

# A Review on Semantic and Syntactic Constraints of VV Reduplication in Mandarin Chinese: Retrospections and Development

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**How to cite this paper:** Fang, Y., & Wang, Y. (2024). A Review on Semantic and Syntactic Constraints of VV Reduplication in Mandarin Chinese: Retrospections and Development. *Open Journal of Social Sciences*, 12, 62-80.

<https://doi.org/10.4236/jss.2024.121006>

**Received:** November 27, 2023

**Accepted:** January 14, 2024

**Published:** January 17, 2024

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## Abstract

This paper reviews the studies on semantic and syntactic constraints of VV reduplication in Mandarin Chinese through three different stages, with the theoretical framework extending from structuralism to functional, generative and cognitive paradigms. While a series of constraints are uncovered and delved into, with explanations proposed in different theoretical approaches, addressing numerous research problems in the field, none of the approaches provides an all-encompassing solution. Further studies may target a more detailed and comprehensive morpho-syntactic analysis in Generative Grammar, with semantic elements incorporated into the framework. Much can be done on the relationship between VV reduplication and relevant cognitive representations for an in-depth cognitive explanation. Furthermore, studies can be done on VV reduplication across languages for typologically significant constraints around the world to unveil some universals among the languages and even human cognition. Besides, chronological studies may provide insights into the constraints of VV reduplication.

## Keywords

VV Reduplication, Grammatical Category, Grammatical Meanings, Semantic Constraints, Syntactic Constraints

## 1. Introduction

VV reduplication in Mandarin Chinese (abbreviated as VV reduplication below) refers to such linguistic forms as 看看 (kan kan, look look, have a look) which is composed of a mono-syllabic verb base (the first constituent of the form) and its reduplicant (the second constituent of the form) which is mostly toneless.

The structure conveys a delimitative aspectual meaning (Li & Thompson, 1981; Dai, 1993; Basciano & Melloni, 2017; Sui, 2018) with syntactic and semantic constraints, for example:

- |  |  |
|--|--|
| (1a) 一天跑十里                               | (b) *一天跑跑十里 (Li, 1998: p. 84)                |
| yi tian pao shi li <sub>classifier</sub> | yi tian pao pao shi li <sub>classifier</sub> |
| one day run ten miles                    | one day run run ten miles                    |
| run 10 miles a day                       |  |
| (2a) 说说                                  | (b) *到到                                      |
| shuo shuo                                | dao dao                                      |
| talk talk                                | arrive arrive                                |
| have a talk/talk for a while             |  |

(1a) is acceptable when the verb 跑 (pao, run) is followed by a numeral classifier, while (1b) is not grammatical as VV reduplication is syntactically incompatible with the numeral classifier, hence the syntactic constraint. In (2a), 说 (shuo, talk) is an activity verb and could be reduplicated while in (2b), 到 (dao, arrive) is an achievement verb and could not be reduplicated, hence the semantic constraint. Therefore, to produce grammatical VV reduplication, one should be aware of its semantic and syntactic constraints, which are of key importance to the acquisition as well as the understanding of the semantic and syntactic features of the linguistic structure. Studies on these constraints thus flourish and could be roughly divided into three stages in different theoretical paradigms: the first stage focuses on verb meanings of the VV reduplication in the structuralism framework. In the second stage, the focus is switched to the event conveyed by VV reduplication and different theoretical approaches are available to tackle the problems left in the first stage. Finally, a core participant in the event, the speaker, is singled out as a new perspective for the study. In the following sections, different perspectives and studies are reviewed, with relevant problems discussed and possibilities for further researches revealed. Section 2 reviews the structuralism approach on constraint studies targeting verb meanings. The problems resolved and potential for further studies are also discussed. Section 3 is dedicated to constraint studies in functional, generative and cognitive frameworks, together with developments and challenges. In section 4, a new perspective on constraint studies is introduced, with the limitations discussed. A brief literature review of studies on the grammatical category and grammatical meanings of VV reduplication is made first in Sections 2 down to Section 4 as these studies constitute the foundation for constraint studies at each stage. Section 5 concludes the paper and proposes possible research topics for future studies.

## 2. Structuralism Studies on Syntactic and Semantic Constraints of VV Reduplication

Studies on syntactic and semantic constraints of VV reduplication target the following questions:

- 1) What verbs can be reduplicated?
- 2) What verbs cannot be reduplicated?
- 3) How can such constraints be explained?

To answer these questions, we first briefly review the studies on the grammatical category and grammatical meanings of VV reduplication, and then focus on constraint studies at this stage.

