

Some Speculations on the Semantic Change of Chinese Modal Verb "Yao"¹

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Abstract

Semantic change is a crucial factor that motivates grammaticalization. From either diachronic or synchronic perspective, semantic change studies provide certain evidence or explanation for the origin, the path, and the direction of evolution process. This study investigates synchronic variations of Chinese modal "yao," and attempts to account for its semantic change. "Yao" is found to perform various grammatical functions as a main verb, a future marker, a connective, an estimation marker, and a modal verb--its major function. In addition, seven meanings have been identified to be associated with "yao." It is proposed that these meanings have a core meaning—"want" or "desire," which is carried by its main verb use. A possible semantic change path is proposed on the basis of previous diachronic study and cognitive and cross-language research findings. Also, to illustrate the conceptualization of the semantic change, we map cognitive schemas onto semantic structure of each meaning to account for the derivation of the meanings and the relations between them.

I. Introduction.

Semantic change is a crucial factor that motivates grammaticalization. From either diachronic or synchronic perspective, semantic change studies provide certain evidence or explanation for the origin, the path, and the direction of evolution process.

Recent researches of semantic change have been concentrated on cross-linguistic studies, with an aim to postulate tendencies in semantic/functional extensions of linguistic elements. Among those works, some are about semantic change paths of modal verbs. Traugott (1989), in her study on English modals suggests three general tendencies in semantic change:

Tendency 1: Meanings related to the external situation may expand and indicate meanings related to the internal situation.

Tendency 2: Meanings of the external/internal situation may expand and indicate meanings of the textual and metalinguistic situation.

Tendency 3: Meaning tends to be more based on speaker's subjectivity. Sweetser (1990), finds a cross-linguistic fact that modal expressions usually have root and epistemic readings. It is also found to be a common development sequence that epistemic meaning derives from root meaning. Another research on modal verbs is Bybee, Pagliuca and Perkins (1991). In examining the future

marking of 75 languages, they find stages of development for future based on modality uses: obligation/desire > intention > future > probability/ imperative.

In this paper we investigate the sequence of semantic change of Chinese modal verb "yao." The hypothesis is that the theories of Traugott (1989), Sweetser (1990) and Bybee, Pagliuca and Perkins (1991) will find exemplification in Chinese modal verb "yao." The structure of this paper is as follows: we will first identify meanings and functions of "yao." Then, we will present explanations for meaning extensions. Finally, we map cognitive schemas onto semantic structures and account for the connections among the schemas.

The material used in this paper is taken from a database of current daily newspaper, the Mandarin Chinese News Corpus established by Computational Linguistic Society. The present research will be based on the analysis of 376 clauses that contain "yao." Without actual examination of the evolution of "yao" from Archaic Chinese to Mandarin Chinese, what this study proposes will be, to certain degree, speculative. But our speculation is by no means arbitrary. The prior theories will be applied to account for our observation.

II. Meanings of "Yao"

In this section we will see that "yao" has seven distinct yet related meanings. "Yao," in designating these meanings, performs different grammatical functions as a main verb, a modal verb, a future marker, a connective and an estimation marker. Below, the meanings belonging to the five categories will be presented. For convenience, in the following discussion, "yao" designating the seven different meanings will be marked with a subscript number respectively, according to the presenting order.

Li and Thompson (1981) tends to treat "yao" as a main verb with the meaning of "wanting." In asserting so, they do not distinguish between the functions of "yao" in the following clauses:

- (1) Wo yao pingguo.
I want apple
'I wanted an apple.'
我要蘋果.
- (2) Wo yao xizao.
I want take a bath
'I wanted to take a bath.'
我要洗澡.

