

Explanation of Picture Language by Stratification of Systemic Functional Linguistics (SFL): $\tan 90^\circ$ as an Example

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ABSTRACT

Language is the main medium of human interaction. Starting from the overall ideographic system of language signs, language is closely related to the construction of social culture. As a form of multimodal discourse, the development of picture language is the common product of the development of social economy and culture. Based on the perspective of stratification of systemic functional linguistics, this article examines how picture language constructs the communication mode of language signs in multimedia environments such as the Internet. As a result, it was found that with reference to traditional language, Halliday's strategy of systemic functional linguistics has the same effect on the interpretation of picture language, but there are variations.

Keywords: stratification of systemic functional linguistics, picture language, $\tan 90^\circ$, language and sociality

I. INTRODUCTION

In the era of digital media, languages are used in daily discourse in multimodal forms, especially in the virtual context of the Internet. Language has changed from a single traditional mode to a multi-modal mode that now combines language, image, and sound. Halliday's language theory was elaborated from a sociological point of view. Halliday considered language as a social symbol and a resource that people purposefully used to express meaning in context. Regarding the languages as social semiotics means explaining language within the sociocultural language, and culture itself is interpreted by semiotic words. Language not only emphasizes social structures and systems, but also symbolizes them. This "dual function" of language diversifies the expression of meaning.

The development of multimodal discourse is the common product of socio-economic cultural productivity and other developments. In contemporary youth groups, as a language symbol, the frequency and scope of its use has gradually increased.[1] In the 1970s, Halliday proposed the idea that language is a social symbol, and held that social reality (or culture) itself is a construct of meaning—a symbolic configuration. From this perspective, language is a system of symbols that

make up culture. As a unique symbol system, language can be the coding system for many other (not all) symbol systems. [2] So language is also part of culture. Linguistic symbols are the main model of human interaction with reality. Starting from the whole of symbols and ideographic systems, language is associated with social and cultural significance. Under the influence of digital media, multimodal discourse presents the unique attributes of multimodal changes in language.[3]

Modern people, especially young people, are beginning to use novel and interesting language in the context of Internet socialization: using the language of pictures with " $\tan 90^\circ$ " to indicate that something doesn't exist or that something doesn't exist ($\tan 90^\circ \tan x = \sin x / \cos x$, when $x = 90^\circ$, that is, $\tan 90^\circ = \sin 90^\circ / \cos 90^\circ = 1/0$, and the denominator cannot be 0, so there is no $\tan 90^\circ$). Obviously " $\tan 90^\circ$ " is a linguistic symbol in the social context of the contemporary Internet, which is exactly a language product in the digital media era. As a linguistic phenomenon, how does the picture language construct the meaning communication mode of language symbols in multimedia contexts such as the Internet? Systemic functional linguistics believes that language is composed of three levels: the semantic layer, the lexical and grammatical layer, and the phonology / writing layer. The following uses the picture language " $\tan 90^\circ$ " as an entry point to explain the theoretical basis of Halliday's systemic function theory's theoretical role in the communication function of picture language.

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II. REVIEW

A. *Overview of the development of multimodal discourse*

As Halliday said, "A fundamental property of language is that it enables human beings to build a mental picture of reality, to make sense of their experience of what goes on around them and inside them". Zellig Sabbetai Harris). After the theory of Discourse Analysis was proposed, the analysis and research on all levels of linguistic signs has developed a lot. With the multicultural intersection and the development of digital media, language research has undergone a major shift. Traditional pure language research has not been able to meet the language requirements of the social communication in the new era. Multimodal discourse research enters people's field of vision, and symbols, images, sounds, actions, and colors begin to participate in discourse communication and meaning construction. This type of speech that interacts from different sensory perspectives and multi-media language resources is called multimodal discourse.[4]

After the 1970s, Halliday turned his emphasis on the relationship between language and sociology and semiology.[5] Halliday believes that language is not a knowledge ability of people, but "a range of choices allowed by culture and society", that is, The range of things you can do. Therefore, the so-called "language" is what the speaker "can do", and the "speech" is what the speaker "actually did". System linguistics pays more attention to the description of individual languages and individual variants, and considers such descriptions to be one of the purposes of linguistics, not to discover the universal phenomenon of language. Transformational grammar pays more attention to the general phenomenon of language, and investigating individual languages is just a means. In Halliday's words, the common phenomenon between languages is not only trivial, but also of little research value in itself. The rules commonly followed by human languages are the ones that are most easily grasped or learned by people, so studying these rules is not very helpful in promoting human communication. On the contrary, only the differences between languages, especially the cultural differences reflected by these differences, are really important. Understanding and mastering these differences will help overcome the communication barriers they cause.

