Language as a natural object?

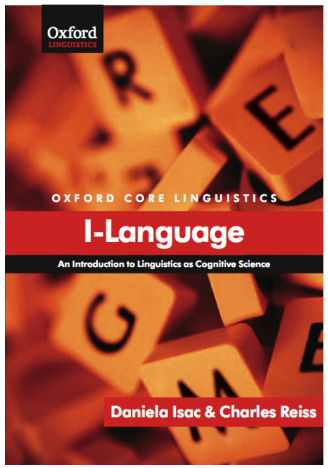
I-language

Philosophical Issues

I-language
Introductory Lecture

Daniela Isac & Charles Reiss

Concordia University, Montreal



Outline

1. Language as a natural object?
2. I-language
3. Philosophical Issues

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Bonobo communication and . . .

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Bonobo communication and supernova—science

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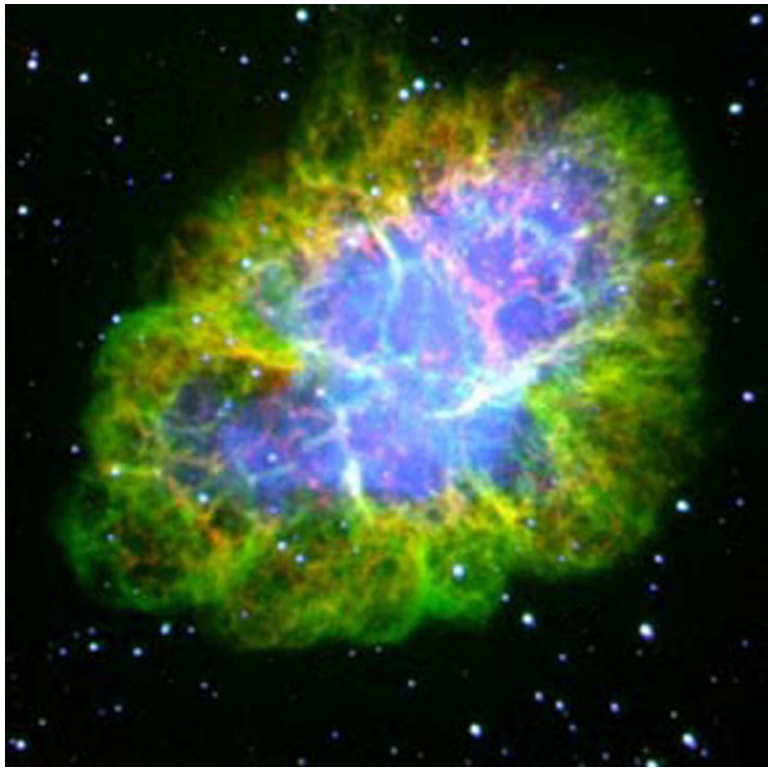

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Bonobo communication and English—science?

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Can we treat language as an object of scientific study?

and if we answer YES

- What will we find?
- Is there any reason to think our conclusions will conform to our pretheoretical intuitions?

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Sir Arthur Eddington, *New Pathways in Science*, 1934

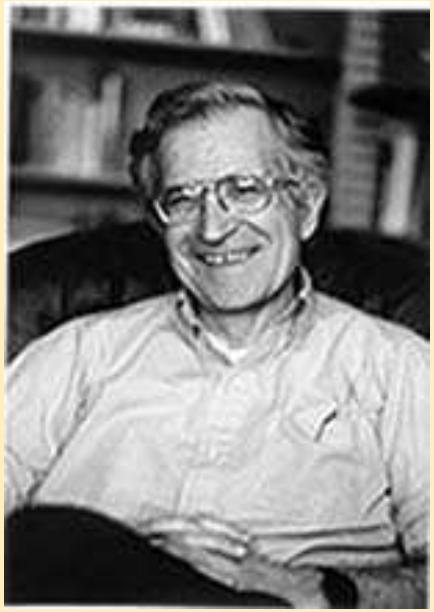
> *Physical science now deliberately aims at presenting a new version of the story of our experience from the very beginning, rejecting the familiar story as too erratic a foundation.*

Zenon Pylyshyn (1984), *Computation and Cognition*:xxii

> *"[I]f you believe P, and you believe that P entails Q, then even if Q seems more than a little odd, you have some intellectual obligation to take seriously the possibility that Q may be true, nonetheless"*

Why Chomsky?