It seems, according to their analysis, that there is little difference between these two clauses. However, the objects of the clauses are eventually associated with different properties: one is an entity and the other is an event. Our analysis is that "yao" of these clauses perform two different functions from both syntactic and semantic considerations. "Yao₁" in (1) means "want to possess," that is, "want to have something under someone's domain." Syntactically, it displays main verb property since it takes aspect marker "le," as in sentence (3):

- (3) Wo yao le pingguo.
 I want ASP apple
 'I have asked for an apple.'
 我要了蘋果。

In our data, 1.6% (6 among 376) of the clauses shows the main verb use.

As for the "yao₂" in (2), the associated meaning is "want to have something become existing." It displays the subject's "opinion and attitude," which Lyon (1977:452) proposes as a feature of modality. In syntactic perspective, it has to co-occur with a verb as in (2) and it cannot take any aspect marker:

- (4) *Wo yao le xizao.
 I want ASP take a bath
 'I have wanted to take a bath.'
 *我要了洗澡。

The above observation suggests that the two types of "yao" behave indeed differently both at syntactic and semantic levels. However, further investigation of syntactic behaviors of modal "yao₂" may find marginal examples like (5):

- (5) Wo yao de shi (ni) qu xizao.
 I want NOM be (you) go take a bath
 'What I asked (for you) is take a bath.'
 我要的是(你)去洗澡。

Here, we have a nominalized modal verb. This example tells that modal "yao₂" of text (5) may not be a typical modal verb. To accommodate this use, we propose to classify it as a "marginal modal." The number of the clauses containing "yao₂" performing this function amounts to 132 (35.11%). That is, about one-third of "yao" clauses are used to indicate the meaning of "wishing to have something become a fact."

The third meaning of "yao" is "force something to be realized." "Yao" carrying this meaning also serve as a modal. At the first sight, there seems to be little difference between the meaning of modal "yao₂" and the meaning of "yao₃." However, subtle distinction is observed in their illocutionary forces. Let us consider the following clauses:

- (6) Gongsì yao jiashu jingdai xiaoxi.
 company want families wait for information
 'The company wanted their families to wait for further
 information.'
 公司要家屬靜待消息。

- (7)shenzhi hai daibu wo yumin, yao wo yumin li quiejieshu
 even also arrest I fishermen want I fishermen sign guaranty
 'They even arrested our fishermen and forced them to sign a
 guaranty.'

甚至還逮捕我漁民,要我漁民立切結書。

- (8) Zhuxi sueiji yao xingzhenguen shumien dafu.
 chair immediately want Executive Yuan written reply
 'The chair immediately ordered Executive Yuan to propose
 a written reply.'
 主席隨即要求行政院書面答覆。

All the three clauses perform directive acts, but in clause (6), "yao₂" shows illocutionary force of advertising, since the company is not in the position to enforce an action upon the victims' families. While in clauses (7) and (8), the subjects are authorized or have the power to command the objects to do something. They demonstrate the illocutionary force of ordering. Besides, "yao₂" in (6) expresses wish or desire of the subject, and the force associated with it is resistible. As for clauses (7) and (8), the function of "yao₃" is to put obligations on the objects-- a function of deontic modal. The illocutionary force is irresistible. In other words, the illocution associated with modal "yao₃" clauses tends to be less polite.

Because people generally follow the politeness principle in communication, the impolite use of "yao₃" is avoided and seldom found. In our data, only 26 clauses (6.91%) contain "yao₃."

Another meaning of modal "yao" ("yao₄") is "ought to, and have to."

Sweetser's analysis (1990) points out that "ought to" and "have to" differ in their domains and imposer. "Ought to" indicates moral or social obligation, but "have to" refers to obligation imposed by extrinsic authority. The examples below show the use of "yao₄."

- (9) Yao yi renmin de liyi uei iouxian.
 ought to PRE people POSS profit be priority
 "People's profit ought to be a first priority."
 要以人民的利益為優先。
- (10) Yitian zhishao yao jieke shici yishang
 one day at least have to practice prostitution ten times above
 'They have to practice prostitution at least ten times a day.'
 一天至少要接客十次以上。

Thus far, we have found "yao₄" clauses occur most frequently in our data. There are totally 146 clauses (38.83%) containing "yao₄" of this use.

