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**The Syntax of Functional Particles in Sichuanese:
a Case Study on *de* (得)**

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Abstract

This dissertation focuses on the phenomenon of modal polysemy by investigating the postverbal modal marker *de* (得) in Sichuanese, a southwestern Mandarin variety. This morpheme appears exclusively in the basic construction [V-DE] and is particularly notable for three characteristics: i) It is postverbal, contrary to canonical Mandarin modal auxiliaries that are all preverbal, ii) It appears to be highly ambiguous, expressing a wide range of root modal interpretations, iii) It imposes aspectual constraints on the preceding verb that are not observed with other modal elements. Following a cartographic approach to syntax, this study provides empirical support for the view that modals are not intrinsically polysemous, and that their varied interpretations can arise not only from contextual factors but also through syntactic marking.

Based on data collected through two rounds of on-site fieldwork, it is argued that the modal morpheme DE is not intrinsically polysemous and is semantically best defined as an alethic modal morpheme (Von Wright 1951), expressing a basic meaning of “objective possibility”. The various modal readings are not “squeezed” within DE but arise through the activation of distinct modal projections, hierarchically ordered within the functional domain of a clause (Cinque 1999, 2006).

The disambiguation of the various modal interpretations is achieved through different strategies in positive and negative constructions. In positive contexts, the range of modal interpretations associated with [V-DE] is disambiguated by the co-occurrence of DE with higher disambiguating modal elements, either overt or covert, that occupy the corresponding modal projections. In negative constructions (e.g., [V-BU-DE]), disambiguation is achieved via remnant movement of vP into the relevant modal projections, functioning as a last-resort strategy to activate those projections.

Furthermore, it is argued that the other characteristics of DE are best understood as residues of its grammaticalization path, with particular attention to its interaction with aspectual markers in both synchronic and diachronic perspectives. Finally, the imperative forms related to DE illustrate the close relationship between modals and imperatives, offering interesting insights into the different strategies for encoding the notion

of “point of view” in the syntax.

This study illustrates how the disambiguation of a polysemous modal can be systematically achieved in the syntax, highlighting a particular “compositional strategy” employed in the Sichuanese modal system. More broadly, it provides insight into how modality is structurally and universally encoded in the syntax and carries general implications for the cartographic view of modality.

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List of Abbreviations

1/2/3_{SG} = first/second/third person singular form

1/2/3_{PL} = first/second/third person plural form

CLF = classifier

MOD = modal

PFV = perfective aspect

EXP = experiential aspect

PROG = progressive aspect

DUR = durative aspect

CRS = currently relevant state

PASS = passive

VOC = vocative

SFP = sentence-final particle

EXCL = exclamative

ATT = (speaker's) attitude

INTER = interrogative

NEG = negation

EMPH = emphatic particle

POSS = possessive

IMP = imperative

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Introduction

The polysemy of modal elements across languages has been widely acknowledged in the literature. For example, the English modal *may* can convey either an epistemic or a root interpretation (i.e., non-epistemic; Coates 1983), as illustrated in (1).

- (1) *John may come back home today.*
- | | |
|--|------------------|
| a. It is possible that John comes back home today. | <i>epistemic</i> |
| b. It is allowed for John to come back home today. | <i>root</i> |

Ambiguity arises not only between epistemic and root modalities, but also within the root modal domain. For example, modal elements with the basic meaning of ‘can’ may also give rise to interpretations such as permission, ability, and goal-oriented readings. This apparent polysemy of modal elements led to a long-standing debate in the literature.

A central question is whether modals that appear polysemous are indeed intrinsically polysemous. Opinions differ among scholars on this question. Some believe that modals are intrinsically polysemous, with distinct lexical entries corresponding to different modal meanings, for example *may*_{epistemic} vs. *may*_{deontic}. Others hold the opposite view, arguing that modals are not inherently polysemous, and that their varied interpretations are derived from a single modal core through different mechanisms, including contextual factors and syntactic configurations.

In the present dissertation, I provide evidence for the latter view by focusing on the modal morpheme *de* (得) in Sichuanese, a Mandarin variety. This morpheme appears exclusively in the basic construction [V-DE] and is particularly notable for the following characteristics:

- i) It is postverbal, contrary to canonical Mandarin modal auxiliaries that are basically all preverbal.
- ii) It appears highly ambiguous, expressing a wide range of root modal interpretations.

- iii) It imposes aspectual constraints on the preceding verb that are not observed with other modal elements; specifically, it disallows both viewpoint aspect and aktionsart markers — that is, the preceding verb cannot bear any kind of aspectual or temporal information.

Examples illustrating the ambiguity of DE are provided in (2) — (4), where (2) is a positive declarative sentence, (3) an imperative sentence, and (4) a negative declarative sentence.

- (2) *Zang1san3 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 a. ‘It is objectively possible for Z. to drink beer.’ *objective possibility*
 b. ‘Z. is permitted to drink beer.’ *permission*
 c. ‘Z. is quite able to drink beer.’ *ability*
- (3) *Xi3 -de2 yi1fu2 lao3!*
 wash -DE clothes ATT(ITUDE)
 ‘You should/’d better wash your clothes (now)!’ *obligation*
- (4) *Zang1san1 ho1 -bu -de2 pi2jiu3.*
 3SG drink -NEG -DE beer
 a. ‘It is not objectively possible for Z. to drink beer.’ *objective impossibility*
 b. ‘Z. is not permitted (e.g. by the doctor) to drink beer.’ *permission denial*
 c. ‘Z. is not quite able to drink beer.’ *ability*
 d. ‘Z. is prohibited from drinking beer.’ *prohibition*

• Research Questions

This dissertation addresses the following general research questions:

- i) Beyond semantic and pragmatic disambiguating mechanisms, are there syntactic mechanisms that can disambiguate the various modal flavors of a “polysemous” modal element?
- ii) To what extent can modality be encoded and identified in the syntax? Specifically, is Cinque’s (1999) modal hierarchy truly overcomplex, or does it remain insufficient to capture the full range of cross-linguistic modal interpretations?

Focusing on the specific case of Sichuanese DE, the dissertation also explores the following more specific questions:

- i) If the interpretative ambiguity of Sichuanese postverbal DE cannot be fully accounted for by contextual factors alone, how can it be derived? Are there any disambiguating strategies at the structural level?
- ii) How can DE be analyzed at both the semantic and syntactic levels?

Furthermore, given the aspectual constraints imposed by the modal morpheme DE on the preceding verb, this study also investigates the interaction between aspect and modality from both a synchronic and diachronic perspective.

• Theoretical framework and methodology

The classification of modal notions adopted in the present dissertation is grounded in classical taxonomies, notably those of Von Wright (1951), Palmer (2001 [1986], 1990) and Van der Auwera&Plungian (1998). In particular, the terminology employed in the dissertation is independently motivated by the range of interpretations conveyed by the modal [V-DE] construction.

The theoretical foundation for the modal analysis is the traditional framework established by Kratzer (1981, 1991). Within this framework, two fundamental factors shape the interpretation of a modal element: the quantificational force, which determines whether a modal expresses possibility or necessity (i.e., existential or universal quantificational force), and the modal flavor, which specifies the particular type of modality (e.g., epistemic, deontic, dynamic, etc.).

The syntactic discussion follows the cartographic approach of syntax (Cinque&Rizzi 2010), which posits a universal structural make-up of clausal structure across languages, characterized by a fixed hierarchy of functional projections. While languages may vary in which functional categories they overtly realize, the underlying order remains universal. Specifically, this dissertation follows the universal hierarchy of functional projections proposed by Cinque (1999, 2006), with particular focus on the hierarchy of modal projections, which is extracted and reproduced in (5).

$$(5) \quad \text{ModP}_{\text{Epistemic}} > \text{ModP}_{\text{Alethic}} > \text{ModP}_{\text{Volitional}} > \text{ModP}_{\text{Obligation}} > \text{ModP}_{\text{Permission/Ability}}$$

(Cinque 1999)

The primary empirical data presented in the present dissertation come from two rounds of on-site fieldwork. The core methodologies employed in both rounds include the following steps:

- Step 1: Formulation of hypothesis
- Step 2: Delimitation of the investigated area
- Step 3: Selection of informants
- Step 4: Design of questionnaire
- Step 5: Data collection
- Step 6: Data classification and analysis

Specifically, the questionnaires used in the fieldwork consist primarily of syntactic tests designed to test whether Sichuanese [V-DE] is compatible with other functional elements, and whether their possible co-occurrences can help distinguish its various modal readings.

• Main Proposals

In response to the general research questions, I propose that, in addition to the commonly recognized context-based disambiguating strategies, the various modal readings can also be distinguished at the syntactic level through the activation of corresponding modal projections. These modal projections are hierarchically ordered within the functional domain of the clause (Cinque 1999, 2006) and can be activated in different ways: either by the presence of a specific element in the relevant projection (i.e., external merge), or through the movement of a lower constituent into the relevant projection (i.e., internal merge). Moreover, I argue that Alethic modality (Von Wright 1951), which represents a pure ‘possibility/necessity’ (Cinque 1999:79), is encoded not only in the high area of the functional domain, but also in the low area, specifically below all identified root modal projections within the functional domain. Integrating also the goal-oriented necessity reading, which has not been taken into consideration by Cinque, this proposal motivates the following revised modal hierarchy:

- (6) $\text{ModP}_{\text{Epistemic}} > \text{ModP}_{\text{Alethic(I)}} > \text{ModP}_{\text{Volitional}} > \text{ModP}_{\text{Obligation/Goal-oriented Nec(essity)}} > \text{ModP}_{\text{Permission/Ability}} > \text{ModP}_{\text{Alethic(II)}}$

In particular, regarding the Sichuanese postverbal modal morpheme DE, it is first demonstrated that the range of modal interpretations apparently expressed by DE on the surface is not trivial and can be systematically disambiguated at the structural level. Consequently, DE itself is not intrinsically polysemous; rather, it is semantically defined as an alethic modal morpheme (Von Wright 1951) expressing a basic meaning of ‘objective possibility’. Syntactically, DE is assumed to head the projection $\text{ModP}_{\text{Alethic(II)}}$,

as it consistently follows other modal elements in linear order and functions as the most basic modal within the root modal domain.

Taking into account also the negative construction [V-BU-DE], the following root modal hierarchy is proposed for Sichuanese, based on Cinque's (1999) root modal hierarchy:

$$(7) \quad \text{ModP}_{\text{Obligation/Goal-oriented Nec}} > \text{NegP} > \text{ModP}_{\text{Permission/Ability}} > \text{ModP}_{\text{Alethic(II)}}$$

The proposed hierarchy aligns with the widely held view that necessity modals universally precede possibility modals across both epistemic and root modal domains, with negation intervening between them (Cormack&Smith 2002, Butler 2003). Specifically, the two projections separated by negation can each express both deontic and non-deontic interpretations of necessity and possibility, respectively. Therefore, the hierarchy in (7) can alternatively be represented as in (8).

$$(8) \quad \text{ModP}_{\text{Deontic/Non-deontic Nec}} > \text{NegP} > \text{ModP}_{\text{Deontic/Non-deontic Poss}} > \text{ModP}_{\text{Alethic(II)}}$$

The disambiguation of the various modal readings is proposed to be achieved through different strategies in positive and negative constructions. In positive contexts, the range of modal interpretations associated with [V-DE] is disambiguated by the co-occurrence of DE with higher disambiguating elements, either overt or covert, that occupy the corresponding modal projections. Within the kratzerian framework of modality, this can be understood as DE providing only the modal base, while the ordering sources responsible for determining specific modal flavors are introduced by these disambiguators, which appear “physically” in the syntax. In negative constructions, disambiguation is achieved via remnant movement of the vP into relevant modal projections, functioning as a last-resort strategy to activate those modal projections.

