Problems of Information Semiotics

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The phenomenon called I
Is a single green illumination
Of a presupposed organic alternating current lamp
(a composite body of each and every transparent spectre)
The single illumination
Of karma's alternating current lamp
Remains alight without fail
Flickering unceasingly, restlessly
Together with the sights of the land and all else
(the light is preserved... the lamp itself is lost)

Kenji Miyazawa, (Translated by Roger Pulvers)

when I access, it turns itself on
inside the COMPUTER SCREEN
flickering letters
I touch them

I feel so warm

Let us begin by recollecting an event in the recent past…

Question

In 2000, the University of Tokyo established *the Interfaculty Initiative in Information Studies, and Graduate School of Interdisciplinary Information Studies.* What is your reading of the historical significance of this institutional development particularly as it relates to the relationship between mankind and information?

Answer

It was a "foolish but wise" reaction to three great changes undergone by human civilization as the 20th ended and the 21st century began.

The Three Changes

1. Transition to the "Post-Human" Age (Humanity under question)

2. Reconstitution of "Knowledge" as a Strategy

3. Reorganization of the "University" (Towards an interdisciplinary/interfaculty organization of learning and research)

A Face Drawn in Sand

Man is an invention of recent date, at most two centuries ago, at the beginning of the "Modern Period", and is perhaps nearing its "end". One can certainly wager that man could be erased, like a face drawn in sand at the edge of the sea.

LECTURE 1

"What Question does Information Semiotics pose?"

Contents

1. Context: The Transformation of "the Humanities"
2. Epistemology: "Studies of Man" and "Informatics"
3. Discipline: The Position of "Semiotics"
4. Paradigm: What Is "Information Semiotics"?
5. Strategy: Research Strategy

I. Context

The Transformation of "the Humanities"

"A Case study"

- *Study "literature" at a distance far from "Literature".*

- *Or "how I, a scholar of French Literature, learned to be a scholar of interdisciplinary information studies?"*

Résumé:
Hidetaka Ishida

- *Professor of Information Semiotics, the University of Tokyo*
- *Born in Japan, 1953*
- *Graduated from the University of Tokyo*
- *Studied in Paris(1975-1977, 1983-1987)*
- *Doctorate in Human Sciences at l'Université de Paris X - Doctoral Thesis: La Formation de la poésie de Mallarmé (1989)*

- <u>1988-1992</u>: Associate Professor of French (Doshisha University, Kyoto)
- <u>1992-1996</u>: Associate Professor (Faculty of Arts and Sciences, University of Tokyo)
- <u>1996- 2000</u>: Professor of Intercultural Communication, Department of Language and Information Sciences, Graduate School of Arts and Sciences, the University of Tokyo
- <u>2000</u>: Professor of Information Semiotics, Interfaculty Initiative in Information Studies, the University of Tokyo
- (<u>1996</u> : Visiting Professor, Department of French Literature, l'Université Paris 8
- <u>1997-1998</u> : Visiting Researcher, l'Université Paris 8
- <u>2002</u>: Visiting Professor, l'Université Paris 7)

Fields of research

- **French Studies**
- *Language Theory, Semiotics, Poetics,*
- *Literary Theory*
- *Modern Thoughts on Language and Society*
- *Media Studies, Information Studies*
- *Works: Essays on Modern Social Theories (Michel Foucault, Pierre Bourdieu, Gilles Deleuze, etc.)*
- *Studies on French Literature*
- *Analysis of European and Japanese Modernity*
- *Reflections on Language and Society*

1980's

- Research on "Literature" and "Poetics"
- *Began research based on ways of studying French literature uncommon in the Japanese academic world, and started considering the dilemma of "the End of Literature".*

1990's

- Research on "Language Praxis Theory"
- *Pursued a general theory in which society and culture are considered as the practical praxis of language.*

2000's

- Research on "Information Semiotics"
- *Investigated the interface of knowledge in information processing and knowledge of the semantic criticism of man.*

Mallarmé Studies in 1980's

From a perspective on the periphery of the "Gutenberg Galaxy", what is "literature" for the civilization of "letters"?

襞にそって襞を…pli selon pli

詩学のモナドロジー・序説

石田英敬

［詩学］

Studies of the "Praxis of Language" in the 1990's

- The establishment of the department of *Language and Information Science,* in the *Graduate School of Arts and Science*

- Key question: How can we understand the Humanities and Social Sciences of the 20th century from the viewpoint of "knowledge about language"?
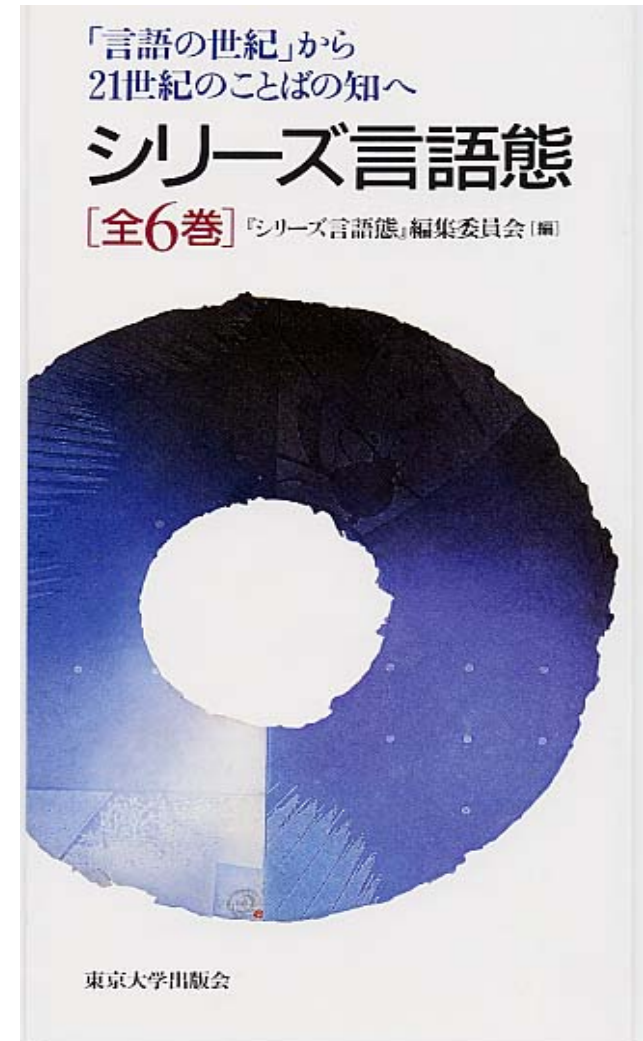
The Question of
# "Information Semiotics" in the 2000's
The Relationship Between the Humanities/Social Sciences
And Information Science.