The next function of "yao" is to serve as a future marker. There will be a discussion on the semantic development of the future marker function in section III. Here, we will first examine how it is used. The "future" does not refer to the description of a future action or a future event. It indicates an assertion or

prediction made about future possibility (Bybee, Pagliuca and Perkins 1991). In this sense, it is reasonable to relate the future use of "yao₅" to its modality use.

- (11) Ta yao diaozhi le.
 he FUTURE transfer ASP
 'He is going to transfer to another position.'
 他要調職了。
- (12) Gongchandang jiou yao dongshou le.
 the communist party JIOU FUTURE take act ASP
 'The Communist Party is going to take act.'
 共產黨就要動手了。

The future use of "yao₅" is not rare in our data. In about 14.1% (53 among 376 clauses) of the clauses, "yao₅" is used as a future marker.

Another use of "yao" is as a connective. In performing this function, "yao₆" designates a conditional meaning. Phrases like "yao₆shi", "yao₆bushi" and "yao₆buran" are frequently found. First, look at a "yao₆shi" clause:

- (13) Yaoshi ta neng jishi ganshang huochē jiou hao le.
 if he can in time catch train JIOU good ASP
 'I wish he had been in time for the train.'
 'It will be fine, if he can catch the train.'
 要是他能及時趕上火車就好了。

As we may see from this example, the "yao₆shi" clause has two readings: one signals counterfactual condition for a past event and the other marks an open condition for the future. Interestingly, clauses with "yao₆bushi" and "yao₆buran" show different functions:

- (14) Yaobushi ni bang wo, wo jiou zuobuwan le.
 without you help me I JIOU not finish ASP
 'If you had not helped me, I wouldn't have finished it.'
 要不是你幫我,我就做不完了。
- (15) Haihao bei song lai zhiliao, yaoburan bu zhidao huei zenyang
 fortunately PRE send come cure otherwise not know HUEI how
 'Fortunately, he was sent to the hospital, otherwise, it would be hard to imagine.'
 還好被送來治療,要不然不知道會怎樣。
- (16) Gankuai qilai, yaoburan ni huei chidao.
 quick get up otherwise you will be late
 'Get up right now, or you will be late.'

趕快起來,要不然你會遲到。

Unlike "yao₆shi," "yao₆bushi" leads clauses expressing only counterfactual past event. On the other hand, "yao₆buran" behaves quite differently. In the texts containing "yao₆buran," the clauses led by "yao₆buran" indicate conclusions drawn from the preceding clauses and the conclusions are in open condition. From the above observation, we also find that the three words differ in their positions. "Yao₆shi" and "yao₆bushi" appear in the protasis, while "yao₆buran" in the apodosis. In our data, connective "yao₆" is rare. It is found only in seven clauses (1.86%).

Now we come to the last use of "yao₇" as a comparative marker. Six clauses in the data (1.6%) have comparative "yao₇." Look at the examples below:

17. Bi Kangningxiang yao qiang duo le.
PRE Kangningxiang COM strong more ASP
'He is much better than Kangningxiang.'
比康寧祥要強多了。

18. Bi meishi shiliou zhanji yao guei shang siyi
PRE American sixteen fighter COM expensive above 400 million

xintaibi
New Taiwan dollars

'It costs 400 million NT \$ more than F16 Fighter.'
比美式F16戰機要貴上四億新台幣。

Although "yao₇" means comparative, it is not a comparison morpheme. The absence of "yao₇" in the comparative constructions will neither affect the grammaticality nor hinder the understanding of the comparative message. Therefore, we may well say that the function of "yao₇" is nothing more than denoting the "estimate" sense.

Table 1 is a summary of the meanings of "yao" and the frequency of each meaning.

