Information Rheology: Information Cannot Test Truth

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Abstract - The statement about the property of some definite thing is not usually the only one. The difference between the stated property and the property of such a definite thing is one type of information rheology. Its origin is that the interaction of a definite thing with other things is incomplete. Based on the definition of customarily-called information and its mathematical expression, this paper points out that information rheology certainly exists. It gives us a caution that information is not necessarily conclusive, and not likely to correspond to definite things. Information is not the criterion, but practice is the sole one for testing truth. It is certain that to study customarily-named information by bringing it to the height of ontology is not promising. Also, the attempt to justify information is hard to be realized.

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I. Starting with the Blind Men and the Elephant

The fable "the blind men and the elephant" in Buddhist Sutra says, there were four blind men by an elephant. The man who felt the elephant's trunk said it was like a pipe. The man who touched the elephant's leg said it was like a pillar. The man who felt its side said it was like a wall. And the man who felt the elephant's tail said it was like a rope. For the same elephant, the four men had different descriptions, ie, different customarily-called information. Likewise, for the same rainbow after a rain, what a man, a cow, a dog or a bee sees is different light bands; while in a spectrum analysis instrument, the rainbow appears another sight. Information does not seem to correspond to certain things, maybe is more likely to have nothing to do with objects. Besides there are contrary examples, ie., the customarily-called information is same but the objects are different: a group of digitals represents a telephone, a landmark, a student, a commodity, the name of a plan, or the amount of a product; a color can express prohibition or pass, connection or disconnection, opening or closing, a man or a woman, being qualified or defective. Similar cases are different persons with same names, cars with fake license tags,.

There may appear more complicated cases such as mispronouncing or misreading massage for message, etc. More example is: the instructions of hackers' invasions can lead to call a maid by a married name, so that to destroy enemy's campaign command system, or steal your bank's deposit.

Usually, the statement about the properties of a certain thing is not the only one. The difference between the stated property of a certain thing and its property is a kind of information rheology. Therefore, the certain, conclusive existence, in point of it being described, is not necessarily the sole one, and not likely to be certain, and even can be unpredictable. And in turn the description of a certain thing with its corresponding one is not likely the sole one. Only such kind of information rheology is enough to give us a caution that customarily-called information is unnecessarily conclusive, and is unlikely to correspond to certain things. It is obvious that customarily-called information cannot become the criterion for testing truth.

Lie, perjury, hypothesis, guess, trial manufacturing, isunderstanding, credulity, illusion, analogy, putting on a play, oral stunt, etc., all of these generate different types of information rheology.

Customarily-called information is general in the social field and nature, so are all kinds of information rheology.

II. Theoretical Analysis of the Source of Information Rheology

In the story of the blind men and the elephant, the elephant touched by the four men can be expressed as follows:

An elephant is said to be a pipe by the first man in Word 1;

The elephant is said to be a pillar by the second man in Word 2;

The elephant is said to be a wall by the third man in Word 3;

The elephant is said to be a rope by the fourth man in Word 4;

Expressing in the following arrays, four pieces of information can be written as:

$Info_1$ = (elephant pipe word 1)

$Info_2$ = (elephant pillar word 2)

$Info_3$ = (elephant wall word 3)

$Info_4$ = (elephant rope word 4)

The above arrays clearly express the same elephant, but the opinions and the words of the four blind men about the elephant are different. Although the

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elements included in the above arrays are different, the formats of information are the same.

Generally speaking, all customarily–called information can be written as the arrays with the above three elements.

Information is the collection of three kinds of properties. It is composed of three parts: the first part is the properties of things themselves, which are based on facts, such as an elephant. The properties of physics, chemistry, biology and society, etc., are conclusive and independent, have nothing to do with any spoken and written language. The second part is the properties of things which are compatible with, responsive to, and simulant of other things. For instance, animals get their claws into their images in mirrors; animals are cheated by other animals' camouflages and die; there are black, white and grey in the eyes of cows, sheep, horses, dogs and cats; dogs are near-sighted; man is unable to see ultraviolet rays and hear ultrasonic waves; reed warblers hatch eggs instead of cuckoos without nests; the probability events occur, Murphy's Law[1] is proved to be correct. More example is, the properties of things that people subjectively think are people's inner thoughts, or those that people express in spoken and written languages or computer programs. Some of the properties of things that people subjectively consider may accord with the properties of the conclusive things, but some may not. Another example is the properties of simulant things that people make by copying conclusive things. The third part is the properties of tools with which other things react the property of a thing, which mainly are the people's inner ideation when they express the properties of things that they consider or the properties of the spoken and written languages, ie., the state of the brain's neurons of a message publisher, or the style of the lines of letters used in the message publication, or the frequency and intensity of sound vibration, etc., or the language and the state of circuit devices (bit) of a computer, and so on.

If we represent the first properties of information definition as X_{jk}, the second part as X'_{jk}, and the third part as X'_{nlfbjk}, and set Info to information, we can formulate the information of things with the following array:

Info= $(X_{jk}, \quad X'_{jk} \quad X'_{nlfbjk})$ (see the appendix)

Information of anything can be expressed with the array including the above three elements, which is called the general formula of information.

The above exceptional definition of information can contain any information in the universe, and there would be no discrepancy and logical paradox. The array can abstractly express any information in the universe.

The information array of the pure natural phenomena, based on things，is as follows:

Info= $(X_{jk} \quad 0 \quad 0)$

The information array of pure lies or historical records without any identification is expressed as:

Info= $(0 \quad X'_{jk} \quad X'_{nlfbjk})$

The information expression of written languages to illiterates, as well as abstract art and animals' sound for the majority of people is:

Info= $(0 \quad 0 \quad X'_{nlfbjk})$

Or written languages, abstract art and animals' sound themselves are conveyed as:

Info= $(X_{jk} \quad 0 \quad 0)$

The array of hidden, disappeared historical events, such as the information of the height, weight, appearance and characters, etc. of some earthman's ancestor 500 years ago, is:

Info= $(0 \quad 0 \quad 0)$

When something does not exist, the approximate coefficient does not make any sense, for example, a lie or a perjury, etc., is still represented as:

Info= $(0 \quad X'_{jk} \quad X'_{nlfbjk})$

Customarily–called information is the collection of three kinds of properties of things, in which some are relatively stable while some are unstable. In the first kind, the relatively-fixed properties of things are as the freezing, melting and boiling points of water, the composition of most chemical elements and compounds, and so on. But events happened in ancient, modern and present-day societies, or just now, may hardly be confirmed entirely. The second kind is mainly related to man. Because of varied individuals, the properties which people think and copy are usually unstable or hard to be perfect. In other words, the interactions of certain things with other things are often incomplete and incompatible. Therefore, the second kind is variable. The third kind is the properties of tools used in expressing the properties of things, which is related to man, and even more with the factors of time and region, etc. For instance, for the same thing, Chinese ancient language, modern language, network language, pictographs, oracle bone inscriptions, traditional characters and simplified forms, are different. In the world there are more than 4200 oral languages and about 500 written languages. The instruments used in the early computers vary from the present ones. Different schools of art have different representations. So, the third kind of tool properties is diversified. All sorts of information rheology formed by all the above variations undoubtedly warn us that customarily-named

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[1] Murphy's Law : If there are two or more ways to do something,and one of those ways can result in a catastrophe,then someone will do it..

information is not completely reliable, and we must not have information superstitions. Therefore, information cannot become the primary principle point.

Info= $(X_{jk}, X'_{jk} X'_{nlfbjk})$, the mathematical expression of customarily-named information, can perfectly interpret any complicated information and is flawless, hence, is called the general formula of information. It is the theoretical foundation to explain the inevitable exist of information rheology.

III. ABOUT WIENER'S INFORMATION MAZE

In 1948, Norbert Wiener (1894-1964), the founder of cybernetics, said: "Information is information, not matter or energy. No materialism which does not admit this can survive at the present day." As a result, he introduced the conception of information in the theory of communication into philosophy, and built an "information maze". Consequently, philosophical research workers have been participating in the study of defining the connotation of information for 60 years. People fell into the perplexity, which is similar to searching for the medium propagating electromagnetic waves, and the verification of "Ether" hypothesis at the end of 19th century. The academic circles have been arguing about the definition of information for several decades. Statistics show there were 130 definitions of information until 1980s. Even Shannon (C. E. Shannon 1916-2001), the founder of information theory, issued a statement that a single conception of information could hardly be expected to be satisfactorily responsible for various possible applications in the general fields.[2] The definition of information and its general formula of mathematics given in the paper is helpful to finish the decades' philosophical exploration about the conception of information, and thereby find out our way out of Wiena's information maze.