- Semiotics belongs to the genealogy of the humanities' pursuit of "artificial language", as conceived by Locke and Leibniz. Meanwhile "modern semiotics" is a primary knowledge of formalization in which we seek to understand society or culture taking "meaning" as our basic category.

Disposition of the Question of "the New Humanities"

Knowledge of Information

Literature as an Axis of the Humanities

Knowledge of Language/Signs
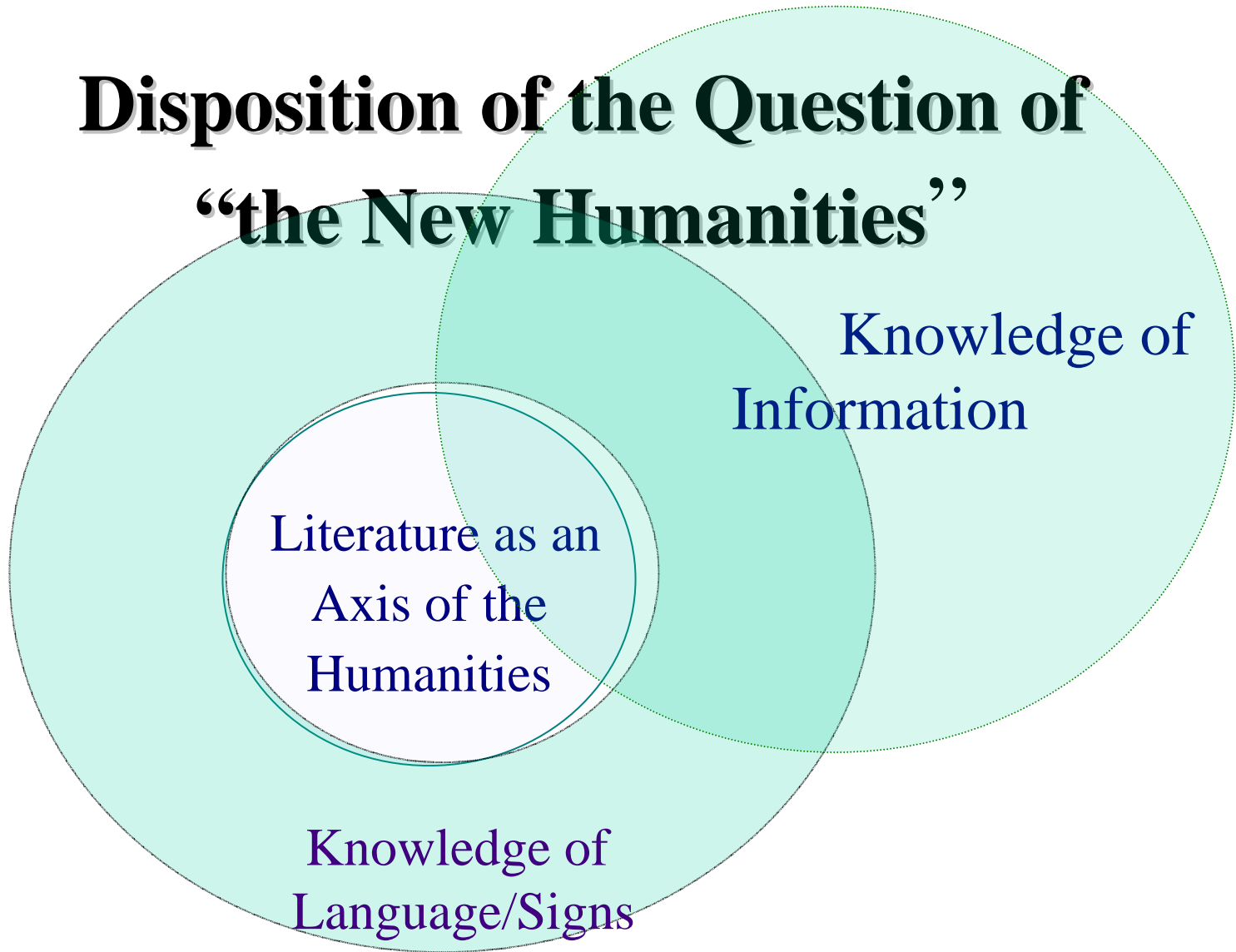
II. Epistemology
What is the issue to be addressed now ?

- "Studies of Man" and "Informatics"
- 2 or 3 things I know about the Information Technology Revolution.

Confronting "the end of the Gutenberg Galaxy," taking the transformation of "the humanities" as our starting point

- For a humanist, who engages in the "critique of literacy", "the Conditions of Knowledge" whereby the world is recognized by reading and writing "letters/books" have begun to fluctuate.

