

# The Motivation of Ellipsis\*

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**Abstract**—The article seeks the motivations of ellipsis from three perspectives: physiology, cognition and pragmatics. In total, there are seven principles which can account for necessity, reasonability, usefulness and importance of ellipsis. These principles constitute the motivations of ellipsis including the principle of information efficiency coding, the principle of information constancy, the principle of cognitive economy, the principle of prominence, cooperative principle, relevance theory and the principle of intentionality.

**Index Terms**—ellipsis, motivation, physiological principle, cognitive principle, pragmatic principle

## I. INTRODUCTION

It is impossible and unrealistic to express all of meaning and thoughts completely in the daily communication. To some extent, we are apt to express what we want to say in an elliptical way in order to communicate each other rapidly and efficiently. Therefore, ellipsis is a common and necessary linguistic strategy. When we regard ellipsis as a linguistic phenomenon, some questions occur to us, for example, why do we need to omit some words? why does ellipsis exist in communication? These questions are related to the motivation of ellipsis. In this article, the author will explore the motivation of ellipsis and answer the above questions. The phenomenon of ellipsis conforms with general laws of language use. The motivation is the reason why something exists, namely, its theoretical basis. The author manages to find out the motivation of ellipsis from the perspectives of physiology, cognition and pragmatics.

## II. MOTIVATION FROM THE PERSPECTIVE OF PHYSIOLOGY

From the perspective of physiology, language is an information system stored in the neural network of brain (Chen, 2001). There are many methods to convey information in social communication, however, the most common and convenient way to convey information is language, both spoken and written.

As an information system, language shares main features with other information systems. Language is storable, carriable and sharable, with worthiness, transitivity, self-regulation and workability (Li, 2005). Language is carried by the neural network of brain which acts as not only its carrier but also the medium of information transmission. From the perspective of physiology, the process of information transmission is represented by the activation process of a series of brain neurons.

### A. The Principle of Information Efficiency Coding

Information theory early derived from communication technology, which was established by American engineer C.E.Shannon as a new subject in 1948. The following figure is a model of communication system theory (Dai, 2003):

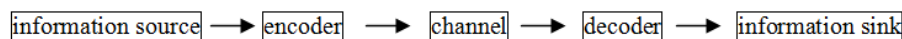


Fig 1. Model of communication system

From the above schema, we can see that communication process is actually the transmission process of information, information starts from information source and goes through encoder, channel and decoder and ends in information sink, in this way, information is transmitted from information source to information sink. Therefore, the task of communication system is to transmit information.

As the main carrier of information, the function of language is also to convey information like communication system. One of communication goals is to improve the efficiency of information transmission, however, how to transmit information effectively? Let us have a look at the information efficiency coding principle in information theory. The 'efficiency' is to transmit the same information volume within the shortest time with the least equipment and materials. 'Effective coding' means that the redundancy rate of information source is compressed by encoding, the average bit number demanded by information source symbol is reduced during transmission, it is realized that lesser code is used and more information is transmitted (Dai, 2003). In this way, we can improve transmission efficiency of information and effectiveness of communication.

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As we know, language is a kind of information system and the carrier of information, how does language transmit information effectively and rapidly in communication? The information efficiency coding principle can be realized by ellipsis in language use. According to the analysis of the information structure, the omitted part usually is the known information which can be inferred from context, therefore, it belongs to redundant information. What we need to express is new 'unknown' information instead of 'known' information. What is 'known' information? What is 'new' information? According to Chafe's consciousness standard in psychology, he defined 'known' information as "existed knowledge in listeners' consciousness speakers suppose during conversation" and defined 'new' information as "introduced knowledge to listeners' consciousness by speakers through conversation" (Zhang, 1998).

Therefore, ellipsis accords with information efficiency coding principle, which not only makes language expression brief and clear and emphasizes new and important information, it will draw listeners' attention to focus on new information and gain better communication effect.

#### B. *The Principle of Information Constancy*

The information efficiency coding principle proves that ellipsis is necessary and reasonable in language, but what information should be omitted is determined by the principle of information constancy, that is, the sum of the known and unknown information is constant. If the information is known for listeners, speakers are apt to apply ellipsis strategy to omit known information, if the information is unknown for listeners, speakers should express new information. However, the total information volume in one communication unit is equal to the sum of the known and unknown information which keeps constant. For example, we set the total information volume is "five", if known information value is "two", and unknown information value is "three"; if known information value is "three", and unknown information value is "two", the total information volume always keeps "five".

### III. MOTIVATION FROM THE PERSPECTIVE OF COGNITION

Compared with formal linguistics, cognitive linguistics holds that language is not a closed and self-sufficient system, it can't be separated from cognition because it is a part of cognition. Language is a kind of cognitive activity and the embodiment of cognitive capability of human beings (Zhao, 2001). The use of language should accord with general cognitive principles.