	Meaning	No	%
Yao ₁	Want to possess	6	1.6
Yao ₂	Want to have something become existing	132	35.11
Yao ₃	force	26	6.91
Yao ₄	ought to, have to	146	38.83
Yao ₅	future	53	14.1

Yao ₆	conditional	7	1.86
Yao ₇	comparative	6	1.6
Total		376	

III. Semantic Change

In section 2, we observed seven meanings of "yao." These meanings are carried by "yao" serving different grammatical functions as main verb, modal verb, connective, and markers of future and comparative. However, these meanings are not totally unrelated, i.e., they have something in common. In this section, one of our missions is to find out what is the common core meaning of "yao." Furthermore, we attempt to postulate development path of the meaning extensions of "yao." Previous studies on grammaticalization have figured out tendencies in semantic change. Some of them work on the semantic change of modal verbs. Their propositions will be adopted here to account for the semantic change sequence of "yao."

In our opinion, the core meaning of "yao" is "want" or "desire." It is an attitude verb. In other words, the "yao" clauses do not deal with truth or reality but with what speakers or subjects want to accomplish. But, how should this attitude verb come to mean future, conditional and others?

Traugott (1989), presents three tendencies in semantic change. Her point is that most semantic changes starts first from concrete, physical domain to abstract, psychological domain and then, to textual, metalinguistic situation. In other words, word meanings are extended to involve more and more speakers' subjectivity. Sweetser (1990), also points out the tendency of using words which originally describe the sociophysical domain for the description of the psychological domain. Similarly, Langacker (1991:269) points out that English modals derive from main verb. An example close to Chinese "yao" is the evolution of a verb meaning "want" into modal "will." Their assumptions and findings strongly support that the development of "yao" starts from the main verb use "yao₁," which indicates the desire for the possession of a concrete entity to "yao₂" with the meaning of desiring the realization of abstract notions, of events, or of actions. As for the meaning of "yao₃," it is close to that of "yao₂." The only difference lies on that it expresses an even stronger, irresistible force, and hence, signals "obligation" at deontic level.

When the desire or the imposing of obligation is recognized, it becomes a part of speakers' belief and hence is referred to as an epistemic necessity, which is a counterpart of deontic obligation. Therefore we propose that "yao₄," designating epistemic necessity is an extension of deontic modality "yao₃." This development follows Traugott's subjectivity tendency (1989) stating that meaning with speakers' subjectivity comes later at the evolution stages. In the same way, Sweetser's assertion (1991) saying that epistemic meaning comes from deontic meaning, provides further support.

Bybee, Pagliuca and Perkins (1991) has a finding: in some languages, modality uses develop into future use. The stages of the development is that obligation and desire modalities occur at the first stage stating what the subject or the

speaker want to or ought to do. Then the obligation and desire may be inferred as to indicate what he intends to do. The intention modality thus develops at the second stage. When the intention is equipped with favorable conditions and can be projected to future reality with confidence, it designates a prediction and, in turn, acquires the function of future markers. This is how the semantic change chain extends to the third stage, indicating future possibility. We find Chinese modal "yao" may undergo similar sequence. This change is further supported by diachronic evidence. According to 太田辰夫 (1987), the modality use of "yao" appeared in Tang Dynasty, while the future use, "yao₅," was not found until some time after Sung and Yuan dynasties.

It is a great leap that modals assumes conditional connective function. In Lichtenberk (1991), an investigation of directional verbs of motion in Oceanic languages, it is observed that the conditional function of motional verb "GO" in To'aba'ita and Zabana derives from a future marker. Remember that in (13) the protasis led by "yao₆shi" signals open-condition future events. Actually, the difference between condition and future prediction is a matter of certainty. Uncertain future event may appear as a conditional event. Therefore, we suspect that the conditional use of "yao₆" is an extension of future "yao₅."