The Crisis of the Humanities and Four "Post-" Conditions

1. **The "Post-Modern" Condition**

   Blurring of the divide between (high) culture and subculture

2. **The "Post-National" Condition**

   Blurring of the boundary between Western cultural modules and Non-Western cultural modules

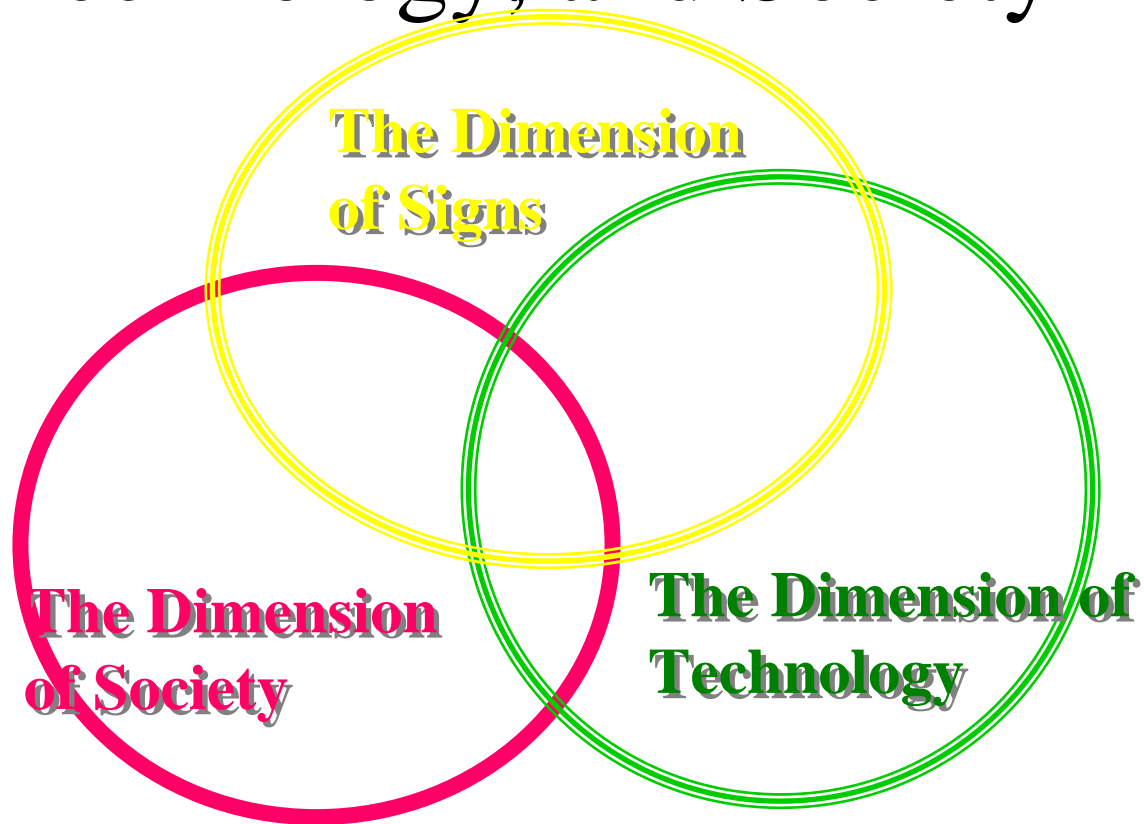3. **The "Post-Gutenberg" Condition**

   Blurring of the distinction between culture based on print-media and multimedia culture

4. **The "Post-Human" Condition**

   Blurring of the boundary between the human and the technological

The Borromean Rings of "Sign, Technology, and Society"

The Information Technology Revolution is a transformation of the interconnections between these dimensions

Significant Changes in Sign Technology

- The Crisis of "Man": Reversal of the relationship between man and machine

- The Crisis of "Knowledge": Change in the conditions for the criticism of "Man"

- The Crisis of "Meaning": Change in the conditions for "Communication"

The Post-Human Condition (after the Humanities)

- Join the great Humanists (McLuhan, Eco, Foucault, etc.) in thinking about the world after "the End of the Man"

Summary of the Argument So Far:

- **"the Humanities"**
  is the "Ethos of Letters", which has synthesized the "Knowledge of Man" since the Renaissance, but is now being transformed.

- **"Informatics"**
  has the potential to bring a new "Ethos of Knowledge" to our civilization, allowing the "the Humanities" to be reborn (undergo a "renaissance") as "the New Humanities".

  NOTE: "Ethos" refers here to the "principal attitudes of knowledge in a civilization".

III. Discipline
The Position of Semiotics
What is the Link between the Humanities/Social Sciences and the Information Sciences?

- Semiotics belongs to the genealogy of the pursuit of "Artificial Language" as conceived by Locke and Leibniz. For the purposes of this lecture, however, I present the problematic with the help of "Modern Semiotics".

Questionnaire

What kind of a study is semiotics?
Do you know? Answer "Yes" or "No".

Do you know what happened in the humanities and social sciences in the 20th century?   Y/N

Are you familiar with the terms "structuralism" and the "linguistic turn"? Y/N

Have you heard of the "cognitive revolution" and the "Chomskian revolution"? Y/N

Are you familiar with the terms "post-structuralism" and "cultural studies"? Y/N

- "The Question of Semiotics" arises from the same line of development as that which links together "the language/sign revolution", "the media revolution", "the cognitive revolution", and "the information technology revolution". All these developments occurred during the 20th century.

Semiotics and Semiology: a definition

- Taken from *Encyclopedia of Media and Information Studies,* Koubundou, Tokyo, 2002, p205

- English: s*emiology (semiotics)*
  French : *sémiologie (sémiotique*)

- The study of natural or human phenomena in terms of signs or signification is called semiology or semiotics. Semiology derives from the Swiss linguist Louis Ferdinand Saussure (1867-1914), who was the father of modern linguistics. Semiotics derives from American logician and philosopher Charles Sanders Peirce (1839-1914).

Development of the terms

- "Semiology" and "semiotics" were both proposed and developed simultaneously but separately in the late 19th century and early 20th century. In the course of 20th century intellectual development, they accreted to form an interdisciplinary field concerned with signification and signal phenomena. "Semiology" and "semiotics" are now considered to be almost synonymous.

