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INTERPRETATION OF CONVERSATION FROM THE PERSPECTIVE OF DISSIPATIVE STRUCTURE

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ABSTRACT: *Conversation is considered as a dissipative structure, on the basis of the input of information, conversation becomes structured. Conversation is also an open system; conversation will affect the outside if there is negentropy input from the outside environment. In conversation, information is the negentropy. The interpretation of conversation development makes us have a better understanding of conversation theoretically and practically. In the paper, the author describes and interprets the conversation from the perspective of dissipative structure, with the expectation to supply a new perspective for the study of conversational structure.*

KEYWORDS: Conversation Development, Dissipative Structure Theory, Features, Interpretative of Conversation

INTRODUCTION

Dissipative structure was first proposed by Belgian physical chemist Ilya Prigogine in an international conference named “Theoretical Physics and Biology” in the year of 1969. And this theory was raised firstly for the development of the unbalanced statistics physics (Yan, 1987:60). Although the theory was first applied in physics, later because of the extensive adaptation of the theory, it has had a huge influence in the world.

Freeman(1996:141-165) in her paper Chaos/Complexity Science and Second Language Acquisition (SLA) raised a new idea of the perspective to study language and second language acquisition. She argues language is a complex and dynamic system and the second language acquisition is also a complex dynamic system. Language is an open system, there is always an interaction of the language with the other elements and, language is also dynamic, which means language is changing all the time. As long as language is used, it changes. They are isomorphic process. In recent years, more scholars show a growing interest in research on the conversation development from the perspective of Dissipative Structure. The practice and the process of verbal conversation can be affected and shaped by the Dissipative Structure, which shares the features as follows: Dissipative Structure is an Open System with nonlinear Features, which is far from equilibrium state; Entropy is a development marker of the system; Fluctuation and Positive Feedback are the intra-factors for the development of Dissipative Structure.

In this paper, the author examines and interprets the conversation development from the perspective of Dissipative Structure, with the expectation to explore the scope of understanding the development of human conversation theoretically and practically.

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LITERATURE REVIEW

Description of Conversation as A Dissipative Structure

Conversation has a great relationship with the society and culture which can be seen as the outside environment. And also, through so many years' study of conversational analysis, although the hypothesis that conversation is structured doesn't prove. From this point of view, the conversation has many coincidences with the dissipative structure. Therefore, we try to discuss this question from angle of dissipative structure. Therefore, it can form such high orderliness and so that conversation can reflects the social orderliness.

Conversation as an Open System

We have introduced in the previous chapter, an open system means the exchange of energy and materials with the outside environment. So, if a conversation is an open system, there are exchanges between conversation and outside environment. We should figure out what does the environments give to the conversation and what does the conversation return to the environment.

Compared with what environment giving to the conversation, what conversation giving to the environment is easier for us to understand, because in history, this question has already been discussed a lot.

In 1952, J. L. Austin distinguished three kinds of speech act simultaneously. They are locutinonary act, illocutionary act and perlocutionary act. Locutionary act is the act of producing a meaningful linguistic expression; Illocutionary act is the act of communication intention through the utterance; Perlocutionary act is the act of bringing about an effect by the utterance. Conversation is taken place in a specific context, there is only one illocutionary act of the utterance in conversation. For example: in the American sitcom the Big Bang Theory, there is such a conversation among the characters.

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Example 1:

Lenard: Oh, hey, Penny, do you want to go to the airport with me later to pick my mother?

Penny: Sure.

Lenard: thanks

Penny: No problem

Lenard: Hey Penny, um, since you're already gonna be at the airport, do I need to go?

Sheldon: Why don't you get your mother from the airport?

Lenard: Well, I can do without the 40-minutes car ride where she criticizes every aspects of my life.

Sheldon: She can cover it in a car ride? I could do 40 minutes on your posture alone.

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Penny: You really want me to pick your mother all by myself?

Lenard: humm, I just feel like it would be a good chance for you to bond.

Penny: Or way for you to avoid her?

Lenard: I don't know what he's putting on those cards, but you are smarter than over.

Penny: Fine, if you really want me to, I will pick your mom up.

Lenard: Seriously?

Penny: Yeah, you know what, she is my mother-in-law, and I'd like for us to have a good relationship.

Lenard: That's very mature of you.