The derivation of comparative use has two possible origins. One source is the function of indicating future. As we have stated, "yao₇" indicates "estimate" and in our perception, what is considered as estimation is mentally pushed away from present reality and is thus projected into future potential. Therefore, we propose that comparative function of "yao₇" is related to its future use. The other origin is the modality use of "wanting to have something become existing." The desired result is the goal to which the force of the modal is directed. If we transfer the relation to the comparative use, we get "yao₇" as a marker of the goal (result in estimation) of comparison.

The semantic change paths of "yao" together with the motivations discussed above are shown in Figure 1.

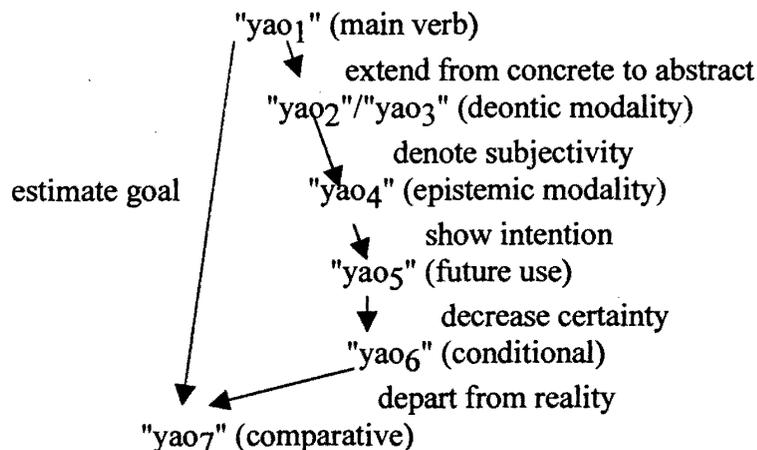


Figure 1. Semantic Change Paths of "Yao".

IV. Image Schemas

The discussion thus far has shown that the meanings of "yao" are distinct and yet related. The main verb use is the core and the others are extensions of it. The paths depicted on Figure 1. show that the extensions are related to the core meaning with different degrees of tightness. In this section, we are going to characterize semantic structures of the meanings with conceptual representations.

With the belief that meanings represent our conceptualization of the world, we adopt Langacker's cognitive grammar model in our analysis. Image schemas will be given to describe the conceptualization of the core meaning of "yao" and its extended meanings. In addition, by comparing structures of the image schemas, we will illustrate how the meanings of "yao" are related to each other by cognitive strategies of metaphor and metonymy.

The central meaning of "yao" resides in main verb use, "yao₁." In Figure 2. the trajector (TR) is understood as the subject that wants to get the landmark (LM), a concrete entity as a goal represented by a box. Dashed arrow indicates mental contact.



Figure 2. Schema of "yao₁"

When modal "yao" develops, the entity LM is replaced by event LM. To describe the modal "yao" relation, two semantic domains are relevant in semantic structure. In the main verb sense, the instantiation domain for entity is space, while in modality use, time domain is needed for the instantiation of event. We have proposed that "yao" is an attitude verb, and that what it represents are potential situations constituted in speakers' or subjects' brains, not in objectively existing situations. Therefore, we need potency domain in addition. The scale of potency presented vertically indicates strength of the force associated with speakers'/subjects' attitude towards the realization of action or event. Four degrees of the potency are identified: known reality, projected reality, potential reality and irreality.² In this way the relation is put into the scope defined by potency and time. The three meanings of modal "yao" are depicted in figures 3-5.

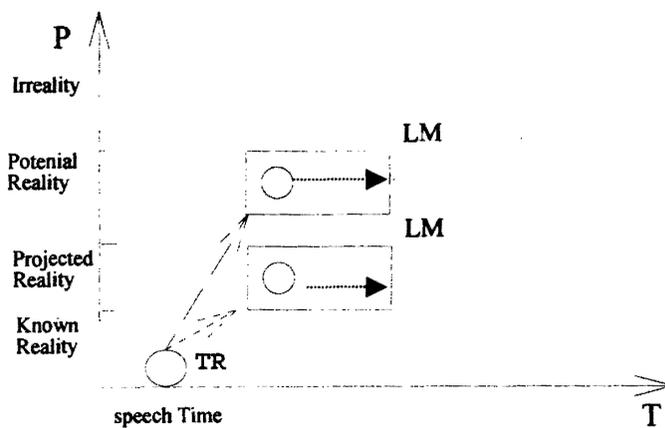


Figure 3. Schema of "Yao₂"