### 2.1. A Brief Review of Studies on Grammatical Category and Grammatical Meanings of VV Reduplication

The first stage of studies starts from around 1924 (Li, 1924) with the focus on verbs. Since the constraint studies are based on researches on grammatical category and grammatical meanings of VV reduplication, this part is devoted to a review in this respect. Scholars' views actually vary on grammatical category of VV reduplication. Some hold that it is morphology (Lv, 1944; Wang, 1963; Li & Thompson, 1981; Shi, 1996); while Li (1964) and Li (2003) believe that they are words. Chao (1968) further argues that they are compounds. Fan (1964) investigates the morphological structuring of VV reduplication and proposes that such forms are phrases with the structure of *verb + cognate verbal classifier*. Though diversified, these views are not free of problems:

Firstly, VV reduplication is not sensitive to morphological constraints as other types of reduplication in Mandarin Chinese do (Basciano & Melloni, 2017: p. 146), for example, in AABB verb reduplication, the morphological constraints are that the roots of the reduplication must have a parallel relationship with each other, be it synonymous, hyponymous or antonymous (Zhang, 2015: p. 6). Nevertheless, such morphological constraints are meaningless to VV reduplication as the two elements are identical, which undermines the proposal that VV reduplication is morphology.

Secondly, the separability of VV reduplication challenges the syntactic atomicity and integrity of words (Basciano & Melloni, 2017: p. 146), one can insert a numeral 一 (yi, one) in between VV, resulting in V — V. Therefore it is problematic when VV reduplication is taken to be a word or a compound.

Thirdly, if we hold that VV reduplication is composed of the verb and its cognate verbal classifier, then such syntactic composition would allow numerals in between, as Mandarin Chinese normally does, however, the numeral sanctioned into VV reduplication is almost limited to 一 (yi, one), for example:

- |   |  |
|---|--|
| <p>(3a) 醒—醒<br/>xing yi<sub>numeral</sub> xing<br/>wake up one wake up<br/>wake up for the moment</p> | <p>3(b) *醒两醒<br/>xing liang<sub>numeral</sub> xing<br/>wake up two wake up</p> |
|---|--|

From the above example, it can be seen that (3a) is acceptable with the numeral 一 (yi, one) inserted in between the VV reduplication 醒醒 (xing xing, wake up wake up, wake for the moment) whereas (3b) is not well formed when the numeral 两 (liang, two) is inserted.

For the grammatical meaning of VV reduplication, scholars reached the following consensus:

1) It expresses the delimitative aspectual meaning, while meanings of tentativeness and mildness are pragmatic (Li, 1964; Li & Thompson, 1981; Zhu, 1982; Li, 1998; Zhu 1998; Li, 2003).

2) The quantifying meaning is inherent in VV reduplication, which explains the incompatibility of VV reduplication with the numeral classifier in (1b)<sup>1</sup>.

3) The aspectual meaning is inherent in VV reduplication.

To sum up, the studies on grammatical category at this stage focus on the internal structuring of VV reduplication. Studies on grammatical meanings of VV reduplication center on the inherent semantic features of the structure apart from its aspectual meanings, accordingly, constraints studies at this stage target the semantic and distributional features of the base verbs and their reduplicability.

However, as aspectual meaning is “syntactically” encoded, the stage of study paves the way for the researches on VV reduplication beyond words and morphology. For example, Zhu (1998), while agreeing with the attenuating and aspectual function of VV reduplication, proposes that VV reduplication is notable for its agentative and dynamic meaning which are not due to the verbs but must be ascribed to VV reduplication. For example, the verb 醒 (xing, wake up), marking the ending of the sleeping state, is non-agentative, however, when it is reduplicated into 醒醒 (xing xing, wake up wake up, wake up and stay awake for a while), it is agentative and dynamic due to the schematic/framework meaning of VV reduplication. Therefore, VV reduplication may have its unique holistic meaning independent of verb meanings. This finding contributes to the second stage of study beyond the verb in VV reduplication. Also, it calls attention to the agent/speaker of VV reduplication, opening up the study in the third stage.

## 2.2. Semantic and Distributional/Syntactic Constraints of VV Reduplication

From studies on grammatical meanings of VV reduplication at this stage, three semantic features of the structure could be extracted: [+durative] [+bounded] [+dynamic]. Obviously, these semantic features are actually related to situation types at the sentential level. It should be mentioned that [+bounded] is entailed from the delimitative aspectual meaning of VV reduplication and is therefore a temporal concept.

As VV reduplication is considered to be words, phrases or morphology for grammatical categorization at this stage, constraint studies are mostly on the semantic and distributional features of the base verb.

Semantic constraints on VV reduplication can be summarized as follows:

I. The verbs in should be [+durative] [+procedural] [+dynamic] [-telic] [-result] [+volitional] [+animate] [+positive] (Li, 1924; Li, 1964; Li & Thomp-

<sup>1</sup>Cheng (1988) provides a syntactic explanation, arguing that the incompatibility is due to the fact that VV reduplicant and the verbal classifier occupy the same syntactic position.

son, 1981; Zhu, 1998; Li, 2003).

II. Modal verbs, directional verbs such as 进 (jin, enter) and copula verbs such as 是 (shi, is) could not be reduplicated (Fan, 1964).

For distributional/syntactic constraints on VV reduplication, scholars reach the following consensus:

I. VV reduplication normally cannot be negated, for example: \*不看看 (bu<sub>negating particle</sub> kan kan, not look look)

II. VV reduplication cannot occur with complements of result, for example: \*打破 (da da po<sub>resultative complement</sub>, hit hit broken).

III. VV reduplication is incompatible with numeral classifiers.

IV. The object of VV reduplication mostly denotes definite referent as the quantifying and dynamic meanings of VV reduplication require that the object must be definite to guarantee the action denoted by VV reduplication is specific and concrete (Li, 1998).