(The Big Bang Theory Season 9 Episode 23)

In this example, they only talked about one thing that is who should pick up Lenard's mother. Lenard doesn't want to pick up his mother. So, he wants his wife Penny to pick up his mother, because he can't stand up his mother's criticism. And Penny wants to have a good relationship with her mother-in-law, so she agrees with Lenard's proposal. In this conversation, from the perspective of speech act theory, locutionary act is the utterances these speakers spoken. And for the illocutionary act, which is the real thought of the speakers, for Lenard, he requires Penny to pick up his mother, and Penny is trying to bind with her mother-in-law. And finally the perlocutionary act of the conversation is that Penny goes to the airport to pick her mother-in-law and Lenard avoids the criticism of his mother.

This example shows the conversation does have an effect on the environment. And the effect is the so called perlocutionary act of the conversation.

After the discussion of how the conversation affect the environment, we should move to the next question , how does the environment affect the conversation.

In order to answer this question, we should think about another question, why do we have a conversation? Or what is the process when we speak about these utterances?

Example 2:

Two people are walking in the street, they have met before. And it is their first time meet today. Here is their greeting conversation.

A: Good morning Jacie.

B: Good morning

A: How you been these days?

B: Just so so.

A: Oh, what happened?

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Specifically, here is the question, why do they have such a conversation? And this concerns the function of language. Hu zhuanglin (2011:10) summarized other scholars' options and gave seven functions of language. Informative function, interpersonal function, performative function, emotive function, phatic function, recreational function and metalingual function.

We all use such small seemingly meaningless expressions to maintain a comfortable relationship between people without involving any factual content.(Hu, 2011:13)

Language serves to establish and maintain social rules ...through this[interpersonal] function,....(Halliday, qtd in Hu:11)

And in this example, the functions of the greeting conversation are phatic function and interpersonal function. In order to maintain their relationship or be an open of a topic, they made such greeting conversation. And if they do not make any greetings, it will be a single of rude or other implications. Therefore, it is social customs that make them have a greeting with each other. And from the dissipative system perspective, the outside environment which is social customs in this example makes conversation.

And for the example of The Big Bang, what makes the conversation? And how dose the conversation happened?

From the content of the conversation, because Lenard can't suffer his mother's critics, he doesn't want to pick his mother, so there is the conversation. And it is also very clear, Lenard knows his mother's limitation very well, so he knows extremely clearly his mother will critic him. He had such experience. Therefore, according to his experience, there is such conversation. And if we understand this from the dissipative system perspective, Lenard's experience makes this conversation.

Until now, we can have a conclusion, conversation is an open system. There are always some motivations that drive the conversation. And also, the conversation will always have some perlocutionary acts to the outside environment. So, there is the exchange of information between conversation and the outside environment.

Conversation as a System Far Away From Equilibrium State

For equilibrium state, it means the ultimate state of an isolated system, there is no difference among the system and everywhere and everything is the same in the system in the macro perspective. For conversation we have just proved it is an open system. There is always an exchange of information with the environment. So, conversation is definitely not in equilibrium state. In conversation, there are many regulations and many differences. And the author also has introduced many basic knowledge about the conversation.

In conversation, there is a basic module of speaking. It is called the turn and turn taking mechanism. For any conversation, it should obey the mechanism. And also there are many other rules such as preference organization and adjacency pairs and conversation repair and so on. All of these rules mean there is organization in the conversation.

The consensus is that conversation is not in the state of equilibrium state, and then the question is how is the conversation in the state of far away from equilibrium?

In the experiment of Bernard·Henri's Cell, when the input heat which is the negentropy reached into a threshold, there will be pattern spontaneously. It has been clearly stated that conversation

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is an open system, there is also the input from the environment. So, whether these input is negentropy or not?

For the examples given in the paper, it is the social customs and the experiences that arouse the conversation. And they are the inputs from the outside environment.

James Gleick, in his book The Information: A History, A Theory, A Flood, he wrote that in the year of 1871, English physicist Maxwell created a thought experience. He imagined an isolated container divided into two parts, A and B. The container is full of the same gas with the same temperature and same density. And in the middle of the container, there is a trapdoor with a demon controlling it. The demon is very smart and has a very advanced magic, it can detect the speed and moving direction of every molecule. When a faster-than-average molecule is moving from B into A through the trapdoor, he will open the door, and let the molecule pass the door and enters into part B. While for the other molecules, he won't let them pass through the door. Finally, during a long time, the faster-than-average molecules will be in part B and other molecules will be in part A. It means the entropy of the system is reduced,which is opposite to the second thermodynamics laws.