B. *Halliday's Stratification*

In the two major currents of contemporary linguistics, whether language is a multi-level system or a single-level system is an important sign of many differences. Undoubtedly, Halliday's systematic functional linguistics shows that language is multi-level. His stratification includes the following aspects: 1. The

level of language should include at least the semantic layer, lexical grammar, and phonetic / written layer. And there is a system of mutual relations between the three levels. Of course, the relationship here does not refer to the component relationship, but the realization relationship between the upper layer and the lower layer (realization). The choice of word meaning (semantic layer) reflects the choice of form (vocabulary and grammar layer), and the choice of form reflects the choice of speech (phonological layer). In the process of hierarchical development, Halliday pays more attention to the meaning of text Systematic and procedural of manifestation and meaning.[6] Another co-author of Halliday and Mathiesen, study of the grammatical systems of English from the perspective of SFL, this book focuses on The semantic layer. That is, it emphasizes how language translates human experience into meaning and communicates. In terms of the semantic layer, Halliday and C. Mathiesen pointed out the importance of individual experience, basic events, and the relationship between events and events to the semantic layer.

In the context of the Internet, the use of multi-modal picture languages such as $\tan 90^\circ$ involves the conversion of knowledge formed by the accumulation of knowledge and experience into the expression of meaning. Halliday believes that cognition is meaning, because understanding something is turning it into meaning, and emphasizes that this semantic perspective can highlight four aspects of human consciousness that other cognitive perspectives often overlook: (1) meaning as a kind of Potential, a system resource, is deployed in the behavior of individual language meaning and is constantly changing. (2) Meaning as a resource for meaning generation is to continuously expand its power by opening up new contexts and improving existing contexts. (3) Meaning is a joint construction, a shareable resource, and a collective public organization and cause (while "thinking" is actually a private phenomenon that occurs in individuals). (4) Meaning, as a form of activity, is an energy resource, and its driving force comes from the grammar at the center of each language.

III. STRATIFICATION OF PICTURE LANGUAGE

A. *To critique Halliday's SFL on picture language about its group*

Halliday's systemic function theory holds that language research should start from considering the collective characteristics of language. That is, the collective characteristics of language: language is used in a certain context (social environment), and it is subject to context constraints. Context can be divided into cultural context and situational context. Cultural context is the product of social structure and the environment of the entire language system. The specific

situational context comes from the cultural context. Situational context, which can be summarized into a small number of situation types, according to the actual use of language in social life, includes three variables: (1) what actually happened; (2) participants and their relationships; 3) The role of language.[7]

From the perspective of the impact of language on society, first of all, language can reflect society. Language variation can directly represent the basic characteristics of social systems: language variation represents the diversity of social structures (various types of social grades); register variation represents the diversity of social processes. This is because people demonstrate the social structure in daily language communication, affirm their social status and social role, and spread their common knowledge and value system.

In response, W. Labov, a famous American sociolinguist, personally visited the streets of New York and conducted language characteristics of people from all walks of life, including people of different occupations, ages and genders. On-site inspections have been conducted in both qualitative and quantitative aspects. He found that there were many tiny differences in the language of New Yorkers. These differences are not arbitrary, but can distinguish different language variants, can reflect the division of social classes, and have certain social significance. He also found that although New Yorkers' habits of language speaking are not exactly the same and can change according to changing circumstances, they have the same attitude towards language. After listening to the recording of the conversation, they were able to identify the class and profession of the speaker.[8] Therefore, we can study the social attributes of a person or a community based on the linguistic characteristics of a person or a speech group and their common language attitude. Another example is that in the dialects of the southwestern part of China, Yanggoutou represents the back room in the dialects of the southwestern mountains. The origin is that the house there likes to lean on the foot of the mountain, so a trench will be dug in the back room to divert the water from the mountain. So in their language, the word Yanggoutou appears, and it is automatically interpreted: behind the house, there is a groove. However, the meaning of a child in his late teens has changed: Yanggou Tou will only guide this position behind the house without a ditch. The Yanggou head has always been used. People in the previous generation realized that the Yanggou head could not explain the location of a ditch behind the house. Most of them would give up the term and use the back of the house. Human beings use language to describe things, and language must be the first thing to represent things. If things change, so does language. Children born in these ten years will not. They think that Yanggoutou is behind the house, and it has nothing to do with that ditch. The example of the gullet head explains, from the

most basic and shallow perspective, that the ideographic system covered by linguistic symbols continues to change with social development. Secondly, people's social communication takes place in a certain social environment. Context determines to a certain extent what we say. Therefore, we can predict the content of communication according to the type of context, that is, predict the register. At the same time, the type of context can be inferred to a certain extent from what we say. Therefore, we can predict the social environment and cultural background of the speaker based on language. In addition, since cultural context is a combination of countless contextual contexts, we can also predict the characteristics of social culture and the degree of development based on the scope of the register in the language.