The Interface of Knowledge about Signs

- The "Language/Sign Revolution": a 20th century discovery in the dimension of the "sign".

- The "Media Revolution": a great social change unleashed by the development of sign technology.

- The "Cognitive Revolution": a combination of knowledge about signs and mathematical technology.

- The "Information Technology Revolution": a combined result of all three of the above changes on a large scale

Semiotics is Knowledge about the "Dimension of Signs"(one of the Borromean Rings of "*sign, technology, and society*")

The Dimension of Signs

The Dimension of Technology

The Dimension of Society
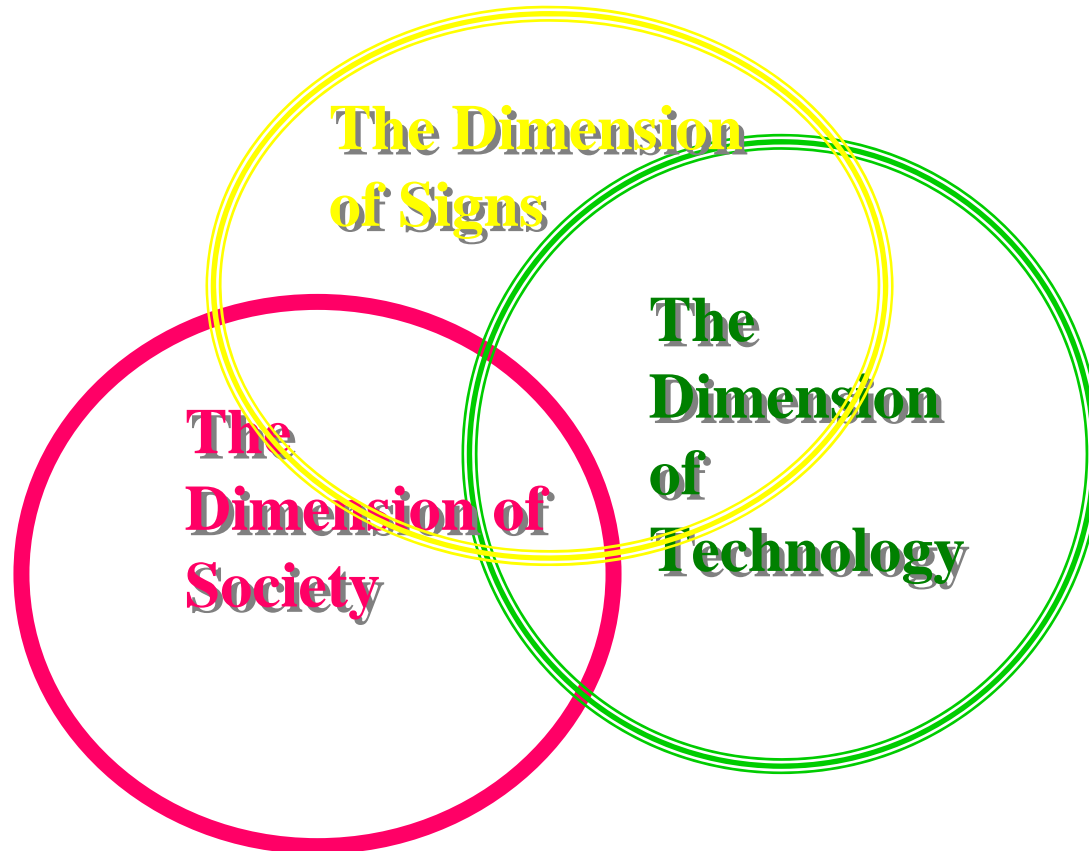
For example, approaches such as McLuhan's "Gutenberg Galaxy" and Debray's "Médiologie" have their starting-point here.

"Signs" are mediated by "Technology" and give rise to "Society".

This perspective enables us to question the relationship between "Media-Technology" and "Civilization".

The Birth of Modern Semiotics

- **Charles.S.Peirce** (1839-1914)
  "Classification of Signs"

  "Semiosis"

- **Ferdinand de Saussure** (1857-1913)
  "General Semiology"

  "Sign System"

Ferdinand de Saussure (1857-1913)

Language is the system of signs which express ideas, and is thus comparable to a system of writing, sign language, symbolic rites, politeness markers, military signals, and so forth. However, it can be said to be the most important of these