V. VV reduplication is incompatible with other aspects due to inherent the delimitative aspectual meaning.

VI. VV reduplication is mostly the predicate of a sentence, and rarely occupies the syntactic position for subject, object and attribute.

Stylistic and phonetic constraints are also discussed at this stage (Zhao, 1993; Li, 1996), but this paper will not go into the details.

However, the following problems remain to be solved:

First, at this stage the semantic constraints of VV reduplication are attributed to the semantic features of verbs, which predict the unreduplicability of such verbs as 到 (dao, arrive) since the verb 到 is [+telic] and [+resultative], but in our corpus we found such an example:

(4) 这粹宝斋你得到到。<sup>2</sup>

zhe<sub>demonstrative</sub> Cui Bao Zhai ni<sub>2nd person singular</sub> dei<sub>modality</sub> dao dao.

The Cui Bao Zhai you must arrive arrive.

You must get to Cui Bao Zhai.

到 (dao, arrive) normally resists reduplication as it is an achievement verb not sanctioned into VV reduplication, however, (4) is available in corpus, therefore, further studies are to search for the conditions under which the semantic constraints on VV reduplication could be released. Zhu (1998) investigates the expressive functions of VV reduplication situated in different sentences and finds out that VV reduplication is closely related to the imperative function of sentences, which affects the reduplicability of the verbs. In other words, imperative sentences may release the semantic constraints on verbs as illustrated in the above example. These findings pave the way for the studies that investigate the relationship between VV reduplication and the sentence patterns they co-occur with, which is to be discussed section 3.

Second, how can we explain that verbs with such semantic features as

<sup>2</sup><http://www.aihanyu.org/cncorpus/index.aspx>. The sentences without further note are all taken from this corpus.

[+durative] [+procedural] [+dynamic] [-telic] [-result] [+volitional] [+animate] [+positive] could be reduplicated? An account of verb semantic may result in tautology.

Third, such semantic features as [+durative] [+dynamic] [-telic] belong to the situation types, which are actually features at the sentential level, therefore, such a question emerges: Are researches on verb semantics sufficient for the semantic and syntactic constraints of VV reduplication?

Finally, from the distributional/syntactic constraints on VV reduplication, it can be seen that semantic features of VV reduplication may account for the distributional constraints in II, III, IV, V. However, they are not explanatory adequate for other constraints, which in turn, triggers more theoretical approaches in the next stage.

### **3. Studies on Syntactic and Semantic Constraints of VV Reduplication at the Second Stage**

The first stage of studies on VV reduplication reveals the semantic and the distributional constraints of the verbs into VV reduplication. However, the problems to be solved suggest that more attention is to be paid to the structure beyond the verbs and morpo-syntactic as well as the eventuality properties denoted by the VV reduplication are to be delved into for an explanatory adequate account of the constraints. With functional, generative and cognitive approaches in position, the second stage of studies is accordingly ushered in. Studies at this stage are explanation oriented and could be traced back to the 1990s. Researches center on the situational and aspectual meanings of the verbs and VV reduplication as well as the eventuality features denoted by the structure, with empirical studies available. Morpho-syntactic features and the major sentence patterns for VV reduplication are also studied to provide a prescriptive or functional explanation.

#### **3.1. A Brief Review of Studies on Grammatical Category and Grammatical Meanings of VV Reduplication**

As mentioned afore, this part again is devoted to a brief literature review of researches on grammatical category and grammatical meanings of VV reduplication as they constitute the foundation for constraints studies on the structure. For studies on grammatical category, two new perspectives are available, namely, morpho-syntactical and constructional. Morpho-syntactically, some scholars hold that the reduplicant is an affix (Sui, 2018; Gao et al., 2021). Gao et al. (2021) conducted empirical studies on Mandarin tone sandhi of VV reduplication and lexical compounds and found out that for VV reduplication, only the monomorphemic verb base was accessed in the mental lexicon and “the second constituent likely serves as an affix”, therefore, unlike lexical compounds, VV reduplication “is not stored as a lexical entry” (Gao et al., 2021: p. 16). Chen & Wu (2023) seem to agree that the reduplicant is an affix and argues that VV reduplication is a post-syntax PF (phonetic form) operation caused by lowering of de-

