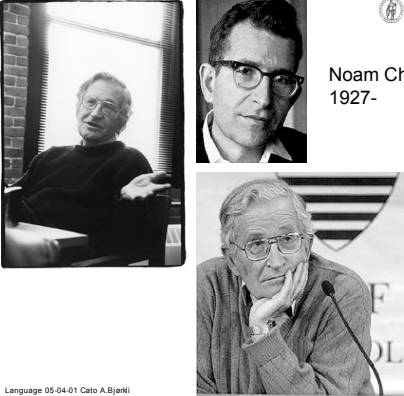
Non-reinforced verbal activity ceases.

Language is thus the outcome of conditioning as all other human behavior.

Language is therefore 'verbal behaviour'

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Noam Chomsky
1927-

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Chomsky

Linguist, philosopher.

In opposition to the behaviorist program
Simplistic models of human behavior
Proclaiming a cognitivist approach

“Colorless green ideas sleep furiously” (1957)
Grammatical correct
No meaning!

Grammar is not the fundamental structure in language

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Chomsky

1. The mind is cognitive (processing info)
2. The mind has modules (subsystems)
3. The mind is prepared for language (dedicated L-module)

Language is not a behavior, it is a system! Thus, acquiring language cannot be explained by simple reinforcement.

The mind develops hypotheses about rules of language. “parameters” are set accordingly. Exposure triggers adaptation.

Acquisition is the transition of a general grammar model into a specific model.

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Chomsky

Criticism:

- 1) What is the structure of the ‘general grammar’?
- 2) What rules are learned?
- 3) What is the role of social interaction?

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Chomsky

LAD (Language Acquisition Device) by Chomsky

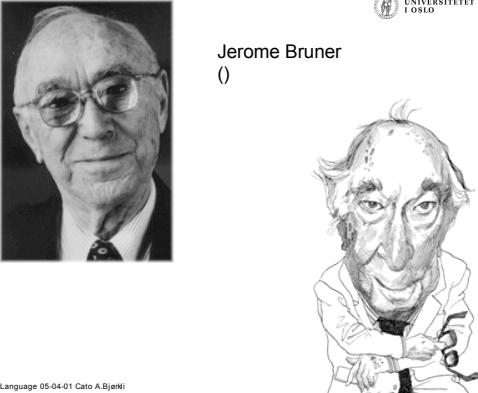
.... yet, this module needs something to be adjusted to

LASS (Language Acquisition Support System) by Jerome Bruner.

... every LAD needs a LASS!


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Jerome Bruner
()

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J. Bruner

Language Acquisition Support System
LASS
States the necessity of a context for language

Detailing the Support System:
Parents as facilitators of language
Games, participation, activity, doing
Children know before the use words

Social participation versus Skinnerian conditioning?

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Language Acquisition In sum:


Learning by 'reward' --> Skinner, 1957

Learning by 'exposure' --> Chomsky, 1959; 1965

Learning by 'participating' --> Bruner, 1983


Active / Passive
Interaction between parent and child
Reference and Context of Acquisition

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Animals and language

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Animals and language

What were the main features of language? (slide 7)

1. **Symbolic representation**
2. **Rule-based and structured**
3. **Creative and generative**

Expressions of animals: Signals or Symbols?

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Animals and Language


Two stances towards animals and language:

Anthropocentric (only humans talk!)	Eocentric (all organisms talk)
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To answer this question we need to define language.

Examples of animals using language; Koko, Kanzi

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Koko (1971 -)

Female gorilla trained in American Sign Language, mastering over 600 (2000?!) signs.

August, 2004: Koko explains she is in pain, and points to her teeth

April, 1998: Koko chats in the net
(http://www.koko.org/world/talk_aol.html)




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Kanzi (1980 -)

Female bonobo ape, capable of using sign language and producing new words and sentences



Trained by Sue Savage-Rumbaugh at Georgia State University.

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Animals and Language

The skill of students of psychology is to ask smart questions.

“Can animals talk?” is at best underspecified.

Chomsky: “Language is the human essence”
(then others than human cant talk!)

Wittgenstein “Language is sharing lifeworlds”
(then animals talk their own language)

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If language is not simple behavior, what is it?

If language is thinking, what then is the relationship between Language and other types of thinking?

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Edvart Sapir (1884-1939) Anthropologist (student of Franz Boas)
Benjamin L. Whorf (1897-1941) Linguist (student of Sapir)

Sapir-Whorf Hypothesis

Weak and strong version

Diversity of languages is not a diversity of sounds, but of ways of looking at the world
Karl Kerényi

The coherent and systematic nature of language interacts and constrains thought and behavior
E. Sapir

We dissect nature along lines laid down by our native languages
B.L. Whorf

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Principle of linguistic relativity

Individual thoughts are influenced by the language available to express them.

Influence from anthropology (*F. Boas*)

Remember C. Pierce? Interpretation is tied to the context!

How many words for 'snow'?

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Think of something that cannot be said.
Think of something that has no concept.
Think of nothing.

Language

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Psychologist