A science that studies the life of signs within society is thus possible, and it would be regarded as part of sexual psychology, and therefore under general psychology. I shall call this semiology (from the Greek sêmeïon 'sign'). Semiology would indicate the elements which constitute signs, what laws/rules govern them. However, as this science is not yet in existence, no person can state what it would be, but it has the right to exist, a place decided in advance. Linguistics is only a part of the general science of semiology; the laws that will be discovered by semiology will be applicable to linguistics, and the latter will indicate a well-defined field within the the wide range of human phenomena.
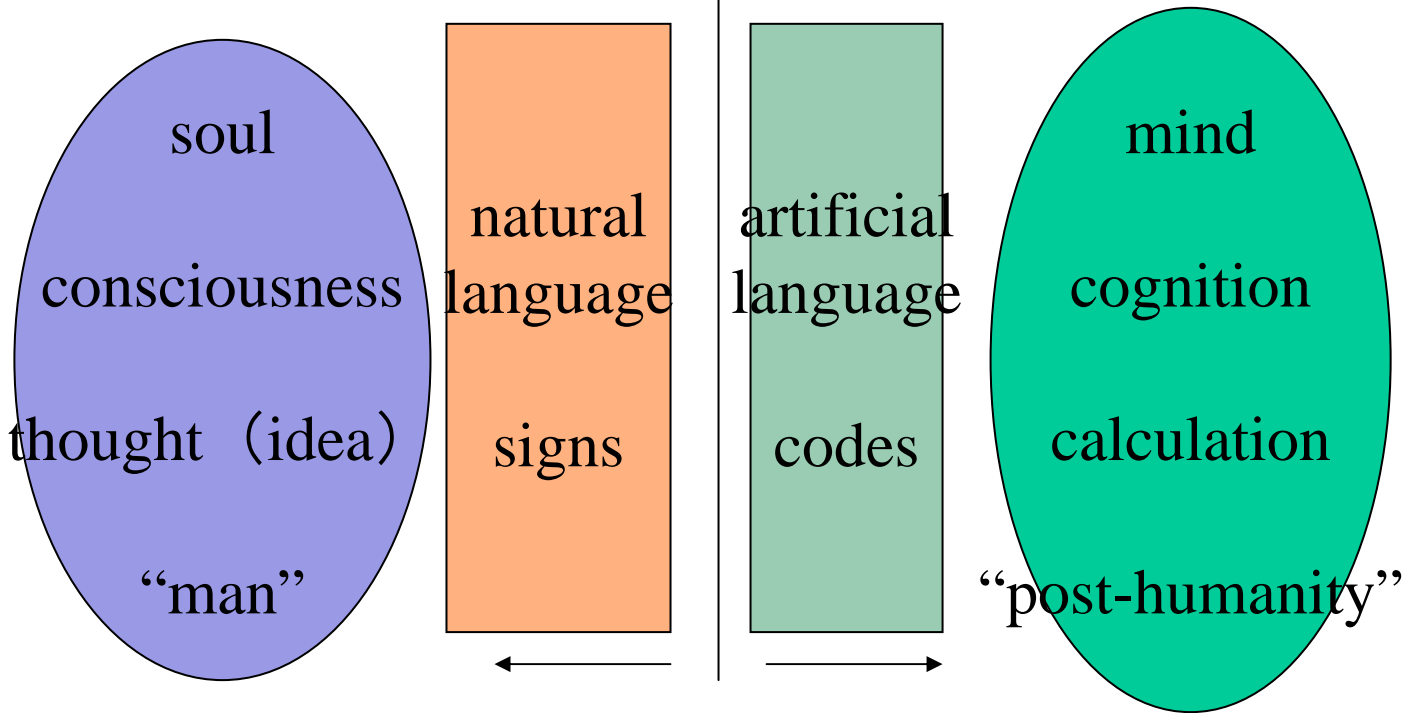
- "Course in General Linguistics"

The Formation of Modern Semiotics
and
The Age of Communication Technology

- Saussure's "Circuit of language" and the "Shannon Model"

- From Buhler's "Function Model" to Jakobson's "6 Functions of Communication"

- The Age in which Media Technology makes a "Knowledge about Signs" possible

  (The "telephone model" and Saussure; the "computer" and Chomsky, etc.)

The Role of Semiotics

- What links the "Question of Meanings" and the "Question of Information"
- What links the Humanities/Social Sciences and the Information Sciences.
- Ideas linking the Language Sign and the Non-Language Sign.
- A paradigm for understanding Multimedia Communication.
- An interface which runs in parallel with the Cognitive Sciences, etc.

1. The Interface between Semiotics and Knowledge

soul

consciousness

thought（idea）

"man"

natural language

signs

artificial language

codes

mind

cognition

calculation

"post-humanity"

The Humanities

The Information Sciences

2. The "Relations" embedded in the opposition between "Society/Culture" and "Nature/Technology"

society . culture	natural language sign	artificial language code	physiology . physics
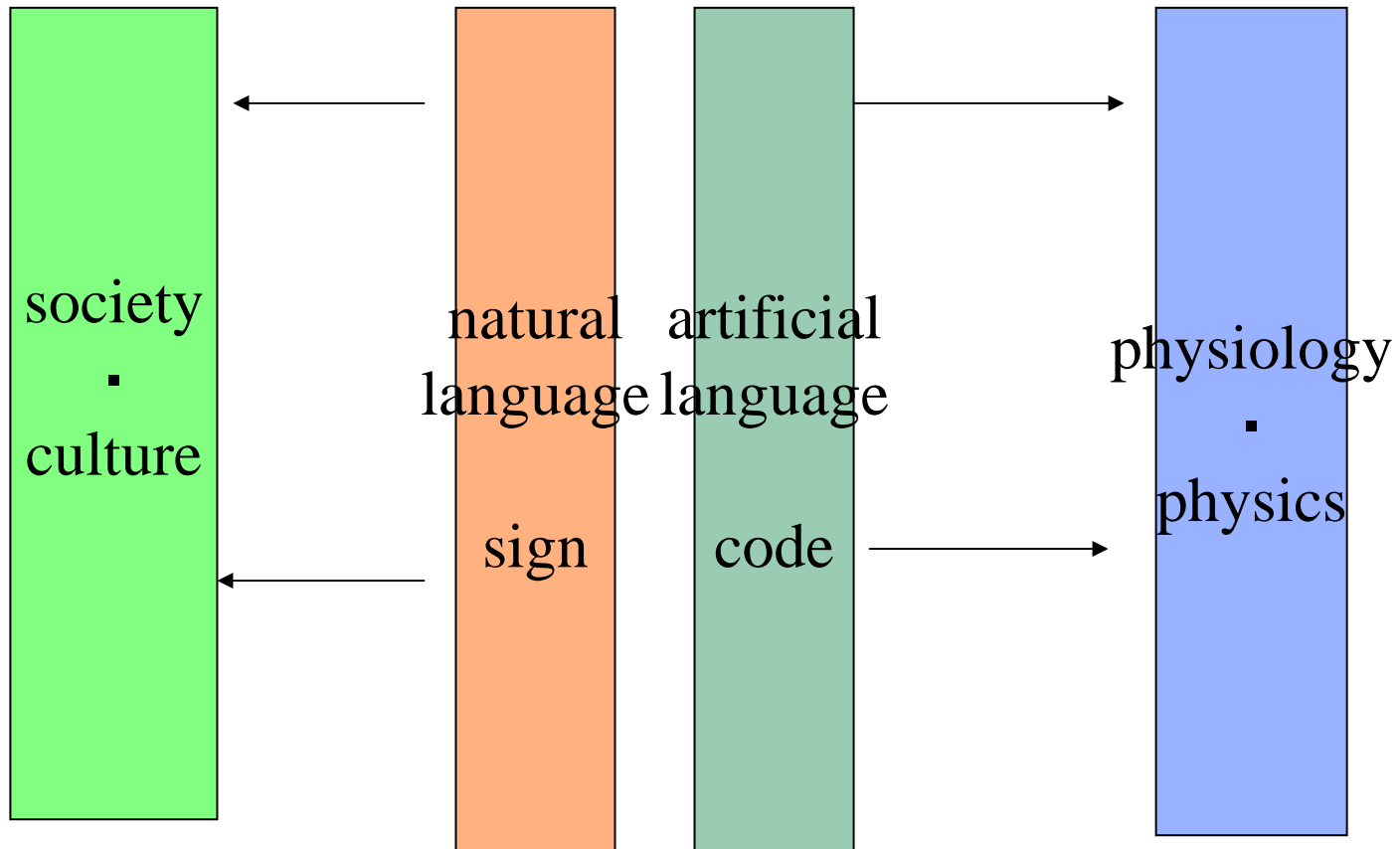
IV. Paradigm

