Study of Verbal Humor in The Big Bang Theory from the Perspective of Violating the Cooperative Principle

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Abstract

Humor is an expression of wisdom, a precious trait of humankind and a positive attitude of life. Humor is everywhere, bringing us much laughter and joy. It can be divided into situational humor and verbal humor. Verbal humor is delivered through language, either spoken or written. The studies of humor have fruitful achievements in the linguistic field. The most classic two theories are the Semantic Script Theory of Humor and the General Theory of Verbal Humor. The Cooperative Principle raised by the famous American linguist Grice is one of the most important theories. There are four maxims included: quantity, quality, relation and manner. The Big Bang Theory is a famous American sitcom. Its humorous language makes people laugh their head off, attracting a huge amount of fans. In this paper, conversations in season 12 are used as corpus. Qualitative research focuses on analyzing the production mechanism of verbal humor from the perspective of violating the Cooperative Principle. While statistic tools are mainly used to calculate the frequency and percentage of each maxim. This research would allow readers to have a better understanding of humor created by verbal languages in sitcoms and also improve their communication ability in daily life by identifying and using strategies to reach the communication goal and even produce humor.

Keywords

The Big Bang Theory; Verbal Humor; The Cooperative Principle; Conversational Implicature.

1. Introduction

1.1. Study Background

Humor has always been considered one of the most important traits since ancient Greek. The Latin word "humere" is believed to be the origin of the English word "humor" with the meaning of "one of the four fluids in the body whose balance was believed to determine your emotional and physical state" (Attardo, 1994). As time goes by, many scholars from different field come up with various explanations and give their own definitions like "a message whose ingenuity or verbal skill or incongruity has the power to evoke laughter" (Palmer, 1994).

Speaking of humor, its impact is imperceptible that may be ignored but it is also strong and powerful that cannot be neglected. It is the icebreaker when dead silence lasts. It is the buffer to ease the tension and weaken the contradiction. It is the fig leaf to cover one's awkward or embarrassment. It is the magic potion that can turn tears into smiles. It is also the social catalyst in maintaining a good relationship.

In the meantime, how to classify humor has also been a controversial topic. Among various kinds of classifications, the famous dichotomy put forward by Bergson (1999) is most frequently used and quoted. He divided humor into two categories: situational humor and verbal humor (also known as language humor or linguistic humor). The former one depends

much more on situation or context, while the latter one relays much more on language itself. In this paper, only verbal humor would be picked out and discussed.

Situation comedy first appeared in American radio in 1920s. Since it is a television series that a continuing cast of characters in a succession of comedic circumstances, it is a perfect corpus for verbal humor study. *The Big Bang Theory* is one of the most popular American television sitcoms. First debuted on September 24th, 2007 and concluded on May 16th, 2019, during the past 12 years, it broadcasted 12 seasons with a total of 279 episodes. The show turns out to be a great success and gets nominated for the Emmy Award for Outstanding Comedy Series from 2011 to 2014. In total, it incredibly wins seven Emmy Awards from 46 nominations. As all the leading characters, except Penny, are scientists in different fields including applied physicist Leonard Hofstadter, theoretical physicist Sheldon Cooper, aerospace engineer Howard Wolowitz, astrophysicist Raj Koothrappali, neuroscientist Amy Farrah Fowler and microbiologist Bernadette Rostenkowski. They are all smart and successful in their certain scientific research, but kind of nerdy and quirky in daily life. Those characteristics make them distinct and unique comparing with normal people. Therefore, conversations in this sitcom contain huge numbers of verbal humor that are suitable for linguistic study.

1.2. Study Significance

Many scholars have used different linguistic theories to study language humor in sitcoms. While they seldom apply statistic meanings into their research. Also there are few studies only concentrated on season 12 of *The Big Bang Theory*. By figuring out how is humorous effect achieved and what is the frequency of verbal humor generated through violating the Cooperative Principle from its four maxims in TBBT, we can better understand the mechanism of humor and comprehend the plots thoroughly. In this way, when we later watch other sitcoms, it would be much easier to get the joke and better appreciate the episodes. What's more, as art is a reflection of culture, by having a better understanding of the language art, we can know more about foreign culture. It would also be helpful in real-life intercultural communications because we can read between the lines and get the underlying conversational implicature. Moreover, we can even violate the four maxims of the Cooperative Principle to create humor in certain circumstances on purpose.

