Argument and Thematic Structures of the Mandarin Compound Verb: Re-Si

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Abstract

This paper investigates the argument and thematic structures of the Mandarin compound verb: re-si (hot to death). Through time, ‘si’ has developed from a verb into many grammatical functions and generated various meanings. Therefore, the compound, re-si, has a complicate grammatical-category combination ‘re’ and ‘si.’ Four phenomena reflecting how re-si constructs its argument(s) and θ-role(s) help us to have an insight into the interpretation and interrelationship among its argument-thematic structures. Firstly, the verb compound, re-si, may predicate about the weather which brings out a special argument. In contrast with an expletive at the external argument in English, a covert argument is allowed in Mandarin. Secondly, the referring reading of the argument whose reading is a generic, specific reading, or nonspecific reading may influence the interpretation of re-si. Thirdly, the noun phrase (NP) at the external argument position of re-si is constrained in a certain type—a proper noun, a specified noun, or a NP with the marker ‘you’, whenever the NP does not refer to the weather. Fourthly, the causee in a causative structure shifts its position between external and internal-argument positions. Through these four different phenomena, we may have a clear picture about interaction between the syntactic structures and semantic interpretations of the compound verb: re-si.

Keywords: Mandarin, Re-Si compound verbs, thematic and argument structures, causativity

1. Introduction

The study focuses on the thematic-argument structures of the Mandarin compound verb, re-si, in which a main verb re (heat) combines with another element ‘si’. Through time, ‘si’ has shifted from a verb to many grammatical functions and generated various
meanings (Lio, 2006). This paper investigates the thematic and argument structures of the Mandarin compound verb: *re-si*. Four phenomena reflecting how *re-si* constructs its argument(s) and θ-role(s) help us to have an insight into the interpretation and interrelationship among the argument-thematic structures of *re-si*.

Firstly, when *re-si* predicates about the weather, different NPs are available to appear at the subject position. Sentence (1a) has an NP, jin-tian (today) at the sentence initial position, while Sentence (1b) has multiple NPs to appear at the subject position. Which of the multiple NPs at the initial position of (1b) is the subject of the weather predicate clause? What grammatical function does the other NP play? And what θ-roles are these NPs, respectively?

1a. *Jin-tian re-si le.*
   Today heat-die Perf/Inc (Today is burning hot.)
1b. *Tai-zhong Jin-tian re-si le.*
   Taichung Today heat-die Perf/Inc (Today is burning hot in Taichung.)

The second phenomenon focuses on the NP forms which occur at the subject position of the sentences with the compound verb, *re-si*. We found that sentence (2a) is grammatical but (2b) is ungrammatical. What mechanism decides the grammaticality of the following sentences?

2a. *you ren re-si le.*
   There is person heat-die Perf/Inc (Someone died of overheating.)
2b. **yi-ge ren re-si le.**

Thirdly, comparing (3a) and (3b), does *re-si* in (3a&b) keep the same interpretation on *re-si*? If no, what causes the different readings of *re-si* in these two sentences?

3a. *jin-tian re-si le yi-ge ren*
   Today heat-die Asp-le one Class-ge person (Today’s heat killed a person.)
3b. *jin-tian re-si ren le*
   Today heat-die people Particle-le. (It is extremely hot today.)

The fourth phenomenon is about the NP located at either the subject position or the object position of the *re-si* predicate such as (4a&b). It seems that the NP, *wo*, can shift its position freely between these two positions. What mechanism triggers such shift?

4a. *Wo re-si le.*
   I heat-die Perf/Inc (I feel extremely hot.)
4b. Re-si wo le.
Heat-death me Inc-le. (It heats me to the extent that I almost die.)

The above four phenomena display the important positions where arguments of the compound verb, re-si, are able to appear and the θ-roles that these arguments may play in the context. What grammatical functions and θ-roles do the NPs before re-si take? Under what conditions are these pre-verbal NPs allowed to appear? What mechanism may influence the interpretations of the re-si predicates: a physiological death or a metaphorical death? Why some of the arguments may shift its position between external and internal argument position? The study will be based on the mapping of the thematic interpretations with the argument structures resulting from re-si predicates. The organization of the study follows the order of the above mentioned four phenomena of the compound verb, re-si. More examples and illustration will be given in the following sections.

2. The NPs Preceding Re-si as a Weather Predicate:

Since the target of the study is re-si, we have to know re, first. The term re (hot/heat), like other weather terms leng (chilling/chill) and bin (icy/ice), etc., is a meteorological predicate. The weather predicate requires an expletive it as its subject in English and ‘es’ in German. The function of the expletive in English or in German is to satisfy the syntactic requirement and carries no concrete semantic meaning as shown in (5a&b). The subcategorization of the weather predicate ‘hot’ in English and ‘heiss’ in German (5b) shows no argument requirement at both the external and the internal argument positions.

