Analysis of Language Resources

Tenth Lecture

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New Possibilities

- Computer-assisted literary research
- Computational criticism, computational aesthetics
- Interdisciplinary research bridging humanities and technology
- *These are not limited to purely statistical analysis*

New Interests in Computational Humanities

- Common framework that would allow us to simultaneously treat all works of art implemented in different media as literature, music and picture… (Tokosumi).
- Universal definition of "Beauty" ?
- Fibonacci numbers and the golden section ?– One of the greatest interests for COE21-LKR Project (D. Sato et al.)
- Language and bodily experience?
- Subconscious reaction, rather than meditative appreciation ? →Topics of Embodiment, again?

A Trial of Computational Rhetoric

We will treat …

- some examples (taken from a poem of Hugo) for

  1) Metaphor and/or Golden Section

  2) Metonymy and/or Anagram

- their close relationship inside the common framework of computational humanities

Metaphor and/or Golden Section

- Metaphor : A is to B as C is to D (A:B=C:D)
- Divide a segment into two parts in proportion a:1 holding the following expression
  $$\frac{1}{a+1} = \frac{a}{1} \qquad a = \frac{\sqrt{5}-1}{2}$$
- Long part : Whole = Short part : Long part
- Fold the short part into the long part so as to temporally consider the latter as the new "whole"

  This "a" always has the same value.
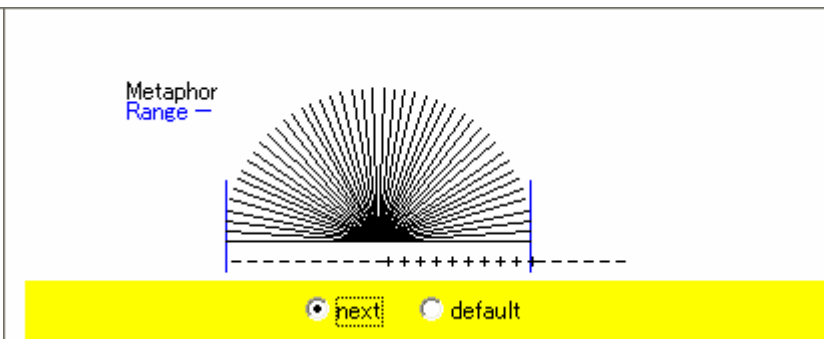 $$\frac{a}{1} = \frac{1-a}{a} \qquad a = \frac{\sqrt{5}-1}{2}$$

- Repeat indefinitely, and you will find a curious convergence and a reversal of the initial position