Noam Chomsky



"Intellectual life is mostly a racket."

Influences (non-political)

- Linguistics
  - Generative Grammar
- Psychology
- Computer Science
  - Chomsky hierarchy
- Philosophy
- Biology
  - Ethology
  - Neurobiology
  - Immunology

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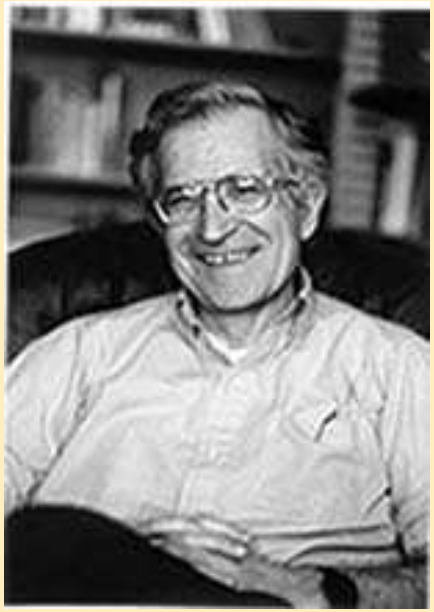

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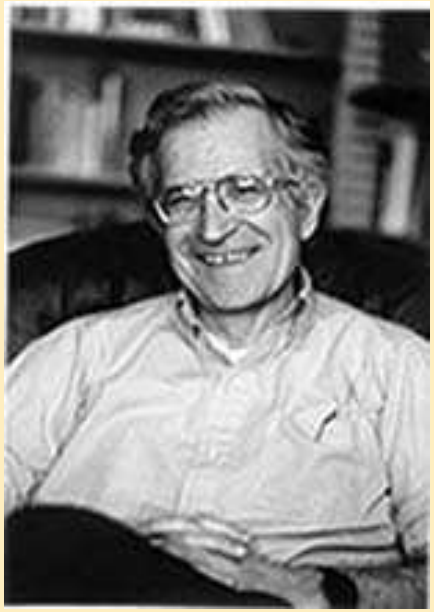

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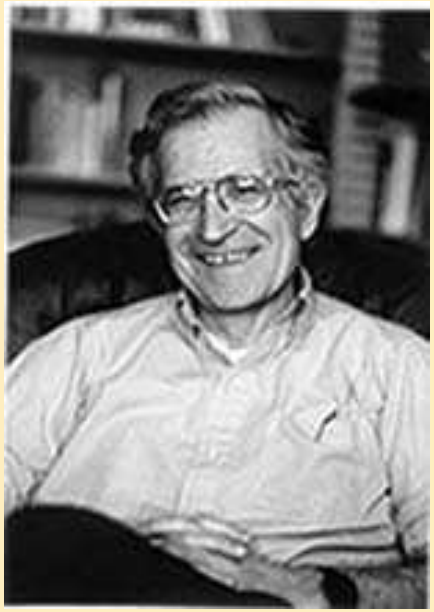

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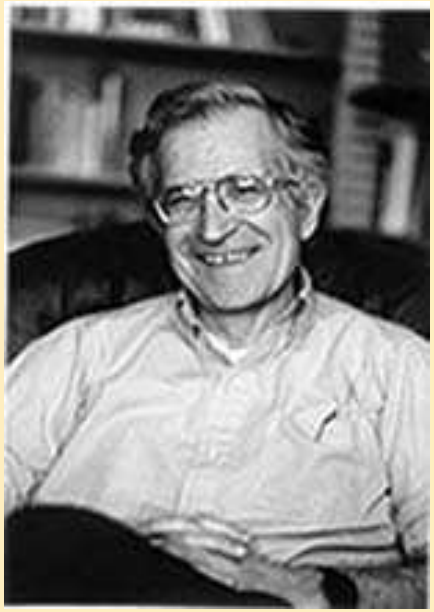