limitative aspect head which induced the phonetic copying of the verb. Other scholars hold that VV reduplication is a syntactic structure above word level (Sui & Hu, 2016; Xiong, 2016; Basciano & Melloni, 2017; Xie, 2020). In the framework of generative grammar, Xiong (2016) holds that the second constituent in VV reduplication is a verbal classifier, behaving similarly to a common classifier. Basciano & Melloni (2017) further postulates that “the reduplicant is the lower copy sitting as the complement of the verbal head (higher copy), and displays the distributional as well as interpretive properties of ‘weak’ verbal classifiers” (Basciano & Melloni, 2017: p. 143). Sui & Hu (2016), on the other hand, argues that a functional category ASP above VP copies the form of the verb in VV reduplication, and the base verb moves to ASP head to generate VV reduplication. They further hypothesize the existence of a null functional category Mood/Modality at LF to which VV reduplication moves for interpretation. Deng & Qi (2023) analyze the afore mentioned syntactic approaches and contend that according to the proposal by Xiong (2016), in 看一看城墙 (kan yi kan chengqiang, look one look wall, have a look at the wall), 一看城墙 (yi kan chengqiang, one look wall, a look at the wall) is of the same structure as 一堵城墙 (yi du<sub>classifier</sub> chengqiang, one wall, a wall), i.e. [<sub>NumP</sub>[<sub>Num</sub> 一(one)][<sub>ClP</sub> [<sub>Cl</sub> 看(look)] [<sub>NP</sub> 城墙(wall)]]]. While 一堵城墙 (yi du<sub>classifier</sub> chengqiang, one wall, a wall) is a legitimate structure with a common numeral classifier 堵 (du<sub>classifier</sub>) and an NP, it is hard to say that 一看城墙 (yi kan chengqiang, one look wall, a look at the wall) is a grammatically accepted structure (Deng & Qi, 2023: p. 429), the same problem is found in the proposal by Basciano & Melloni (2017). As for Sui & Hu (2016), Deng & Qi (2023) argue that the complement position for the base verb is empty if the second constituent in VV reduplication is generated in ASP, resulting in the failure to predict the incompatibility of VV reduplication with various complements. Following the diachronic studies by Zhang (2000) and light predicate raising approach by Larson (2014), Deng & Qi (2023) argue that VV reduplication originated from the *Verb + Numeral + Verbal Classifier* Construction in early medieval Chinese (e.g. 鸣三声, ming san sheng, call three times, call for three times), with the development of cognate verbal classifier, V yi V (V one V) emerged in Song Dynasty, originally indicating the frequency of one or several actions and then describing a short duration of the eventuality denoted by the base verb (the first V in V yi V) in early and contemporary Mandarin. Syntactically, V yi V in early Mandarin is a verb-complement construction, with light predicate raising, the construction is lexicalized. Consequently, VV reduplication, derived from V yi V with yi dropped, is also lexicalized. Deng & Qi (2023) accentuate the holistic nature of VV reduplication which may resist certain syntactic movements, however, the idea that VV reduplication is lexicalized is not supported by the empirical studies by Gao et al. (2021). Furthermore, according to Deng & Qi (2023), V yi V originally indicates the frequency of action and self-factive verbs are least constrained. With activity verbs and static verbs later permitted into the construction, the construction develops [+durative] meaning. Such an analysis implies that [+durative] meaning for V (yi) V is related to the



situational aspect of activity and static verbs which would be equally constrained in V yi V and VV reduplication if the latter is derived from the former. However, according to [Xiao & McErnery \(2004\)](#), [Basciano & Melloni \(2017\)](#) and the collostructional analysis on the corpus data of VV reduplication by [Fang \(2020\)](#), activity verbs are least constrained in VV reduplication, while static verbs are highly constrained. Such a discrepancy indicates that VV reduplication and V yi V are differently constrained, therefore, it is reasonable to deduce that VV reduplication and V yi V may be syntactically and semantically different. Based on the fact that VV reduplication is relatively entrenched and holistic in nature, with its delimitative aspect meaning not predictable from its constituents, [Fang \(2020\)](#) and [Xue et al. \(2022\)](#), working in the framework of Construction Grammar ([Goldberg, 1995, 2006](#)), propose that VV reduplication is a form-meaning paired construction, a holistic linguistic unit with its own argument structure, prototypically selecting an agentive subject ([Zhang, 1994; Fang, 2020](#)).

Consequently, studies on the grammatical meanings of VV reduplication can be classified into three categories:

I. Studies focusing on situation features of VV reduplication as a holistic unit. Among them, [Smith \(1991\)](#) argues that VV reduplication is the closed situation representing the activity with limited continuation or repetition. [Chen \(2001\)](#) proposes that VV reduplication is a duality of durative, dynamic and imperfective situational aspect and perfective viewpoint aspect.

II. Studies from the perspective of eventuality, among them, [Dai \(1993\)](#) concludes that VV reduplication denotes a dynamic, perfective and temporary event, [Qian \(2000\)](#) holds that VV reduplication is the iterative aspect, and [Chen \(2005\)](#) proposes that VV reduplication expresses a durative, temporally bounded, agentive, dynamic event. [Xiao & McErnery \(2004\)](#), [Yang \(2011\)](#) and [Jv \(2013\)](#) argue that VV reduplication is the delimitative aspect with features of transitoriness, holisticity and dynamicity.

III. Studies with a cognitive perspective on VV reduplication, for example, [Wang & Zhang \(2009\)](#) verify the diminishing meaning of VV reduplication through cognitive tasks.

Therefore, the focus on the grammatical meanings of VV reduplications at this stage has been switched to studies on situational aspect of VV reduplication. Accordingly, studies center on the eventuality of VV reduplication at the syntactic and even the discourse level. As VV reduplication may not simply be a word, a syntactic or a morphological structure, situational and subjective information (e.g. observational viewpoints) may well be encoded, hence further development on semantic and syntactic constraints of VV reduplication.