With respect to the other characteristics of DE, namely its aspectual constraints and non-canonical postverbal position, this study argues that these characteristics are best understood as residues of its grammaticalization path. In particular, the aspectual constraints that DE imposes on the preceding verb are attributed to both synchronic and diachronic factors. The incompatibility with aktionsart markers is viewed as a consequence of DE's grammaticalization process, from an aktionsart marker located in the inner aspect domain to a viewpoint aspect marker in the outer aspect domain. By the conclusion of this grammaticalization process, the inner aspect domain becomes and remains syntactically inaccessible in the modern [V-DE] construction, thereby excluding all aktionsart markers from it. In contrast, the exclusion of viewpoint aspect markers is analyzed as a result of competition of the same syntactic projection: DE is base-

generated in the aspectual projection typically associated with viewpoint aspect markers in Sichuanese and subsequently raises to its modal projection, ModPAlethic(II), as part of its synchronic derivation. The interaction between DE and aspectual markers observed both synchronically and diachronically offers empirical support and new insights into Van Gelderen's (2003, 2004) idea that "deontic modals merge as aspect".

• Organization of Chapters

The present dissertation is organized as follows:

Chapter 1 provides a general introduction to Sichuanese, with a particular focus on its modal system.

Chapter 2 lays the theoretical ground for the study, introducing key modal notions and the terminology adopted throughout the discussion. It also reviews previous literature on modal polyfunctionality and formulates the general research questions that are at the core of the whole study.

Chapter 3 gives a thorough introduction of the modal morpheme DE and the [V-DE] construction in Sichuanese, illustrating particular characteristics of DE, which lead to specific research questions regarding this modal morpheme.

Before delving into the main discussion, an important distinction is made in chapter 4 between Sichuanese [V-DE] and two apparently similar constructions: Standard Chinese [V-DE] and Sichuanese [V-DE-RES(ULATIVE)]. This comparison serves to avoid unnecessary confusion in the following discussion.

Chapter 5 presents the fieldwork, which provides the primary empirical data for this study. Its main aim is to test whether Sichuanese [V-DE] is compatible with other functional elements, and whether their possible co-occurrences can help distinguish the various modal readings. The core methodologies and the process of the two rounds of fieldwork are presented in detail in this chapter.

Chapter 6 focuses on the semantics of DE. It proposes a proper semantic definition of DE and investigates its interaction with the disambiguating elements identified through the fieldwork. In particular, it also addresses the phenomenon of modal concord observed in the cooccurrence of DE with specific modal elements.

Chapter 7 builds upon the semantic analysis from Chapter 6 and turns to the syntactic analysis of DE, with the main aim of examining how the different disambiguating strategies are implemented in the syntax. A revised root modal hierarchy is proposed based on Cinque's (1999) hierarchy, and derivations of both positive and negative constructions are also presented. Furthermore, it explores the aspectual constraints imposed by DE, offering explanations from both synchronic and diachronic perspectives.

Finally, Chapter 8 focuses on the imperative construction [V-DE-*lao*] and its underlying imperative form [V-*lao*]. This chapter examines the distinctions between [V-*lao*] and other canonical imperative forms, highlighting the crucial role of modal elements in [V-*lao*] and thereby offering a concrete case in support of the modal approach to imperatives. In the end, the encoding of “point of view” in the imperative [V-DE-*lao*] is also discussed.

Chapter 1

Introduction of Sichuanese

Sichuanese (Si4cuan1hua4 四川话, also Sichuan dialect or Sichuanese Mandarin) is a commonly used term that broadly encompasses the linguistic varieties spoken primarily in the Sichuan province of China. From a typological perspective, Sichuanese belongs to the southwestern Mandarin group, which has been further classified into six main varieties and twenty-two subvarieties.¹ In this dissertation, the term “sichuanese” will specifically refer to the primary variety spoken in the Chuanqian district (Cuan1qian2 pian4 川黔片), with particular focus on the subvariety spoken in the Chengyu district (Cen2yu2 hua4 成渝话 ‘Chengdu-Chongqing dialect’).

From a linguistic perspective, Sichuanese exhibits all the fundamental characteristics of Mandarin Chinese.² It follows the Subject-Verb-Object (SVO) word order, makes systematic use of classifiers, and lacks the Indo-European type of verbal morphology. In Sichuanese, modality is primarily expressed through preverbal modal auxiliaries and adverbs, while aspect is typically marked by overt aspect markers. Examples (1) and (2) illustrate modality and aspect marking, respectively.³

¹Chinese Academy of Social Sciences (2012). *Zhōngguó yǔyán dìtú jí (dì 2 bǎn): Hànyǔ fāngyán juǎn* 中国语言地图集 (第 2 版): 汉语方言卷 [Language Atlas of China (2nd edition): Chinese dialect volume]. Beijing: The Commercial Press. P84-88.

²The term “Mandarin Chinese” encompasses the broad group of Mandarin varieties spoken across China, including both Standard Chinese and Sichuanese. In this dissertation, the term “Mandarin (Chinese)” will be used exclusively when referring to properties shared by both Standard Chinese and Sichuanese. Conversely, the term “standard Chinese” will specifically refer to *Pǔtōnghuà* 普通话 [common tongue] to clearly distinguish it from “sichuanese”.

³For the phonetic transliteration of Sichuanese examples, this dissertation adopts the transliteration system Si4cuan1hua4 Pin1yin1 四川话拼音 [Sichuanese Pinyin], as used in the *Sìchuān Fāngyán Cídiǎn* 《四川方言词典》 [Sichuan Dialect Dictionary] (1987) and the *Sìchuān Fāngyán Cíyǔ Huìshì* 《四川方言词语汇释》 [Sichuan Dialect’s Vocabulary Explanation] (1989). In this dissertation, Sichuanese

- (1) *Zang1san1 ko3yi3 ho1 jiu3.*
 3SG be.allowed.to drink alcohol
 ‘Zhangsan can (i.e., is permitted to) drink alcohol.’
- (2) *Zang1san1 mai3-lao yi2-ben3 su1.*⁴
 3SG buy-PFV one-CLF book
 ‘Zhangsan bought a book.’

Owing to its close relationship and high degree of similarity to Standard Chinese, Sichuanese is typically regarded as a variety that differs primarily in phonetics and phonology, despite exhibiting notable grammatical distinctions. As a result, the phonetics and phonology of Sichuanese have been extensively studied. However, its syntax, as well as the linguistic variation between Sichuanese and Standard Chinese, remains relatively underexplored, with much of the existing literature remaining at a descriptive level.

1.1 An overview of Sichuanese modal system

As this dissertation primarily focuses on the postverbal modal morpheme *de* (得) in Sichuanese, it is essential to first provide an overview of the Sichuanese modal system. Similar to Standard Chinese, epistemic modality in Sichuanese is generally expressed through modal adverbs, while root modality is primarily expressed via modal auxiliaries. An overview of the Sichuanese modal system is given in Table 1.1 (cf. Lin 2012:154, Yang 2020:79).

examples are annotated with tone markings represented by numbers following each syllable. Original examples presented in this study are transliterated according to this system, with slight modifications based on the Sichuanese variety spoken in the area where the fieldwork was conducted, namely Shehong city.

⁴The particle *lao* is the Sichuanese counterpart of the aspect marker *le* in Standard Chinese and is widely used by the Sichuanese speakers in the investigated area.

Epistemic necessity	<i>yin1gai1</i>	‘it should be the case that.’
	<i>ken3din4</i>	‘it must be the case that.’
Epistemic possibility	<i>ko3nen2</i>	‘it is likely to be the case that.’
	<i>do1ban4</i>	‘it is highly likely to be the case that.’
Root necessity	<i>pa4si4</i>	‘it is likely to be the case that.’ (‘lit. it is feared that.’)
	<i>bi4xu1</i>	‘must’
	<i>yao4</i>	‘need’
	<i>yin1gai1</i>	‘should’, ‘ought to’
Root possibility	<i>ko3yi3</i>	‘be permitted to’
	<i>-de2</i>	‘have the possibility to (i.e., be permitted to, be able to, etc.)’
	<i>-de2lai2</i>	‘knows how to’

Table 1.1

Two points require attention regarding the table above. First, the modal auxiliaries *hui* ‘knows how to’ and *neng* ‘be able to’ are excluded, as it remains unclear whether they are originally part of Sichuanese or have entered the language through interference with Standard Chinese. Regarding *hui* ‘knows how to’, it is used far less frequently than *-de2lai2* in the everyday speech of native speakers. As for *neng* ‘be able to’, it is rarely used and tends to appear more commonly in the speech of younger generations. Second, it is important to note that among all the modal auxiliaries listed in the table, only the last two, *-de2* and *-de2lai2*, occur in postverbal position, whereas the others all appear in preverbal position, which is the canonical position for Mandarin modal auxiliaries. The contrast between these two non-canonical modal elements and their Standard Chinese counterparts is illustrated in Table 1.2 and Table 1.3 below.

	Modal element	Combination with verb	Interpretation
Sichuanese	<i>-de2</i>	V- <i>de2</i>	‘have the possibility to (e.g., be permitted to, be able to, etc.)’
Standard Chinese	<i>keyi, neng</i>	<i>keyi/neng-V</i>	‘be permitted to/be able to’

Table 1.2

	Modal element	Combination with verb	Interpretation
Sichuanese	<i>-de2lai2</i>	V- <i>de2lai2</i>	‘knows how to’
Standard Chinese	<i>hui</i>	<i>hui-V</i>	‘knows how to’

Table 1.3

This dissertation will focus on the postverbal *-de2* as shown in Table 1.2, leaving *-de2lai2* in Table 1.3 for future research. A preliminary observation from Table 1.2 suggests that the Sichuanese *-de2* appears to encompass at least the modal interpretations typically conveyed by the two modal auxiliaries *keyi* and *neng* in Standard Chinese. A detailed introduction to the construction [V-DE] will be provided in Chapter 3.⁵

1.2 Current status of Sichuanese and challenges

Due to the longstanding underestimate of Sichuanese within the field of generative grammar, there is an absence of a dedicated corpus for Sichuanese. As a result, the available empirical data primarily derive from traditional Sichuanese grammar books and literature.

In addition to the lack of a corpus, the significant interference between Sichuanese and Standard Chinese presents a considerable challenge for fieldwork. Firstly, Sichuanese shares a large portion of its character system with Standard Chinese, meaning that nearly all written expressions in Standard Chinese can be pronounced in Sichuanese, although such expressions may be absent or sound unnatural in the latter. Moreover, with the wide spread of radio and television, Sichuanese is becoming more and more standardized. While younger generations tend to replace Sichuanese structures and vocabulary with their Standard Chinese counterparts, the middle generation speaks a “mixed” form of Sichuanese, retaining its syntactic structures while incorporating Standard Chinese vocabulary. As a result, it is increasingly difficult to find informants who speak a “pure” form of Sichuanese, less influenced by Standard Chinese.

In this dissertation, the initial empirical data upon which the first observations and preliminary analysis are based are drawn from my own knowledge of Sichuanese as a native speaker, traditional Sichuanese grammar books, and other texts written in Sichuanese. Additional empirical data from the fieldwork will be introduced in Chapter 5.

⁵Henceforth, when referred to independently, the Sichuanese modal element *-de2* will be formally represented as DE, and the construction [V-*de2*] will be denoted as [V-DE].

Chapter 2

State of the art

This section addresses several preliminary issues. First, the classification of modal notions adopted in this study will be introduced and motivated, drawing on classical classification systems. Subsequently, the issue of modal polyfunctionality, a long-standing challenge in the study of modality, will be outlined by referring to various approaches presented in the existing literature. This issue will be the main concern of the present study.

2.1 Classification of modal interpretations

Originating from the study of modal logic, modal concepts and categories have been extensively studied across fields of logic, philosophy, semantics and syntax. As a result, multiple classification systems have been proposed within these fields; however, no consensus has been established. In the following discussion, I will first introduce the most widely acknowledged classification system of modal categories in the literature and decide the classification system to be adopted in this study. The ideal approach is to employ the simplest and most fundamental labels to represent all possible modal readings that emerge in this work while avoiding labels that are specific to any particular classification system. The discussion begins with the first formal classification system proposed in the literature.