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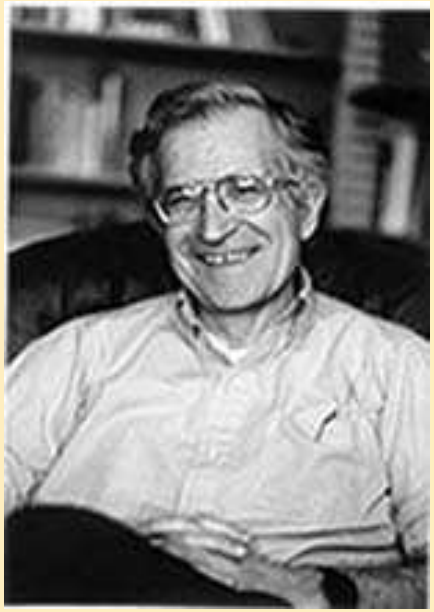

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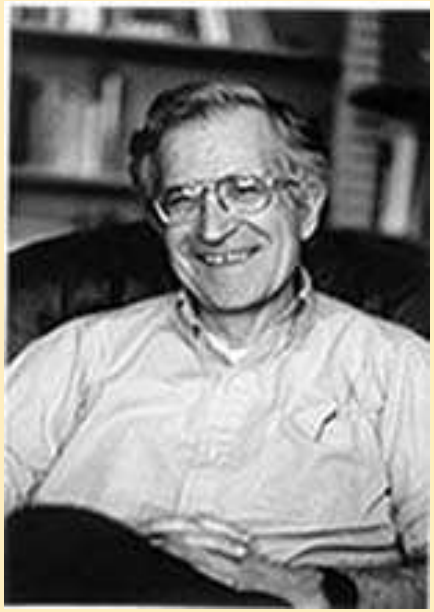

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Some general questions about language

- What do we use it for?
- How is it acquired? Learning/innateness?
- How is it instantiated in the brain?

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- How can languages differ?
- Are some more complex than others?
- Do they reflect cultural differences?

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What do we mean by *language*?

Language as a natural object?

I-language

Philosophical Issues

- Not uses of language
- Not effects of having language
- $\rightsquigarrow$Prerequisites for having language.
  - e.g. memory

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A prior question:

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What *is* language?

Our goal

- Partly to give specific answers . . .
- But also to change the KINDS of questions you ask . . .
- Crucially . . . by creating a sense of humility

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Some data . . .

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Where's Warlpiri spoken?

Figure: There are about 3000 Warlpiri speakers

Warlpiri plurals

Find the pattern

SINGULAR	PLURAL	gloss
kurdu	kurdukurdu	*child/children*
kamina	kaminakamina	*girl/girls*
mardukuja	mardukujamardukuja	*woman/women*

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What is the Warlpiri plural rule?

- What is the sound of the Warlpiri plural?
- It is a variable x, such that x has the same form as the Noun it is added to.

Some lessons about language based on Warlpiri plurals

- Some aspects of language are 'simply' memorized— *kurdu* means 'child' in Warlpiri but *child* means 'child' in English.
- Some aspects of language involve rules or patterns.
- If there are rules, they have to apply to some kind of input and produce some kind of output—the units of language can be quite abstract.
- The rules apply to elements that are only definable in linguistic terms—for example, the Warlpiri plural rule applies to nouns, not verbs, and the noun-verb distinction is a purely linguistic one.