### 3.2. Studies on Semantic and Syntactic Constraints of VV Reduplication

Studies on semantic and syntactic constraints at this stage extend to VV reduplication as a whole, the sentences the VV reduplication are in and even discourse. Explanatory efforts regarding the constraints are made in different theo-



retical frameworks.

Semantically, the studies center on the constraints imposed by situation types and eventuality of VV reduplications.

For the relationship between situation types of VV reduplication and the constraints, [Chen \(2001\)](#) argues that the reduplicability of verbs in VV reduplication is constrained by the situation type of VV reduplication which is [+dynamic] [+durative] and [-telic], and further explains that activity verbs can be freely reduplicated as their situation types are in line with that of VV reduplication. [Xiao & McErnery \(2004\)](#) develop the idea by [Shi \(1996\)](#) that VV reduplications are open to specific verb classes and points out that activity verbs, together with semelfactives, are relatively free to be reduplicated while other verbs are restricted in their admittance by VV reduplication. Furthermore, [+dynamic], [-resultative] features are the determining semantic constraints for the verbs into VV reduplication. Moreover, the agent of VV reduplication must be [+animate] and VV reduplication must denote a future event in contrast to [Dai \(1993\)](#) which states that VV reduplication can denote past, present as well as future event. However, details on the reduplicability of specific verbs are not provided, for example, what verbs are prohibited by VV reduplication? What verbs can be reduplicated but are subject to more constraints? Are there a sanction hierarchy for different verbs into VV reduplication? Besides, corpus studies by [Fang \(2020\)](#) reveal that VV reduplication does describe the present scene and [-animate] subject is possible although cases are limited. [Fang \(2020\)](#), in the framework of Construction Grammar and through collocation analysis, finds out that the argument in subject position sanctioned by VV construction should be mostly agent which follows the animacy hierarchy, namely, [+human] > [+animals] > [plants]/[-animate] and the hierarchy concerning the semantic coherence of base verbs with VV reduplication is: activity > semelfactive > accomplishment > stage-level-state > individual-level state > achievement<sup>3</sup>.

For the relationship between eventuality of VV reduplication and the constraints, [Dai \(1993\)](#) points out that VV reduplication is subject to the constraints of eventuality denoted by VV reduplication, namely, the event should be [+dynamic] and [+procedural] without encoding the inchoative and the resultative phase of the event. [Chen \(2005\)](#) examines the sentences VV reduplication is in and holds that the reduplicability of verbs depends on the eventuality features of the sentences, i.e., different sentence patterns constrain the verb's admittance into VV reduplication. For example, 死 (si, die) normally could not be reduplicated as it is [-dynamic] [+resultative] and [-durative], however, causative “让 (rang, let) construction”, together with the particle 看 (kan, try), releases the constraints, e.g. 你让他死死看 (ni rang ta si si kan, You let him die die try, you let him try dying) as the causative-trial construction renders the event denoted by VV reduplication to be [+dynamic] [+durative] and [-resultative]. [Chen \(2005\)](#) also states that the event denoted by VV reduplication should be temporally bounded without being the natural temporal endpoint, i.e., it should be

<sup>3</sup>For the classification of verbs here, please refer to [Xiao & McErnery \(2004\)](#).

[+bounded] and [+agentative]. Jv (2013) further examines the semantic constraints of VV reduplication at the discourse level and finds out that specific discourses could lift the constraints on the construction. Both Chen (2005) and Jv (2013) notice that sentence patterns and even discourses could release the constraints on VV reduplication, extending the researches beyond the verbs or the holistic VV reduplication. Though it is significant to examine how VV reduplication interacts with different sentence patterns, it is questionable to attribute the reduplicability of the verbs to specific sentence patterns. Look at the following example:

(5) 我们也不过靠靠敌人的“牌头”呀。

wo men<sub>first person, plural</sub> ye buguo<sub>evaluative</sub> kao kao di ren de<sub>nominal particle</sub> “pai tou” ya.

We just rely rely the enemy’s tittle.

We just for the time being rely on the enemy’s tittle.

In (5), the verb 靠 (kao, rely) is [–dynamic] and [–bounded] as it is static, and since the sentence is evaluative, no such semantic features as [+dynamic] [+bounded] [+durative] are available, i.e., neither the verb nor the sentence in (5) are in line with the semantic requirements of VV reduplication, hence the unreduplicability of the verb according to the proposal by Chen (2005). However, 靠 (kao, rely) in (5) is reduplicated. Therefore, the role of VV reduplication as a whole and other factors sanctioning verbs into it should be examined in depth. Furthermore, the types of sentences capable of releasing the semantic constraints are to be studied in greater details.

Syntactically, Dai (1993) points out the VV reduplication cannot occur in temporal complements as the inherent meaning of transitoriness makes it impossible to co-occur with temporal complements. Sui & Hu (2016) state that VV reduplication is constrained in relative clauses unless it moves to a null functional category Mood/Modality at LF for interpretation. Chen & Wu (2023) find out that if VV appears in past event narrative, the follow-up sentence should be available, for example:

(6) a. 他看看我，转身走开了。(Chen & Wu, 2023: p. 134)

ta<sub>third person singular</sub> kan kan wo<sub>first person singular</sub> zhuan shen zou kai le<sub>2, clause final particle</sub>

He look look me, turn walk away.