- **Von Wright (1951)**

The first systematic classification of modal concepts is proposed by the philosopher-logician Von Wright (1951) (see Table 2.1 cited from Von Wright 1951:2), in which four main macro-categories, or modes, are distinguished. The first is the “alethic mode”

or “modes of truth”, traditionally concerned with logical truth. The second is the “epistemic mode” or “mode of knowing”, which has to do with what is known to be true or false. The third one is the “deontic mode” or “mode of obligation”, an umbrella category for what is “obligatory” (e.g., ought to), “permitted” (e.g., may) or “forbidden” (e.g., must not). The final category is the “existential mode” or “mode of existence”, which primarily relates to quantification (Von Wright 1951:1-2).

Alethic	Epistemic	Deontic	Existential
Necessary	Verified	Obligatory	Universal
Possible		Permitted	Existing
Contingent	Undecided	Indifferent	
Impossible	Falsified	Forbidden	Empty

Table 2.1

Although “Alethic modality” is prototypically introduced as pure logical modality, it is sometimes used in a broader and more general sense in modern linguistic literature. For example, Cinque (1999) defines “alethic possibility/necessity” as a kind of “pure possibility/necessity” which is usually expressed as “it is possible/necessary that...” (Cinque 1999:79). Following Kratzer (1991), Butler (2003) assigns an epistemic modal base to what he calls “alethic modality”, relating it to what is objectively possible or necessary, which “does not relativize the modal to any particular kind of facts” (Butler 2003:993). Similarly, Von Stechow (2006) views “alethic” as referring to what is possible or necessary in the widest sense, although he mentions this only for reasons of historical completeness.

In contrast to “alethic modality”, the categories “epistemic modality” and “deontic modality” have been widely adopted in subsequent linguistic research on modality and thus remain the primary categories of modality. The last category, “existential modality”, will be set aside in this study, as only the first three categories are pertinent to the types of modality explored here.

However, given that this classification of Von Wright (1951) is fundamentally rooted in logic, and that other modal notions like ability are not addressed, it remains necessary to explore other classification systems. The next classification system to consider is proposed by Palmer (2001[1986], 1990).

- **Palmer (2001 [1986], 1990)**

Based on his typological study of modality, Palmer identifies two macro categories

of modality: “propositional modality” and “event modality”. Propositional modality consists of epistemic and evidential modality, both of which pertain to the speaker’s judgement regarding the truth-value of a proposition. In contrast, event modality corresponds to the traditional term “root modality” (i.e., “non-epistemic modality”; Coates 1983) and is typically oriented toward the subject of the sentence. Under the category of “event modality”, two sub-categories are distinguished based on different types of enabling factors. When the enabling factors are subject-external, such as laws and social regulations, this is referred to as deontic modality. Conversely, when the enabling factors are subject-internal, such as intrinsic ability and personal desire, it is classified as dynamic modality. Further subdivisions of deontic and dynamic modality are presented in Table 2.2 below.

Propositional modality		Event modality	
Epistemic	Evidential	Deontic	Dynamic
		Obligative, permissive (commissive)	Abilitive, volitive, neutral/circumstantial

Table 2.2

When discussing the category of dynamic modality, Palmer includes also a “neutral/circumstantial” use, in addition to strictly subject-oriented “ability” and “volition”.¹ The “neutral possibility” use is exemplified by the English modal *can*, which, as Palmer notes, simply indicates “that an event is possible.” (Palmer 1990:83). See (1) for illustration.

- (1) He can escape (there is nothing to stop him). (Palmer (2001) [1986]:77)

He further suggests that “the description ‘circumstantial possibility’ is more appropriate if there is a clear indication of the circumstances in which an event is possible” (Palmer 1990: 84). Ultimately, Palmer observes that “it is by no means always possible to distinguish between mere possibility (i.e., neutral/circumstantial possibility) and subject-oriented ability” (Palmer 1990:85). He provides the following example, where it is unclear whether subject-oriented ability is involved, to illustrate this observation:

- (2) One thing you want to avoid, if you possibly can, is a present from my mother.
(Palmer 1990:85)

¹As pointed out by Huddleston and Pullum et al (2002): “in the case of Palmer’s taxonomy, the category of dynamic modality is broader than just subject-oriented modality. Dynamic modality basically covers the range of meanings that are clearly not epistemic and not deontic.”

- **Van der Auwera & Plungian (1998)**

V&P (1998) adheres to the basic dichotomy of epistemic vs. non-epistemic modality and further classifies non-epistemic modality based on a primary distinguishing criterion, namely whether the conditioning factors are external or internal to the participant of an event (i.e., usually the subject of the sentence). According to their system, it is crucial to identify whether a root modal is participant-external or participant-internal. “Participant-external” modality refers to “circumstances that are external to the participant, if any, engaged in the state of affairs and that make this state of affairs either possible or necessary.” (V&P 1998:80). A modal is defined as “deontic” only when the participant-external circumstances involve “some person(s), often the speaker, and/or some social or ethical norm(s) permitting or obliging the participant to engage in the state of affairs” (V&P 1998: 81). The non-deontic categories in V&P’s system, although not directly labeled, align with the widely acknowledged “goal-oriented” modality (Portner 2009), as exemplified in (3).

(3) To get to the Station, you can take bus 66. (V&P 1998:80)

On the other hand, “Participant-internal” modality refers to “a kind of possibility or necessity internal to a participant engaged in the state of affairs.” (V&P 1988:80), encompassing notions such as ability and needs. The subcategories of both Participant-internal and Participant-external modality are further distinguished between “possibility” and “necessity” modality, a distinction that is not explicitly addressed in Palmer’s classification system. The classification system of V&P is summarized in Table 2.3.

Epistemic	Non-epistemic					
	Participant-internal		Participant-external			
	Possibility	Necessity	Possibility		Necessity	
	Ability	Need	Deontic (permission)	Non-deontic (goal-oriented)	Deontic (obligation)	Non-deontic (goal-oriented)

Table 2.3

V&P do not explicitly address the somehow ambiguous category “circumstantial” modality, whose definition often oscillates between a participant-internal and participant-external interpretation. For instance, Nauze (2008:122) defines “circumstantial modality” as “expressing that the action/event can be performed because of external factors”, while still acknowledging cases of participant-internal circumstantial modality (i.e.,

circumstantial ability). Similarly, Kratzer (2012:54) explicitly notes that the relevant facts targeted by circumstantial modality can include both external and internal circumstances.

Since this study primarily focuses on non-epistemic modality, epistemic modality will be set aside in the systems discussed above, and the attention will be directed toward non-epistemic modality.

2.2 Motivating the labels

Before formally introducing the labels to be adopted in this work, several further explanations are necessary regarding specific modal notions.

- **“Objective modality”**

The label “objective possibility/necessity” will be used in this work to refer to what is objectively possible or necessary.

As modality is generally associated with knowledge, beliefs, demands, or some kind of facts (Lyons 1977), “objective modality” is typically considered rare in natural languages. Nevertheless, there is acknowledgement of a kind of possibility or necessity that is viewed from a purely objective standpoint. Examples include Palmer’s (2001[1986], 1990) “neutral/circumstantial possibility”, Cinque’s (1999) “pure possibility”, and “alethic modality”, a term directly used by scholars such as Butler (2003) and Leiss (2008).

More straightforwardly, Hengeveld (2004) introduces a distinct modal category called “event-oriented modality”, which refers to purely objective modality within his classification system. This category contrasts with the other two categories in his system, participant-oriented modality and proposition-oriented modality, based on the parameter “target of evaluation”, which refers to “the part of the utterance that is modalized” (Hengeveld 2014:1992). A general outline of his classification system is shown in Table 2.4 below.

Target of evaluation	What is affected?
Participant-oriented modality	the relational part of the utterance as expressed by a predicate
Event-oriented modality	the event description contained within the utterance
Proposition-oriented modality	the propositional content of an utterance

Table 2.4

According to Hengeveld, event-oriented modality occupies an intermediary position between participant-oriented modality and proposition-oriented modality (cf. Nauze 2008).² It differs from both categories in that the source of modality is neither a participant in the event nor the speaker. In general, it is considered purer and more objective than the other two categories (cf. Lyons 1977: 797-804; Halliday 1970; Coates 1983). As Hengeveld further suggests, this kind of objective reading can be best captured by impersonal constructions (see also Palmer 1990, Nauze 2008).

The formal definition of “objective possibility/necessity” will align with “alethic modality” (i.e., *logical possibility/necessity*, von Wright 1951), not in the epistemic sense commonly adopted in general modern linguistic literature (Cinque 1999; Butler 2003), but rather in the sense of circumstantial modality within the root modal domain (Kratzer 1981, 1991, 2012; Palmer 2001[1986]; von Stechow 2006).

- **‘subjective’ vs. ‘objective’ modality**

Since we are formalizing the modal notion of “objective modality” within the non-epistemic modal domain, it is also worth noting the existence of “objective modality” within the epistemic modal domain. Indeed, the category “objective epistemic modality” has long been acknowledged in the logic and semantic literature (e.g., modality expressed by *Objectively speaking...*). Lyons (1977) suggests that epistemic modals can be both subjective and objective, with the objective epistemic modal subsequently described by Iatridou (1990) as “metaphysical modality”. This parallel shows that the dichotomy between subjective and objective modality is present in both epistemic and non-epistemic domains, which is not surprising given their shared conceptual foundations.

- **‘Ability’ with and without agency**

Another label that requires clarification is “ability”. Traditionally, the label “ability” covers both physical ability (e.g., ‘be able to’) and learned/acquired ability (e.g., ‘know-how’) of exclusively animate subjects. In the case of physical ability, “ability”

²To avoid confusion, Nauze (2008) notes that participant-oriented modality and proposition-oriented modality in Hengeveld’s system correspond to Palmer (2001 [1986])’s event modality and propositional modality, respectively. Nauze suggests that Hengeveld’s “event-oriented modality” might be better viewed as “a reshaping of the typology” rather than a completely new type of modality (Nauze 2008:16). In any case, Nauze (2008) concurs with Hengeveld (2004) in positing the existence of a modal meaning that is not directly tied to the speaker’s attitude or judgments, nor to the participants in events, and is not necessarily deontic.

typically refers to the possibility enabled by the intrinsic property, or more precisely, the subject-internal characteristic of an animate individual. See (4) for example.

- (4) John/My dog is able to run 10 miles per hour.

However, it has also been noticed that certain properties of inanimate subjects can enable the actualization of specific events. Palmer (1990) observes that “only animate creatures may have ability, but subject orientation is possible with inanimates, where it indicates that they have the necessary qualities or ‘power’ to cause the event to take place.” (Palmer 1990:85). Similarly, Radden&Dirven (2007) highlight cases where natural physical entities can also be associated with “ability” under their use as means, as illustrated in (5).

- (5) X-rays can/are able to penetrate the body’s tissues and bones.
(Radden&Dirven 2007:225)

Santorio (forthcoming) formalizes the concept of “ability without agent” within the framework of standard modal semantics by noting that “some ability reports simply have subjects that are not agents” (P29). Some of his examples are cited below.

- (6) a. Steel is able to withstand a pressure of 100 tons.
b. This type of coal is able to burn without producing smoke.
c. The central mall on campus is able to hold 10,000 people.
(Santorio forthcoming P30)

Given the above reasoning, the label “ability” will be used in a broad sense in this dissertation to cover both the “ability” of animate subjects and the “properties/characteristics” of inanimate subjects.

To sum up, the basic informal and corresponding formal labels for non-epistemic modality that will be employed in this dissertation are listed in Table 2.5. For ease of interpretation, informal labels will be used in the examples.