While in the year of 1914, Marian Smoluchoski pointed out the mistake of Maxwell's experience.(Feng,Feng,2005:239) The demon should be part of the system. And if the demon wants to detect the speed and moving direction of the molecules, he can only find a way to see these molecules. It means the demon must have a way to find the information he needed. Regardless any of the technology, he has to know these information. Therefore, during the process of knowing these information, there is exchange between the system and the environment. And, the reason why the entropy of the system reduced is the input of the information. That's why one can have the conclusion, information actually is negentropy.

For a system, if one could get enough information from the outside, we can reduce the uncertainly of the system. In Maxwell's experience, the information about the molecules reduced the chaos of the speed and moving direction. And the reducing of chaos means the reducing of entropy. And it proves again that information is negentropy.

Information usually refers to what has been learned and observed from news, message, knowledge and data and so on. While coming back to conversation, one can easily find that the input of conversation is also information actually.

Example 3:

Yang Lan: When you became the youngest queen of international chess, media are interest in you, what has changed in your life?

Hou Yifan: I think life is almost the same, actually "queen" is only a title, or it is just a luck and also there are other reasons, including the fully preparation of the coaches. I can give my best preparation in this game and finally get the champion. Actually, the competitors' ability are the almost the same, it is normal that there are some wins and losses among us.

Yang Lan: it was said that your gandpa fired firecracker when you won the game Can you tell me the reflection of the family? What are the different reactions of them?

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Hou Yifan: My family definitely are very happy, my grandpa is very happy with my great grade, actually, previously, when I won the champion of the female-ten-year old group in World Youth Games, my grandpa had fired a firecracker.

..... (Yang Lan Interview, 2013:23)

Yang Lan interviewed Hou Yifan the youngest queen of International Chess at that time. The first question Yang asked was that what did the life change, when she became the youngest queen of international chess. And Hou answered that it was almost the same, queen was only a title, and for the winning, it was only a luck, and because everyone included the couch had a fully preparation, so that she could win the competition. Yang said that she heard from others that Hou's grandpa fired a firecracker for the celebration and wanted to know the reflection of Hou's family. Hou said that her family was very happy especially her grandpa and also, when she won the champion of 10-year group, her grandpa also fired a firecracker.

This conversation is the adjacent pair of question and answer. Yang asked two questions and Hou answered them particularly. So, how did Yang ask these questions? Or where did she get these questions? These questions must come from the outside environment. For the interview, Yang Lan had to do a lot of prior work. Yang admitted in the questions that she had checked the news before that Hou had won the tile of the Youngest Queen of International Chess. And also, she heard from others that Hou's grandpa fired firecracker at hometown. Both what Yang checked and heard are from the outside environment, and in this example, they are from news and others. And these are information in nature actually. So, in this example, what Yang heard and checked were the negentropy of the conversation and drove the conversation developing from one question to another question.Here is another example:

Example 4:

Lenard: It's from Game of Thrones, what do you think?

Sheldon: I don't know. If we're going to start a fantasy sword collection-and I've long thought we should--is this really the sword to start with?

Lenard: What did you have in mind?

Sheldon: Well, off the top of my head, I'd have to go with Excalibur. It gives you the right to rule England.

Lenard: It would be a replica of a movie prop.

Sheldon: air enough. It'd give you the right to rule a replica of England.

Lenard: Well, they don't have an Excalibur here, so what do you want to do?

Sheldon: Mm. Tough decision.

(The Big Bang Theory, Season 5 Episode 5)

In this example, Lenard and Sheldon were in the comic book store, they were standing in front of a toy of a sword. They liked this sword very much and wanted to buy it, so they were staring at it all the time and had such a conversation.

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This conversation was started from a sward, which was totally outside of the environment. And when Lenard and Sheldon saw this sward, they were both attracted by this sward. The signal of the sword was in their brains. The sward aroused their knowledge. So, Lenard said the sword was coming from Game of Throne. He must have watched Game of Throne before, so he could take the knowledge of the Game of Throne into the conversation. And then the conversation was continuous, Sheldon, according to his previous experience, raised the question whether they should start collecting sword from this one. Then, Sheldon again "top of his head" he thought the sword would give you the right to rule England. And Lenard adjusted his statement. No matter what did Lenard and Sheldon said, it was their knowledge and experience that drove the continuing of the conversation. If they hadn't had all the knowledge of the conversation, they had no conversation.