5a. It’s hot. (English)
be hot: 0 <0> (Argument structure)
5b. Es ist heiss. (German)
It is hot
Ist heiss: 0 <0> (Argument structure)

In Mandarin, in contrast, no NP occurs at the subject position such as sentence (6a). Similarly, Polish also has no NP or an empty NP for a weather predicate in (6b). Moreover, the aboriginal tribe languages in Taiwan, Atayal and Paiwan, also require no overt subject NP for their weather predicates.

6a. Hao re o!
Very hot part. Re [Adjective; ____] (Subcategorization)
It’s very hot. Re: 0 <0> (Argument structure)
6b. Jest gorąco!
   Is hot!     Gorąco [Adjective; _____]
   It’s hot.  Gorąco:  0 <0>

6c. Kiloh (ga)!
   hot Final-Particle!   Kiloh [adjective; _____ ]
   It’s very hot. Kiloh: 0 <0>

Let’s turn to the secondary role si in the compound verb re-si. Zhu (1982) proposes that ‘ji’ (extremely), ‘duo’ (much more), ‘tou’ (transparently/extremely) or ‘si’ (die/extremely) has the complement function as the post-modifier of ‘re’. Thus, ‘si’ is a post modifier with the basic meaning ‘die’ to modify ‘re’. Here, ‘si’ expresses the meaning of extremely and plays the role as the gradable-complement of ‘re’ (hot). Chao (1968) calls ‘si’ ‘Intensive Complement’ which has the same grammatical function as the Zhu (1982) has. The interpretation of ‘re-si’ is ‘extremely hot’. Let us get into the first issue about different NPs appearing at the initial position of the weather-predicate clauses in (7a&b).

7a. Tai-zhong re-si le.
   Taichung heat-die Perf/Inc (Taichung is extremely hot.)

7b. Jin-tian re-si le.
   Today heat-die Perf/Inc (Today is extremely hot.)

Her (1991) proposed that weather verbs may take either an overt NP with a feature specification [+PLACE] or a covert subject NP. Her’s finding gives an explanation for the grammaticality of sentence (7a) but not (7b). Hsin’s (2005) argued that both temporal and locative subjects can occur with weather verbs without difficulty. Hsin’s suggestion explains the grammaticality of sentences (7a&b). However, when multiple NPs occur at the subject position of a weather predicate, another issue is raised. We have to identify the grammatical function for each of the multiple NPs at the subject position of the weather predicate in Mandarin. Such an example is listed in (8).

8. Tai-zhong jin-tian re-si le
   Taichung today heat-die Perf/Inc
   Taichung, today is extremely hot.

When two or more NPs appearing at the initial position of a weather predicate just as Tai-zhong (Taichung), jin-tian (today), tian-qi (weather) appear at the initial position of the sentence in (9a-c), we wonder which one is the subject and what grammatical role each of them plays in (9a-c)
Mandarin is a topic-prominent language; that is, topic frequently appears at the initial position of sentences. Comparing the semantic correlation and linear location between the topic NP and its predicate, the subject NP has stronger and more direct semantic relevance to its predicate and sits closer to the predicate, too. *Tian-qi* (weather) has the strongest semantic relevance to the predicate *re-si* (extremely hot); therefore, it plays the role of the subject for the weather predicate. Since the subject of weather predicate is allowed to be overt or covert, we assume that *tian-qi* is a null subject NP in sentences (9a&b) and (8). Then we have to explain what grammatical functions and semantic roles of multiple NPs preceding the subject NP *tian-qi*. The sentence in (9c) has three NPs at the initial position. These three NPs cannot be assigned the grammatical roles with only a Topic and a Subject. The solution is by inserting a possessive marker ‘de’ in front of *tian-qi*. Then, a DP is formed as ‘*jin-tian de tian-qi*’ (Today’s weather) or ‘*Tai-zhong de tian-qi*’ (Taichung’s weather). The insertion of ‘de’ will make the temporal or spatial NP bear possessive function. The marker ‘de’ is optional to be overt or covert in these sentences of (9a-c). The NP with the feature specification [+Place] or with [+Time] can combine with the NP ‘*tian-qi*’ to form a DP. Thus, sentences (9c) can be interpreted as a Locative topic followed by a subject NP.

In brief, the predicate, *re*, alone acts as a predicate and can be modified by a gradable pre-verbal adverb such as ‘*hen*’ or ‘*hao*’. The predicate ‘*hao-re*’ can carry a Subject NP ‘*tian-qi*’ with the thematic role of theme. The gradable adverbs ‘*hen*’ or ‘*hao*’ cannot be used to modify the compound ‘*re-si*’. The ‘*si*’ in ‘*re-si*’ is mutually in complementary distribution with any other pre-predicate gradable adverbs. And ‘*si*’ plays the role as an intensive or gradable complement behind *re*. Temporal NP or locative NP in sentence initial position will acts as a topic, each of which combines with ‘*tian-qi*’ to form a DP with another phrase ‘*tian-qi*’. The triple NPs at the initial position of a weather predicate will appear in the ordering of Topic-Genitive-(*de*)-Subject.