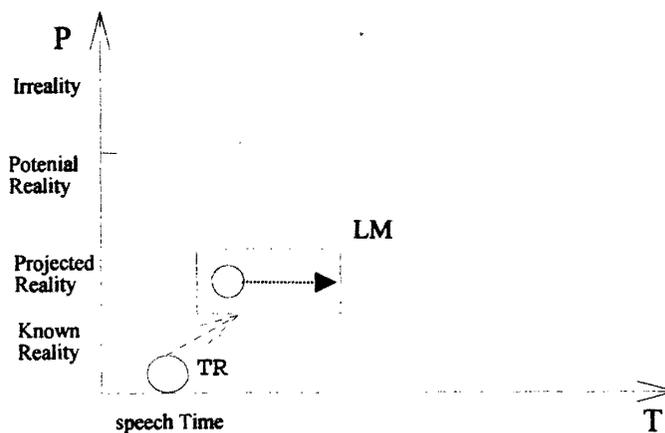


Figure 4. Schema of "Yao₃"

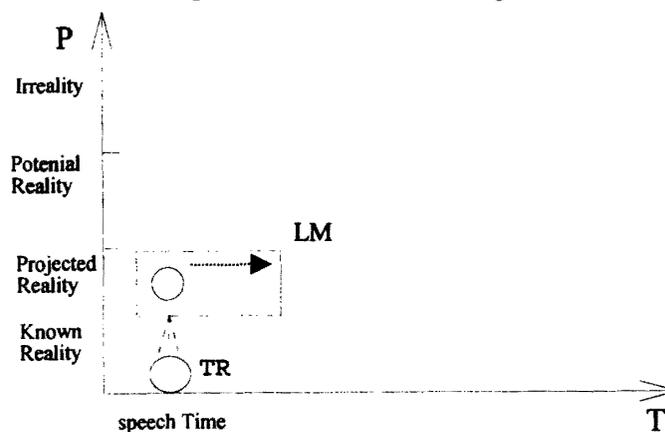


Figure 5. Schema of "Yao₄"

The schemas differ slightly in LM positions and TR specification. The LM of "yao₂" (want to) is assumed to be either in potential reality or in projected reality since it expresses a desire rather than obligation; the TR of the LM event is not specified. Let us now turn to image schema of "yao₃" (force something to be

realized). It has LM placed in projected reality, which shows strong illocutionary force. Furthermore, the subject of the LM event is marked as TR2, which excludes the possibility of its being correferential with TR1 of "yao" relation. By this way, the conceptualization represents deontic obligation denoted by "yao₃". The schema of "yao₄" depicted in Figure 5. also places LM in projected reality to imply obligation. However, in this case, it represents epistemic necessity, that is, it is part of speakers' belief. This characteristic of "yao₄" makes it become atemporal relation. The other distinction is that the trajector of the LM event is not specified; it may be identical with the trajector (TR1) of "yao₄" relation or not.

Figure 6. represents the conceptualization of future "yao₅." As we may see in this kind of expression, LM event is assumed with great confidence (projected reality) to occur in immediate future.