So, in the example, conversation is developing with the continuous input of the knowledge and experience which is information actually. And therefore, it is the negentropy. And because of the continuous input of negentropy, the conversation is continuous developing, and in the state of far away from the equilibrium state. It is just like the Cell, the continuous input of heat causes the maintain of the structure. So, conversation is in the state of far away from equilibrium state.

Nonlinear Features of Conversation

Nonlinear features means that the speakers cannot depict the development of the conversation. This feature is rooted in the conversation itself. In a conversation, what a speaker said is not only dependent on himself but also what the other speakers said. And sometimes, their content is more dependent on what the other said. And in the development of the conversational analysis, the starter already sensed such feature.

Sacks, Schegloff, and Jefferson (1974:669) found that conversation was not totally free from the context, they called it context-sensitivity. They thought that when a speaker made some utterances, these utterances had already become a part of the context, and what the other said was influenced by their previous utterances. Conversation could be developed which would have the important twin features of being context-free and capable of extraordinary context-sensitivity.(Sacks, Schegloff & Jefferson,1974:669)

The context-free is easy to understand. It is what the speakers unusually refer to the time, the location, the participants and their genders, social status and so on. These features are independent from the conversation, which means, these features won't influence the mechanism of turn-taking. For context-sensitivity, it refers that the turn is sensitive to the prior turn. The content and expression of the current turn are restricted to the prior turn and in turn, the current turn will restrict the under turn.

Every construction of the turn is based on the understanding of the previous turns, and because different participants have different knowledge and different backgrounds and so on. Or we can speak, every participant is unique, everyone is different from others, so they will have different understanding of the same utterance. And because of the differences in understanding, they will make different responses to the utterances. And in turn, when the utterances are spoken out, they will influence the next turn again. So, there is the sensitivity of the previous turn, and it is the reason why conversation is nonlinear.

Yet, someone may argue that there is some counter examples like the adjacency pair. For the adjacency pair, the first pair part will influence the second the second pair part, one can easily

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predict the content of the second pair part. Like the greeting-greeting adjacency pair. The second pair part must be greeting utterance. While, actually although the participants of the conversation can predict the second pair part of the utterance, one cannot predict exactly what the speaker will say. And also, adjacency pair can not guarantee that the second pair part will come out. For conversational analysis, only when the conversation occurs, can the conversation be studied. They are studying the product actually. That's why the conversation still cannot be predicted.

Grice (1975 qtd.Yang, 2012:116) raised the cooperative principle, which is one of the accepted principles in conversation. Yang Zhong(2012) introduced cooperative principle in his book. Cooperative principle is summarized that make your conversational contribution such as required, at the stage at which it occurs, by the accepted purpose or direction of the talk exchange in which you are engaged.

And the four maxims are: the maxim of quantity, the maxim of quality, the maxim of relevance and the maxim of manner. It is assumed that the participants adhere to the cooperative principle and the maxims. Just like doing anything together with the other. We agree in conversation, people follow the cooperative principle and people must cooperate with each other. But it be still cannot sure what the participant will say exactly. And as what has been discussed, conversation is sensitive to the previous turns.

Example 5:

Sheldon: Leonard, where are the Skee-Ball tickets?

Penny: Skee-Ball tickets?

Sheldon: Yeah, from when we went to the arcade three years ago I finally decided what prize I want. Hurry up.

Lenard: Uh, if I still have them, they're probably in the junk box.

Penny: Ooh, what are you gonna get?

Sheldon: None of your business. But when you see me wearing a flower in my lapel later, you are most welcome to sniff it.

Lenard: Yup, oh... here you go.

Sheldon: Oh, thank you.

(The Big Bang Theory, Season 7 Episode 8)

Penny, Lenard and Sheldon are at home, Sheldon wants the skee-ball tickets, so he asks Lenard where they are. Please pay attention to what Penny asks "what are you gonna get?" this utterance is speaking out because of the previous conversation. It is because Sheldon mentioned the skee-ball tickets so Penny asks him the reason for skee-ball tickets. As the spectators before Penny said this utterance, one cannot know she will ask Sheldon. So, the development is developed on itself. And from the beginning of the conversation, one would usually fail to know the process or the end of the conversation.