### 3. The NPs in Front of a Non-Weather-Predicate *Re-si*

In section 2, an NP refers to Time, Place, or Theme acts as a Topic, Subject, or topic and DP in front of *re-si*. In this section, other NPs can also appear at the beginning of a sentence like (10a); however, other NPs at the same position generate ungrammatical
ones like (10b).

10a. *yi-ge ren re-si le.
   There is a Class-ge person heat-die Perf/Inc
   There is a person who died of overheating.
10b. *yi-ge ren re-si le.

Here, *re-si is not concerned with ‘weather’ but a Patient or an Experiencer. We notice that Sentence (10a) that starts with an indefinite QP is grammatical, whereas Sentence (10b) which also begins with an indefinite QP is ungrammatical. What mechanism decides the grammaticality? Chao (1968) and Li & Thompson (1981) proposed that the subject NP has to be a definite one in Mandarin. Stockwell et al (1973) categorizes NPs into two types: Definite NPs and Indefinite NPs. Definite NPs include proper nouns and those NPs which are preceded with a definite marker. Indefinite NPs encompass NPs of specific and non-specific references. Specific references are those NPs whose references are known only by speakers but not listeners. The non-specific references are the NPs whose references are unknown by both speakers and listeners. Hsin (2002) proposes that ‘you’ is a syntactic marker to license the appearance of an indefinite NP at the subject position. Hsin’s proposal predicts and explains the grammaticality of sentences (10a-b). Some bare NPs, as in (11c), can behave like a definite NP, as in (11d), and appear at the subject position without you.

11a. you ren re-si le. (you Indefinite Bear NP)
   There is someone heat-die Perf/Inc (Someone died of overheating.)
11b. **ren re-si le. (Indefinite Bear NP)
   People heat-die Perf/Inc
11c. ren yi-jing re-si le. (Definite Bear NP)
   person already heat-die Perf/Inc (A man has died of overheating)
11d. na ge ren re-si de. Generic Bear NP
   that –CL person heat-die Perf/Inc ‘ (That man die of overheating.)

The above examples strongly support Hsin’s (2002) claim that syntactic license ‘you’ is essential for the indefinite subject NPs. Definite NPs, either in bare N or definite NP form, do not require the licenser you.

4. The Meaning of Re-si Decided by Following NPs

This section focuses on three types of Quantified NPs which influence the interpretation of the predicate ‘re-si’. What causes the differences between (12a&b)?
12a. *jin-tian re-si le yi-ge ren*  (see 3a)
12b. *jin-tian re-si ren le*  (see 3b)

The differences between (12a) and (12b) include that (12a) has a quantifier object NP, *yi-ge ren*, with a specific reading, while (12b) has a bare object NP with a nonspecific reading. Besides, ‘*le*’ in (12a) is as an Aspect; however, ‘*le*’ in (12b) is a sentence final particle. The above information does not explain why *re-si* has different interpretations. Let us look at (13a&b).

13a. *jin-tian re-si le yi-ge ren*
   Today, heat-die Asp-*le* a Class-ge person  ‘*re-si*’ [V; (NP) ____ QP]
   Today, a person died from the heat.  ‘*re-si*’: (Time) <Patient>
13b. *jin-tian re-si le san-ge ren*
   Today, heat-die Asp-*le* three Cla-ge people  *re-si*: [V; (NP) ____ QP]
   Today, three people died from the heat.  *re-si*: (Time)  <Patient>

The quantifier NPs, *yi-ge ren* and *san-ge ren*, cause *re-si* in (13a&b) to gain the physiological-death reading for the NPs in (13a&b). These quantifier NPs have specific reference. Another type of quantifiers in (14a&b) like *yi-xie* (some) and *xu-duo* (many) results in two possible interpretations of *re-si*: a physiological death or a metaphorical death. See (14a&b).

14a. *jin-tian re-si le yi-xie ren*
   Today, heat-die Asp-*le* some people  ‘*re-si*’ [V; (NP) ____ QP]
   Today, some people died from the heat.  ‘*re-si*’: (Time) <Patient>
14b. *jin-tian re-si le xu-duo ren*
   Today, heat-die Asp-*le* many people  ‘*re-si*’ [V; (NP) ____ NP]
   Today, many people died from the heat. ‘*re-si*’:(Time) <Patient/Experiencer>

The indefinite quantifier *yi-xie* (some) has a strong specific reading just like the number, one, two, or three. It is easy for readers to obtain a physiological death for *re-si*. However, *xu-duo* has a loose specific reference. That is, more readers will obtain the metaphorical reading of *re-si* in (14b). The third type of quantifiers includes universal quantifier such as *suo-you* (all) and *mei-ge* (every) (15a-b) and generic quantifier bare NP like ‘*ren*’ in (15c). The reading of *ri-si* obtains the reading of metaphorical death for all the NPs in (15a-c). In addition, *le* in (15a-c) is a final Particle not an Aspect any more.