2. Literature Review

2.1. Linguistic Study of Verbal Humor

In the late 20th century, fruitful achievements were made in studies of verbal humor from the modern linguistic field. For instance, Hancher (1980) and Richardson (1989) tried to analyze language humor from the perspective of the speech act theory. Leech (1983) put forward the Politeness Principle. Brown and Levinson (1978) came up with another theory called the Face Saving Theory. Curco (1995) applied the Relevance Theory raised by Sperber and Wilson in 1986 into interpreting humorous utterances. Cognitive theories were also adapted to studies of verbal humor like the Conceptual Blending Theory (Frauconnier&Turner, 2002). Coulson (2001) and Norrick (2003) made explanations of jokes with the Frame-shifting Theory. While among all the theories, two of them outstood and became most classical when speaking of verbal humor.

2.1.1. Semantic Script Theory of Humor (SSTH)

This theory was firstly proposed by Raskin (1985) in his book Semantic mechanisms of Humor. It is the first semantics-based theory that only concentrates on verbal humor. From his point of view, a linguistic theory concerning with humor should incorporate both necessary and sufficient conditions for certain context to be amusing. In his hypothesis, there are two standards should be met for a proper model of humor: the text is completely or partially

compatible with two different scripts; the text in the two scripts should be opposite. The semantic script theory offers an explanation of how opposed scripts work to create humor, while it still has some drawbacks. According to Attardo (1994), SSTH could not account for quality differences in verbal humor. That is to say, a good joke and a bad joke could not be distinguished with the help of SSTH.

2.1.2. General Theory of Verbal Humor (GTVH)

To fill the gaps in SSTH, Victor Raskin and his extraordinary student Salvatore Attardo put forward a more comprehensive theory General Theory of Verbal Humor in 1991. It combines pragmatics, textual linguistics and the theory of narrativity.
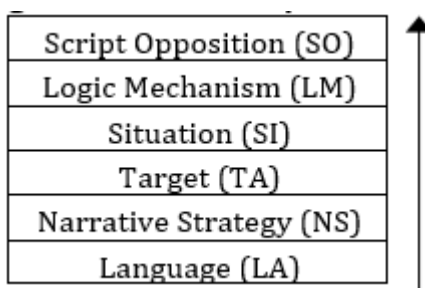

Figure 1. Hierarchy of SSTH

The main idea of GTVH is the six knowledge resources in a hierarchical order that contribute to verbal humor. With script opposition (SO) on the top, which is the core of SSTH, the other five parameters below are: logical mechanism (LM), situation (SI), target (TA), narrative strategy (NS) and language (LA). The higher knowledge resource is, the more abstract it is, and the bigger power of humor generation it is (Cai&Yin, 2005). Ritcher (2001) asserts that GTVH is better developed than any other theories concerning with humor, but it is still not accurate or formal.

2.2.   Conversational Implicature and the Cooperative Principle

Herbert Paul Grice is a famous American linguist and philosopher. He first mentioned conversational implicature in his article The Causal Theory of Perception. It refers to things that a hearer can work out from the way the speaker says instead of what is said. He divided conversational implicature into generalized one and particularized one. The former one can be inferred without relevant background, while the latter one requires corresponding context. What Grice later discussed is the particularized conversational implicature (He, 2017).
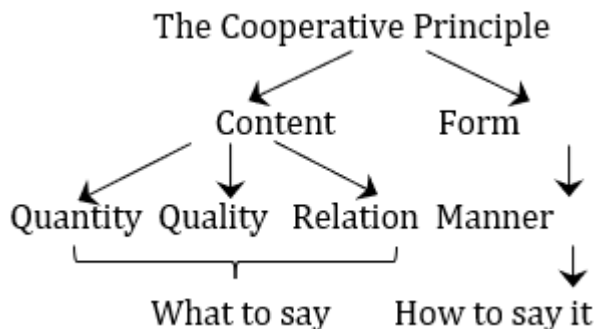

Figure 2. The Classification of the CP

The Cooperative Principle was put forward in Grice's William Jam Lectures at Harvard in 1967. Later in 1975, part of his lectures was written into a book called Logic and Conversation. The

rest of them were published with the title of Further Notes on Logic and Conversation in 1978. Then in 1989, the full version of the whole lectures came out, entitled Studies in the Ways of Words (Jiang, 2000). According to Grice (1975), there are four maxims in the Cooperative Principle.