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In conclusion, for conversation, the development is independent and nonlinear. The beginning of the conversation cannot illustrate any development or end of the conversation. So, conversation is not a simple linear system, but a complex nonlinear system, it has the features of a dissipative structure system.

RESEARCH FINDINGS

In the first part, it has been discussed that a conversation has the features of the dissipative structural system and the conversation can be analyzed by the dissipative structural system. And in this chapter, we will have an explanation of the conversation from the perspective of dissipative structure in detail. Normally, conversation consists three parts, the beginning of conversation, the development of conversation and the ending of conversation. So, next, the author will analyze the conversation from three parts.

The Beginning of Conversation

For a dissipative structure system, there must be some conditions for the beginning of the dissipative structure system, one is that the system must be an open system and the second is that there must be the input of negentropy. These two conditions are essential for the beginning of the dissipative structure system. Like the experience of Bernard·Henri's Cell, the input of heat offers the negentropy for the beginning of the pattern.

As for conversation, in the last chapter, the author has discussed and reached the conclusion that conversation is an open system, on the one hand, the outside environment has a great influence on conversation not only in the field of content but also styles and so on. On the other hand, conversation has an effect on the outside environment by the perlocutionary force of the utterances.

And also there is negentropy imported into the conversation. In the last chapter, the concept that information is negentropy is clearly stated in the paper through Maxwell's experience. And in conversation, there is the input of information, it can be any form, no matter social customs or experiences or others. Everything that can cause the conversation can be regarded as the negentropy of conversation.

Example 6:

A: Can I help you?

B:yeah, I'd like the yellow one.

A: OK, wait a minute.

.....

This conversation happened in a store, a customer entered the store and wanted to buy the yellow T-shirt, the sailor told him to wait for a minute. In this conversation, the sailor said "Can I help you?" for two reasons. The first reason is that he saw the customer coming into the store and he as a sailor had to welcome him. The second reason is that the sailors have the formalized words for a customer. So, the sailor said these words. Therefore the conversation is beginning. These two reasons are the negentropy of the conversation, because these two reasons give the

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conversation information from the outside environment and it drives the conversation happened. If the sailor didn't know the social customs or he didn't see the customer, he definitely wouldn't say "Can I help you?" or something like that.Another example:

Example7:

A: Mom, I wanna ice cream.

B: You have eaten it an hour ago.

A: but, I wanna ice cream now.

.....

This conversation happened between a mother and baby. The baby wants to have an ice cream but the mother tells him that he just ate an ice cream and couldn't have an ice cream. While for the baby, he doesn't understand the imply meaning of his mother and emphasizes that he wants to have the ice cream now.

In this conversation, the beginning of the conversation is because the baby wants to have an ice cream which he had already eat before. From the dissipative structure view, the former experience of eating ice cream is the negentropy in this conversation and also because he is a baby, he doesn't know so many social rules he just expresses his idea directly, therefore, here is the conversation.

So, in conclusion, the beginning of the conversation is because there is negentropy input from the outside environment, these kinds of negentropy works as the power to start the conversation.

The Development of Conversation

The input of negentropy makes the conversation beginning. The next question one need to solve is how the conversation develops from the perspective of dissipative structure system?

For the development of conversation, some conversations can develop a very long time, while for some conversations; they only exist very little time. The development of conversation seems unpredictable because of the nonlinear feature of the conversation. One cannot make any prediction of the exact words of the conversation but it does not mean conversation is totally unpredictable. The development of conversation also has its own features. More examples will be employed to explain the development.

Negentropy in the Development of Conversation

Example 8:

Lenard: Hi, look, nice?(1)(input of negentropy)

Penny: Give it (table)a chance, Sheldon; you might actually like it.(2) (positive feedback, fluctuation)

Sheldon: You're absolutely right. Nope.(3)

Penny: Well, you can't say he didn't give it a fair shot.(4)

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Sheldon: So, when can we get rid of it?(5)

Lenard : We're not.(6)

Sheldon: What about the roommate agreement? It specifically states that any changes in furnishing have to be approved by the Furnishing Committee. Which only sits on alternate years. Yeah, and by the way, it sits over there.(7) (input of negentropy)

Penny: Come on, that is ridiculous.(8) (positive feedback, fluctuation)

Lenard: She's right--a committee that important should meet more often.(9) (positive feedback)

Penny: That's not what I'm saying.(10) (positive feedback, fluctuation)

Lenard: Oh. This is the thing about me standing up to him and not letting him run my life?(11) (positive feedback, fluctuation)

Penny: Yes.(12)

Lenard: That.(13)

Sheldon: Okay. I think we've found the problem here. It's not the table at all. It's you.(14) (input of negentropy, competition)

Penny: Me?(15) (positive feedback, fluctuation)

Lenard: Well, it's always me--take one for the team.(16)

Sheldon: I have spent years turning this lump of clay into an acceptable conduit for my will, and then you came along and reshaped him, with your newfangled ideas and your fancy genitals.(17)

Penny: Are you gonna let him talk to me like this?(18)

Lenard:"Fancy" sounds like a compliment.(19)

Penny: Okay, I have not tried to change Leonard. That's just what happens in relationships. Look how much Amy's changed you.(20)(input of negentropy)

Sheldon: That's not true.(21)(positive feedback, fluctuation)

Penny: Oh, please. When I first met you, you were incapable of touching another human being. Now you're holding hands, you're going on dates, you even made out with her on a train.(22)

Sheldon: She told you?!(23)

Penny: Of course she told me-- it's the most interesting thing that's ever happened to her in her entire life!(24)

Sheldon: You're too close to it, but Amy has had a huge impact on you.(25)

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Sheldon: You're right. Without realizing it, I've allowed that woman to alter my personality.(26)

Lenard: Mm, Sheldon, you didn't have a personality; you just had some shows you liked.(27)

Sheldon: No. No, I've changed. Like the frog who's put in a pot of water that's heated so gradually he doesn't realize he's boiling to death.(28)

Penny: Or you're the frog who's been kissed by a princess and turned into a prince.(29)

Lenard: Or you're just a tall, annoying frog.(30)

Sheldon : Excuse me. I have to break up with my girlfriend.(31)

Penny: Oh, Sheldon, wait. No.(32)

Sheldon: You've opened my eyes to the truth. Amy has made me a more affectionate, open-minded person. And that stops now.(33) (no input of negentropy, end of conversation)

(The Big Bang Theory, Season 7, Episode 16)

In this example, it is a long conversation. In the conversation, the content and topic of the conversation change several times. First, they talk about the new table they brought which Sheldon doesn't like it. Then they change their topic to the roommate and whether Sheldon run Lenard's life or not. This topic develops not very long then Sheldon changes the conversation to the topic that he thinks it is Penny's wrong, so that Lenard does not listen to his words, and then, Penny again changes the topic to how Amy who is Sheldon's girlfriend changes Sheldon. Finally, Sheldon realizes that Penny was right, so he decides the break up with Amy.

So, the conversation is developed because the content and topic of the conversation are always changed. And if we discuss it from the option of dissipative structure system, the new topic and content can be seen as the new negentropy form the outside environment. The conversation is started by the input negentropy that Lenard saw Sheldon and he and Penny just brought a new table, so the conversation starts. And then, according to the cooperation principle, Sheldon talked with them. And then, Sheldon didn't like the table so, according to his taste he brought new negentropy to the conversation, their topic is changed to the discussion of the roommate agreement and the reason why Lenard was not listen to his words. Every time, they change the topic and content, they will bring the new negentropy to the conversation, and in the latter changes, Penny according to her experience and understanding of Sheldon and Amy, she brought the new negentropy that Amy changed Sheldon a lot. The whole conversation is developed through one negentropy to another negentropy.

While sometimes, the topic and content of the conversation may not change or there are no less than two topics to choose from. In the examples given above, one should pay attention to the turn of (8)(9)(10)(11)(12)(13)(14), when Sheldon mentioned the roommate and the Furnishing Committee. Penny said that was ridiculous. These two turns actually brought in two kinds of negentropy. One was Sheldon's Furnishing Committee and another was how Sheldon control Lenard's life. And in the later development of the conversation, the conversation mainly concerned how Sheldon run Lenard's life. Therefore, in the conversation, when there is more than one negentropy, there will be a competition. And only one topic can be developed.