#### A. *The Principle of Cognitive Economy*

From the perspective of cognition, ellipsis in language embodies the principle of cognitive economy, which states that an organism like a human being attempts to gain as much information as possible about its environment while minimizing cognitive effort and resources (Evans, 2007). This cost-benefit balance drives category formation. In other words, rather than storing separate information about every individual stimulus experienced, humans can group similar stimuli into categories, which maintains economy in cognitive representation. Cognitive economy relates to the way in which human categorization works so as to provide a maximally efficient way of representing information about frequently encountered objects.

In cognitive linguistics, the theory related to categorization is Prototype Theory posited by Eleanor Rosch. Prototype Theory holds that there are two basic principles that guide the formation of categories in the human mind: (1) the principle of cognitive economy; and (2) the principle of perceived world structure. These principles together give rise to the human categorisation system. Based on Prototype Theory, George Lakoff put forward idealised cognitive model (also ICM) in order to account for the typicality effects uncovered by Prototype Theory. ICMs are similar to the notion of a frame, since both relate to relatively complex knowledge structures. ICMs or frame also represents the principle of cognitive economy because they are abstract schemas across a range of experiences rather than representing specific instances of a given experience. Language is a kind of cognitive activity, the principle of cognitive economy also guides the use of language. In other words, if speakers and listeners share the same ICM or frame, it is unnecessary to express the detailed information but activate the relative ICM by prompt of language.

In sum, the principle of cognitive economy guides our knowledge structure in brain and the use of language, ellipsis accords with the principle of cognitive economy in language. The principle of cognitive economy is the motivation of ellipsis from the perspective of cognition.

Before the principle of cognitive economy is applied in linguistics, linguists have already put forward similar principle, that is, the principle of least effort or economy principle, which can be summarized as: "To gain the largest benefit with the least cost, it is a fundamental principle instructing people's behavior". In current academic community, George Kingsley Zipf was the first man to put forward this principle in 1949 (Jiang, 2005). Zipf pointed out principle of least effort is a basic principle directing people's behaviour, originally, he started with economy of words and applied it into linguistic field. This principle accepted great response in linguistic field, French linguist Andre Martinet developed Zipf's principle of least effort, he published the book of "A Functional View of Language" in 1962 and further illustrated this principle, however, he preferred to the name of "economy principle".

Martinet thought that economy of language is a basic principle: In order to realize communication successfully, paid efforts are always in directly proportional with transmitted information volume. Language economy includes two factors: one is that speakers need to transmit their own information; the other is that they try their best to reduce their

mental and physical efforts (Martinet, 1962). During the communication process, people use lesser language unit with little efforts as possible, and transmit more information with less efforts. That is to say, with the premise of successful communication, consciously or unconsciously, people will reduce their efforts for the sake of economy. It is because that economical expression not only reduces burden of encoders but also makes listeners easy to decode language.

Comparing:

(1) a. The Chinese eat their food with chopsticks, the Europeans eat their food with knives and forks. (before omission)

b. The Chinese eat their food with chopsticks, the Europeans with knives and forks. (after omission)

As Zipf said, the principle of least effort can direct human beings' activities in daily life, language is also a kind of activity of human being. In daily life, we can hear some Chinese words such as "save time", "save labour", "save money", "save material", "save room" and so on, it seems that any physical things can be economized, similarly, language can also be economized or omitted. In fact, this omission behavior is restricted and drove by some kind of mental factor of human beings--laziness. Just as Jespersen realized, everybody has some kinds of mental power to direct his/her action such as laziness, idleness, escape, casualness, leisure (Li, 2000). Therefore, we prefer to say "China" in shorten form instead of "the People's Republic of China" in full name. In commercial mails, we often use "ASAP" to replace "as soon as possible", these examples show that people prefer to ellipsis in order to save efforts.

However, we can't misunderstand "economy" and "least effort" as "least words" or "no words", it is a naive mistake. "Economy" and "least effort" is related to communication effect, which is the basic purpose of communication. The principle of least effort emphasizes that people usually adopt an economical approach with least effort in order to gain ideal communication effect. That is the real connotation of principle of least effort. We can't only emphasize ellipsis, we should master the degree and contents of omission. Ellipsis doesn't mean arbitrary omission, it is a kind of omission with principles. Its basic principle is to realize the best communication effect, to omit words which should be omitted, and keep words which can't be omitted. For example:

(2) Seven men were lost, and one (was) saved in the crash.