15a. *jin-tian re-si le suo-you ren*
   Today, heat-die Asp-*le* all people  ‘*re-si*’ [V; (NP) ____ NP]
Today, it lets all people feel extremely hot. ‘re-si’: (Time) <Experiencer>  
15b. jin-tian re-si mei-ge ren le  
Today, heat-die every person Asp-le ‘re-si’ [V; (NP) _____ NP]  
Today, it lets everyone feel extremely hot. ‘re-si’: (Time) <Experiencer>  
15c. jin-tian re-si ren le  
(see 13(b))

In short, re-si in (13a&b) indicates the real death of the object NP with the patient θ-role, while re-si in (14a&b) refers to either physiological or metaphorical death of the object NP with the patient or experiencer θ-role, and re-si in (15a-c) shows no death but the feeling of the object NP with experiencer θ-role. The variable interpretations correspond to the three types of quantifiers mapping with specific, loose-specific, and non-specific reference respectively.

5. Interrelation between External and Internal Argument Positions:

The NP, wo, in (16a&b) seems able to appear at either the subject position or the object position of the compound, re-si, a V-V or V-C compound. The change of external and internal arguments here differs from the arguments shift in weather predicate such as Hsin’s (2005) examples of ‘wo shai tai-jang’ and ‘tai-jang shai wo’. It also differs from Liu & Hu’s (2013) V-si, a psychic compound, such as in ‘wo xian-mu-si ta-de haoyun le’ with causer-cause semantic relationship and ‘ta-de hao yun xian-mu-si wo le’ with affecter-affectee semantic relationship. The question is why the NP can appear at either the subject or the object position, shown in (16a&b).

16a. Re-si wo le.  
Heat-death me Inc-le. Re-si: 0 <1>  
It heats me to the extent that I almost die. Re-si: 0 <experiencer>  
16b. Wo re-si le.  
I heat-death Perf/Inc. Re-si: 1 <0>  
I almost died of the heat. Re-si: experiencer <0>

To get insight of the issue, this study chooses two different approaches to explain the fact that wo occurs at either the external argument or the internal argument of a compound, re-si. The first approach is the traditional generative grammar in terms of Phrase-Structure rules to explain the change from DS (Deep Structure) through Transformational Rules to surface structure (SS). The DS in (16a) undergoes the transformation of Object-NP-Movement to generate its SS as (16b). The condition that allows an object NP to move to the subject position is that the subject position should be empty. Since an empty subject violates the Extended Projection Principle (EPP), the condition tends to trigger the object-NP raising to the subject position. The second
approach is based on Huang’s (2006) tri-layer VP-shell model of syntax-lexicon mapping in terms of event structures to approach argument structure. According to Huang (2006), re-si in sentence (16a) is a causative without a causer ‘tian-qi’ appearing. This sentence is presented as the tree diagram (17).

(16b) is an Inchoative template with [BECOME <MANNER> [x <STATE>]]. The sentence is presented in tree diagram (18).

6. Conclusion:

This study focuses on the thematic and argument structures of the Mandarin compound verb: re-si. Four phenomena reflect how re-si constructs its argument(s) and θ-role(s). Firstly, the subject tian-qi can be overt or covert when occurring with the weather predicate re-si, similar to other languages such as German, Polish, and Atayal. In
contrast, English requires a dummy subject *it* due to EPP. Secondly, the overt NPs occurring at the subject position of the predicate *re-si* are not about weather but a Patient or an Experiencer. The subject NP needs to be a definite NP, or it has to be licensed by a marker *you*, as prosed in Hsin’s (2002). Thirdly, three types of Quantifier NPs influence the interpretation of the compound ‘*re-si*’ in the predicate. The number quantifier NPs with strong specific reference tend to gain the physiological death readings for *re-si*, whereas quantifier NP such as *xu-duo-ren* with a loose specific referring tends to give the metaphorical reading for *re-si*. Fourthly, the study uses two different approaches to explain the shift of the external argument and the internal argument of the predicate *re-si*. The first approach is via an Object-NP-Movement Transformation Rules from DS to SS. The second approach is based on Huang’s (2006) VP-shell model of syntax-lexicon mapping in terms of event structures to approach argument structures. The causative-template event explains ‘*Re-si wo le*’, while the inchoative-template event illustrates “*wo re-si le*”.

Reference: