



*Extended Abstract*

## **How Does Communication Barrier Happen? View The “Common Meaning Space” in Terms of Information System Theory**

**Bi Lin**

Xi'an Jiao tong University; International Center of Philosophy of Information ; Xi'an 710049  
No.28, Xianning West Road, Xi'an, Shaanxi, 710049, P.R. China

E-Mails: bilin1001@qq.com; Tel.: +43-688-608-22146

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The purpose of any social discipline is to understand the society through their theoretical perspectives. Human communication as a social science is also without exception, its purpose is to explain the society by means of inspecting the social information as well as the contents and extensions during the operation of social information system. Social together with its system are complex and comprehensive by nature, which determines human communication existing itself as a comprehensive science with multiple theories, aspects and perspectives. It is reasonable to study with the help of related theories of other subjects in facing concrete research issues and when the existing theories lack enough power to give an explanation.

Interpersonal human communication is an important part in human life, the human communication study about is rather few, however. This paper is about to solve this problem, for current human communication cannot explain the barriers occurred in the interpersonal human communication. To deal with such issue that often happens in social life, the author is appeal to information system theories to explain that the trajectory of information changes in the course of human communication could cause barriers.

### **Origin of the issue: difficulty in explaining life cases**

The author has found a worthy pondering case in daily life. A friend of mine just describes the rules and her feelings after playing it when she is trying to introduce a game for me, though her description is quite vivid, I'm even no fond of it and have no desire to know it more. Then she tries again to

introduce its content, which still cannot attract me to understand its essence. Finally I even have a feeling of contradicting when she repeats it a third time.

Human communication possesses reverent explanations upon communicating issues. Human communication has a necessary premise which refers to the mutual meaning space possessed by both disseminator and recipient. Spreading and communicating is such a process that disseminator and recipient are signifying and interpreting the semantic information with symbols. In the process of symbolization, the disseminator transforms his expressions into languages, words and behaviors, etc.; and the recipient collects them into his information processing system, then interprets them with symbols by recognizing, understanding, interpreting and reflecting, etc. Signifying or interpreting these information in process of spreading with symbols must have a necessary condition that both the two sides should share a mutual meaning space, which means both of them must gain a shared understanding about senses of those symbols.

Whether the concept “common meaning space” could solve the issue referred at the beginning of the text? What can be confirmed is that the example at the beginning conforms to all hypothesis of this theory: my friend and I compose the subject and object in the process of spreading and what we are communicating with each other is the rule of the game, she transforms me her senses by means of language and body, and I indeed hear my friend’s voice and the content she tries to tell me no matter how the result is, what’s more important, my friends and I share similar surroundings and a common language system, therefore “common meaning space” does exist between us. According to the logic of this theory, I have interpreted them when receiving the symbols of my friend, so the spreading effect of understanding the game rule is achieved. However, it is strangely that even though mutual meaning space exists between my friend and I, why impassable interaction still happens?

### **Rationality of explaining human communication barriers with information system theory**

Several premises need to be confirmed before solving the above question: Firstly, it is no doubt that human communication is such an activity which relates to information transfer. Secondly, human communication is a kind of human interaction behavior on the microscopic level; and if being extended a little, it can be regarded as a process of spreading information; seen from a more macro perspective, it is considered as a system in which interaction occurs between information and many elements of the environment. human communication, as a behavior, is an activity that considers man as the main part; as a process, it is the interaction and interrelation of a series of links and elements carried by information from its source to destination; and as a system, it is a complicated “process aggregation”, which refers to the overall changes caused by interaction of various communicating processes. What can be confirmed is that the core of human communication is always the information no matter being explained from any aspects. Human communication, on a more macro level, could exist as a procedural activity as well as a systemic activity, therefore, it is an activity of both procedural and systemic by nature.

On account of the marketing tendency of media operation, main current human communication studies focus on areas of mass media and new media, but few pay their research attention to exploring its information level. These theory studies about human communication that develop roughly around the five modules of mass human communication put forward by Wilbur Schramm, that are control