In example (2), if "was" in bracket is omitted, grammatically, the whole sentence is a wrong sentence, because the predicates of two clauses are different, the former "were" is plural, the latter "was" is single, so "was" here shouldn't be omitted. The above example shows us improper ellipsis.

### B. *The Principle of Prominence*

Denmark psychologist Rubin illustrated the prominent or salient principle of our perception organization through his famous face/vase illusion, we can't see the face and vase at the same time because human beings have a basic cognitive capability of figure-ground segregation, and we always see the prominent figure at first instead of ground in a scene.

Gestalt psychologists hold that perceptual field of perceivers is always divided into two parts: figure and ground. Figure is a gestalt, the most prominent or salient entity in a scene, which can be perceived by us, however, ground is reduced to the background to foil figure (Ungere & Schmid, 2001).

Based on the prominence principle, Figure-Ground theory is applied and developed in cognitive linguistics. Talmy discussed figure-ground theory in his attentional system, and Langacker studied figure-ground theory in the frame of perspective. Langacker gave its definition as follows: Impressionistically, the figure within a scene is a substructure perceived as "standing out" from the remainder (the ground) and accorded special prominence as the pivotal entity around which the scene is organized and for which it provides a setting (Langacker, 1987).

Figure-Ground theory can be applied to account for the organization of language information. In cognitive linguistics, prominence determines the choice and arrangement of language information. In detail, the selected information acts as figure, the omitted information acts as ground (Ungerer & Schmid, 2001), that is to say, the new unknown information stands out by omitting old and known information. In other words, new information is a figure and gains prominence, old information is a ground which is often hidden or omitted, therefore, ellipsis has a function of prominence, which is another cognitive motivation of ellipsis.

## IV. MOTIVATION FROM THE PERSPECTIVE OF PRAGMATICS

We can also find motivation of ellipsis from the perspective of pragmatics. As we know, cooperative principle and relevance theory are the main principles and theories in pragmatics. Is ellipsis related to these pragmatic principles?

### A. *Cooperative Principle*

As we know, cooperative principle is the main theoretical achievement in pragmatics, which was put forward by American philosopher Grice in 1967, who called it as "revised Occam razor principle". Grice pointed out in a speech in Harvard University: In order to ensure conversation to go smoothly, two speakers should obey by some basic principles, especially cooperative principle: "According to the purpose of conversation and communication direction, the utterance of speakers must meet the communication requirements under certain conditions (Grice, 1989)". It includes four sub-maxims: (A) Quantity Maxim; (B) Quantity Maxim; (C) Relation Maxim; (D) Manner Maxim.

Professor Hu Zhuanglin (1994) also gave an detailed account of cooperative principle in his book of "Cohesion and Cohesiveness of Text": (1) Quantity Maxim means that provided information is moderate, not more, not less; (2)

Quality Maxim means that provided information accords with facts; (3) Relation Maxim means that provided information is related to current conversation; (4) Manner Maxim means that provide information is brief and clear, no ambiguity. Among these four maxims, “Quantity maxim” and “Relation Maxim” can account for ellipsis phenomenon. “Quantity maxim” reflects the necessity of ellipsis, it is required that speakers need to give necessary information and omit unnecessary information, in other words, to express new information and omit known information. “Relation maxim” directs how to use ellipsis, it is required that speakers only give relevant information and omit irrelevant information. Based on these two standards, we can use ellipsis properly and gain optimal effect of language communication. We just keep new, necessary and relevant information and omit known, unnecessary and irrelevant information.

Jiang Wangqi also mentioned Grice’s cooperative principle in his article of “Zipf and his principle of Least Effort”, he thought Grice’s Cooperative Principle and Zipf’s principle of Least Effort are related to each other, because both principles derived from the same “Occam razor principle” (Jiang, 2005). However, it is American linguist Laurence Horn who was the first man to combine Grice’s Cooperative Principle with Zipf’s principle of Least Effort. He simplified their theories into two principles in 1984: Q principle based on listeners, R principle based on speakers. Q principle is called “listeners’ principle of least effort”, derived from Grice’s Quantity Maxim; R principle is called “speakers’ principle of least effort”, derived from Grice’s Relation Maxim. Therefore, Horn’s theory is called “new Grice theory”. I agree to Horn’s simplified principles, his theory is a good explanation for the necessity and motivation of ellipsis. Ellipsis not only obeys by Q principle--to speak necessary information and omit known information, but also obeys by R principle--speak relevant information and omit irrelevant information.