  From the literature viewpoint, this represents a *transformation (metamorphosis)* of the being.
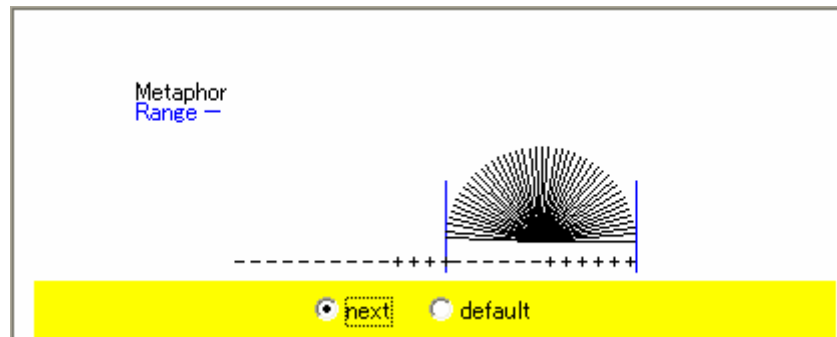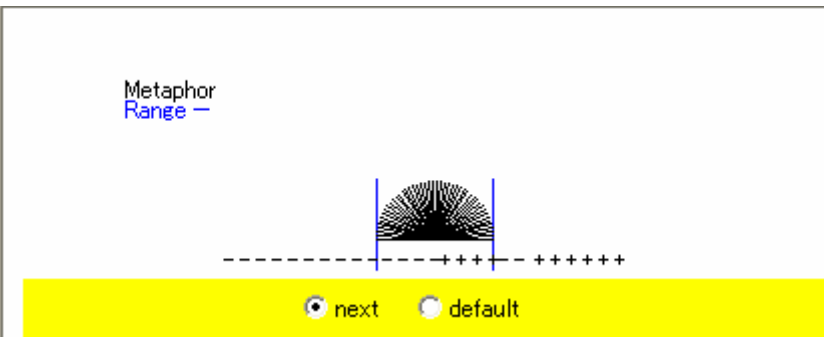 $$\lim_{i->\infty} \sum_{i=1} a^{2i} = a \qquad \lim_{i->\infty} \sum_{i=1} a^{2i+1} = a^2$$
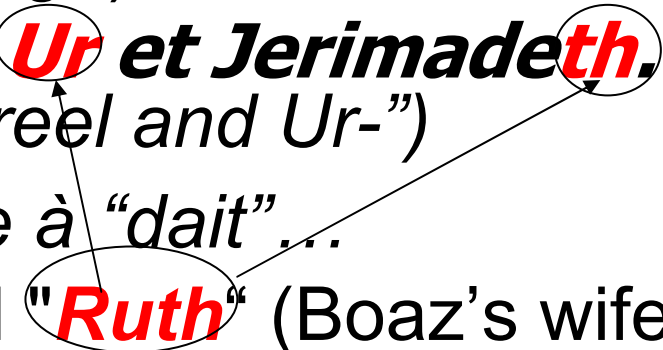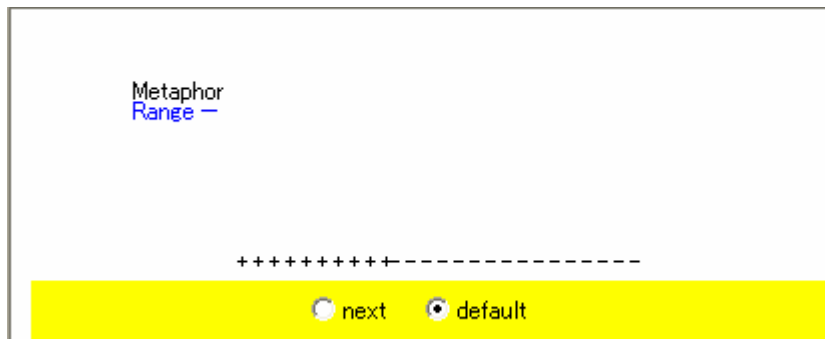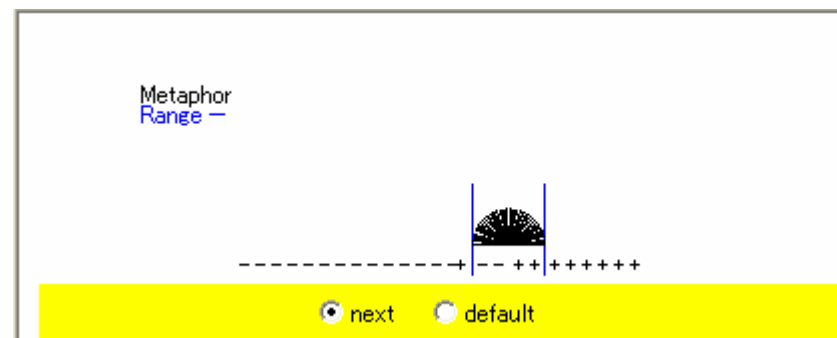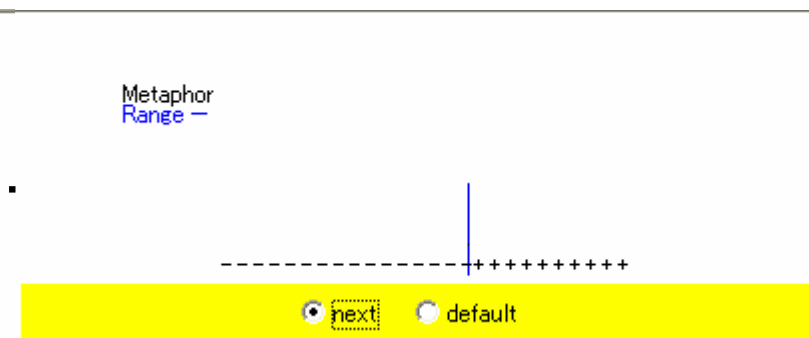
Initial State