To sum up, Halliday's systemic function theory defines the group language and conventions of the picture language represented by $\tan 90^\circ$ from the two dimensions of the audience's own change and context change. This shows that, in the context of the diversified development of society and culture, the language of pictures presents the characteristics of diversity and audience grouping.

B. To critique SFL on picture language about its Stratification

Next we look at the empirical significance of multimodal picture language and Halliday's hierarchical thought.

Halliday's hierarchical thought of systemic function theory includes the following aspects: Language is hierarchical, including at least the semantic layer, vocabulary layer, and phonological layer. The three-layered thought of language corresponds to its three levels of content, expression and substance. In addition to the three-level distribution, the focus of hierarchical thinking is that it constitutes a system with interrelationships among the various levels. Halliday explained the relationship between levels as realisation, that is, the choice of "meaning" (semantic layer) is reflected in the choice of "form" (vocabulary and grammar layer); (Phonological layer). As the saying goes, "what can be done" is reflected in "what can mean"; "what can be meant" is reflected in "what can be said". At the same time, Halliday believes that each lower level is a reflection of the previous level, because from a functional point of view, the semantic layer should be upper.

As I mentioned in Introduction, the image language $\tan 90^\circ$ expresses at the semantic level that something does not exist or that there is no possibility of something. Halliday's lexical and grammatical layer has developed from Halliday's grammatical wording or grammatical metaphor theory. The development of metaphor theory of lexical grammar explains the new

grammatical functions of contemporary multi-modal picture languages. Here, the new grammatical function of the picture language refers to that, unlike the traditional language which completes the expression of the semantic layer through the form of grammatical rules, the picture language uses metaphor to complete the interpretation of the meaning of the upper layer, the semantic layer. That is to say, the picture language completes the process of how the picture language expresses meaning without the grammar function being changed. At this point, it is not difficult to see that the core of the semantic layer or the lexical grammar layer is the embodiment of the semantic layer. In essence, this perspective of the semantic layer first indicates the concept of system functional linguistics first. And the emphasis of multi-modal picture language is to emphasize the conveyance of meaning, not the grammatical rules and forms of conveyance. At this point, the theory of system function theory, the theory of semantic layer first, explains the development status of contemporary multi-modal and plural languages.

C. To critique SFL on picture language of its features

Context change, economic cost, from spoken to written language, to be precise, not written language but written language, that is, people's language conversation has developed from face-to-face communication to communication in written form in the virtual context of the Internet today. This is also consistent with the development of human civilization from the era of word of mouth, to the era of writing, and to the era of audiovisual. The variation of language symbols is directly related to the change of social culture. Language reflects social culture to some extent. Especially the multisemiotic discourse, which allows us to effectively understand a particular society and culture. A first in multimodal / multisemiotic discourse studies this collection of original articles by international scholars focuses primarily on texts from non-English speaking contexts. The illuminating insights enhance our understanding of how language and other semiotic resources construe specific cultural and social concerns.[9]

Traditionally, the sequence, pictures, and components of the semantic layer category are reflected in clauses, clauses, and phrase grammatical forms. Processes, participants, traits, and environment are represented by verbs, nouns, adjectives, and adverbs. This consistency Manifestation is a common feature in human daily speaking. However, in written language, especially in scientific discourse, there are many inconsistencies. Typical inconsistencies are noun phrases, which express the process or character that should be expressed by verbs and adjectives in the form of nouns. The relationship between empirical events that should be expressed by sequences is expressed in clauses, so it is also called metaphorical transfer, that is,

the relationship between the embodiment of semantics and grammar deviates from the consensus. This metaphor-level shift exists in every language, but only under certain historical conditions has metaphor become the dominant feature of semantic systems, like modern English.[10]

The most suitable theoretical model of multimodal discourse is the theory of systematic functional linguistics, because it does not need to modify the theoretical framework itself in order to adapt to new purposes. Although multimodal discourse analysis seems to expand its research scope, the theory of systematic functional linguistics can be used directly as its theoretical framework without any changes. This framework consists of five levels of systems.[11] The five levels are: (1) Cultural level, including ideology as the main form of culture and genre or potential for genre structure as the potential for choice of discourse mode. (2) Context level, including the context structure composed of discourse scope, discourse tone and discourse mode. (3) Meaning level, including discourse meaning and conceptual meaning, interpersonal meaning, and conspiracy meaning. (4) Formal level, different formal systems that realize meaning, including lexical grammatical system of language, visual ideographic form and visual grammatical system, auditory ideographic form and auditory grammatical system, tactile ideographic form and tactile grammatical system, etc. And the relationship between the modal grammars is divided into two categories of complementary and non-complementary. Complementarity includes two types of strengthening and non-reinforcing; non-complementary includes inclusive, overlapping, increasing and decreasing, and scenario interaction. (5) The media level is the material form of discourse in the material world, including linguistic and non-verbal. Linguistic includes two types of pure language and companion language; non-verbal includes two types of physical and non-physical. Physical factors include facial expressions, gestures, posture, and movement; non-physical factors include instrumental ones, such as PPT, laboratories, Internet platforms, physical objects (projection), audio, and simultaneous interpretation rooms.[12]

According to the Halliday Systemic Function Theory above, the theoretical guiding significance for the establishment of a multimodal discourse system, specifically the picture language. Combining the multimodal discourse system and Stratification, this time I tried to make a feature summary of the picture language.