### B. *Relevance Theory*

Grice’s cooperative principle was revised and developed by subsequent scholars, especially for his relation maxim. Sperber and Wilson (1986) wrote a monograph to discuss relevance theory in their book of “Relevance: communication and cognition”, actually, relevance theory is the development of relation theory. What standard or principle do listeners understand utterance according to? Sperber and Wilson held that the standard of utterance interpretation is based on a cognitive hypothesis, that is, principle of relevance--“Any ostensive communication activity aims at the optimal relevance (Sperber & Wilson, 1986)”.

Relevance theory is a kind of cognitive theory about human communication and discourse interpretation. It admitted two basic facts: (1) Information processing requires people to pay some efforts; (2) The larger the effort degree paid for information processing is, the smaller the chance of communication success is, vice versa (He, 2001). On one hand, human beings pursue successful communication by information processing, on the other hand, they pursue effects of communication as possible as they can. “Brain is an information storing and processing system to gain the largest efficiency with least effort (Zhao, 2001)”. Relevance theory requires two partners participating in communication to obey by this principle. As for speakers, the information what he provided should be related to the cognitive context of listeners, they should omit those irrelevant information in order to make listeners understand their own intention easily and realize successful communication; As for listeners, they must try their best to search for new information related to context and understand speakers’ intention.

### C. *The Principle of Intentionality*

Intentionality has a long history in philosophy. Aristotle, Avicenna, and medieval doctrines of knowledge and experience lead indirectly to the highlight of intentionality research in the nineteenth- and early twentieth-century phenomenology in the works of, among others, Bolzano (1837), Brentano (1874) and Husserl (1900). Phenomenology is a study of conscious experience, the study of how things (phenomena) are presented in consciousness. In contemporary research, intentionality is understood as a feature of brains, and thus only secondarily, epiphenomenally, as a feature of language. Language is intentional insofar as it allows for expressing beliefs, desires, and other mental states (Lyons, 1995). For Fodor, ‘intentional’ means ‘representational’, having informational content (Fodor, 1994). Linguistic expressions are intentional by force of the corresponding mental states being intentional. Utterances are intentional: they are about something, someone, or at the very least they are about a state, event, or process.

Searle defined intentionality as “the feature of mental states and events, the feature of aiming at something, about something”, this “aboutness” and “directivity” of mental states is called “intentionality”. Searle introduced intentionality in linguistic meaning theory at first, he emphasized that intentionality is the foundation of language and the basic feature of speech act (Searle, 1983). In Searle’s opinion, speech acts not only use language symbols but express the intention of speakers, language symbols are the medium to express intention. Utterance is to speak out the heart of speakers, which is the meaning of utterance. Grice argued that the basic feature of linguistic communication is that speakers express their intentions to hearers, and hearers must recognize speakers’ intentions (Grice, 1989). Sperber & Wilson also summarized that the basic feature of linguistic communication is to express and recognize intention. (Sperber & Wilson, 2002)

Jaszczolt holds that intentionality can be stronger or weaker and intentions allow for degrees, then he puts forward the principle of Degrees of Intentions. He regards the strongest intentionality as the default intentionality and calls this type of default a cognitive default (Jaszczolt, 2005). According to Default Semantics, there are three kinds of intentions in communication: the communicative intention, the informative intention embedded in it, and referential intention.

Speakers communicate certain content (they communicate that they intend to inform about something), they inform the addressee about certain content, and they refer to objects and eventualities. Jaszczolt assumed a scene to illustrate default intentionality: a baby is careless to hurt one of his fingers and cries loudly, but his mother doesn't think it is serious and shouts at her baby:

(3) You are not going to die.

As for the above sentence, we can understand it in two ways: A) You should not worry. B) You are not going to die from this wound. Utterances are intentional, we must find out the default intentionality of mother, she thinks her baby's hurt is not serious and there is nothing to worry about it. Therefore, A) reflects the mother's intentionality properly.

According to Jaszczolt's default semantics, the intentionality of speakers can be default, listeners will find speakers' default intentionality, that is why we can understand conversational implicature. Default reasoning is a special way to understand ellipsis, therefore, the principle of intentionality provides another motivation of ellipsis from the perspective of pragmatics.

## V. CONCLUSION

This study aims at shedding light on the motivation of ellipsis and account for the existence reasonability of ellipsis. First, language is an information system, ellipsis in language accords with the principle of information efficiency coding and the principle of information constancy. Secondly, language is a kind of cognitive activity, ellipsis in language accords with basic cognitive principles such as the principle of cognitive economy and the principle of prominence. Finally, language is usage-based, ellipsis in language accords with basic pragmatic principles including cooperative principle, relevance theory and the principle of intentionality.

The nature of economy is our pursuit nowadays, the economy of language reflects the demand of times. The economy of language is realized by ellipsis. The motivations discovered in this study help us to recognize the necessity, reasonability, usefulness and importance of ellipsis.

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