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Equivalence Classes

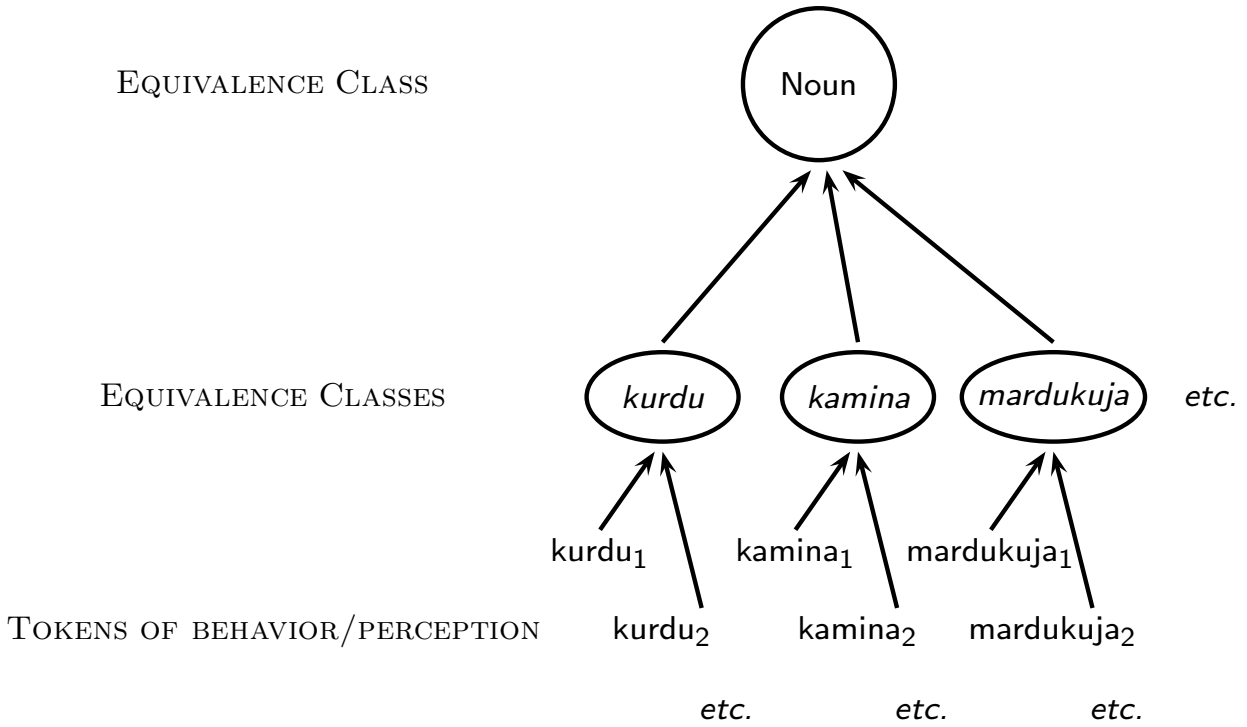

Figure: The equivalence class of Nouns is itself an abstraction from equivalence classes abstracted from sets of tokens of individual nouns.

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Where's Samoan spoken?

Figure: There are 300,000 Samoan speakers

Fieldwork conditions in Samoa

Language as a natural object?

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Fieldwork conditions in Samoa

Samoa looks like this!

Samoan verbs: sg-pl

What's the rule?

Sg	Pl	
nofo	nonofo	'sit'
moe	momoe	'sleep'
alofa	alolofa	'love'
savali	savavali	'walk'
maliu	maliliu	'die'

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Samoan Rule

Representing syllable sequences

a. $\sigma_2\ \sigma_1$

b. $\sigma_3\ \sigma_2\ \sigma_1$

c. $\sigma_n\ \ldots\sigma_2\ \sigma_1$

Rule (tentative)

If $\sigma_n\ \ldots\sigma_2\ \sigma_1$ is a $\textsc{Sg}$, then the $\textsc{Pl}$ is $\sigma_n\ \ldots\sigma_2\ \sigma_2\ \sigma_1$

What is language?

The language faculty can copy and concatenate

- Reduplication: $x \rightarrow x^\frown x$
  - Warlpiri: x is a SINGULAR
  - Samoan: x is second to last syllable of a SINGULAR

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The goal

Chomsky 2000:122, 'Language as a natural object'

. . . to abstract from the welter of descriptive complexity certain general principles governing computation that would allow the rules of a particular language to be given in very simple forms

Some questions

What kind of thing is the rule?

- Invented or discovered?
- Where is it? What is it a property of?

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Language as a natural object

- A realist vs. instrumentalist view
  - Is chemistry just for calculation?
  - Is the Warlpiri reduplication rule real?
- Language as a natural object: Rules are properties of people (their minds/brains)
- What implications does this have?

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I-language perspective

- (I-)Languages are aspects of individuals, internal, intensional
- I-Languages are real aspects of the world (like fields, cells, etc.)
  - Neuroscience needs to find a way to "copy and concatenate"
- A language is not a set of words or sentences, not a corpus.

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I-language and 'everyday' languages

One of the odd conclusions that Pylyshyn warned us about:

- English, French, Mohawk, Samoan, Haitian, etc. don't exist!
  - . . . in any scientifically precise sense
- There are just individuals with their own individual I-language(s)

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Remember the humility. . .

Case in Dyirbal

English	Dyirbal	gloss
she *saw him*	ɲuma yabuŋgu buran	'mother saw father'
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Big philosophical that arise

- Nature–Nurture debate
- What is Knowledge? How is it acquired?
- What is reality and how can we get access to it?
- Is there a principled distinction between mind and body?
- How can our study of these issues bear on social questions and educational practice?

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