The first three maxims emphasize on content and what to say, while the last maxim stresses on form and how to say. Grice holds that people should abide by the four maxims in the process of communication, and each maxim contains one or more sub-maxims. However, sometimes people may fail to observe every maxim or violate some of them purposely to achieve certain conversational implicature and generate humor.

2.3. Study of Verbal Humor from the Perspective of the CP

Many scholars have done much work with the framework of the CP to study humor. According to Hancher (1980), both Speech Act Theory and the Cooperative Principle could generate verbal humor and provide certain conversational implicature. Raskin (1985) made some complementary elements of Grice's Cooperative Principle. He stated that it would be easier for people to show their true feelings with the help of violating the CP. Liu (1987) discovered a paradox of humor. On the one hand, humor meant success in the communication process, while on the other hand, it broke certain rules in conversational exchange as it violated the CP. Yamagnchi (1988) made a conclusion that language humor produced by jokes was a result of deceptive violation of the CP. Attardo (1994) tried to explain the communicative nature of jokes and proposed that violation of any maxim could lead to the generation of humor. Chen (1999) illustrated that if there were violations of the CP involved in the conversation, unexpected amusing effects would come out from the angle of listeners. While Carrell (2000) emphasized on the important role of listener. He suggested that humorous effect was decided by the understanding and interpretation of the listener instead of the speaker. There should be four elements required, humor maker, humorous speech, listener and specific situation. Shi (2000), Liu&Xiong (2003) and Gao (2006) took plenty of vivid examples to demonstrate that obeying or breaching the CP could both produce humorous effects. Suo (2002) came up with "a principle of tact" added to the CP as a remedy and substitute for Leech's Politeness Principle. Fang (2007) viewed verbal humor as one of the pragmatic strategies comparing with other linguistic theories. Xie (2007) probed into the process of humor generation from the perspective of the Cooperative Principle and the Relation Theory, ending with a disclosure of the limitations of the CP.

2.4. Research Gaps

Many scholars have done some researches of the verbal humor in *The Big Bang Theory* with different models. Liu (2011) conducted a contrastive analysis between the Cooperative Principle and Relevance Theory, pointing out that the two theories have different mechanisms on interpreting language humor. While Tang (2012) and Guan (2014) both combined the Cooperative Principle and the Politeness Principle to analyze humor utterances in the show. Li (2012) divided verbal humor into two categories: linguistic humor (including phonetic humor, lexical humor, syntactic humor) and pragmatic humor (including logic-violation humor, politeness-violation humor, intention-violation humor). Another researcher Gui (2015) even made a comparative analysis from perspectives of 71 Principle in the pragmatic field and Speech Act Theory in the linguistic philosophy area.

Also there are researchers who focus on the Cooperative Principle only. Geng (2015) and Zhang (2011) picked the first and third season as their linguistic data respectively. While Miao (2012) and Tong (2015) chose season 5 as their research subject. For Liu (2016) and Xu (2017), season 8 was selected as the corpus. As time goes by, their corpora are a little bit out of date. So this research would concentrate on the latest season 12 which is also the final season of this hit

sitcom. What's more, seldom of them used statistic tools to show the frequency and proportion of each maxim's violated times. In this paper, statistic method is added to fill in the gaps.

3. Theoretical Framework

3.1. Violation of the Quantity Maxim

The Maxim of Quantity plays a basic but important role in the social intercourse. How much information people provide should be in accordance with the need of present conversation. When the speaker intentionally or unintentionally gives more or less information than the listener requires, the humorous effect will be generated.

3.1.1. More Information

When the speaker provides information exceeding what is requested, it is so-called overstatement. Information overload could make the conversation inefficient and the same time people may feel bored. But sometimes the speaker violates this maxim deliberately with their additional purposes. Thus people who get their further underlying will find it quite interesting.

3.1.2. Less Information

When the speaker provides information insufficient than what is requested, it is so-called understatement. The lack of information may lead to blurred meaning or even misunderstanding of the facts. Consequently, humorous effect will be realized because of the unclear expression and asymmetric message.