What is "Information Semiotics"?
Thinking at the Interface between "Meaning" and "Information"

A science that studies the signification of information for our life is possible. We shall call this Information Semiotics. However, as this science is not yet in existence, no one can state what it would be, but it has the right to exist, a place decided in advance.

Nagao Shin
"Basic Concept of Multimedia Informatics "

- *In the past, various media for the distribution of information have developed, including newspapers, radio, film and analogue television. In the future, we will enter a new age - that known as the "age of multi-media" - when information will be presented to people in a more all-encompassing form. The remarkable development of information processing technology will be linked to progress in the information communication system, allowing the whole world to function like one information system, and a great diversity of information will become generally available.*

- *An improved understanding of how human beings relate to information is required in order for these new technological conditions to be used appropriately in society and be linked to greater human happiness and social development. From this perspective, I will consider what exactly information is, and what influence it has on human beings and society.*

- *We interpret information and acquire values through the process of understanding the meanings that result from that process of interpretation. The addition of various new forms of information has major consequences for our understanding of information's meaning. It is therefore necessary to develop clear concepts about the distinction between information and data, and about the relation between information and knowledge. By understanding the nature of multimedia we open the way to a world of creativity. In this respect, the power of multimedia is very great. It is important to have an acquaintance with the meanings and concepts being developed in the philosophical world of semiotics. In this chapter, I will consider the future role of multimedia, while referring to these various aspects of information.*

What Semiotics Demands of "Multimedia Informatics"

- **Information and Semiotics: The Three Elements in Semiotics**

   Some reference to the field known as Semiotics is required here. Semiotics is the study of how receivers of information receive and interpret that which is transmitted to them. The information transmitted is often in the form of words or texts consisting of letters or characters, but it could also be some kind of signalized form, such as traffic signs. Thus, semiotics considers all of these as "signs" and discusses what signs mean.

   Semiotics postulates the existence of three elements. First, there is the "object" itself existing in the real world. Next, there is the "name" (or "sign") indexing the object. Finally, there is the "meaning" (or "concept") represented by that name. I have already explained how these elements are related in verbal communication. The most important thing is that the reality or object seen by the sender is transmitted to the receiver as accurately as possible. At the same time, it is also important to consider how accurately the receiver can understand what the sender wants to say, or the meaning or concept that he or she wants to convey.

If We Consider "Information", "Man" And "Meaning" According to Nagao (1999)…

The Question of Information Semiotics

While people engage in semiosis, machines engage in information processing.

- *When people "calculate", do they also "mean"?*

- *When people engage in "Science", do they simultaneously engage in "the Humanities" ?*

The "problematic" of information semiotics is located at the interface between "information" technology and the experience of "meaning".

An Epistemological Gesture of Information Semiotics is…

1) Return to the Epistemological Principal
and

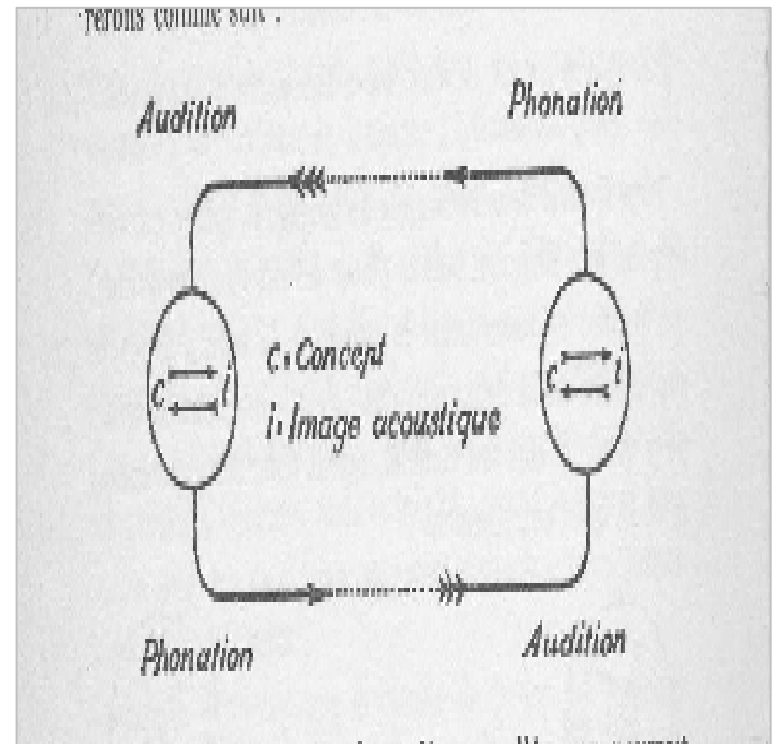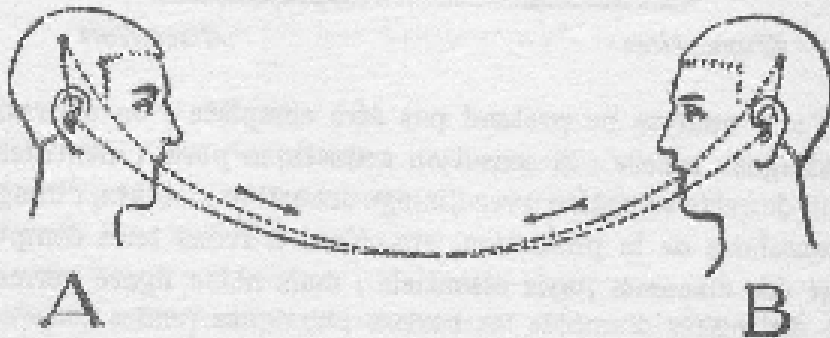2) Pursuit of a New Paradigm

The Gesture of Return

Example 1:

Communication Diagrams in Semiotics.

- Saussure's "Circuit of Language".

- The Shannon-Weaver Model

- Jakobson's "6 Functions of Communication"

1.Saussure's "Circuit of Language"

§ 2. Place de la langue dans les faits de langage.* [59]

Pour trouver dans l'ensemble du langage la sphère qui correspond à la langue, il faut se placer devant l'acte individuel qui permet de reconstituer le circuit de la parole.* Cet acte [60] suppose au moins deux individus; c'est le minimum exigible pour que le circuit soit complet. Soient donc deux personnes, A et B, qui s'entretiennent:

2.Shannon-Weaver Model

Fig. C 1. The communication chain according to Shannon and Weaver (1949: 7; modified drawing).
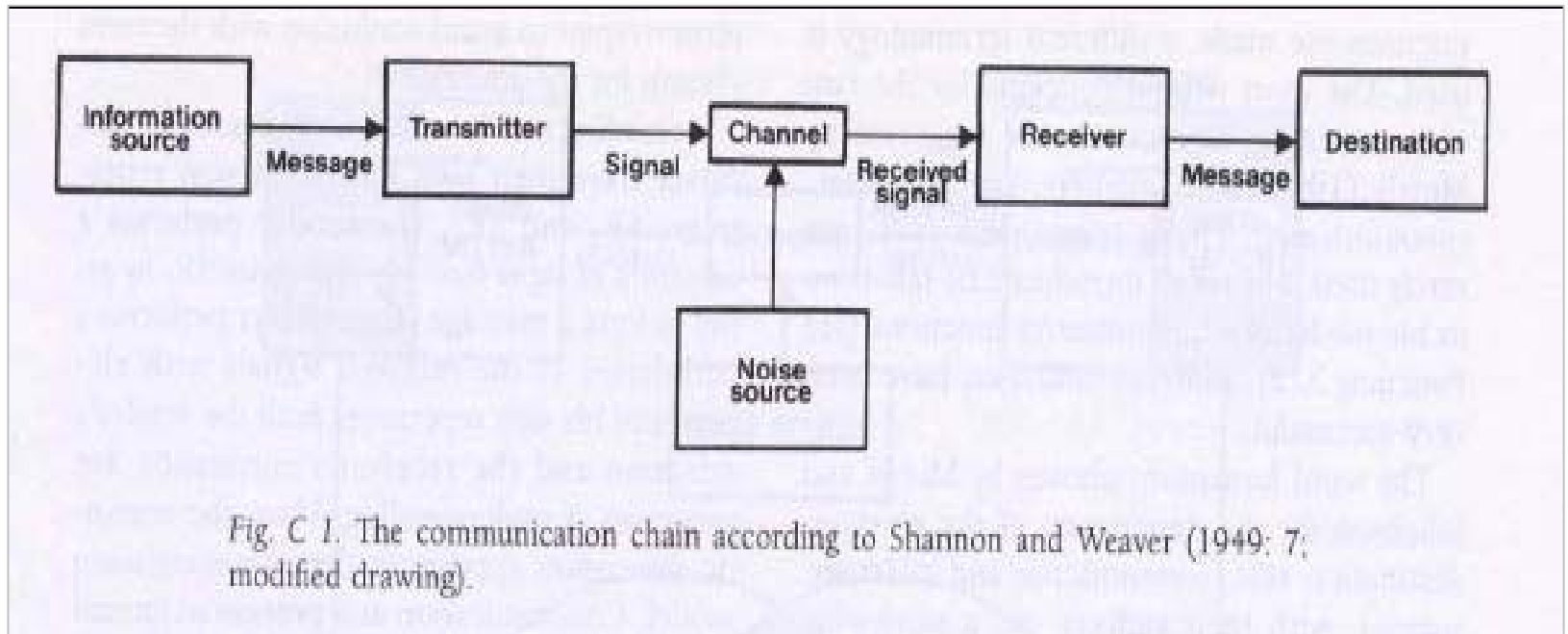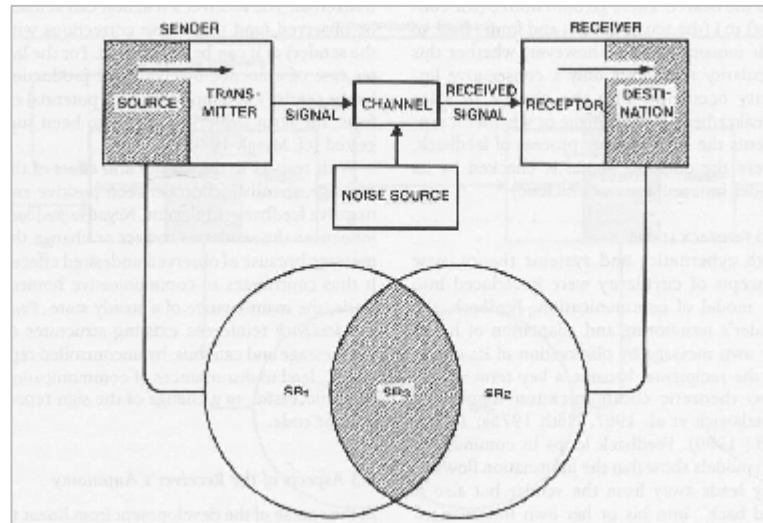
"Shannon-Weaver Model" and "Circuit of language"