study, medium study, content study, audience study and effect study. Nevertheless, human communication research, especially Chinese human communication theory, is facing the problem of scientize, hence the empirical research of audience and effect studies among the above five aspects becomes the tendency of human communication research in recent years. In addition, lots of social problems caused by emerge of various forms of medias also promote the study of media culture and issues about the ethic. However, human communication studies much more than this, throughout the history, human beings never cease to communicate with each other since their origin, all of which construct the current mankind history. View the world far away, we find that though we are living in an age of fast developing media, except for media, human communication also exists in man, between man and man, man and group, group and group as well as country and country, all of these human communication activities and phenomena which occur among time-space relationship should be included into the area of human communication study. Besides, empirical study, as a method of studying from individual case, still has inevitable abuse. Though this method could explain and resolve concrete issues, yet due to the contingency of individual case as study object, its result would lack universality. For the value of a theory lies in its explanatory power, and the way to get which is to explore the core concept whereby the discipline develops. Obviously, the core of human communication is information whose production and spreading derive from the need of human beings' material production and contact. As an information activity associated with material production, the core of human communication transformation between information, taken in this sense, human communication also exists in, except for mass media, all levels of social life such as man himself, human beings, groups and organizations, therefore it is necessary and worthy trying to discuss issues of human communication from the aspect of information.

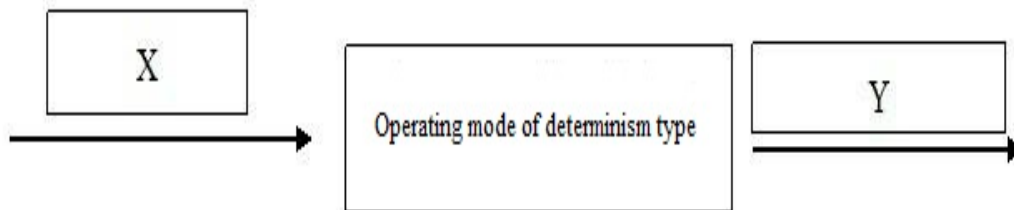
### **Evolution process of information in system**

Now that “common meaning space” cannot explain the issue raised at the beginning, we might as well return to the core of human communication, the information, from which we could explore the unfinished and endless knowledge in human communication theories. To be clear that what the disseminator and the recipient actually do in their signifying and symbolizing is to exchange the senses that attach to the symbols. Sense in human communication theory refers to men's understanding about the natural and social issues, the meaning men give to their objects is just the essence they communicate and exchange by means of symbols. In the theory of information system, exchanging of sense means creation of information, which refers to create a new information by recombining and reconstructing them, the information after recreating is the sense after exchanging. Therefore, it is absolutely possible to understand in virtue of information creation system when analyzing the individual case.

Information creation system is used to create new information by processing the existing ones. Information creation is realized through recombining and reconstructing the information, in this process, the system creatively breaks down and regroups those existing information, and then gives them new choice, matching and constructing. For it concerns graphical analysis, it is necessary to stipulate the case elements ahead: first, what is exchanged or spread in the case is the game rule, it is stipulated as existing information set X; second, signifying and interpreting with symbols are actually the process of

creating new information, it involves the information processing steps which possesses two types, that are determinism type and indeterminism type, then the below study needs to discuss the symbolic activities by regarding them as determinism type and indeterminism type respectively. Figure 1 shows the operating model of information system of determinism type:

**Figure 1.** Operating mode of determinism type.

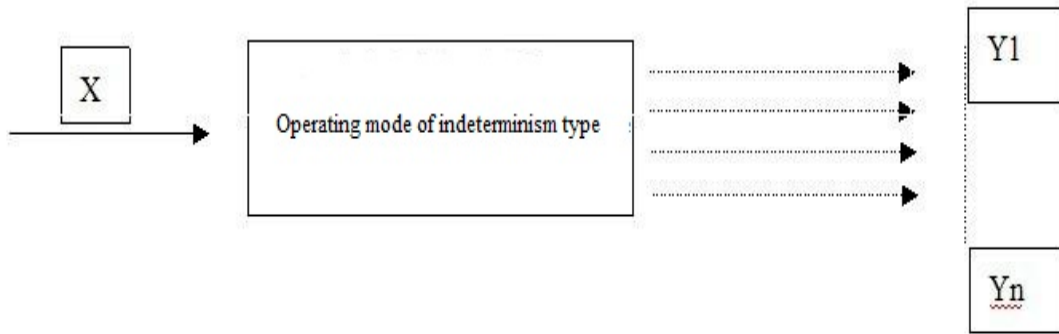


In model of determinism type, when game rule X comes into my friend's information processing system and transforms as languages, what I receive must be the information Y that exists as language information. This kind of processing model is as the saying "You reap what you sow", which means my friends says out what she wants to say, and I, however, as another information processing system, understand all what she "expresses". If man is regarded as an information processing facility that operates according to the principles of mechanical determinism type, thus as information recipient in the case, "I" should get all information she conveys as well as resonate with them instead of occurring such phenomenon as "impassable interaction" .