He looked at me and turned way.

#<sup>4</sup> b. 他看看我。

ta<sub>third person singular</sub> kan kan wo<sub>first person singular</sub>.

He look look me.

He looked at me...

(6)a is acceptable with a follow-up clause and VV reduplication denotes the past event, while for (6)b, one may expect more information and it consequently cannot stand alone in the narrative.

Scholars at this stage endeavor to provide explanations for the constraints

<sup>4</sup>“#” indicates that the sentence cannot stand alone, i.e. further information is expected.

within different theoretical frameworks. Semantic approaches hold that the constraints are the result of semantic conflict between the verb and the VV reduplication (Chen, 2001) or between the verb and the sentences VV reduplication is in (Chen, 2005) or between the verb and the discourse context for VV reduplication (Jv, 2013) or between the VV reduplication and other structures, for example, quantifying structure and complements. However, semantic analysis could not account for other constraints such as the incompatibility between VV reduplication and negation. For this matter, syntactic explanation comes into play. For example, to account for the fact that VV reduplication is constrained in relative clauses but the constraint could be released using a modal verb, Sui & Hu (2016) hypothesizes the existence of a null functional category Mood/Modality at LF to which VV reduplication moves for interpretation. To account for the incompatibility between VV reduplication and complements, Basciano & Melloni (2017) propose a novel syntactic explanation which postulates that the reduplicant of VV reduplication is the lower copying in the syntactic position of the complement of the verbal head which precludes any complements from occupying that position. To account for the incompatibility between VV reduplication and negation, Sui & Hu (2016) argue that Neg intervenes between Asp and Mood/Modality, resulting in the failure of the movement by VV reduplication to Mood/Modality at LF for interpretation, hence the impossibility of VV reduplication to be negated. However, while VV reduplication is constrained in occurring with negating particles such as 不 (bu, not), 没 (mei, didn't), Fang (2020) and Chen & Wu (2023) point out that VV reduplication does occur with negative particles in specific sentences, for example:

(7) a. 他发痴不看看时辰。(Fang, 2020: p. 28)

ta<sub>third person singular</sub> fa chi bu<sub>negating particle</sub> kan kan shi cheng.

He behave inappropriately not look look the time.

He behaved inappropriately without considering the situation he was in.

b. 这么重要的书，你也不/没看看。(Chen & Wu, 2023: p. 137)

zhe me zhong yao de<sub>nominal particle</sub> ni<sub>second person singular</sub> ye bu/mei<sub>negating particle</sub> kan kan.

So important book, you not look look.

How could it be that you did not/hadn't read such an important book.

In 7(a), VV reduplication occurs with the negative particle 不 in a conditional sentence and in (7)b VV reduplication occurs with negative particles in an imperative sentence, which, in the syntactic hypothesis by Sui & Hu (2016), are impossible. What's more, both the semantic and syntactic approaches fail to provide satisfying answers to the following questions: Why are activity verbs least sanctioned in VV reduplication? Why are [-durative] semelfactives admitted into VV reduplication in almost the same way as activity verbs? Why are static verbs, normally constrained in VV reduplication, sometimes could be reduplicated? To provide answers to these questions, Fang (2020) attempts to pro-

vide a cognitive explanation in Construction Grammar. Through corpus studies, Fang (2020) finds out that there exists a hierarchy for verbs into VV reduplication: activity > semelfactive > accomplishment > stage-level-state > individual-level state > achievement. As VV reduplication is a construction, it would coerce the semantic features of verbs that are in conflict with VV reduplication. Specifically, semelfactive can be construed as [+durative] when it denotes iterative activity (Xiao & McErnery, 2004) and is therefore close to activity verbs, static verbs, especially stage-level-state verbs (individual-level state verbs, such as 有 (you, have) are not reduplicable) can be reduplicated when they denote change of state under the cognitive mechanism of metaphor: CHANGE IS MOTION, as they consequently gain the semantic feature of [+dynamic]. Studying the syntactic environment stage-level-state verb reduplications are in, Fang (2020) finds out that stage-level-state verbs can be reduplicated when they occur in imperative sentences and sentences with dynamic modality, as they provide the force dynamics (Talmy, 2000) to trigger the change of state, for example:

(8) a. 我可要多留留您。

wo<sub>first person singular</sub> keyao<sub>modality</sub> duo liu liu nin<sub>second person singular, honorific</sub>.

I will stay stay you.

I will keep you here for a longer time.

b. 走，到家坐坐！

zou, dao jia zuo zuo

Go, arrive home sit sit.

Go, let's sit for a while in my home.

In (8)a, the hearer intends to leave, and 可要 (keyao<sub>modality</sub>, will) is the dynamic modality providing the force dynamic to prevent the hearer from leaving, which, triggering the causative change of state, sanctions the stage-level-state verb 留 (liu, stay) into VV reduplication. In (8)b, VV reduplication occurs in an imperative sentence, which provides the causative force dynamic on the part of the hearer to switch to the state of sitting and consequently sanctions the stage-level-state verb 坐 (zuo, sit) into VV reduplication. It can be seen that force dynamics here are closely related to the interactions between the speaker and the hearer.