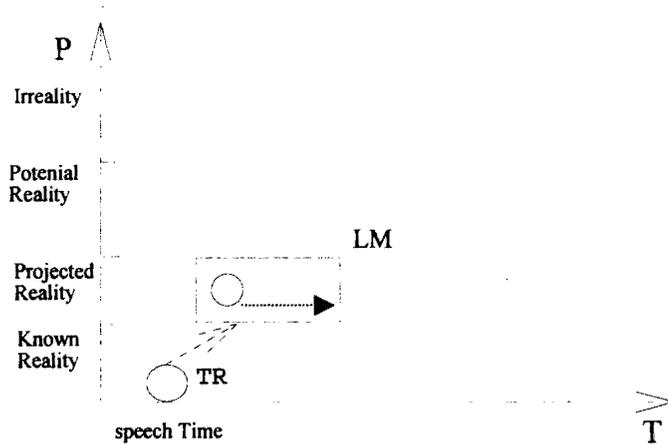


Figure 6. Schema of "Yao₅"

To describe the semantic structure of "yao" used for conditionals, we have to extend the time axis to include the time prior to speech time. Figures 7-9 illustrate structures of conditional "yao₆." As what the schema of "yao₆shi" shows, there is an open-condition LM event in the future time or counterfactual past LM event. Figure 8. tells us that "yao₆bushi" clauses indicate only counterfactual past events. As for the structure of "yao₆buran" in Figure 9., it shows that "yao₆buran" clauses state open-conditions (LM) for the future time.

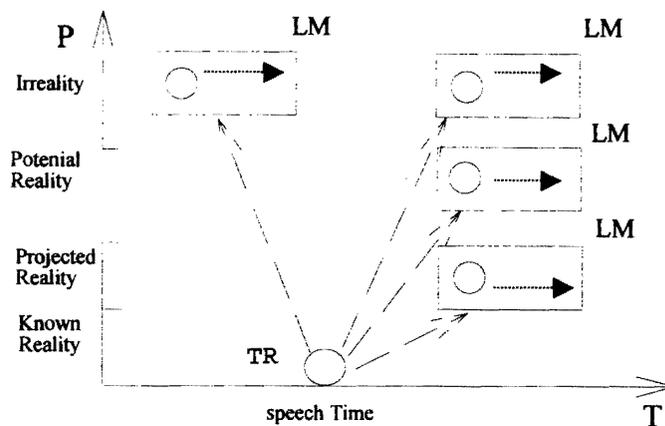


Figure 7. Schema of "Yao₆ (shi)"

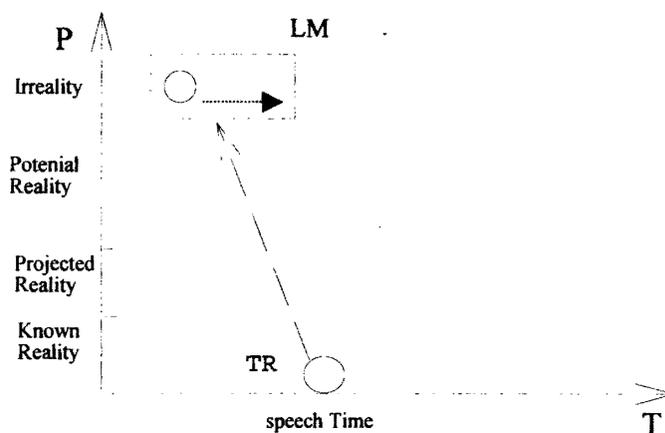


Figure 8. Schema of "Yao₆ (bushi)"

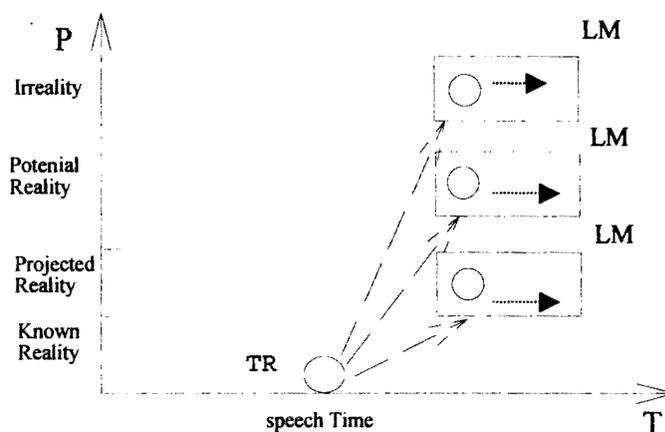


Figure 9. Schema of "Yao₆ (buran)"

To call "yao₇" a comparative marker is quite misleading. As what we have noted, "yao₇" is not a comparative morpheme since it does not constitute comparative structure. Rather, it designates "estimate" or "evaluate" sense

associated with comparison. In spite of the "estimate" sense, the statement of comparison is believed to be true, therefore, the LM is put in projected reality and the relation as a whole is atemporal.