Non-formal	Formal
<i>Objective possibility</i>	Alethic possibility
<i>Permission</i>	Deontic possibility
<i>Obligation</i>	Deontic necessity
<i>Prohibition</i>	Deontic necessity
<i>Ability</i>	Dynamic possibility
<i>Goal-oriented</i>	Teleological possibility/necessity

Table 2.5

For the sake of completeness, some “conversion formulas” for certain modal categories across different classification systems are provided below.

- i) “Objective possibility” or formally “Alethic possibility” in this work corresponds to “neutral/circumstantial possibility” in Palmer (2001[1986]) or “circumstantial possibility” in Von Fintel (2006).³ “Objective impossibility” will be used to refer to its negative value.
- ii) “Permission” corresponds to participant-external deontic possibility in V&P (1998). “Permission denial” will be used to refer to its negative value.
- iii) “Obligation” corresponds to participant-external deontic necessity in V&P (1998). It can be further subdivided into “obligation” with strong quantificational force (e.g., ‘must’; ‘have to’) and weak quantificational force (e.g., ‘ought to’; ‘should’) (Palmer 1986, 1990; Bybee et al. 1994)
- iv) “Prohibition” corresponds to the original “forbidden” in Von Wright (1951) (see Table 2.1), which logically corresponds to “permission denial” (negated permission) (Sparvoli 2017).⁴ In this work, it exclusively refers to cases in which a universal deontic modal (e.g., ‘must’) scopes over the negation (e.g., ‘must not’), leading to a “prohibition” reading.
- v) “Goal-oriented” or formally “teleological” possibility/necessity corresponds to participant-external non-deontic possibility/necessity in V&P (1998).

³I will follow Palmer (2001 [1986]) in not making a finer distinction between “neutral” and “circumstantial” modality.

⁴“prohibition” is represented as “It is necessary not to”, and negated permission is represented as “It is not possible to”. Since “necessary not” ($\Box\neg$) is logically equivalent to “not possible” ($\neg\Diamond$), “prohibition” is also logically equivalent to negated “permission”.

2.3 Polysemy of modals

As widely acknowledged, it is natural for modal elements to be polysemous. The interpretation of this polysemy varies in the literature. Broadly, it refers to the traditional distinction between epistemic and non-epistemic modality, while in a more detailed sense, it encompasses a wider range of readings that a modal element can convey (e.g., epistemic, deontic, bouletic, teleological etc.).

In the former, broader sense, modal elements that can express both epistemic and root readings are often the subject of study. An example of this is the English *may*, as illustrated in (7). In (7a), *may* conveys a non-epistemic/root reading, whereas in (7b), it expresses an epistemic reading.

- (7) a. John may use this package. ‘John is allowed to use this package.’
- b. John may be at home. ‘John is probably at home.’

In this dissertation, we adopt the latter, more detailed approach, focusing on the various modal readings that a single modal element can express. For instance, Nauze (2008:22) observes that the Dutch modal verb *kunnen* can express readings including epistemic modality as well as a wide range of non-epistemic modality, such as permission, goal-oriented modality, ability and circumstantial modality. Similarly, Hacquard (2010) provides the following examples from French, as illustrated in (8).

- (8) a. Deontic modality (permission/obligation)
Le père de Mary lui impose un régime très strict. Elle peut/doit manger du brocoli.
 ‘Mary’s father imposes on her a strict diet. She can/must eat broccoli.’
- b. Dynamic modality (ability)
Mary est très forte. Elle peut soulever cette table.
 ‘Mary is very strong. She can lift this table.’
- c. Teleological modality (goal-oriented)
Mary veut être à Paris à 17 heures. Elle peut/doit prendre le train pour aller à Paris.
 ‘Mary wants to be in Paris at 5 p.m. She can/must take the train to go to Paris.’
 (Hacquard 2010:84)

An ongoing debate in the literature concerns whether modals can be truly polysemous.

Intuitively, modal elements appear to be more or less ambiguous at the surface level. Rather than focusing on the apparent polysemy of modals, we are more interested in the true nature of modal elements. Basically, if a modal element is not genuinely polysemous, its various readings should be derived through other means, either contextual or structural. Conversely, if a modal is truly polysemous, all its possible readings should be lexically encoded within the modal itself. In section 2.3.1, we review analyses that support the non-polysemy view of modals, while in section 2.3.2, we examine a semantic universal proposed in the literature that supports the true polysemy of modals.

2.3.1 Modals are not polysemous

In this section, we will review previous analyses from both semantic and syntactic perspectives.

a) Semantic perspective

In the possible worlds semantics, modals are considered quantifiers over possible worlds (Kripke 1962, Kratzer 1981, 1991). A crucial idea of Kratzer (1981, 1991, 2012) is that each modal element has a single lexical entry, and its apparent polysemy is purely context-dependent. Specifically, the interpretation of modals is relative to different kinds of “conversational backgrounds”, which can be made explicit through adverbial phrases such as “according to certain regulations...” or “given the available evidence...” See (9) for example.

- (9) a. According to current laws, minors cannot enter internet cafés.
 b. To go to the central library, you have to take the tram.

The two crucial components of a modal are modal force (or quantificational force over possible worlds) and modal flavor. Modal force determines whether a modal expresses possibility (existential quantification) or necessity (universal quantification). Modal flavor, on the other hand, distinguishes among different interpretations such as epistemic, deontic or teleological modality, among others. For instance, *cannot* in (9a) can be decomposed into possibility modal + deontic modal flavor, while *have to* in (9b) consists of necessity modal + teleological modal flavor.

She proposes that the interpretations of modals are derived from the following three factors:

- i) Modal force (existential or universal)

- ii) Modal base (epistemic or circumstantial (i.e., root))
- iii) Ordering source (deontic, teleological, etc.)

While modal force is lexically determined, both modal base and ordering source are context-dependent, relying on different “conversational backgrounds”. For instance, to derive the interpretation of the modal *may*, the existential force is lexically specified by the modal itself. The set of possible worlds it quantifies over is first restricted by a circumstantial modal base (i.e., root interpretation), then further ordered according to different ideals provided by laws (deontic), desires (bouletic), or goals (teleological). However, the traditional context-dependent approach has been challenged by later scholars. For instance, Nauze (2008:157) argues that an overt deontic conversational background does not necessarily determine a deontic interpretation. Instead, the modal can still receive an epistemic reading, as illustrated in example (10).

- (10) In view of what the law provides, Jockl may be executed.
(Nauze 2008:157)

Kratzer (2012) also acknowledges that different modal elements impose distinct constraints on the types of conversational backgrounds they are compatible with. For instance, the German modal *kann* can express possibilities based solely on brute facts (i.e., with an empty ordering source), whereas *darf* cannot. Therefore, the same reading expressed by *Ich kann das nicht aushalten* in the context of a severe headache cannot be expressed using *Ich darf das nicht aushalten* (Kratzer 2012:57).

By pointing out several problems in the traditional ambiguity and polysemy approach, Papafragou (1998) also supports the monosemy view, adopting “a common core for the meaning of each modal, and [using] it as a basis for deriving the vast range of possible interpretations which the modals may contextually receive”(P45).

b) Syntactic perspective

It has been widely acknowledged in the literature that epistemic modals have scope over non-epistemic modals, a syntactic distinction that has been consistently recognized (Jackendoff, 1972; McDowell 1987; Picallo 1990; Brennan 1993; Cinque 1999, 2006; Hacquard 2006, among others). Building on this foundational observation, further hierarchical relations have been proposed, among which the most influential proposals are: i) a universal hierarchy encoding the ordering of modal elements with distinct semantic features across languages (Cinque 1999, 2006), and ii) necessity modal universally scopes over possibility modal within both epistemic and non-epistemic domains

(Cinque 1999, Cormack&Smith 2002, Butler 2003). In what follows, these two principal proposals are reviewed in detail.

i) A universal hierarchy for modal elements

Intuitively, when two modal elements co-occur, two patterns emerge: either they encode the same semantic feature, as observed in modal concord (Guerts&Huitink 2006, Zeijlstra 2007), or they encode distinct semantic features. Cinque (1999) focuses on the latter case, demonstrating that modal elements with distinct semantic interpretations also exhibit syntactic differences. In line with the traditional bipartite division between epistemic and root modality, Cinque identifies distinct functional projections for various subclasses of modality, among which $\text{ModP}_{\text{Epistemic}}$, $\text{ModP}_{\text{Alethic}}$, $\text{ModP}_{\text{Volition}}$, $\text{ModP}_{\text{Obligation}}$, $\text{ModP}_{\text{Ability}}$ and $\text{ModP}_{\text{Permission}}$. This modal hierarchy is illustrated in (11).

- (11) $\text{ModP}_{\text{Epistemic}} > \text{ModP}_{\text{Alethic}} > \text{ModP}_{\text{Volition}} > \text{ModP}_{\text{Obligation}} > \text{ModP}_{\text{Ability/permission}}$
(Cinque 1999)

To derive this hierarchy, Cinque begins by demonstrating that epistemic modals and alethic modals should be structurally distinguished, not just from a logical point of view. His analysis draws on the “triple modal” constructions observed in Hawick Scots, a variety of English, as discussed by Brown (1992:75), cited in (12) below. Cinque observes that the alethic possibility modal *might* follows the future-marking element *will* in T(Future), whereas epistemic modals precede T(Future) (see Cinque 1999:72-73).

- (12) He'll might could do it for you
(= ‘he might be able in the future to do it for you’).

This observation leads Cinque to propose the following sequence:

- (13) $\text{ModP}_{\text{Epistemic}} > \text{ModP}_{\text{Alethic}}$ (Cinque 1999:79)

Concerning root modals, Cinque distinguishes three main sub-classes: volition, obligation and ability/permission. As a first step, he demonstrates that $\text{ModP}_{\text{Volition}}$ is positioned between $\text{ModP}_{\text{Alethic}}$ and $\text{ModP}_{\text{Ability/Permission}}$, occurring lower than the former and higher than the latter. This is illustrated in (14) from Cinque (1999:80).

- (14) a. Gianni potrebbe [ALETHIC] voler uscire.
‘G. could want to go out.’

- b. Gianni vorrebbe poter [ROOT] cantare.
'G. would want to be allowed/be able to sing.'

This leads to the following sequence:

$$(15) \quad \text{ModP}_{\text{Alethic}} > \text{ModP}_{\text{Volition}} > \text{ModP}_{\text{Ability/Permission}}$$

Subsequently, he shows that $\text{Mod}_{\text{Volition}}$ scopes over $\text{Mod}_{\text{Obligation}}$ (see (16)), which results in the sequence presented in (17).

- (16) a. Gianni vorrebbe dover [OBLIGATION] prendere una decisione subito.
'G. would want to have to take a decision immediately.'
- b. ?Gianni dovrebbe [OBLIGATION] volerci aiutare.
'G. should want to help us.'

$$(17) \quad \text{ModP}_{\text{Volition}} > \text{ModP}_{\text{Obligation}}$$

As for the relative order of $\text{Mod}_{\text{Obligation}}$, $\text{Mod}_{\text{Permission}}$, and $\text{Mod}_{\text{Ability}}$, Cinque (1999) shows that $\text{Mod}_{\text{Obligation}}$ precedes $\text{Mod}_{\text{Ability/Permission}}$, while leaving the latter two undifferentiated.⁵ See (18) (Cinque 1999:80).

- (18) a. Ci vorremo dover poter entrare anche noi in quel club.
'We would like to have to have the permission to enter that club.'
- b. *Ci vorremmo poter dover entrare anche noi in quel club.
'We would like to have the permission to have to enter that club.'

This completes the final hierarchy introduced in (11).

ii) Necessity modals scope over possibility modals.

Cormack&Smith (2002) categorize modals into necessity and possibility modals, based on their scopal interactions with sentential negations (designated as $\text{Pol}[\text{NEG}]$). Their primary observations are derived from the following two examples, where both modal elements are interpreted deontically. Again, we only consider root modals here.

⁵In this dissertation, we will not differentiate between $\text{ModP}_{\text{Ability}}$ and $\text{ModP}_{\text{Permission}}$, as there is no direct evidence from the target language, Sichuanese. The relative order between $\text{ModP}_{\text{Ability}}$ and $\text{ModP}_{\text{Permission}}$ is explored in Cinque (2006). Since their relative order cannot be directly observed, Cinque uses the "restructuring" verb *riuscire* 'manage to' in Italian as a reference point to clarify their ordering. For a detailed analysis, see Cinque (2006:90-91).

- (19) Edwin can't climb trees. (Cormack&Smith 2002:135)
 a. 'It is not the case that Edwin can climb trees.' NOT > CAN
 b. *'Edwin is able not to climb trees.' *CAN > NOT
- (20) Alfred shouldn't eat nuts. (Cormack&Smith 2002:135)
 a. 'It is advisable for Alfred not to eat nuts.' SHOULD > NOT
 b. *'It is not the case that it is advisable for Alfred to eat nuts.' *NOT > SHOULD

The authors show that the two negations in (19) and (20) can only be interpreted as sentential negation, as evidenced by their interaction with tag questions (Klima 1964). See (21) and (22).

- (21) Edwin can't climb trees, can he? (Cormack&Smith 2002:135)
 (22) Alfred shouldn't eat nuts, should he? (Cormack&Smith 2002:135)

This leads to the following sequence:

- (23) SHOULD (deontic) > Pol[NEG] > CAN (deontic)

By further testing other modals, they identify two groups of modals: pre-Pol Modal1, which includes almost all root necessity modals (e.g., *must*, *should*, *ought to*, etc., with the exception of *need* in Modal2), and post-Pol Modal2, which includes all root possibility modals (e.g., *can*, *could*, *may*, etc.) (Cormack&Smith 2002:141).⁶ This observation leads to the sequence represented in (24).

- (24) Modal1(NECESSITY) > Pol[NEG] > Modal2(POSSIBILITY)

Given the fundamental idea that heads are merged in their relative scope positions, Cormack&Smith propose that Pol[NEG] is a functional head, with Modal1(NECESSITY) and Modal2(POSSIBILITY) being merged above and below this functional head, respectively.

Butler (2003) makes a prediction similar to that of Cormack&Smith (2002), proposing the following LF (and syntactic) hierarchy of root modals and sentential negation:

⁶The exception of *need* may be explained by its status as a Negative Polarity Item (NPI), which requires it to appear within the scope of a negative element (Cormack&Smith 2002:139, Iatrou&Zeijlstra 2009).

(25) root necessity > negation > root possibility (Butler 2003:986)

Although Butler agrees with Cinque (1999) in positing a hierarchy for modal elements, he argues that Cinque’s hierarchy is not “neat” enough in that “there is a proliferation of different features, with a certain amount of duplication of necessity/possibility within these features” (Butler 2003:990).

The similarities and differences between the two proposals are summarized in the table below.

	In common	NOT in common
Cinque (1999)	Split between necessity and possibility in both epistemic and root modal domain, with the former precedes the latter	i) Multiple functional heads for modal elements with distinct semantic features ii) The role of negation is not relevant
Cormack&Smith (2002), Butler (2003)		i) Only two functional heads for necessity and possibility modals within each domain (i.e. epistemic and root) ii) A dedicated functional projection for negation

Table 2.6

2.3.2 Modals are polysemous

Nevertheless, some other scholars believe that modals are polysemous in nature. The traditional view attributes the polysemy of modals to multiple lexical entries. In this sense, two distinct lexical entries are necessary for a modal auxiliary like *must*, which conveys both epistemic and deontic readings (e.g., *must_{Epistemic}*, *must_{Deontic}*). Despite the fact that this idea has been widely argued against in the literature (Hacquard 2010), certain lexical restrictions and specifications are indeed observed among different root modal elements. As is widely acknowledged, some modal elements exhibit a general tendency in their usage. For instance, while English *might* tends to convey an epistemic reading, *can* is hardly used epistemically (Von Stechow 2006:5, 10). Furthermore, *may* is never used to express ‘ability’ (Palmer 2001[1986]:77). As Matthewson (2016:533) notes, “the fact that modals may have lexically restricted conversational backgrounds weakens the argument against an ambiguity analysis.” Based on these observations, a generalization known as semantic universal has been proposed in the literature.

Semantic universal

In Nauze’s (2008) typological study of modality, he views modal force and modal flavor as positioned along two axes. The vertical axis distinguishes between possibility

and necessity, while the horizontal axis differentiates various types of modality, such as epistemic, deontic, teleological, bouletic, and others (Nauze 2008:220). Specifically, he proposes the following semantic universal for modality within the framework of Kratzer:

“Modal elements can only have more than one meaning along a unique axis of the semantic space: they either vary on the horizontal axis and thus are polyfunctional in the original sense of expressing different types of modality or they vary on the vertical axis and can express possibility and necessity, but they cannot vary on both axes.” (Nauze 2008:222)

For example, English modals are lexically marked for modal force, distinguishing between existential force (e.g., *may*, *can*) and universal force (e.g., *must*, *have to*), while unmarked for modal flavor. This means they can vary along the horizontal axis and convey different modal flavors depending on the contexts. The English modal *must*, which is lexically marked for universal force but varies in modal flavor, is illustrated in Table 2.7. On the other hand, St’át’imcets modals are lexically marked for modal flavor but have variable modal force (Matthewson et al. 2007, 2009; Rullmann et al. 2008), meaning they vary along the vertical axis.⁷ The St’át’imcets modal *k’a*, which is lexically marked for epistemic modal flavor but varies in modal force (it can be translated as either *must* or *may*), is illustrated in Table 2.8.

FORCE \ FLAVOR	FLAVOR		
	Epistemic	Deontic	Teleological
Existential			
Universal	<i>must</i>	<i>must</i>	<i>must</i>

Table 2.7

⁷St’át’imcets (Lillooet language), is a Salishan language spoken in southern British Columbia, Canada.

FLAVOR FORCE	Epistemic	Deontic	Teleological
Existential	$k'a$		
Universal	$k'a$		

Table 2.8

Although Nauze's (2008) semantic universal has been challenged and refined by other scholars (e.g., Bochnak 2015a, b; Vander Klok 2013; Steinert-Threlkeld, Imel, Guo 2023), it continues to represent a general tendency in modal interpretations. Having reviewed the various views on the polysemy of modals, it is clear that the polysemy of modals cannot be attributed to a single domain. In this dissertation, we will focus on the following questions regarding the polysemy of modals in general:

- i) Besides the semantic and pragmatic disambiguating methods, are there any other syntactic methods to disambiguate the various modal flavors of a “polysemous” modal element?
- ii) To what extent can modality be encoded and identified in the syntax? Is Cinque's (1999) modal hierarchy truly overcomplex, or is it still insufficient to capture all the possible cross-linguistic modal interpretations?

Introduction of Sichuanese [V-DE]

DE primarily expresses a ‘possibility’ reading. The various flavors based on the ‘possibility’ reading is shown in (1)-(4).

- In the above example, (1a) represents the most basic reading, simply stating that Zhangsan has the possibility to drink beer based on objective facts, e.g., he is not allergic to alcohol. The interpretation in (1c), however, does not convey a simple ‘ability’ reading, such as ‘Zhangsan is able to drink beer’; rather, it guarantees that ‘Zhangsan is able to drink a lot of beer’, thereby introducing a degreed ‘ability’ reading.

22

- (2) *Ze4-xi1 pin2go3 ci2 -de2.*
 these apple eat -DE
 a. ‘These apples are edible/It is objectively possible for these apples to be eaten.’ *objective possibility*
 b. ‘These apples can be eaten (e.g., as permitted by someone/the regulation)’
permission

The objective facts that make the reading in (2a) available could include, for instance, that the apples have not gone bad or that they are not poisonous. In the next example, when the verb denotes an event that can potentially persist over time, an additional degreed reading as in (3c) may also emerge.

- (3) *Ze4-go4 sou3ji1 yong4 -de2.*
 this-CLF telephone use -DE
 a. ‘It is objectively possible for this telephone to be used.’ *objective possibility*
 b. ‘This telephone can be used (e.g., as permitted by the teacher).’
permission
 c. ‘This telephone can be used for a long time (e.g., it is durable).’ *ability*

A goal-oriented reading becomes available when a sentence containing [V-DE] is preceded by a conditional adverbial clause, as illustrated in (4).

- (4) *Qi(e)4 xiong2mao1ji1di4, ngi3 zo4 -de2 san1hao4xian4.*
 go Research.Base.of.Giant.Panda 2SG take -DE number.three.line
 ‘In order to go to Research Base of Giant Panda, you can take metro line 3.’

DE appears to express a ‘necessity’ reading in only two specific cases. In the first case, [V-DE] co-occurs with the sentence-final particle *-lao*, forming an imperative-like sentence, as indicated by the possible absence of an overt subject (see (5)).¹ In this case, the sentence can convey a weak ‘necessity’ reading (Palmer 1986, 1990; Von Stechow & Iatridou 2008) and is typically employed as a kind suggestion directed toward

¹Recall that the sentence-final particle *lao* in (5) is the Sichuanese counterpart of the sentence-final particle *le* in Standard Chinese. It is not glossed with the traditional label CRS (currently relevant state, Li & Thompson 1981), which signals change into a new situation, because, as will be shown, it primarily conveys the speaker’s attitude (ATT) in this context. This special type of imperative construction will be discussed in detail in Chapter 8, where the specific attitude the speaker intends to express will also be clarified.

the addressee.²

- (5) *Xi3 -de2 yi1fu2 lao3!*
 wash -DE clothes ATT
 ‘You should/’d better wash your clothes (now)!’ *obligation*

The second case arises in the regular negative form of [V-DE]. When the negative morpheme *bu* is present, an additional ‘prohibition’ reading becomes available. See (6).³

- (6) *Zang1san1 ho1 -bu -de2 pi2jiu3.*
 3SG drink -NEG -DE beer
 a. ‘It is not objectively possible for Z. to drink beer.’ *objective impossibility*
 b. ‘Z. is not permitted (e.g., by the doctor) to drink beer.’ *permission denial*
 c. ‘Z. is not quite able to drink beer.’ *ability*
 d. ‘Z. is prohibited from drinking beer.’ *prohibition*

The possible readings that DE appears to express are listed in Table 3.1. It should be noted that DE does not express a simple ‘ability’ reading, but always a degreed one, which can be roughly understood as a ‘(strong) ability’ reading. Henceforth, the label ‘ability’ used to mark all examples of [V-DE] refers exclusively to the degreed ‘ability’ reading.

	Possible interpretations
(V-)DE	Objective possibility
	Permission
	Ability
	Obligation

Table 3.1

Given that Sichuanese DE is grammaticalized from a verb meaning ‘get;acquire’, it naturally falls within the widely recognized class of acquisitive items attested in lan-

²Here, I follow the traditional interpretation of the [V-DE-*lao*!] type of imperatives (Zhang et al., 2001), namely one involving a relevant weak necessity reading, although an underlying possibility reading is also accessible. This will be discussed in detail in later chapters.

³Note that the reading in (6c) should not be straightforwardly labeled as *inability*, which is the negative value of *ability*. What is negated here is not the simple ability to drink beer, but rather the strong ability to drink beer (e.g., in large quantities); the subject still has the basic ability. This point will be further clarified at the syntactic level in Chapter 7.

guages of Mainland Southeast Asia (MSEA) (Enfield 2001). This class of verb-like morphemes, typically derived from etyma meaning ‘come to have’, exhibits a remarkably similar set of functions across MSEA languages, encompassing verbal, aspectual and modal uses. In their modal use, these morphemes give rise to a broad range of modal meanings, most of which are loosely translatable as *can* in English (Sybesma 2008). This is consistent with the polysemy observed in Sichuanese DE. In particular, as highlighted by Sparvoli (2017: 44–45), the polyfunctionality of MSEA acquisitive modals becomes especially salient in their negative forms, where their interpretations may range from participant-internal inability or failure to circumstantial or alethic impossibility, and may further extend to deontic denial of permission. More generally, polysemy among non-epistemic modalities is also widely attested in Germanic languages, comparable to acquisitive modals found in MSEA languages (Narrog 2016).

3.1 Characteristics of [(V-)DE]

In this section, we will examine several characteristics of the [V-DE] construction. In particular, we will explore the grammatical status of DE, the argument structure of [V-DE], the distribution of verbs in [V-DE], and the interaction between [V-DE] and different types of aspect markers.

DE is not a suffix

Based on the above examples, one might wonder whether DE functions as a suffix attached to the lexical verb, similar to Mandarin aspect markers. This section aims to demonstrate that DE in [V-DE] is not a suffix, as traditionally defined (Lü 1942). Instead, it behaves more like a canonical modal auxiliary.

Firstly, DE in [V-DE] can be separated from the verb by various elements, including a negative morpheme (see (6) above, cf. Chao 1968) and a degree adverb (*da4* ‘very’) in the context of a negated strong ability reading (see (7)).

- (7) *Zang1san1 ho1 bu da4 de2 pi2jiu3.*
 3SG drink NEG big;very DE beer
 ‘Zhangsan is not quite able to drink beer.’

Moreover, DE generally conforms to the fundamental properties of Chinese modal auxiliaries (Chao 1968:738, Li&Thompson 1981:172-174, Zhu Dexi 1982:61) outlined in (8).

(8) Characteristics of Chinese Modal Auxiliaries

- a. They must co-occur with verbs
- b. They cannot undergo reduplication
- c. They cannot take any aspect markers (e.g., *le*, *zhe*, *guo*)
- d. They may occur as the A element in A-not-A questions
- e. They can be used independently

The first three criteria are perfectly satisfied by DE, as illustrated below. (9a) shows that DE cannot directly combine with nominal elements, (9b) indicates that DE cannot undergo reduplication, and (9c) shows that DE cannot take any aspect markers.

- (9)
- a. **Zang1san1 de2 pi2jiu3*.
3SG DE beer
 - b. **Zang1san1 ho1 -de2 -de2 pi2jiu3*.
3SG drink -DE -DE beer
 - c. **Zang1san1 ho1 -de2 -lao3/go4 pi2jiu3*.
3SG drink -DE -PFV/EXP beer

Nevertheless, DE does not appear to satisfy the last two criteria. Typically, when forming an A-not-A question, Sichuanese canonical preverbal modal auxiliaries (as in [Aux-V]) undergo reduplication, as illustrated in (10a).⁴ In contrast, within the [V-DE] construction, it is the main verb that is reduplicated, as shown in (11a). Moreover, while Sichuanese preverbal modal auxiliaries can be used independently as short answers (see (10b)), DE cannot occur in isolation and must always appear alongside the main verb (see (11b)).

- (10)
- a. *-Ngo3 ko3(yi3) bu3 ko3yi3 ho1 pi2jiu3?*
1SG be.allowed.to NEG be.allowed.to drink beer
'Can I drink beer?'
 - b. *-ko3yi3*.
be.allowed.to
'You can (drink beer).'
- (11)
- a. *-Ngo3 ho1 bu ho1 -de2 pi2jiu3?*
1SG drink NEG drink -DE beer
'Can I drink beer?'
 - b. *-Ho1 -de2*.
drink -DE
'You can drink (beer).'

⁴Typically, it is the first syllable of the canonical modal auxiliary that undergoes reduplication.

However, its postverbal position is likely responsible for the deviation from the last two criteria, which does not change the fact that it exhibits properties more akin to those of an auxiliary. Indeed, DE has traditionally been classified as a modal auxiliary by Sichuanese grammarians, including Zhou (1983) and Zhang et al. (2001). To sum up, although DE in [V-DE] may not possess the same degree of independence as canonical preverbal modal auxiliaries, it is significantly more autonomous than verbal suffixes. Therefore, DE will be considered a non-canonical modal auxiliary or, more generally, a modal morpheme.

Argument structure of [V-DE]

Observing the examples introduced above, it becomes evident that two distinct structures can be formed with [V-DE] (see (12) and (13)). Since we are only interested in the syntactic structure here, only a general modal interpretation is provided below.

- (12) *Zang1san3 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 ‘Zhangsan can drink beer.’
- (13) *Ze4-xi1 pin2go3 ci2 -de2.*
 these apple eat -DE
 ‘These apples are edible/these apples can be eaten.’

In the first case where the direct object remains in situ, DE consistently appears between the lexical verb and the direct object, forming a [S-V-DE-O] construction. In the second case, the direct object is fronted to a topic position, resulting in a [O-V-DE] construction.

The first sentence contains an external argument, specifically the agent *Zhangsan*, and conveys causative-transitive semantics. In contrast, the second sentence at first glance exhibits a “passive-like” structure, as it lacks an overt external argument while still conveying implied causative-transitive semantics. However, an explicit “by-phrase”, which can typically be added to a passive sentence, is not possible in example (13), as shown in (14).⁵

- (14) **Ze4xi1 pin2go3 zao2 Zang1san1 ci1 -de2.*
 these apple PASS 3SG eat -DE

External arguments can be overtly expressed in the [O-V-DE] construction only when

⁵*Zao* (遭) (also written as 着 or 招) is the Sichuanese equivalent of *bei* (被) in Standard Chinese. Both serve as canonical markers of passive voice and are used to introduce the agent in passive constructions.

they are used contrastively, as illustrated in the two examples in (15). However, as observed from the translation, this is not an explicit expression of agents through a “by-phrase” but rather an adjunct meaning ‘for’ or ‘with respect to.’, which is not considered part of the verb’s argument structure. In any case, the sentence in (13) always carries the underlying meaning ‘these apples are edible’.

- (15) a. *Ze4xi1 pin2go3 da4ren2 ci1-de2, xiao3-wa2'er2-1 ci1-bu -de2.*
 these apple adults eat-DE small-children eat-NEG -DE
 ‘These apples are edible for adults, not for small children.’
- b. *Ze4-go4 tu2su1guan3 lao3si1 qi(e)4 -de2, xuo2sen1 qi(e)4 -bu -de2.*
 this-CLF library teacher go -DE students go -NEG -DE
 ‘This library is accessible for teachers, not for students.’

Therefore, it can be concluded that [V-DE] is never syntactically passive. These characteristics, namely encoding causative-transitive semantics while lacking syntactic external arguments, distinguish it from a passive construction and align it more closely with a middle construction. In fact, canonical preverbal modal auxiliaries can also form the same type of middle construction, as illustrated in (16).

- (16) *Ze4xi1 pin2go3 ko3yi3 ci1.*
 these apple can eat
 ‘These apples can be eaten.’

To conclude, the following two types of constructions can be formed with DE:

- i) Transitive construction ([S-V-DE-O])
- ii) Middle construction ([O-V-DE])

Distribution of verbs in [V-DE]

Lexical verbs can be categorized according to various criteria. In this section, we will examine which types of verbs can appear in the [V-DE] construction and which cannot. A fundamental rule of [V-DE] is that, since DE always occupies the final position in this construction, all other verbal elements, including bare verbs, verbal compounds, and verbs marked by aspect markers, must precede DE, provided they are allowed in the construction.

To start, we consider verb classes in terms of syllables. In Sichuanese, verbs are primarily monosyllabic or disyllabic. For disyllabic verbs, a number of traditional criteria have been proposed for further subdivision. Here, we adopt one of the most basic distinctions, namely whether the two syllables of a disyllabic verb can be separated from

one another (Chao 1968; Li&Thompson 1981), a distinction that is remarkably relevant to how different classes of verbs combine with DE. Based on this criterion, we distinguish two subclasses: (separable) verbal phrases and (inseparable) verbal compounds. Some examples of the three verb classes are provided in Table 3.2.

Verb class	Example verbs
Monosyllabic verbs	<i>sua3</i> ‘play’
	<i>mai3</i> ‘buy’
Disyllabic (separable) verbal phrases	<i>you2-yong3</i> ‘swim-swim’
	<i>da3-jia4</i> ‘fight’
Disyllabic (inseparable) verbal compounds	<i>da3sao3</i> ‘clean’
	<i>zun3bei4</i> ‘prepare’

Table 3.2

Generally, all three classes of verbs can enter the [V-DE] construction, albeit showing different ways of combination. Monosyllabic verbs directly precede DE, as shown in (17). For disyllabic (separable) verbal phrases, only the first syllable precedes DE, meaning that DE is placed between the two syllables, as shown in (18). In contrast, for disyllabic (inseparable) verbal compounds, the entire compound precedes DE, since they are typically treated as single words stored in the lexicon (Huang 1984), as illustrated in (19).

(17) *Monosyllabic verbs*

- a. *sua3 -de2 / sua3 -bu -de2*
play -DE / play -NEG -DE
‘can play’/ ‘cannot play’
- b. *mai3 -de2 / mai3 -bu -de2*
buy -DE / buy -NEG -DE
‘can buy’/ ‘cannot buy’

(18) *Disyllabic (separable) verbal phrases*

- a. *you2 -de2 -yong3 / you2 -bu -de2 -yong3*
swim -DE -swim / swim -NEG -DE -swim
‘can swim’/ ‘cannot swim’
- b. *da3 -de2 -jia4 / da3 -bu -de2 -jia4*
fight -DE -fight / fight -NEG -DE -fight
‘can fight’/ ‘cannot fight’

(19) *Disyllabic (inseparable) verbal compounds*

- a. *da3sao3 -de2 / da3sao3 -bu -de2*
 clean -DE / clean -NEG -DE
 ‘can clean’/ ‘cannot clean’
- b. *zun3bei4 -de2 / zun3bei4 -bu -de2*
 prepare -DE / prepare -NEG -DE
 ‘can prepare’/ ‘cannot prepare’

Next, we consider verb classes based on the Vendlerian classification of situation types (Vendler 1967), with an additional situation type “semelfactive” proposed by Smith (1994, 1997) (see Table 3.3). The situation types are identified according to the three fundamental criteria:

- i) whether the situation described is telic or atelic
- ii) whether the situation described is durative or non-durative
- iii) whether the situation described is dynamic or non-dynamic

Situation types	Examples	static	durative	telic
States	‘be happy’	+	+	-
Activities	‘dance’	-	+	-
Accomplishments	‘build a house’	-	+	+
Achievements	‘break’	-	-	+
Semelfactive	‘kick’, ‘knock at the door’	-	-	-

Table 3.3

First, state, activity and semelfactive verbs can all appear in [V-DE], as shown in (20), (21) and (22). The verbs in (20) are inseparable verbal compounds, and the verb in (21a) is a monosyllabic verb; therefore, they all directly precede DE. On the other hand, the verbs in (21b) (*tiao4-wu3* ‘dance’) and (22) (*qiao1-men2* ‘knock at the door’) are disyllabic separable verbal phrases, so DE is inserted between the two syllables.

(20) *State verbs*

- a. *Jin1tian1 da4jia1 dou1 gao1xin4-de2.*
 today everybody all be.happy-DE
 ‘Today everybody can be happy.’
- b. *Ng13 xi3huan1 -de2 ta1, ngo3 ye3 xi3huan1 -de2 ta.*
 2SG like -DE 3SG 1SG also like -DE 3SG
 ‘You can like her; I can also like her.’

(21) *Activity verbs*

- a. *Zang1san1 pao3 -de2.*
 3SG run -DE
 ‘Zhangsan can run.’
- b. *Ngo3men1 tiao4 -de2 -wu3.*
 1PL dance -DE -dance
 ‘We can dance.’

(22) *Semelfactive verbs*

- Ngi3 qiao1 -de2 -men2.*
 2SG knock -DE -door
 ‘You can knock at the door.’

