Lojban Language

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What is Lojban?

- constructed language (1987)
- based on Loglan by James Cooke Brown (1955)
- natural language processing and semantic parsing
- syntactically unambiguous

Grammar example

tavla: x_1 talks/speaks to x_2 about subject x_3 in language x_4

Lojban sentence: mi tavla do la lojban. la gliban.

English translation: I talk to you about Lojban in English.

Lojban grammar simplified

Bridi = [Sumti] [cu]* Selbri1 | [Sumti] [cu]* Selbri2 [Sumti] | … |

       [Sumti] [cu]* Selbri5 [Sumti] [Sumti] [Sumti] [Sumti]

Sumti = Prosumti | Descriptor Selbri

Descriptor = le | lo

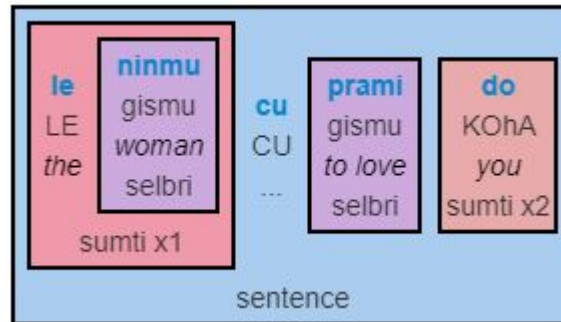Selbri = Selbri Selbri | xebni | prami | xamgu | klama | blanu | ninmu | …

Prosumti = mi | do | ...

Ambiguity

Some places ambiguity is tolerable

In programing languages

    ambiguity is bad

Lojban is unambiguous

Preventing ambiguity

Terminators: semicolons, brackets, parentheses

Math example:

    without order of operations

    2 + 2 * 2   = 6 or 8
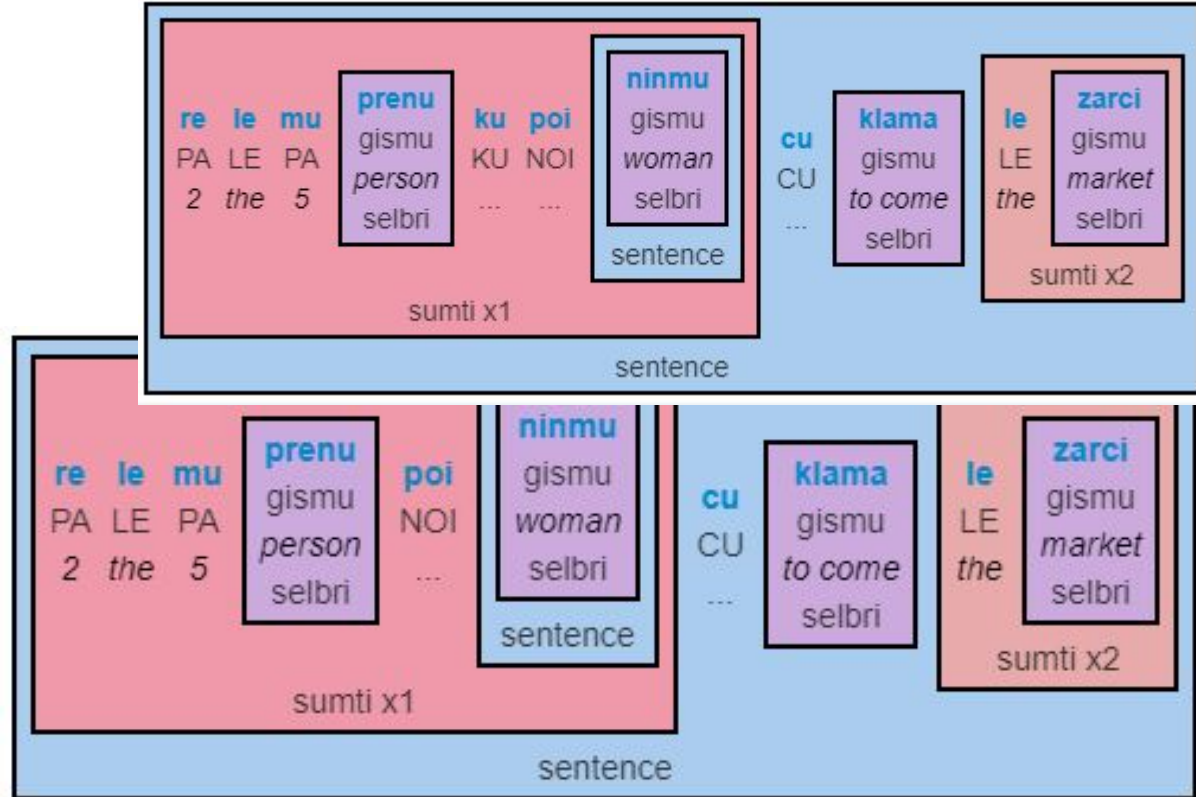
    2 + (2 * 2) = 6

    (2 + 2) * 2 = 8

Preventing ambiguity examples

re le mu prenu ku poi
ninmu cu klama le zarci

Two women out of the five
persons go to the market.

re le mu prenu poi ninmu
[ku] cu klama le zarci

Two of the five women go to the
market.

Tanru grouping

xlali zgike karni = bad-music magazine

xlali zgike bo karni = bad music-magazine

xlali ke zgike karni [ke'e] = bad music-magazine

Referential ambiguity

A: Je me déteste. (I hate myself)

B: Moi aussi. (Me too)

Two interpretations for B:

Je me déteste. (I hate myself)

Je te déteste. (I hate you)

Referential ambiguity

A: mi_a xebni mi_a

B_1: mi_b go'i $\varnothing_a$

B_2: mi_b go'i mi_b

B_3: $\varnothing_a$ go'i mi_b

P = "x_1 hates/despises x_2 (object/abstraction)"
a = Alice   b = Bob

Statement	Substitution	Meaning
A	$P(x_1,x_2)$ $[x_1:=a,x_2:=a]$	P(a,a)
B_1	$P(x_1,x_2)$ $[x_1:=b]$ $[x_1:=a,x_2:=a]$	P(b,a)
B_2	$P(x_1,x_2)$ $[x_1:=b,x_2:=b]$ $[x_1:=a,x_2:=a]$	P(b,b)
B_3	$P(x_1,x_2)$ $[x_2:=b]$ $[x_1:=a,x_2:=a]$	P(a,b)

xu preti (questions?)

Bibliography

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