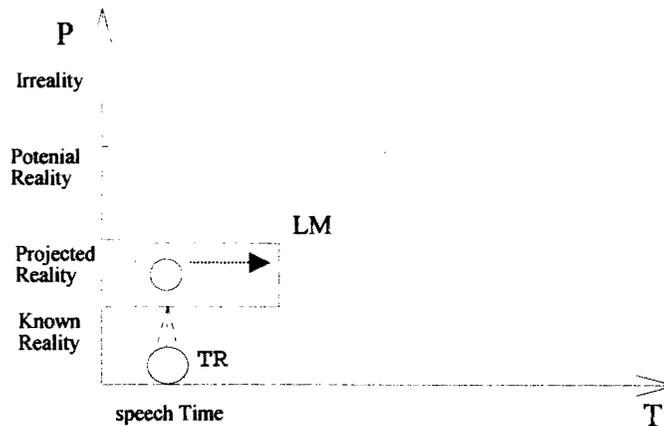


Figure 10. Schema of "Yao7"

Metaphor and metonymy are two strategies of semantic extensions. Metaphor is to map cognitive domain of one concept into another. Metonymy is a process whereby a familiar concept or an easily-understood part of something is taken to stand for another concept or the whole thing. In the case of "yao," we find both strategies at work. First, the modality uses derive from the main verb function through space-to-time metaphor: the instantiation domain of space for the entity of the main verb use is mapped into the time domain for event in the modality uses. As for the extension from modality "yao" to future use, metonymy plays a role. Psychological states like desire, obligation and intention are preconditions for a prediction to be made. And it was because of the connection of modality and preconditions that "yao" acquires future function. Following the sequence, the future use of "yao" further develops to mean conditional, but the motivation is not as straightforward. As we have noted, conditional use designates uncertain prediction. It seems that for "yao" to transfer from future prediction to conditional marking involves metaphoric mapping from belief system to expect domain. Finally, as far as comparative function is concerned, we would say it is motivated by metaphor too, considering either the modality or the future origin. First, the desired object in the modality use is mapped into estimated result in comparative function. At the same time, both estimation and prediction have future locations and we believe this is a factor that leads the future use of "yao" to transfer metaphorically into comparative use.

V. Summary

In this paper, we have identified seven meanings of Chinese modal "yao" and have distinguished the core meaning and its extensions. In accounting for synchronic variations, we adopted sequence and tendencies of semantic change proposed by Traugott (1989), Sweetser (1990) and Bybee, and Pagliuca and Perkins (1991). The conclusion is that the semantic extension paths of "yao" follow the sequence found in other languages. Finally, we provided image schemas to

illustrate the conceptualizations of the meanings of "yao." Also, we proposed that both metaphor and metonymy play roles in motivating the extensions.

NOTES

1. "Yao" is actually a heterosemy. As we may see in the discussion, it may function as main verb, modal verb, connective and markers of future and comparative. However, it is usually categorized as modal verb, according to its most salient function.
2. Degrees of reality are notions of Longacker's dynamic evolutionary model (1991:277). Known reality refers to what has happened; potential reality denotes possible future evolution of event, and projected reality confines to the most possible course of evolution. Irreality may refer to either counterfactual or impossible situations. We find it necessary to distinguish between degrees of reality because the differences among the meanings of "yao" lies mostly in locations of events on the dynamic evolutionary model.

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