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Fluctuation and Feedback in the Development of Conversation

Then next, what should be considered is how the conversation selects Penny's topic but not Sheldon's topic. When these topics both enter into the conversation, there is a competition between them. For the conversation, the new topic can be regarded as a fluctuation of the dissipative structure system. Firstly, both of the new topics are the micro fluctuations, whether the micro fluctuation can be developed into a macro fluctuation and finally becomes the content of the conversation depends on many outside factors. Such as, the interest of the speakers, the context of the conversation, the knowledge of the speakers and so on. In the given example, Lenard was interested in Penny's topic, so there were more utterances on Penny's topic and then Lenard made more utterances on Penny's topic. Finally, Penny's topic became the content of the conversation. Related with the former introduction of the dissipative structure system, it is typical positive feedback of the fluctuation.

Example 9:

Raj's parents: Lalita's parents approved the match. If you decide on a spring wedding, we can avoid monsoon season.(1) (input of negentropy)

Raj: A spring wedding?!(2)

Raj's Parents: It's up to you, dear. We don't want to meddle.(3)

Raj: If you don't want to meddle, then why are you? Sorry, ...(4)

Raj's parents: I'm sorry, darling. We have to go. Doogie Hower is on. Grandma! It's Doogie Time! Bye-bye!(5)(input of negentropy, competition)

Raj: I don't believe it.(6)(positive feedback, fluctuation)

Harward: Neither do I. Doogie Howser's been off the air for like 20 years.(7)(positive feedback, fluctuation)

Lenard : Actually, I read somewhere that it's one of the most popular programs in India.(8)

Sheldon: It might speak to a cultural aspiration to have one's children enter the medical profession.(9)

Lenard: I bet you're right.(10)

Harward :- I bet they love Scrubs.(11)

Sheldon:- What's not to love?(12)

Raj: Excuse me! Hello? My parents are trying to marry me to a total stranger. What am I going to do?(13)(input of negentropy)

Sheldon: I suggest you go through with it.(14)

(*The Big Bang Theory, Season 1 Episode 8*)

In this example, they were talking about Raj's (arranged (marriage from his family firstly, and then, their topic changed to *Doogie Hower* an American TV series. And ignored Raj's question of how did he do. In this example, Raj's question is a kind of fluctuation, and *Doogie Hower*

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is another fluctuation, these two kinds of fluctuation cause different results, the *Doogie Hower* arouses others' interests and so the positive feedback causes *Doogie Hower* soon becoming the content of the conversation and ignoring Raj's question. And only when Raj asked them again, they turned into his question and gave the positive feedback.

So, in the conversation, when a new topic enters into the conversation, whether it can be the content of the conversation depends on the positive feedback of the topic which is the fluctuation. If the new topic can trigger the positive feedback of the system , then, the new topic will develop very soon and become the conversation.

The Ending of Conversation

In the experience of Bernard·Henri's Cell, the input of heat causes the occur cell occurring and the change of the heat causes the change of the pattern and also the withdrawing of the heat causes the end of the pattern. So, it is similar to the conversation. When there is no negentropy putted into the conversation the conversation will soon end.

For some conversations they last only a very short time , it is because there is no new negentropy enters into the conversation so the conversation complete very quickly. For example:

Example 11:

A: Excuse me, do you know where is the registration office?

B: Oh, it is in the International School of Education located in the east gate of the university.

B: How can I go there?

A: go straight and cross the lake , and then go straight about 300 miles and then, you will see the gate and then, turn left, the International School of Education is on you left.

A: OK, Thank you.

B: You are welcome, my pleasure.

This conversation is took place when a new international student first came to the university and asked another Chinese student the location of the registration office. So, in this conversation, the negentropy is the requirement of the information of the location of the registration office. The Chinese student told her the information. After that, there was no more new negentropy in the conversation, so the conversation ended.

And it is the same with the long conversation, when there is no new negentropy, the conversation will end. Like the given example, when Sheldon decided to break up with his girlfriend, he went out. And it didn't have to talk about the topic so, the conversation just end.

CONCLUSION

In this paper, the author describes and interprets the conversation development from the perspective of dissipative structure theory. It is clearly illustrated in the paper that the

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development of the conversation is in compliance with the features of the dissipative structure. From the research, the author finds that conversation is developed by the input of different kinds of negentropy, and then the conversation starts, and with the continuous input of negentropy, the conversation is developed further. If there is no more negentropy in the conversation, the conversation will soon disappear. And in the conversation, there may be more than one topic at the same time in the conversation, and only the winner has the chance to be developed from the micro fluctuation to the giant fluctuation and finally become the content of the conversation. So, although one cannot predict the explicit utterances of the conversation, according to the dissipative structure theory, the whole development of the conversation can be clearly understood.

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