In summary, this stage witnesses in-depth and full-fledged studies on the grammatical category and grammatical meanings of VV reduplication. Specifically, studies on the grammatical category delve into the morpho-syntactic and even discursal analysis of VV reduplication and more attention is paid to situational aspect and eventuality meanings of VV reduplication as a whole. Accordingly, studies on the semantic and syntactic constraints of VV reduplication are conducted in a variety of theoretical frameworks. More importantly, different approaches, whether semantic, syntactic or cognitive, are oriented towards the systematic explanation of those constraints. Moreover, scholars are aware of the influences of situational and (inter)subjective information on the constraints of VV reduplication, which open up the next stage of study.

## 4. Studies on Syntactic and Semantic Constraints of VV Reduplication at the Third Stage

Studies at this stage start roughly from 2010 based on Li & Thompson (1981) and Zhang (1994) which point out that there is an argument constraint on the subject of the event denoted by VV reduplication, namely, it should be agentive, for example:

(9) a. 小宋俏皮地眨眨眼睛。(Zhang, 1994: p. 22)

xiao song qiao pi di<sub>adverbial particle</sub> zha zha yan jing.

Xiao Song wittily wink wink eye.

Xiao Song wittily winked his eyes.

b. 你看看嘛!

ni<sub>second person singular</sub> kan kan ma<sub>mood particle</sub>.

You look look.

Have a look.

In (9)a and (9)b, both “小宋 (Xiao Song)” and “你 (ni, You)” are the agent of the event denoted by the corresponding VV reduplication. Furthermore, in (9)b, there is an implicit argument not realized in the syntax: the speaker. Also, Liu (1983) has already pointed out the [+volitional] meaning for VV reduplication, for example:

(10) a. 他故意碰碰桌上的茶杯。(Liu, 1983: p. 199, with slight change)

ta<sub>third person singular</sub> gu yi peng peng zhuo shang de<sub>nominal particle</sub> cha bei.

He deliberately touch touch on the table the cup.

He deliberately touched the cup on the table.

b. \*他不小心碰碰桌上的茶杯。

ta<sub>third person singular</sub> bu xiao xin peng peng zhuo shang de<sub>nominal particle</sub> cha bei.

\*He accidentally touch touch on the table the cup.

He accidentally touched the cup on the table.

(10)a is acceptable because 故意 (gu yi, deliberately) implies the event denoted by VV reduplication is intentional, which is compatible with the [+volitional] meaning of VV reduplication, whereas in (10)b, 不小心 (bu xiao xin, accidentally) indicates that the event by VV reduplication is unintentional, which is incompatible with the [+volitional] meaning of VV reduplication, resulting in the unacceptability of the sentence. These studies offer insights into a new perspective targeting the agent or the speaker of the event for constraints studies on VV reduplication. Accordingly, scholars probe into the influence of discursal, situational, and (inter)subjective information over the constraints of VV reduplication.

### 4.1. A Brief Review of Studies on Grammatical Meanings of VV Reduplication

Based on what is afore mentioned, Hua (2010) studies the [+volitional] meaning of the structure from the perspective of the subjective mind of the agent or

speaker of the event denoted by VV reduplication and concludes that the meaning of reduplicable verb, VV reduplication as well as the act involved is subjectively volitional. “Subjectively volitional” means “People are psychologically willing to perform certain acts or accept certain patients, states or manners” (Hua, 2010: p. 26). In other words, the grammatical meaning of VV reduplication is [+volitional]. Fang (2020) further proposes that the grammatical meaning of VV reduplication is that the agent performs the limited durative, procedural action event. These studies delve into the influence of the speaker or agent of event over the meaning and grammatical behavior of a linguistic structure and are conducive to constraint studies at the third stage.

#### 4.2. Studies on Semantic and Syntactic Constraints of VV Reduplication

Based on studies in section 4.1, Hua (2010) investigates the reduplicability of different meanings of the verb 计算 (ji suan, calculate). The research finds out that the verb could not be reduplicated when meaning negatively “secretly scheme against others”. Hua’s explanation is that verbs with negative meanings are emotionally unacceptable and people are unwilling to repeat the act, resulting in the failure of the verb to be reduplicated.

Hua (2010) further argues that the [+volitional] meaning of VV reduplication affects its syntactic distribution, making it difficult for VV reduplication to co-occur with objects or adverbials that are negative in meaning, for example:

(11) a. 出出主意 (Hua, 2010: p. 43, with slight change)

chu chu zhuyi  
offer offer idea  
offer some ideas

b. 出出馊主意

chu chu sou zhuyi  
offer offer bad idea  
offer some bad ideas

(11)a is acceptable as the object 主意(zhuyi, idea) is not negative whereas 11(b) is unacceptable as the object 馊主意(sou zhuyi, bad ideas) is negative.