3.2. Violation of the Quality Maxim

The Quality Maxim regulates the necessity of the authenticity of one conversation. People cannot tell what they know is fake or what is lacking of evidence. However, in order to achieve certain humorous effect, they may say something that is contrary to the facts or they do not have the evidence to prove its true. The pattern of this kind of manifestation may include some rhetorical devices like irony, metaphor, hyperbole and meiosis.

3.2.1. Irony

Irony is often used to convey one's attitudes or feelings towards something or somebody with exactly opposite literal meanings. This kind of ironic expressions obviously flout the Quality Maxim, aiming to convey certain deep implicature. The hearer who receive the implied meanings would get amused by this language trick.

3.2.2. Metaphor

Metaphor is a figure of speech that compares someone or something with similar ones. Apparently, the speaker knows that the one is not the same as what he or she depicts but only have something in common. So their words violate the principle of saying truth. While people still use this kind of eloquence to indirectly deliver what they really want to say, making the dialogue enjoyable.

3.2.3. Hyperbole

Hyperbole is an exaggerated way of speech often used to show one's strong feelings and specific emphasis towards something. It makes a mountain out of a molehill, clearly neglecting the Quality Maxim. When someone doing this intentionally, he or she may intend to draw people's attention to achieve their purpose or express their feelings. In this inflated way, humorous effect would be generated.

3.2.4. Meiosis

Meiosis means do not confirm something actively but denying something opposite firmly or weakening something already happened. In most cases, it is used when people have secrets or

truths they don't want to reveal so that they choose to express in a way more euphemistic but flouting the Quality Maxim. The tactful expressions may trigger unexpected humor.

3.3. Violation of the Relation Maxim

The Maxim of Relation requests the interlocutors to deliver information relevant and coherent to the present context. While in some cases, in order to avoid embarrassment or showing unwillingness to continue the topic, people would deliberately change the topic or saying something irrelevant. If the hearer could infer the speaker's intention, the conversation can be successfully carried out and humorous effect would also comes out.

3.3.1. Irrelevant Information

Sometimes people distract others' attention by giving unrelated messages purposely. This kind of act may sounds like unreasonable or even a little bit impolite, but in some way leading to comic effect beyond expectation.

3.3.2. Topic Change

It is common for us to change our topic when we have something do not want to disclose while the same time unwilling or unable to tell lies. Ending the conversation abruptly apparently neglects the Relation Maxim. But in certain contexts, the designed violation may defuses embarrassment and shows one's sense of humor.

3.4. Violation of the Manner Maxim

The last maxim is different from the former ones. Since other three maxims focus on what to say while the Manner Maxim emphasizes on how to say in the process of communication. It tells people that they should express their ideas in a brief, clear and orderly way. Nonetheless, sometimes disobeying the rule incidentally or deliberately could make the conversation quite laughable.

3.4.1. Obscurity

The first sub-maxim is to avoid obscure expressions when having conversation. That is to say the speaker should make his or her words clear and easy to understand. However sometimes people may choose to use obscure expressions to hide the truth or their personal feelings, provoking humor at the same time.

3.4.2. Ambiguity

Ambiguity refers to words and phrases that have more than one meaning which may cause confusions to the information receiver. While sometimes misunderstanding of the utterance could totally bring the conversation deviated from the original meaning. As a result, the context could be absolutely ridiculous.

3.4.3. Redundancy

When people provide excessive wordiness or repetition in expression, it violates the sub-maxim of redundancy. In some contexts, the speaker neglects this principle by giving prolix expressions instead of a brief one, making the conversation cannot go on smoothly and the listener feel bored and amused.

4. Research Design

4.1. Research Questions

In this paper, three research questions would be focused as follows:

1. What is the frequency of verbal humor generated through the violation of the Cooperative Principle, and which maxim is most frequently used in TBBT season 12?

2. What is the humor-provoking mechanism in terms of violating the Cooperative Principle from the perspective of its four maxims and each sub-maxim?

3. How will this study help us in appreciating American sitcoms, embracing foreign cultures and having daily communications?