However, the situation becomes slightly more complicated with accomplishment and achievement verbs. Smith (1994) believes that Mandarin has verbs representing all four situation types proposed by Vendler (1967). On the other hand, Tai (1984) argues that Mandarin lacks accomplishment verbs, based on the observation that, unlike their English counterparts, Mandarin verbs do not necessarily imply the existence of an endpoint. Tai illustrates this contrast with the following examples. In (23a), the English verb *kill* implies the death of the patient, while in (23b), the Mandarin verb *sha*, which is literally translated to ‘kill’, does not. This distinction is evident in that the Mandarin sentence can be followed by a clause meaning ‘but he didn’t die’, whereas such a follow-up is not possible in the English version. As Sybesma (2021:68) observes, the Mandarin verb *sha* in (23b) is better translated as ‘tried to kill’.⁶

- (23) a. *I killed John, but he didn’t die. (from Tai 1984:291)
- b. *Wo sha-le Yuehan, keshi ta mei si.*
 1SG kill-PFV John but 3SG not.have die
 ‘I tried to kill John, but he didn’t die.’

Similarly, Sybesma (1997) argues that Mandarin lacks inherently telic predicates, as all accomplishments (and, arguably, achievements) in Mandarin are analyzable as [activity-result compounds] (Sybesma 1997:226; see also Lin 2004 and Huang 2014). For instance, the verb *sha* ‘try to kill’ in (23b) can only be transformed into an accomplish-

⁶Recall that Sichuanese is a branch of Southwestern Mandarin; therefore, the sentence in (23b) is syntactically and semantically identical in both varieties. For clarity, all examples that remain the same across both varieties will be transliterated based on the phonetic and phonological properties of Modern Standard Chinese (MSC) and will not be marked for tone.

ment verb by adding a result-denoting complement *si* ‘die’ to the activity verb *sha* ‘try to kill’, resulting in the compound *sha-si* ‘kill-die’. Further examples are given in Table 3.4 below.

Activity verb	[Activity verb] –[result-denoting complement]
<i>chi</i> ‘eat’	<i>chi-wan</i> ‘eat-finish’ (‘eat up’)
<i>zhao</i> ‘search for’	<i>zhao-dao</i> ‘search-arrive’ (‘find’)
<i>da</i> ‘hit’	<i>da-lan</i> ‘hit-broken’ (‘break’)

Table 3.4

Given this situation, only state, activity and semelfactive verbs are considered in this section, leaving telic verbal phrases/compounds (i.e., accomplishment and achievement) to the next section.

Aspectual restrictions of DE

Two types of aspect are distinguished in the literature. One pertains to the specific perspective adopted by the speaker regarding all or part of the event (Comrie 1976; Bertinetto 1986; Bertinetto&Delfitto 2000), while the other concerns the event type (Vendler 1967), or situation type (Smith 1991, 1994), characterized by the internal structure of events (Bertinetto&Delfitto 2000). The former is typically referred to as Viewpoint aspect (also called Grammatical aspect or outer aspect), and the latter is referred to as Aktionsart (also known as situation aspect, lexical aspect, or inner aspect). The Vendlerian classification of verb classes introduced in the last section falls under the category of aktionsart. For the sake of clarity, this dissertation will use the terms viewpoint aspect and aktionsart to refer to these two types of aspect.

Before addressing the aspectual restrictions of DE, a brief overview of Sichuanese aspect is provided below. Similar to Standard Chinese, Sichuanese makes a clear distinction between viewpoint aspect and aktionsart. Viewpoint aspect is typically expressed through overt morphemes immediately following the verb (e.g., *-lao* for perfective aspect, *-dao* for durative aspect, and *-go* for experiential aspect⁷), while aktionsart is primarily conveyed through verbs (e.g., states and activities) and verbal compounds in the form of [activity - result] (e.g., achievements and accomplishments), as previously

⁷The corresponding viewpoint morphemes in Standard Chinese are *-le* (*-lao*), *-zhe* (*-dao*) and *-guo* (*-go*). Here, the term “Experiential aspect” is commonly used by sinologists to denote “an event that has been experienced with respect to some reference time” (Li&Thompson 1981:226), typically translated as the English present perfect.

discussed. Next, we will examine the aspectual restrictions that the modal morpheme DE imposes on viewpoint aspect and aktionsart of the preceding verb.

As introduced in the previous section, DE can only take scope over the verbal form immediately preceding it. Therefore, to test whether DE can scope over verbs marked by overt viewpoint aspect and aktionsart markers, we need to place both types of aspect markers immediately after the verb and before DE. However, it turns out that DE cannot take scope over any viewpoint aspect or aktionsart markers, in contrast to canonical pre-verbal modal auxiliaries, which do not exhibit such restrictions. This can be illustrated by the following examples: in (24a), (25a), (26a) and (27a), canonical modal auxiliaries allow verbs marked by viewpoint aspect and aktionsart markers. Conversely, in (24b), (25b), (26b) and (27b)), DE does not permit such combinations.

i) Viewpoint aspect

- (24) a. *Xiang3 man3fen1 bi4ye4, jiu4 bu2 ko3yi3 gua4 -go4 ko1.*
 want full-grade graduate then NEG be.allowed.to fail -EXP subject
 ‘If you want to graduate with the full grade, then you cannot have failed any subjects.’
 b. **Xiang3 man3fen1 bi4ye4, jiu4 gua4 -go4 bu2 de2 ko1.*
 want full.grade graduate then fail -EXP NEG DE subject
- (25) a. *Ngi3 ko3yi3 zo4 -dao3.*
 2SG be.allowed.to sit -DUR
 ‘You can keep seated.’
 b. **Ngi3 zo4 -dao4 -de2.*
 2SG sit -DUR -DE

ii) Aktionsart

- (26) a. *Zang1san1 ko3yi3 yong4 -wan2 ze4xi qian2.*
 3SG be.allowed.to use -finish these money
 ‘Zhangsan is allowed to use up these money.’
 b. **Zang1san1 yong4 -wan2 de2 ze4xi1 qian2.*
 3SG use -finish DE these money
- (27) a. *Ngo3 ko3yi3 da3 -si3 ze4-zi1 cong2 bu2?*
 1SG be.allowed.to beat -die this-CLF bug INTER
 ‘Can I beat and kill this bug?’
 b. **Ngo3 da3 -si3 de2 ze4-zi1 cong2 bu2?*
 1SG beat -die DE this-CLF bug INTER

All the above examples demonstrate that DE exclusively selects a bare verb, defined as a

verb that is not followed by either viewpoint aspect markers or aktionsart markers. The aspectual restrictions and the interaction between aspect and modality will be discussed in detail in Chapter 7.

3.2 The “Polysemy” of Sichuanese DE

At the beginning of this chapter, it was shown that DE appears to be a highly ambiguous modal morpheme. However, it seems that not all possible modal readings of DE can be disambiguated solely by relying on contextual factors. In fact, only the deontic “permission” reading can be clearly interpreted with the use of an adverbial phrase such as “in view of.”, as suggested by Kratzer (1981, 1991).

In view of the law...

- (28) *Zang1san3 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 ‘Z. is permitted to drink beer (e.g., he is 20 now).’ *permission*

However, an adverbial phrase such as “in view of the relevant facts...” does not always result in an unambiguous interpretation. Instead, all the readings in (29) are available.

In view of the alcohol content of the beer and Zhangsan's health and habits...

- (29) *Zanglsan1 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 a. 'It is objectively possible for Z. to drink beer.' *objective possibility*
 b. 'Z. is permitted (e.g., by the speaker) to drink beer.' *permission*
 c. 'Z. is quite able to drink beer (as he usually does).' *ability*

Even an epistemic premise does not affect the multiple readings of DE, as shown in (30).

Based on my deduction...

- (30) *Zanglsan1 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 a. 'It is objectively possible for Z. to drink beer.' *objective possibility*
 b. 'Z. is permitted (e.g. by his mom) to drink beer.' *permission*
 c. 'Zhangsan is quite able to drink beer.' *ability*

Instead, some structural distinctions appear to exist between the various modal readings. First of all, the ‘ability’ reading can be easily disambiguated by adding a degree adverb. In such cases, the construction exclusively conveys an ability reading. See (31).

- (31) *Zang1san1 xiang1dang1 ho1 -de2 pi1jiu3.*
 3SG quite drink -DE beer
 ‘Z. is quite able to drink beer.’

Secondly, [V-DE] can never express the ‘necessity’ reading without the presence of the sentence-final particle *-lao*, as demonstrated by the ungrammaticality in (32).

- (32) **Xi3 -de2 yi1fu2*
 wash -DE clothes

These observations raise the question of whether the polysemy of DE can truly be attributed to contextual factors. Based on the above observations, the following specific research questions will be explored throughout this dissertation:

- i) If the interpretative ambiguity of Sichuanese postverbal DE cannot be attributed to purely contextual factors, how can it be derived? Are there any disambiguating strategies at the structural level?
- ii) How can DE be analyzed at both the semantic and syntactic levels?
- iii) How can the aspectual restrictions of DE be accounted for? What can these restrictions tell us about the relationship between aspect and modality?

With these questions in mind, fieldwork is conducted to collect more empirical data and test the proposed hypotheses. Before introducing the fieldwork, it is necessary to distinguish the Sichuanese [V-DE] construction under investigation from two other similar constructions found in both Standard Chinese and Sichuanese.

Chapter 4

Standard Chinese [V-DE] and Sichuanese [V-DE-RES]

Before delving into the details on DE, it is essential to distinguish our research focus, namely Sichuanese [V-DE], from two other constructions: Standard Chinese [V-DE] and Sichuanese [V-DE-RES]. Section 4.1 introduces the traditional view regarding Standard Chinese [V-DE], as well as the restrictions observed in its current use. Based on fieldwork data, it will be shown that these restrictions are not applicable to Sichuanese [V-DE]. In section 4.2, Sichuanese [V-DE-RES] will be introduced, in comparison with Sichuanese [V-DE]. This chapter will demonstrate that the two constructions differ significantly in both their syntactic and semantic properties when compared to Sichuanese [V-DE]. Based on these differences, Sichuanese [V-DE] will be treated as an independent construction, distinct from the two other constructions discussed in this chapter.

4.1 Standard Chinese [V-DE] vs. Sichuanese [V-DE]

The [V-DE] construction has existed in Standard Chinese for a long time; however, its use is now highly restricted. Some [V-DE] constructions have been lexicalized over time, while others are only retrievable in grammar books and literature from earlier periods. As a result, it is now considered an old-fashioned construction in Standard Chinese (Li 1924). In the first part of this section, we will review the traditional descriptions of Standard Chinese [V-DE], and in the second part, we will examine its restrictions in use, drawing a comparison with Sichuanese [V-DE].

As Li (1924) suggests, the single postverbal DE in Standard Chinese shares the same

denotation of ‘possibility’ as the modal auxiliary *neng* ‘can’. He also notes that this DE, primarily responsible for the ‘possibility’ reading typical of canonical modal auxiliaries, is rarely used alone with the verb, as in [V-DE]. On the other hand, Chao (1968) defines DE as a neutral-tone “potential suffix”, which is directly attached to the main verb and can be translated with the English suffix *-able* (Chao 1968:469). He provides the following examples.

- (1) a. *chi -de*
eat -DE
‘edible’
b. *zuo -de*
do -DE
‘can be done’
c. *shuo -de*
speak -DE
‘can be mentioned’ (Chao 1968:469)

He further adds that when an agentive subject is introduced, the verb can also acquire an active sense, as illustrated in (2).

- (2) *Ta hao le, xianzai chi -de le.*
3SG well CRS now eat -DE CRS
‘he is well again, he can eat (i.e., has an appetite) now.’ (Chao 1968:469)

Chao then refines the categorization of DE by stating that it is not a pure suffix, as it can be separated from the main verb by the insertion of the negative morpheme *bu*. See the example in (3).

- (3) a. *chi -bu -de*
eat -NEG -DE
‘inedible’
b. *zuo -bu -de*
do -NEG -DE
‘must not do; must not be done’ (Chao 1968:469)

However, as Chao notes, the postverbal DE in Standard Chinese is not “unlimitedly versatile”, as some [V-DE] constructions are primarily used in an idiomatic sense, while other positive forms “do not occur except as back information from the negative.” (Chao 1968:470).