More importantly, [+volitional] meaning of VV reduplication imposes constraints on the pronominal subject of the structure. Specifically, the first and the second person subject are less constrained than the third person. Hua (2010: p. 42) explains that this is due to the volition of the speaker. When the subject is the first person pronoun, the speaker is the agent of the event denoted by VV reduplication which is obviously in line with the speaker’s volition. When the subject is the second person pronoun, the event is out of the volition of the speaker. When the subject is the third person pronoun, VV reduplication is syntactically constrained, and the release of the constraint relies on the availability of forms marking the volition of the speaker or agent, for example:

(12) # a. 他/他们看看书。(Hua, 2010: p. 43)

ta<sub>third person singular</sub>/ta men<sub>third person plural</sub> kan kan shu.

He/They look look book.

He/They read books for a while.

b. 他/他们要看看书。

ta<sub>third person singular</sub>/ta men<sub>third person plural</sub> yao<sub>modality</sub> kan kan shu.

He/They would like to look look book.

He/They would like to read books for a while.

The subject for (12)a is the third person pronoun and volition of the agent cannot be detected, hence its relative unacceptability. Whereas in 12(b), the modality marker 要(yao<sub>modality</sub>, would like to) indicates the volition of the agent, resulting in the release of the syntactic constraint.

Therefore, according to Hua (2010), the volitional meaning of VV reduplication explains a series of semantic as well as syntactic constraints on VV reduplication. For example, why VV reduplication favors to occur with positive structures, why imperatives are the typical syntactic environment of VV reduplication. Furthermore, the discussion on the argument (subject) constraints of VV reduplication indicates that the author views VV reduplication as an independent, holistic linguistic unit, which is in line with the Construction Grammar approach. However, [+volitional] meaning only captures one aspect of the grammatical meanings of VV reduplication which is not explanatory adequate for the constraints of VV reduplication. Other scholars also notice the influence of speaker over the syntax of VV reduplication. For example, studying the semantic constraints of VV reduplication in the framework of Construction Grammar through corpus, Fang (2020) finds out that in conversations the subject argument of VV reduplication is often omitted and VV reduplication is therefore in the initial position of the discourse. VV reduplication of high frequency thus develops the function similar to discourse markers, for example:

(13) 看看，私心多重。

kan kan, si xin duo zhong.

Look look, selfishness how heavily.

Look, how selfish.

In (13), 看看 (kan kan, look look, have a look,) does not simply mean to briefly look at someone, actually the speaker is using it as a discourse marker to invite the listener to pay attention to the behavior of the third person in the situation and to agree with the speaker's judgment. Fang (2020) argues that such a syntactic development (the dropping of the subject and the initializing of VV reduplication) is driven by the cognitive mechanism of (inter)subjectivity which in turn imports speaker-oriented modality into the construction, and constrains the occurrence of VV reduplication with negative particles in narratives, for example:

(14) a. 国王抱歉地笑笑。



guowang baoqian di<sub>adverbial particle</sub> xiao xiao.

King apologetically smile smile.

The King smiled apologetically

\*b. 国王抱歉地没笑笑。

guowang baoqian di<sub>adverbial particle</sub> mei<sub>negating particle</sub> xiao xiao.

\*The King apologetically didn't smile smile.

The King did not smile apologetically

Fang (2020) explains that (14)a is acceptable as VV reduplication is used in the narrative which coerces the modality of the construction. (14)b is unacceptable because the particle “没 (mei<sub>negating particle</sub>, didn't)” is used to negate the realis (Sun, 2023) whereas VV reduplication is speaker-oriented modality (Tang, 2008: p. 204) denoting irrealis, hence the failure of VV reduplication to co-occur with the negative in narratives. Another study, though not directly related to VV reduplication here, deserves our attention. Lu (2019) studies the relationship between the linguistic representation of time and viewpoint across languages and finds out that Mandarin uses descriptive reduplication for viewpoint management in narratives, which definitely offers insight into studies on the relationship between VV reduplication and viewpoint.

## 5. Concluding Remark

Our paper reviews the studies on the semantic and syntactic constraints of VV reduplication in addition to researches on its grammatical category and grammatical meanings at three distinctive stages. As the studies develop, different theoretical approaches, extending from structuralism to functional, generative and cognitive paradigms, are adopted. With the different stages marking the switch from descriptive to prescriptive and then to explanatory studies, the approaches address certain problems concerning the constraints of VV reduplication, however, certain problems remain unaddressed and suggestions for further studies are as follows:

1) Morpho-syntactically, a more detailed and comprehensive analysis on the constraints of VV reduplication may be expected using emerging paradigms in Generative Grammar, and more semantic elements may be incorporated into the framework.

2) Cognitively, much can be done to reveal the linguistic construal of VV reduplication as well as the cognitive representations such as viewpoint and (inter)subjectivity and ultimately seek the cognitive explanation for the constraints of VV reduplication.

3) Typologically, studies may be carried out for VV reduplication in other languages to see if there exist any typologically significant constraints for VV reduplication around the world, which may contribute to revealing some universals among the languages and even human cognition around the world.

4) Chronologically, origins of VV reduplication could be investigated and the relationship between VV reduplication and relevant constructions could be

delved into to better account for certain constraints of VV reduplication. It may well be that VV reduplication is related to a number of constructions that contribute to its evolution and thus provide possible explanations for some constraints.

### Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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