

# ***How to Understand Overtones: Mental Mechanisms and Influencing Factors of Irony Comprehension***

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**Abstract:** Irony can be defined as words that express something other than, and usually intending the opposite of, the literal meaning. Irony is used in different kinds of conditions to criticize, tease or praise others. Irony comprehension is the process of identifying irony and detecting its implied meaning. This article discusses different predictive mental processing of irony comprehension and introduces the factors that affect irony comprehension in existing research. At the end, this article points out limitations of existing research and put forwards some possible improvements in future study.

**Keywords:** Irony, Irony comprehension, Predictive processing, Influencing factors

## **1. Introduction**

### **1.1. Definition of irony**

Irony usually refers to the use of words that are contrary to the original meaning to express the original meaning. An ironical utterance is both inappropriate and relevant to its context[1]. There are two layers of meaning, the surface layer is inherent to the word itself, which is the literal meaning, and the inner layer is given by specific context, which is the true meaning that the speaker intends to express. Verbal irony prototypically involves a contrast between an utterance's literal meaning and its intended meaning, which are the two layers discussed above [2,3].

### **1.2. Types of irony**

Irony can be divided into the following types:

According to the way that manifest irony, it can be divided into two types: verbal irony and situational irony. Verbal irony is reflected through a certain word of the utterance, while situational irony is embodied through the situation that the speaker in and the context of the sentence [4].

According to the function of the irony, it can also be divided into irony criticism and irony compliment. Irony criticism is to express negative attitudes such as criticism and blame in a positive literal meaning; and irony compliment is using a negative literal meaning to express praise, appreciation, encouragement, and other positive attitudes [5]. In daily communication, irony criticism is more common and easier to recognize than irony compliment. Research show that children's recognition and understanding of irony criticism is better than irony compliment [6,7].

### 1.3. The roles of irony

Irony can be used to achieve some social purposes, especially to convey indirect or ironic attitudes. In terms of expressing function, irony criticism such as "You are so smart!" is more euphemistic than direct criticism such as "You are so stupid!" Therefore, irony can reduce the negativity of the discourse, and make the utterance more polite when expressing criticism [8,9].

Many people use irony to tease or criticize others in everyday life or to convey their emotions such as disappointment or upset. If irony is only understood literally, there will be miscommunication, which will affect the social interaction [8]. Therefore, the ability to comprehend irony is important, and we need to find out what contributes to irony comprehension.

Irony comprehension is the process of identifying and separating the implicit meaning of the irony sentences, which includes three parts: recognizing attitude of the irony speaker, recognizing the meaning of the utterance, and explaining the irony phenomenon [10]. The understanding of these "overtones" is conducive to enriching our communicating methods and promoting the development of our social skills, thereby making the communication more effective.

## 2. The mental mechanisms of irony comprehension

### 2.1. Conversational Implicature Theory

Grice first proposed conversational theory. This theory believes that people must follow the cooperative principle in order to achieve specific goals in communication activities [11].

The cooperative principle includes four maxims: (1) Quantity, which requires the spoken words detailed enough to achieve the purpose of the conversation, but cannot be more detailed than required; (2) Quality, which requires the speaker not to say words that he or she believes to be lack of evidence; (3) Relation, which requires the speaker to speak appropriately; (4) Manner, which requires the speaker's words to be concise and clear. In verbal communication, if the speaker violates one of the maxims, it takes more effort for the listener to processing the utterances in order to understand the purpose of the speaker.

In irony comprehension, if the speaker uses irony, then he or she does not comply with the cooperative principle. At this time, the listener will doubt the true meaning of the utterance and make inferences to its true meaning, that is, the conversational meaning. Generally speaking, inferring conversational meaning from the literal meaning will go through two stages: according to the standard pragmatic model, the literal understanding of an utterance is always primary. If this literal understanding is incongruous, listeners or readers will turn to nonliteral interpretation of the utterance in a second processing step. This secondary interpretation would identify the utterance as being of ironical intent, which stands in contradiction to the literal meaning of the utterance [10-13]. However, the theory cannot explain the following questions: (1) How the relation maxim reflected; (2) What is the irony express; (3) Why the listener does not interpret irony as deception. Study found that 5 to 7-year-old children often regard irony as deception [14]. To explain the above questions, many researchers have proposed new irony theories.