Step1

Step2

Step3

Step4

Step Infinity

Example of a "Golden" Metaphor

- Paternal metaphor (From *"Boaz Asleep (Booz Endormi)"* of Victor Hugo) :

- **Sa gerbe n'est ni avare ni haineuse.** *("He bound sheaves without the strain of hate or envy. ")*

- The subject ("Boaz") is taken place by his attribute ("gerb (wheat)") which belongs to the metaphor world of plants (beings "asleep") to finally become a big ("cedar") tree (metaphor of a great patriarch).

Example of an "Anagrammatic" Metonymy

- Maternal metonymy (From *"Boaz Asleep (Booz Endormi)"* of Victor Hugo)

- **Tout reposait dans Ur et Jerimadeth.** *("Silent was all in Jezreel and Ur-")*

- *Jerimadeth → Je rime à "dait"…*

- The string of the word "**Ruth**" (Boaz's wife) as a proper name is split into separate parts (and places) to represent the act of dissemination all over the world (topics of adjacency).

- Instead of "Ruth" as person, her space of life will become dominant by the effect of metonymy.

The possibilities of Semantics for Saussure

- **1.Association** between **words (review)**
- **2.Anagram** between **syllables**
- **3.Parallel Texts** between **documents (review) (cf.** Notes of Saussure's Course)
- Three types of meaning are generated.
- Anagram: Saussure tried (in vain) to find the average length of words or phrases which would allow him to judge that hidden syllable patterns had been intentionally set by the author of the poem and thus *significant*.

Ontology of Anagram

- A sort of windowing method to get syllabic or lexical co-occurrence data: Saussure tried to analyze a poem by counting the number of hidden syllable patterns -- which were found more often than by chance -- in a fixed number of lines that could be regarded as a range of bucket.

Donom amplom victor ad mew templa portato

A PLO   O A   PLAPO O

APOLO   APOLO
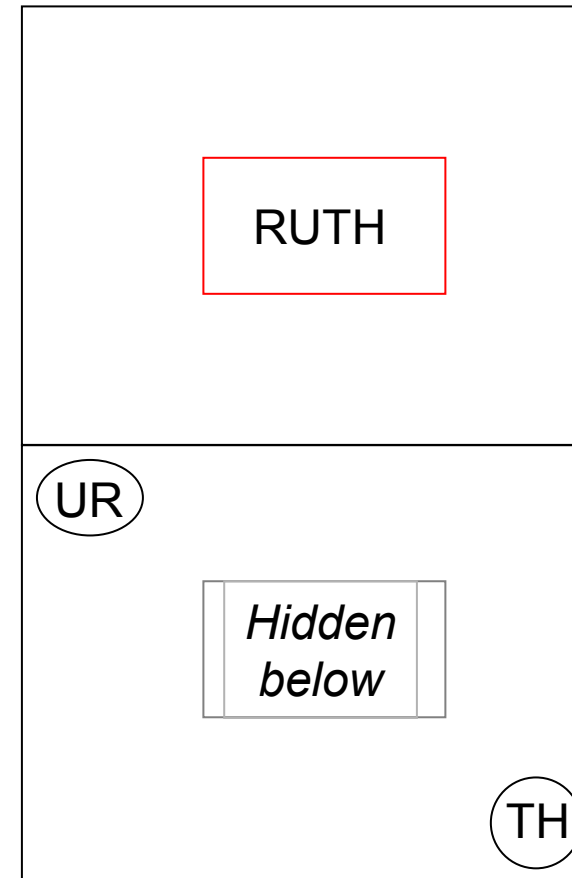
The world as a frame

Summary

- Revolutionary research combining humanities and computer science
- Computational rhetoric or computational criticism
- 1) Metaphor and/or Golden Section
- 2) Metonymy and/or Anagram