In the paper Systemic Functional Approach to Language Evolution, Rose mentioned that human language development has gone from simple to complex. Rose used four models to explain the root of this development. First, the language develops from simple expression, and self-adaptive changes are

constantly generated during the process of being passed down from generation to generation. It is expressed as the development of social communication and social culture to stimulate language expression as a way of expression; Third, language development has entered a symbolic period. People form a universal experience in life. This universal experience is symbolic and can be conveyed to people who have not had such experience, so that they have empathy. Fourth, language reorganization. The fourth condition is the emergence of a device that combines interpersonal relationships and conceptual meaning in the discourse, enabling the speaker to delicately negotiate complex social relationships and express complex sequences of experiences as stories.[13] The key strategy for expanding the meaning here is reorganization. That is the separation of linguistic elements (such as wording and their meaning), and their recombination with alternative elements, resulting in novel meanings.[14] Rhetorical features such as metaphors are obvious features of language in this period.

From the above four models, it is obvious that the process of language from simple expression to complex expression reflects the growing experience of human culture. However, the emergence of contemporary picture language shows that traditional language reorganization (such as metaphorical expression of language) has been difficult to meet the language expression needs of contemporary people. According to the social nature of language in Halliday's functional theory, it is not difficult to find that the multimodal picture language exhibits the following characteristics in its use and development: (1) the economic effect on the time cost of language expression. Economic effects of picture language. Save time and cost, and cover a relatively large amount of information intuitively. (2) the spatial transformation of the context, the traditional person-to-person expression, often becomes conveyed through virtual media. [15] (3) audiovisual nature. Human civilization has passed from word of mouth civilization to written records, and has now entered the audiovisual era. The combination of text and picture is popular in the daily life of contemporary people in multimedia form. (4) the cultural capital statute. As humans receive higher and higher education, cultural circles are gradually formed within a certain range. The literal expression of traditional language rhetoric is no longer the only kind of language complexity (Halloran, 2005).[16] The interdisciplinary nature of language expression is a natural manifestation of text capital. At this time, this kind of language expression rich in cultural capital circulated.

As Rose puts it, "the detailed discourse model of modern languages must evolve through a series of steps, each of which provides the conditions for the next development." [17] In terms of phonetics, language and Stratification are discussed. In fact, La Boer's research

also shows the capital nature of language. It is just that the attribute of capital of that era emphasized relatively pure capital. The example of Houshan Gully illustrates the guiding role of culture in language development. The picture language represented by the specific example of *tan90°* demonstrates that multimodal discourse can not only reflect the various events and processes that occur in the subject and object world, but also the status of the participants in the event and the relationship between them. Relations, multiple symbols in the text can form a coherent and organic whole, that is, the meaning of the language of the picture is consistent with Halliday's Stratification.

IV. CONCLUSION

On the one hand, we explore the changing internal situation and its social and cultural significance. From the internal point of view, how the hierarchical relationship of picture language establishes a model of meaning in non-traditional language communication; on the other hand, the sociality of language determines its internal Change must be driven by some external force, which results in change, which is the sociocultural significance of language. Of course, to examine the external driving force from the outside needs to be explored from a sociocultural perspective, as Kirk Hazen said, "cultural identity of the speaker had statistically significant effects on language variation. To understand in this community, the interactions of cultural identity and other external variables must be considered. "

Due to the emergence of the virtual context of the Internet, language shows a group characteristic. The system functional school advocates studying language from the perspective of interorganism, mainly studying the influence of social environment on language.[18] Therefore, for the system functional school, language and society are closely linked. Humans learn language in exploring social environment, and at the same time, they understand society through language. Language and society are interdependent and interact.

Halliday's system function theory Stratification brings us two points of thinking about the use of picture language.[19] First, picture language has group characteristics. Picture languages are different from traditional languages, especially the vocabulary grammar level and phonetic / writing level. To a certain extent, the picture languages of different groups include unconventional grammatical and phonetic / writing levels, which determines the scope of use of picture languages. It is bound to present a narrowing of the audience, that is, specific group characteristics. Second, the layered representation of picture language. Whether it is a traditional language or a multi-modal picture language, the Halliday's functional theory Stratification

has the same effect on the interpretation of the two, but there are some variations.

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