Fig. C 2. The sign repertoire (SR) in the communication process: SR₁: the sender's (active) sign repertoire. SR₂: the receiver's (passive) sign repertoire. SR₃: the common sign repertoire of both.
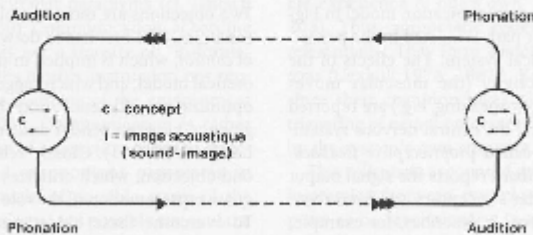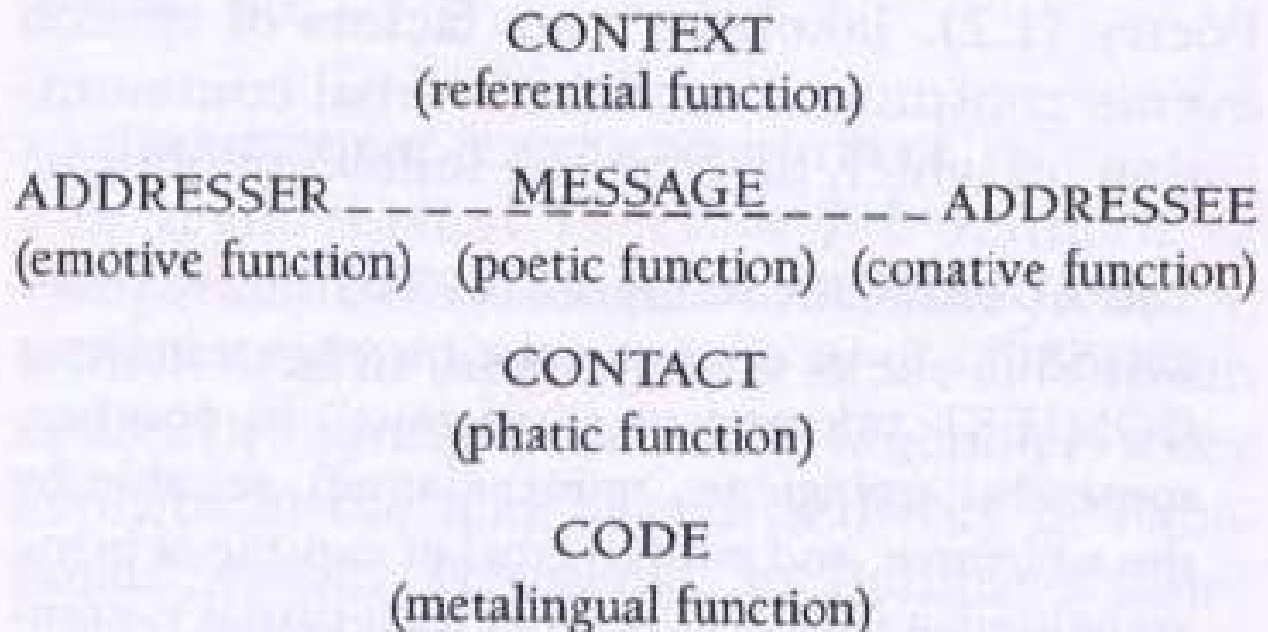
Fig. C 3. Saussure's model of the "speech circuit" (1916a: 28; redrawn) (cf. Saussure 3.1.1 and Fig. S 2).

3.Jakobson's "6 Functions of Communication"

The factor of sign activity and the formulation of sign function

CONTEXT
(referential function)

ADDRESSER _ _ _ _ MESSAGE _ _ _ _ ADDRESSEE
(emotive function)   (poetic function)   (conative function)

CONTACT
(phatic function)

CODE
(metalingual function)

Fig. F 2. Jakobson's model of the constitutive factors and the corresponding functions of verbal communication (1960: 353, 357).

To Pose the Questions of "Information Semiotics" is…

- To reconsider the questions of "Semiotics"
- To adopt the strategy of posing "the Question of Meaning" in relation to "Sign Technology"
- To Understand the "Semiosis" made possible by Sign Technology, including Virtual Reality
- Preparing for the Transfiguration of the "Knowledge of Meanings"

V. Strategy

The Research Strategy of Information Semiotics

I.   Epistemological Reexamination of Semiotics:
     the Epistemology of "Early Modern Semiotics"
     (Locke, Leibniz, etc.), the Epistemology of
     Modern Semiotics.

II. Problems of Information Semiotics:
     The Organization of the Interface of Learning

III. A Case Study:
     An Analysis of Cyber-Semiosis

Topics for Future Lectures

Problems in Information Semiotics

1. "Signs".
2. "Language".
3. "Interface", "Metaphor", and "Body"
4. "Text" and "Hypertext"
5. "VR", etc.