The inevitable occurrence of information rheology stipulates that information is necessarily variable, and it certainly cannot test truth. The criterion for testing truth is the complete and close practice, and the essence of this practice is exactly to show or verify the properties of things. To study customarily-named information by bringing it to the height of ontology is not promising. It needs a difficult process to justify information.

APPENDIX

We can use the following arrays to interpret the above customarily-named information:

$$\text{info}_1 = \begin{pmatrix} P_{11} & P_{12} & \cdots & P_{1n} & P'_{11} & P'_{12} & \cdots & P'_{1n} & P'_{nlfb11} & P'_{nlfb12} & \cdots & P'_{nlfb1n} \\ C_{11} & C_{12} & \cdots & C_{1n} & C'_{11} & C'_{12} & \cdots & C'_{1n} & C'_{nlfb11} & C'_{nlfb12} & \cdots & C'_{nlfb1n} \\ B_{11} & B_{12} & \cdots & B_{1n} & B'_{11} & B'_{12} & \cdots & B'_{1n} & B'_{nlfb11} & B'_{nlfb12} & \cdots & B'_{nlfb1n} \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ S_{11} & S_{12} & \cdots & S_{1n} & S'_{11} & S'_{12} & \cdots & S'_{1n} & S'_{nlfb11} & S'_{nlfb12} & \cdots & S'_{nlfb1n} \end{pmatrix}$$

$$\text{info}_2 = \begin{pmatrix} P_{21} & P_{22} & \cdots & P_{2n} & P'_{21} & P'_{22} & \cdots & P'_{2n} & P'_{nlfb21} & P'_{nlfb22} & \cdots & P'_{nlfb2n} \\ C_{21} & C_{22} & \cdots & C_{2n} & C'_{21} & C'_{22} & \cdots & C'_{2n} & C'_{nlfb21} & C'_{nlfb22} & \cdots & C'_{nlfb2n} \\ B_{21} & B_{22} & \cdots & B_{2n} & B'_{21} & B'_{22} & \cdots & B'_{2n} & B'_{nlfb21} & B'_{nlfb22} & \cdots & B'_{nlfb2n} \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ S_{21} & S_{22} & \cdots & S_{2n} & S'_{21} & S'_{22} & \cdots & S'_{2n} & S'_{nlfb21} & S'_{nlfb22} & \cdots & S'_{nlfb2n} \end{pmatrix}$$

$$\cdots\cdots\text{info}_m = \begin{pmatrix} P_{m1} & P_{m2} & \cdots & P_{mn} & P'_{m1} & P'_{m2} & \cdots & P'_{mn} & P'_{nlfbm1} & P'_{nlfbm2} & \cdots & P'_{nlfbmn} \\ C_{m1} & C_{m2} & \cdots & C_{mn} & C'_{m1} & C'_{m2} & \cdots & C'_{mn} & C'_{nlfbm1} & C'_{nlfbm2} & \cdots & C'_{nlfbmn} \\ B_{m1} & B_{m2} & \cdots & B_{mn} & B'_{m1} & B'_{m2} & \cdots & B'_{mn} & B'_{nlfbm1} & B'_{nlfbm2} & \cdots & B'_{nlfbmn} \\ \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots & \cdots \\ S_{m1} & S_{m2} & \cdots & S_{mn} & S'_{m1} & S'_{m2} & \cdots & S'_{mn} & S'_{nlfbm1} & S'_{nlfbm2} & \cdots & S'_{nlfbmn} \end{pmatrix}$$

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[2] Shannon C. E. (1993), Collected Papers Ed. by N. J. A. Sloane & A. D. Wyner (Los Alamos, Ca: IEEE Computer Society Press), p.180.

In the formulas, *P* expresses the attribute of physics, indicates the attribute of chemistry, *B* deputies the attribute of biology … and S substitutes for the attribute of society, etc. instead of *X*, every property of information expressions in the paper; *m* is the number of categories of the sub-systematic things in some systematic thing, m=1, 2, 3…; and n is the number of the different attributes of every sub-systematic thing, n=1, 2, 3…