Obviously, it is impossible to do a reasonable explanation if man is regarded as an information processing system that operates followed by determinism type. Before exploring the reason, man's physiological structure that needed in the process of receiving information should be considered. In physical sense, men have roughly similar physiological structures, and seen from the hardware elements, each human body is composed of elements as skin, blood, muscle and bone. In addition, human body also consists of software elements, which refers to the covert differences such as individual looks and thinking modes caused by different ways of DNA information coding. Next, view from the psychological level, man as an individual with independence sense, his receiving and processing information is carrying under interaction of the existing cognitive structure that formed by removing his thinking mode, past experience and value judgment, in which all elements are operating together. Man belongs to be complicated no matter viewed from physiological or psychological level, therefore, it is far enough to fully understand the complexity of cognitive process if man is just considered as a simple information processing object.

Then, what if man as information processing system operate according to the mode of indeterminism type? As shown in figure 2.

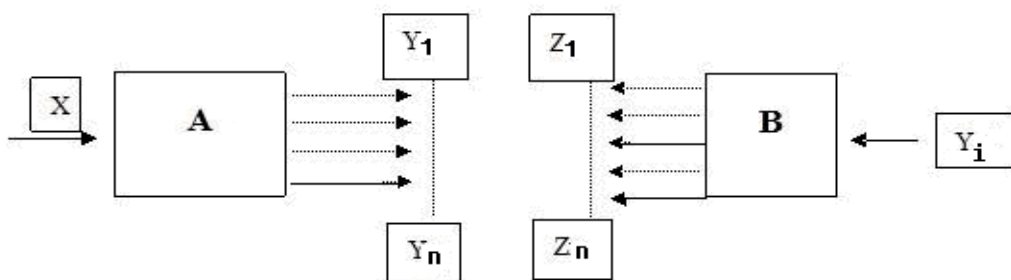
**Figure 2.** Operating mode of indeterminism type.



In this information processing system of indeterminism type, seen from the angle of my friend who spreads the game rule, when transmitting information X to “me”, she should firstly collect the game content into her information processing system, which also means filtrating, that is to say, the information she filtrates is considered to be enough to fully describe the game. After that, she should remove her thinking mode, life experience and language performance to process those that filtrated and then transform them into languages to output. All that experience such a series of processing will no more be the original information X, instead, it may be any information set in Y1----Yn. In other words, the information X in several Y1----Yn sets is resulted from the output program of various information recombination and reconstruction, it is any possible information produced inevitably during the information processing after distortion, and it is also the created information after the game decomposites, composites, chooses, matches and constructs its rule again. Seen from me as a recipient, what I receive is might any information set in Y1----Yn set, which will not coincide completely with information set X no matter which of them I receive. Likewise, I also follow the information processing system that operates according to mode of indeterminism type, and the information I receive and output will still gradually distort and change. Hence though I receive a confirmed information in Y1----Yn set, I can certainly output Z1----Zn information set.

The issue of “obstacle in interaction” just lies here. If the disseminator is considered as information processing system A, the recipient is considered as information processing system B, the result is as following in figure 3:

**Figure 3.** Diagram of information matching in human communication barriers.



It can be seen from the figure that the recipient B, as an information processing system, after receiving some information ( $Y_i$ ) in  $Y_1$ ---- $Y_n$  set, creates it and then outputs " $Z_1$ ---- $Z_n$ " possible created information, this part of information is neither equal to its original one nor equal to any information in  $Y_1$ ---- $Y_n$  set that outputted by the disseminator, here, "impassable interaction" results from the fact that the created information outputted by system of the disseminator mismatches the one that outputted by the system of the recipient.

### **Discussion about the explanation power of information creation system to human communication issues**

Let us return back to discussion about human communication, now that distortion happens inevitably in the process of information transfer, then whether signifying and interpreting with symbols can realize? Signifying and interpreting with symbols share a theory hypothesis, that is between the two human communication sides lying a mutual meaning space, otherwise the interpreting activity will be meaningless. This is equal to the information processing mode of determinism, which interprets human communication content with symbols, naturally hopes that the recipient could understand the meaning carried by the symbol after receiving it, for example, if the disseminator symbolizes the content of "human communication" as X, the effect he wants to achieve is that the recipient could associate "human communication" when he sees the symbol X. Of course this belongs to an ideal state, the fact is, however, if the recipient does not know the relation between X and "human communication", his understanding would stay just on the letter X; if the recipient knows the relation between X and "human communication" but has little knowledge about "human communication" except for its literal meaning, then he would take for granted that X equals to "human communication"; if luckily enough to meet a recipient who is familiar with the science of human communication, he would enlarge his understanding about X to every schools and areas of human communication, this is just what "common meaning space" is about to express, while this kind of profound understanding is one of those many different versions. Therefore, due to the complexity of human nature and the inner randomness of information processing system, complete signifying and interpreting with symbols belong to a probability event which occurs in an ideal state only.

