



*Extended Abstract*

## **Methodology, key to Information Modeling and Defining**

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### **Introduction**

What is the really appropriate definition of information? This is always the No.1 issue in the study of information science doubtlessly. Precise definition of information is by all means the most significant foundation for information studies. Unfortunately, researchers with different backgrounds, and thus different view angles, have already proposed variety of definitions of information in different disciplines. This has led to difficulties for the successful studies of information science.

What is wrong with the information defining then? Is it possible to have a proper definition of information able to unify all the others? Is there existed any unity over the diversity in the information studies? This paper will tackle with these problems.

### **Methods**

To start with, some representative, and thus most influential, definitions of information are reviewed, including the definitions respectively presented by Norbert Wiener in 1948, which says that information is neither matter nor energy, by Claude Shannon in 1948 which means that information is something that can be used for uncertainty removal, and by Gregory Bateson in 1972, which considers that information is the difference that makes difference.

It is realized through the reviews that the methodology of “divide and conquer” is the common root for producing the diversity and is no longer suitable for the information science studies though it had been successful in physical science studies. The methodology for information science studies should take on the view of information, the view of system, the view of ecology, and the view of interaction between subject and object.

Employing the new methodology, an ecological model of information process is established as is seen in Fig.1 below. Based on the methodology for information science and the new model of information process, both the ontological and epistemological definitions of information are derived. The ontological information is generated by the object in environment and is determined by the object while has nothing to do with subject. The epistemological information is the results of subject's perception and reflects both the attributes of subject and object.

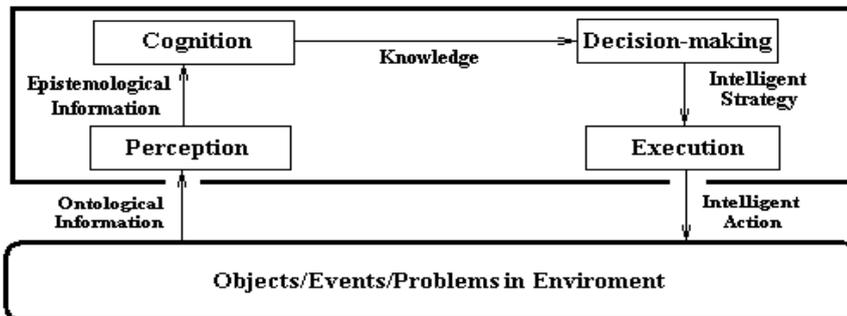


Fig.1 Model of Information Process

After defining the concepts of ontological and epistemological information, the comparisons and analyses the two definitions with the ones existed before are carried out in the paper for clarifying the proper definitions of information.

## Results and Discussion

It is proved through the comparison between the new definitions of information, derived from the new methodology and new model, with the definitions existed, including the one given by Wiener, Shannon, and Bateson, etc., that the new definitions proposed in the paper are able to unify the other definitions.

This indicates that the definitions of ontological information and epistemological information are appropriate ones and can serve as the foundation for information studies.

## Conclusions

The most fundamental conclusion the author would like to present in the paper is that there are two categories of information, instead of one, as seen in Fig.1, one is ontological information and the other is epistemological information. Numerals controversies existed in history as well as in current time in information studies are rooted from the definition confusion.

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