4.2. Data Collection

Since *The Big Bang Theory* has 12 seasons with 279 episodes in total, it would be difficult and time-consuming to analyze all of them. So, in this paper, only the latest also the last season 12 that broadcasted from September 24th 2018 to May 16th 2019 on CBS is chosen as the corpus. First of all, the author watches the whole 12 seasons of this sitcom to get familiar with the plots, as well as the character settings and language patterns of every single role. Then, the author goes over all the 24 episodes in season 12 attentively, labeling certain parts and counting down the number of times that the audiences are amused by language humor generated by violating the four maxims in the Cooperative Principles according to the laugh track. As this paper only focused on verbal humor, clips that produce humorous effects through the means of gestures, facial expressions, accents and dialects, stage settings, background music or any other ways are excluded. After that, the labeled parts are reviewed for a second time in case of miscalculation and then are categorized into branches under the four maxims respectively. At the meantime, the typical examples in every sort are picked out as corpora for later statistic and analysis.

4.3. Analytical Procedure

Both statistic tools and qualitative method are employed during the analytical procedures. In order to demonstrate how is humorous effect achieved by flouting the four maxims under the Cooperative Principle, the qualitative means is used to give elaborate explanations of each discourse and its conversational implicature under certain context. To make the paper more objective and concise, statistic meanings is carried out after calculating the amount of relevant data in each maxims and sub-maxims. By providing visualized numbers, the proportion of each maxim gives a clear answer of the question that which maxim in the Cooperative Principle is most frequently violated in creating humor. With the combination of the two methods, the results would be more detailed and direct.

5. Results and Discussions

In the present chapter, typical examples in *The Big Bang Theory* are excerpted and further elaborated to illustrate how people create verbal humor by violating the four maxims of the Cooperative Principle. The author tries to reveal the underneath conversational implicature and resulting verbal humor of every character by having a deep understanding of their peculiar personalities and language patterns. Besides qualitative research, statistical analysis is also carried out to explore the frequency of violating each maxim and its sub-maxims in order to generate humorous effect.

Table 1. Violation of the four maxims of the CP

Maxims of the CP	Quantity	Quality	Relation	Manner	Total
Frequency	92	156	73	68	389
Percentage	23.65%	40.10%	18.76%	17.48%	100%

The corpus covers all 24 episodes in season 12. According to the calculation, there are 389 pieces of language humor triggered by violating the Cooperative Principle in total, excluding those generated by other means or violating other principles. Table 1 gives an overall result of the frequency and proportion of the violation of the four maxims under the CP. The Quality

Maxim takes up the biggest share, exceeding 40% of the selected parts. The Quantity Maxim ranks the second place by occupying 23.65% of the whole corpus. As for the humor generated by flouting the Relation Maxim and Manner Maxim, the number almost equal with the percentage of nearly 18%.

5.1. Violation of the Quantity Maxim

Table 2. Violation of the Quantity Maxim

Sub-Maxims	More Information	Less Information	Total
Frequency	52	40	92
Percentage	56.52%	43.47%	100%

As the figures showed in Table 2, there are 92 times of language humor made by neglecting the Quantity Maxim among which the number of giving more information is slightly higher than giving less information. That is probably because of Sheldon's talkative trait when he expressing his opinions. At most of the cases, he provides massive information to others without even noticing of it. The humorous effect comes out in an unconscious and unexpected way. The following examples would give detailed explanations from violating the two sub-maxims.

5.1.1. More Information

Example 1 (episode 02)

Amy: Sheldon, that's not how you write a thank you card.

Sheldon: What's wrong with it?

Amy: "Dear Aunt Helen, thank you so much for the lovely place setting. If my handwriting looks strained, that is because this is the 16th thank you card Amy has forced me to write. The muscles in my wrist are cramping as I struggle to finish this sentence. Ow, ow, oh, the pain. Love, Sheldon."

In this conversation, what Sheldon wrote in the thank you card is a typical example of violating the Quantity Maxim by providing more information than the card's receiver needed. Normally when we are writing a thank you card, we would briefly thank certain people for what they have done for us. But in this context, Sheldon used floods of ink to describe how he struggled to write the card, showing his unwillingness and torture of doing this. His reaction seems to be a great breach of etiquette, but the same time shows his straight-forwardness and honesty. Those words are over-loaded but not redundant, as it gives audience a more vivid picture of Sheldon's unique but cute personality. Pouring out one's heart and expressing one's feelings freely is not a common action for usual people. Instead, we tend to hide our inner feelings and true ideas for the sake of politeness and relationship maintenance. So when the audience hearing this, they were surprised and amused by Sheldon's frankness.

5.1.2. Less Information

Example 2 (episode 22)

Leonard: How was your flight?