In our daily life, in turn, there also exist lots of human communication barriers, among which the most typical one is misunderstanding. Just as its name implies that "understanding" refers to some errors or mistakes appear in the interaction between two sides of human communication. What should be clear firstly is that a necessary premise lies in misunderstanding, that is both the two sides sharing a subjective will of understanding each other by means of meaning interaction, which meanwhile is the starting point of human communication. But why the misunderstanding till happens though the activity sets out based on human communication will? In terms of information system, both the two sides of human communication are all systems that process the information according to the mode of indeterminism type, the one who outputs information should transform his viewpoints and attitudes that being expressed into language information and then organize them as language symbols within his expressing ability range, the expression of these languages may vary its senses accompanied the voice, intonation, expression and bodies of the exporter, for instance, stressing any letter in "I love you" would cause different emphasis of its senses; and if it is respectively expressed with mood of

declarative, question or exclamatory, the result is also entirely different; when saying out the sentence, man's corresponding facial expression still produces different understandings about it to the other side; likewise, body changes accompanied also affect understanding of this sentence. What's more complicated is that the output of a language information set includes elements such as sense, voice, intonation, mood and bodies, as the results of total information transfer, they are formed after a complex permutation and combination which is determined by the usage of various elements in the exporter's system, the randomness of such information processing determines that the outputted information no longer has its original full meaning it wants to express before, added that the recipient would dislocate the information when he receives it, thus it is natural and inevitable to produce some misunderstandings.

### **Conclusion: analysis and definition about “common meaning space” in human communication**

Having viewed real case of human communication barriers in daily life, the author found the defect and inability of “common meaning space” in explaining human communication issues. After resorting to information system theory, the author then observes human communication activity by regarding it as an information processing system, thus discovers that from its origin to destination, information gradually experiences steps like filtration, matching, recombination, reconstruction and output, during which original information varies inevitably and information that has arrived at destination is no longer the one as its original. Information after varying will experience a new round varying as a new origin, and this new varying would be aggravated by any chance element in information processing system. Thus, as the disseminator and recipient of information processing system, their exporting information sets do not match under the action of contingency and randomness, which causes the human communication barrier that one only hears the voice, but get little meaning.

The mismatching of information sets can also be used to interpret barriers within human communication area. And in human communication, the exchange of meaning is realized through signifying interpreting with symbols. However, due to the structural complexity of man both physically and mentally and the randomness of information system of indeterminism type, information distortion cannot be avoided no matter in the process of signifying the content or interpreting it with symbols, the same symbol would result different understandings on account of different cognitive backgrounds of the readers. Therefore, it is impossible to realize a complete interaction which is just an ideal state.

In man's daily interpersonal activities, embarrassing human communication like misunderstanding happens often even if the disseminator and recipient are on very intimate terms with each other. If explaining this phenomenon with “common meaning space”, such result would occur that though the two sides share same language systems and similar life experiences which can meet the hypothetical condition of “common meaning space”, it is still impossible to realize an effective human communication. What causes this is not because the two sides have no subjective will to communicate successfully, it is because they all have different viewpoints and attitudes upon things, objects and people due to their distinctive physical and mental structures, life experiences and value judgments that caused by the complexity of their own information system, which results in their viewpoints and attitudes producing no resonance.

In a word, the failure of “common meaning space” results from its regarding the disseminator and recipient as a kind of mechanical and isolated device that outputs and receives information, it neglects the randomness of information processing caused by the individual’s inner mental-physical structure, life experience and thinking mode, and also neglects the fact that the information delivered in interpersonal interaction and human communication is not its original form, but the created one after processing instead. It is just this randomness and complexity determines that man, as an information processing system, follows the operation principles of indeterminism. Therefore, the “common meaning space” in human communication is worthy analyzing and defining. Objectively speaking, what can be confirmed is “common meaning space” does exist, otherwise we are unable to attend normal interpersonal human communication and social life. Nevertheless, man’s inner complexity and randomness of information processing confine that true “meaning space” is impossible to have complete “mutual commonness” of meaning, in general, “meaning space” only appoints within “roughly similar” scope, some are rather different or even run in the opposite directions. In this sense, man’s human communication is quite a rough activity.

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