### 2.2. Echoic reminder theory of irony

Contrary to conversational implicature theory, this theory believes that irony comprehension requires only one stage of processing. The listener depends on the speaker's thoughts, behaviors, discourse and social norms to understand irony. The inconsistency between the listener's expectations or social standards and the facts can remind the listener of speaker's actual meaning and attitudes [15,16]. For instance, if someone said: "What a nice weather!" on a rainy day when he is going to picnic, the

listener can suppose that he is upset according to the contradiction between the bad weather and the speaker's words.

### **2.3. Pretense Theory of Irony**

Pretense theory of irony believes that irony is essentially a pretense. The speaker pretends to be another person and is talking to an imaginary listener; if the listener is aware of the speaker's pretense, he can understand that the speaker is trying to express some attitudes. Common background is the foundation emphasized by this theory, otherwise irony will become deception [16,17].

Pretense theory can explain certain types of irony, but empirical evidence is needed. Moreover, the theory cannot effectively explain the processing of irony that does not have a literal meaning [18], and it can be applied to all speeches, not limited to irony. For example, in a room full of people, a lady said, "It's so hot!" She was pretending to talk about the weather, while her real intention was to ask someone to open the window [15].

### **2.4. Allusional Pretense Theory**

Kumon-Nakamura believed that irony speakers do not expect listeners to believe their words, which is described as pragmatic insincerity [12,19]. The research of Winner and Leekam supports allusional pretense theory. They used children aged 5-7 as the subjects, each of who received a deceptive story and an irony story as a pair. The results showed that 67% of children who can correctly identify pragmatic insincerity can correctly infer the meaning, while only 19% of children who fail to recognize pragmatic insincerity can correctly infer the meaning [20].

### **2.5. Indirect Negation Theory**

Researchers who support both the echoic reminder theory and the pretense theory believe that the implicit meaning can be extracted directly, without the need to retrieve the literal meaning [16]. Giora believes that people process the literal meaning and implicit meaning and "calculates" the difference between them. Therefore, it is more difficult to understand irony than straightforward sentences [21].

## **3. Factors influencing irony comprehension**

### **3.1. Age and proficiency**

Studies shows that children about 6 years old have basic irony comprehension skills, and children younger than 5 years old have difficulty understanding irony. In addition, children aged 11 to 12 begin to develop a sense of humor [22]. Moreover, 7-year-olds detect contextual inconsistency with high frequency [23]. The development of language proficiency with age may be able to explain the promotion of irony comprehension. Researchers found that adults' language proficiency also contributes to irony comprehension, Wang studied college students whose first language is Chinese and students from Xinjiang province whose first language is Xinjiang dialect through two experiments, intending to compare the cognitive capability among them. Results showed that the higher the Chinese proficiency, the easier it is for students to understand Chinese irony [24]. Study that compared English native speakers and Chinese learners showed that there were correlations between the learners' irony scores and their proficiency and the amount of time they had spent in an English-speaking country [25].

### 3.2. Intonation

Existing research holds different views on the roles of intonation. Some think that intonation is necessary for irony understanding, while others think that the contribution of intonation is limited. Zhang Jijia and Zhang Meng used neutral intonation and emphasized intonation to exam irony comprehension of children aged 6 to 10. The results show that intonation has a significant effect on the correct rate of children's judgement on attitude and meaning of words, but it has limited effect on age and type of irony. Therefore, this can support the view that intonation has a limited effect on irony comprehension [6]. However, this research only studied the roles of intonation on irony comprehension of Mandarin speaking children, it is possible that different language speaking children rely on different prosody cues to understand irony.

### 3.3. Irony type and relationship between speaker and listener

As mentioned before, irony can be divided in to irony criticism and irony compliment. Ding and Wu constructed an experiment to study comprehension of different types of irony, suggesting that the second and third grade pupils are better at understanding irony compliment, while the fourth, fifth, and sixth grade pupils are better at understanding irony criticism [26]. Besides, social relationship between speaker and hearer is a significantly important factor that affect irony comprehension: if they have a close relationship, literal criticism is more likely to be understood as irony compliment, and if they dislike each other, literal praise is more likely to be understood as irony criticism [26,27].

## 4. Conclusion

The use of irony in daily life is common. The speaker expresses deep meaning through irony, while the listener grasps the speaker's true purpose through context. This process of using and understanding involves multiple factors. This article attempts to analyze this process from the perspective of mental mechanisms and discusses the effects of other subjective or objective factors on the understanding of irony. However, due to the complexity and diversity of language, the understanding of irony still needs to be further demonstrated. As possible improvement, influencing factors' interactions between each other need to be discussed; further research about languages other than English need to be constructed. It is expected that people's interpretation of the cognitive mechanism of irony will be more comprehensive.

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