Beverly: There were some parents with a baby. A lot of crying.

Leonard: Well, babies do that.

Beverly: No, it was the parents.

It's usual for kids to cry during public transportation. So when Beverly said there was a lot of crying, without making it clear whether the subject was parents or baby, Leonard had no doubts about the fact that it was the baby who cried a lot according to his common sense. But unexpectedly, Beverly said it was the parents. Different with other mother-son relationship, Leonard always finds it hard to communicate with Beverly as her values the fact most, even neglecting feelings and emotions. This conversation reflects the unity of her rational, ruthless

and cool identity as a psychologist. The surprising answer given by Beverly proves her unique logic and language patterns. Her utterance creates humor in the way of violating the Quantity Maxim and thus breaks our traditional mindset.

5.2. Violation of the Quality Maxim

Table 3. Violation of the Quality Maxim

Sub-Maxims	Irony	Metaphor	Hyperbole	Meiosis	Total
Frequency	75	35	20	26	156
Percentage	48.07%	22.43%	12.82%	16.67%	100%

As mentioned before, the Quality Maxim is most frequently flouted to produce humor. From Table 3, the number counts to 156 in total and its sub-maxim irony takes up 75 pieces, accounting for a proportion over 48% surprisingly. Speaking of the reasons, most of the characters in *The Big Bang Theory* are well-educated scientists, so they tend to choose a smart but sarcastic way to state their standpoints or refute others' arguments. In this way, there is no wonder why irony is most constantly used. Metaphor comes to the second with the frequency of 35 times and percentage of 22.43%. As for hyperbole and meiosis, the rate is relative low. The following examples would give detailed explanations from violating the four sub-maxims.

5.2.1. Irony

Example 3 (episode 03)

Howard: Guys, so what do you think?

Leonard: Well, I don't know, w-we're pretty happy here.

Penny: Yeah. Plus, if we moved, we'd probably just get a loft downtown.

Leonard: Really? I always figured we'd get a place with a yard.

Penny: Oh, sure, yeah, that makes sense, so you could shoot hoops and mow the lawn?

When they talking about moving to another place, Penny chose to get a loft downtown, but Leonard preferred a place with a yard. But actually we know that he is not good at sports at all and would not do exercises or housework at yard. To oppose his choice, Penny didn't point out the problem and reveal the truth directly. Instead, she posed a rhetorical question to dig at him to suggest the yard was unnecessary and useless for them. Her clever arguing skill not only makes herself prevail in this debate but also satirizes Leonard's incompetence in doing sports at the same time. Her witty words generate humorous effect.

5.2.2. Metaphor

Example 4 (episode 03)

Penny: Sure, uh, next question. "How are you with pets?"

Leonard: Well, I did take care of Sheldon for 15 years, and he only bit me twice.

In this context, Leonard assimilated Sheldon as his pet to insinuate that Sheldon was like a pet in need of good care. He didn't express his emotions directly, but we can feel his attitude towards Sheldon was complicated. Even though sometimes Sheldon could be a trouble that Leonard had to clear up the mess he left, he still took care of him for 15 years as roommate and best friend. Comparing Sheldon as his pet, we can feel his concern and love of Sheldon, and the same time complaint and resentment. It is an artful and wise way to convey his inner voice and true feelings towards Sheldon, bringing the audience a good laugh.

5.2.3. Hyperbole

Example 5 (episode 03)

Amy: Hey. Wait a minute, what about us? I mean, we're married now. Maybe we want to buy the house next door.

Sheldon: Well, Amy, we can't move. I'd have to change all the tags in my underwear.

Amy: You can buy new ones.

Sheldon: What--new house, new underwear. What am I, in the Witness Protection Program?

Sheldon hated changes in his life to the point of eccentricity. So when Amy proposed the idea of buying a new house, it almost drove Sheldon crazy. It is a well-known fact that the Witness Protection Program conducted by the U.S. Department of Justice will provide witness being threatened with new identity and new residence. Sheldon took this example to show his strongly unwillingness to move, making his character setting more nerdy and stubborn. His exaggerated way of speech produced intense comic effect that people couldn't help laughing their heads off.

5.2.4. Meiosis

Example 6 (episode 20)

Leonard: Okay, if I go in there and pick something I want to do that she also wants to do, she's gonna think I'm just picking it to make her happy. So I feel like I have to pick something I know she doesn't want to do or she's gonna be disappointed. Right? What do you think?

Amy: Think I've got ice cream in this bag that's starting to melt.

Leonard was caught in a dilemma between whether he should do something he want to or not want to in the consideration of his mother's reaction. He was so confused that he kept mumbling for a long time, making Penny bored. But Penny didn't show her impatient directly, she tactfully used her melting ice cream to imply that Leonard had occupied her too much time and she wanted to leave immediately. The euphemistic meiosis shows her wisdom and humor, tickling people's funny bone.

5.3. Violation of the Relation Maxim

Table 4. Violation of the Relation Maxim

Sub-Maxims	Irrelevant Information	Topic Change	Total
Frequency	35	38	73
Percentage	47.95%	52.05%	100%

The Relation Maxim also plays an important role in the Cooperative Principle. In Table 4 we can see that the humorous utterance made by giving irrelevant information and changing the topic both take approximately half parts of the Relation Maxim. They are frequently used when people feel awkward or unwilling to continue the conversation so that the attentions will be distracted. While sometimes, when people doing this too deliberately, the humorous effect will arise spontaneously. The following examples would give detailed explanations from violating the two sub-maxims.

5.3.1. Irrelevant Information

Example 7 (episode 20)

Rajesh: Now I'm some sort of big joke. I'm even on some alien conspiracy blog. See? "Caltech astrophysicist finds proof of alien life''

Howard: Wow, that is not a great picture of you.

At that moment Rajesh was in a gloomy mood because his speech was misunderstood and widely spread on the Internet. Rather than say something related to comfort his friend like we usually do, Howard deliberately violated the Cooperative Principle to spice things up by giving some comments of the photo chosen by the media in the tone of ridicule. The remarks may seem uncompassionate, but actually we know that Howard and Rajesh are best friends. It was his way of showing concerning and cheering his friend up. His nifty joke brings us joy.

5.3.2. Topic Change

Example 8 (episode 01)

Penny: Amy asked me to water her plants.

Mr. Fowler: She doesn't have any plants.

Penny: Oh. Well, you caught me in a lie. Have a good day.

Penny found an excuse to conceal her real purpose of entering the house. Unfortunately, it was exposed by Mr. Fowler as Amy didn't have any plants. In order to ease the tension and hide her awkwardness, Penny abruptly began to extend greetings to Mr. Fowler. The topic changed so deliberately that people could aware her true intention. Penny's reaction is a subconscious violation of the Relation Maxim, leaving the dialogue interrupted and breaking the Cooperative Principle. Her straight-out response and cute prevarication make people simmer with laughter.

5.4. Violation of the Manner Maxim

Table 5. Violation of the Manner Maxim

Sub-Maxims	Obscurity	Ambiguity	Redundancy	Total
Frequency	19	27	22	68
Percentage	27.94%	39.71%	32.35%	100%

As for neglecting the Manner Maxim, humor appears most from ambiguous deliveries, approaching close to 40% (see Table 5). Since in the sitcom, those quirky nerds often use scientific expressions that may have different meanings or related puns in daily life. Obscurity and redundancy also bring a lot of joy to the audiences with the number of 19 and 22 times respectively. The following examples would give detailed explanations from violating the three sub-maxims.

5.4.1. Obscurity

Example 9 (episode 13)

Bernadette: The drug I've been working on for the past five years just got approved by the FDA.

Penny: Wow.

Howard: It's her anti-inflammatory drug.

Bernadette: Yep, three years of testing and no reported side effects.

Rajesh: Hmm, so it works.

Bernadette: Eh.

The drug produced by Bernadette's company was finally approved by the FDA. Bernadette claimed that there were no reported side effects during three years of testing. But when Rajesh asking about whether it worked or not, she hesitated and only replied with a blurry word, showing her doubt and uncertainty about the efficacy. Her vague expression apparently violates the Manner Maxim as she didn't make it clear, leaving people suspicion of the drug. But as a member of the team and a worker of the company, it is her euphemistic and smart way to make people guess her implicature and know the truth.

5.4.2. Ambiguity

Example 10 (episode 07)

Leonard: I've narrowed it down to three projects.

Rajesh: Ooh, is mine one of them?

Leonard: Actually, yeah. The software in the telescope room hasn't been upgraded in years, and it seems like it might be time.

Barry: Whoa, whoa, whoa! - (chuckles) So you're just gonna give the money to your friend? I smell a rat.

Scientist: I work with rats, too. That might be me.

Barry thought Leonard was partial to his friend Rajesh, so he used the phrase "smell the rat" to imply that the given situation had something wrong and what Leonard did was not right. But another scientist who was too absorbed in her experiment didn't understand the context and related the literal meaning to her work environment which was related with rats. The irrelevant discourse is a typical example of pun and ambiguity. It is an unexpected and hilarious result of misunderstanding that make the audience roar with laughter.

Example 11 (episode 14)

Officer: Well, how can I help you?

Sheldon: If I know someone in violation of the building code, should I turn them in?

Officer: Interesting question.

Sheldon: Yeah, I know. Because, on the one hand, Confucius says we owe a greater responsibility to people we're close with rather than to society at large. But, on the other hand, Socrates says that we're obligated to obey all laws, even unjust ones. And then, furthermore, if we're entertaining rules about when it's okay to break the rules, I should-- where does it end?

Sheldon was in a dilemma between whether he should turn his friends in on account of their unproved construction. One the one hand, he valued his friend; while on the other hand, he believed that everyone must abide by the law. To show his entanglement, he even quoted two theories from Confucius and Socrates respectively. As for normal people, we would make a choice before going to the office after a thorough consideration, while Sheldon chose to express his whole thinking process in the face of the officer. Apparently, his action violates the Manner Maxim as he doesn't refine his thoughts in a brief version and make the conversation long and inefficient. But it helps in showing his struggle and stubborn characteristics. Verbal humor created by redundancy makes his figure lovable and laughable.

6. Conclusion

6.1. Findings and Implications

By analyzing the humor-provoking mechanism in conversations of *The Big Bang Theory*, people may have a clear concept of how verbal humor is realized in the dialogues. It also helps in comprehending the plots and contexts because we could infer what others trying to say as the conversational implicature conveys their real thoughts and true feelings. Therefore, it would be easier for audiences to appreciate verbal humor and grasp the story line when watching other American sitcoms or reading any conversational texts.

Besides, as art is a proper reflection of culture, by having a better understanding of the language art, we can know more about the culture background and cultural connotation. As the examples showed in this paper, unlike traditional consensus among Chinese people, Americans are more daring to break the rules of the Cooperative Principle to express their thoughts when having conversations. It can be traced back to their free and open culture, while Chinese tend to be more conservative and polite because we attach great importance to saving faces. People who master the art of language may have better acquisition of knowledge in its culture, vice versa.

What's more, we can apply these strategies into our daily communication. By employing the Cooperative Principle in real-life communications, the speaker and hearer can better coordinate with each other to make the communication more smooth and efficient because we can get the underlying conversational implicature. In certain occasions, especially having intercultural communications with people from America or other countries with similar culture background, we can even deliberately violate the Cooperative Principle to convey humor, as humorous utterances can be the booster for a good relationship and harmonious atmosphere.

6.2.   Limitations and Suggestions

As this paper is only a tentative study of verbal humor in *The Big Bang Theory* from violating the Cooperative Principle, there are sure to have some limitations.

First of all, this research is conducted on the theoretical framework of the Cooperative Principle, which is only one of the pragmatic theories that study verbal humor in the linguistic field. There are certainly some contexts beyond the four maxims that this theory cannot give suitable explanation. It will be better to combine more theories into one joint study so as to draw a more comprehensive conclusion.

Secondly, as the time and energy are limited, the workload would be too heavy to go through the complete works of this sitcom. So the author only chooses the latest season 12 with 24 episodes as the corpus for study. Therefore, there would be certain margin of error due to the insufficient linguistic data. Also, the findings cannot represent the other unanalyzed 11 seasons. For this reason, taking a larger sample size into account would make the results more accurate.

Last but not least, the only criterion of verbal humor collected from the episodes is the laugh track recorded by the studio audiences. While this kind of method tends to be quite subjective, thus leading to omissions of humor in the number of statistics. Besides, it is hard to measure the degree of humorous effect by volume nor length of laughing. Hence, we can not identify by violating which maxim can we generate the humorous effect to the largest extent. To fill the research gap, the further researcher could introduce a group of random-selected participants to complete a well-designed questionnaire based on the clips of shows including verbal humor.

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