Lü (1942) also discusses the “suffix-like” status of DE, based on the fact that it cannot be used alone and must always follow a lexical verb (Lü 1942:246). She observes that

DE can carry the same interpretations as canonical preverbal modal auxiliaries *keyi* ‘has possibility/permission to’ and *neng* ‘has possibility/ability to’ (Lü 1942:246). In a later work, Lü (1980) attributes the same interpretative possibilities to postverbal DE and states that [V-DE] is generally used in the passive sense and cannot take objects (see (4)).

- (4) *Zhe-shuang xie chuan -bu -de.*
 this-pair shoe wear -NEG -DE
 ‘This pair of shoes is not wearable/cannot be worn.’ (Lü 1980:165)

Turning to the present, Standard Chinese [V-DE] is highly restricted in contemporary use. Wang (2017) provides a comprehensive overview of the restrictions concerning Standard Chinese [V-DE]. Notably, most of the restrictions identified by Wang do not apply to Sichuanese [V-DE]. Some relevant divergences concerning certain restrictions are given below.

The first restriction concerns the possibility of forming imperative forms. Wang observes that sentences with Standard Chinese [V-DE] and [V-BU-DE] cannot form imperatives, as illustrated in the following examples.

- (5) **Pao -de/ -bu -de!*
 run -DE/ -NEG -DE
 Intended meaning: ‘Be able/unable to run!’ (Wang 2017:656)

Although bare Sichuanese [V-DE] cannot form an imperative sentence on its own, it can construct an imperative sentence with the addition of the sentence-final particle *-lao*, as shown in (5) of Chapter 3, repeated below in (6a). On the other hand, its negative counterpart [V-BU-DE] is frequently used alone as a negative imperative to convey a ‘prohibitive’ reading, as shown in (6b). This negative imperative sentence, for instance, could be uttered by a mother shouting at her child who is running in the middle of the street.

- (6) a. *Xi3 -de2 yi1fu2 lao3!*
 wash -DE clothes ATT
 ‘You should/d better wash your clothes (now)!’
 b. *(Ze4’er2) pao3 -bu2 -de2!*
 here run -NEG -DE
 ‘You must not run here!’

The possibility of being used as an imperative may be attributed to the type of modality expressed in the two sentences. While the Standard Chinese sentence in (5) can only

be understood as conveying a dynamic ‘possibility’ reading, the Sichuanese sentences in (6) can also carry a deontic ‘necessity’ reading. This is in line with Chao’s (1968) observation regarding the Standard Chinese modal auxiliary *neng* ‘can’, which is always associated with a dynamic modal reading. As Chao points out, there is no imperative form for *neng* ‘can’, which could be translated as ‘Be able to...!’ (1968:740).

The second restriction pertains to the possibility of in-situ objects. Wang observes that most transitive verbs appearing in Standard Chinese [V-DE] cannot take in-situ objects, whether canonical or non-canonical. An example of a verb taking its canonical object is provided in (7), while an example of a verb taking a non-canonical object is shown in (8).

- (7) **Ta xue -de/ -bu -de yingyu.*
 3SG study -DE/ -NEG -DE English
 Intended meaning: ‘He can/couldn’t learn English.’ (Wang 2017:657)
- (8) **Ta fei -de/ -bu -de Shanghai.*
 3SG fly -DE/ -NEG -DE Shanghai
 Intended meaning: ‘He can/cannot fly to Shanghai.’ (Wang 2017:660)

Conversely, transitive verbs in Sichuanese [V-DE] are generally able to take both their canonical and non-canonical objects, as shown by the grammaticality of (9) and (10), respectively.

- (9) *Zang1san1 da3 -de2 lan2qiu2.*
 3SG play -DE basketball
 ‘Zhangsan can play basketball.’

Context: we are planning to fly back to Sichuan.

- (10) *Ngo3men fei1 -bu -de2 Cen2du1. Cen2du1 de2 xia4 lui2zen4yu3.*
 1PL fly -NEG -DE Chengdu Chengdu PROG fall thunderstorm
 ‘We can’t fly to Chengdu, (because) there is a thunderstorm in Chengdu.’

The third restriction pertains to the double object construction. Wang observes that Standard Chinese [V-DE] and [V-BU-DE] cannot be used in a double object construction, as illustrated in (11).

- (11) **Wo gei -de/bu -de ta san -ben shu.*
 1SG give -DE/NEG -DE him three -CLF book
 Intended meaning: ‘I can/couldn’t give him three books.’ (Wang 2017:658)

On the contrary, Sichuanese [V-DE] is perfectly compatible with the double object

construction. See the following example with the ditransitive verb *jiao* ‘teach’.

- (12) *Ta1 jiao1 -de2 gao1zong1sen1 yin1yu3, ta1 si4 nyian1jiu1sen1*
 3SG teach -DE high.school.students English 3SG is master.graduate
de2ma.
 SFP
 ‘He can teach English to high school students, (since) he is a master graduate.’

The fourth restriction observed by Wang concerns the asymmetry between Standard Chinese [V-DE] and its negative counterpart [V-BU-DE], that is, a broader range of verb classes is allowed in the negative construction, but not in the positive one. This asymmetry is illustrated in (13) and (14) with unaccusative and unergative verbs, respectively.

- (13) Unaccusative verbs
- a. **Zhe-ge ren lai -de.*
 this-CLF person come -DE
 Intended meaning: ‘This person can come.’
 - b. *Zhe-ge ren lai -bu -de.*
 this-CLF person come -NEG -DE
 ‘This person couldn’t come.’ (exemplified from Wang 2017:661)

- (14) Unergative verbs
- a. **Zhe-ge ren ku -de.*
 this-CLF person cry -DE
 Intended meaning: ‘This person can be cried for.’
 - b. *Zhe-ge ren ku -bu -de.*
 this-CLF person cry -NEG -DE
 ‘This person may not cry.’ (Wang 2017:661)

On the contrary, both verb classes are acceptable in Sichuanese [V-DE], as shown in (15) and (16). Moreover, the unergative verb *ku* ‘cry’ in (16) can also be interpreted with the previously mentioned ‘strong ability’ reading, in addition to the basic ‘pure possible’ reading.

- (15) Unaccusative verb
- a. *Jin1tian1 wan3sang4 Zang1san1 lai2 -de2.*
 today night 3SG come -DE
 ‘Zhangsan can come tonight.’

- b. *Jin1tian1 wan3sang4 Zang1san1 lai2 -bu -de2.*
 today night 3SG come -NEG -DE
 ‘Zhangsan cannot come tonight.’

(16) Unergative verb

- a. *Ze4-go4 wa2'er2-1 ku2 -de2.*
 this-CLF child cry -DE
 i) ‘This child can cry.’
 ii) ‘This child is quite able to cry/is able to cry for a long time.’
- b. *Ze4-go4 wa2'er2-1 ku2 -bu -de2.*
 this-CLF child cry -NEG -DE
 i) ‘This child cannot cry.’
 ii) ‘This child is not quite able to cry/is not able to cry for a long time.’

The last restriction concerns DE’s inability to select disyllabic verbs in Standard Chinese [V-DE], an observation also made by Lü (1980:165). However, disyllabic verbs generally fit perfectly into Sichuanese [V-DE] and [V-BU-DE], as illustrated in (17).

- (17) a. *Nyi3 jin4'lai2 -de2./Nyi3 jin4'lai2 -bu -de2.*
 2SG enter -DE 2SG enter -NEG -DE
 ‘You can come in./You cannot (must not) come in.’
- b. *Zang1san1 can1jia1 -de ze4 -go4 bi3sai4.*
 3SG participate -DE this -CLF competition
 ‘Zhangsan can participate this competition.’

The Sichuanese examples mentioned in this section are further confirmed by the fieldwork that will be introduced in Chapter 5, where further examples are also provided. The distinctions between Standard Chinese [V-DE] and Sichuanese [V-DE] discussed in this section are summarized in the table below.

Can it form...	Standard Chinese [V-DE]	Sichuanese [V-DE]
imperative sentences	✗	✓
double object constructions	✗	✓
Can it have...		
in-situ direct object in cases of transitive verbs	✗	✓
Does it show...		
asymmetry between positive and negative sentences	✓	✗
Can the verb belong to...		
unaccusative verbs	✗	✓
unergative verbs	✗	✓
disyllabic verbs	✗	✓

Table 4.1

The sharp contrast observed above leads us to conclude that Sichuanese [V-DE] is freer in its use than Standard Chinese [V-DE], suggesting that it remains an active member of the modal system. Consequently, although they share the same form and potentially the same origin, they should be considered separately in linguistic studies.

4.2 Sichuanese [V-DE-RES] vs. Sichuanese [V-DE]

Within the same variety of Sichuanese, it is necessary to distinguish [V-DE] from [V-DE-RES(ULTATIVE)], which has also been claimed to convey a modal reading. In [V-DE-RES(ULTATIVE)], the complement functions as an indication of its result.¹ A key distinction between the two DEs lies in their requirement for a complement: while DE in [V-DE-RES(ULTATIVE)] must be followed by a complement and thus behaves like an infix, DE in [V-DE] can never be followed by any complement and therefore behaves more like a suffix. Although both DEs in the two constructions are claimed to convey modal readings, it will be shown that the two constructions are fundamentally distinct, and therefore [V-DE-RES] cannot be regarded as a mere extension of [V-DE] by adding a resultative element.

The first distinction between the two constructions lies in the modal interpretations they can express. As previously introduced, [V-DE] exhibits a wide range of modal interpretations, including deontic and dynamic modality, whereas [V-DE-RES] is limited to dynamic modality (Xie 2012), specifically indicating that “the endpoint specified for the action can be reached successfully” (Cheng&Sybesma 2004:421).

¹For detailed discussions on Standard Chinese [V-DE-RES], see Li&Thompson (1981), Huang (1988), Sybesma (1999), N, Zhang (2001, 2003), Wang (2017), among others.

This interpretative distinction is further supported by the non-mutually exclusive relationship between the two constructions, as evidenced by the fact that each can naturally be followed by the negative form of the other. This is exemplified in (18).

- (18) a. *Ngo3 ban2 -de2 ze4-zang1 zo2zi3, dan4si4 ngo3 ban1 -bu -dong4.*
 1SG carry -DE this-CLF table but 1SG carry -NEG -move
 ‘I am permitted to carry this table, but I am not able to move it.’
 b. *Ngo3 ban2 -de2 -dong4 ze4-zang1 zo2zi3, dan4si4 ngo3 ban1 -bu*
 1SG carry -DE -move this-CLF table but 1SG carry -NEG
-de2.
 -DE
 ‘I am able to move this table, but I am not permitted to do so.’

The second distinction pertains to the scope of the two DEs within each construction. In [V-DE], DE scopes over the main verb but says nothing about the resultant state of the event, as illustrated in (19a). In contrast, in [V-DE-RES], DE scopes over the resultant state of the event while outscoping the main verb, as shown in (19b).

- (19) a. *Ngo3 ho1 -de2 ze1-pin2 pi2jiu3.*
 1SG drink -DE this-CLF beer
 ‘I can drink this bottle of beer (e.g., it is not too strong for me; I have permission, etc.)’
 b. *Ngo3 ho1 -de2 -wan2 ze1-pin2 pi2jiu3.*
 1SG drink -DE -finish this-CLF beer
 ‘I can drink up/finish this bottle of beer.’

The scope relations of the two DEs are illustrated in (20) (“>” denotes ‘has scope over’). Fundamentally, the two constructions differ in their perspectives on the events they quantify over. While [V-DE] examines the starting point of an event from an external standpoint, emphasizing the possibility of its initiation, [V-DE-RES] focuses on the internal structure of the event, specifically concerning whether its natural endpoint can be reached.

- (20) a. DE > V [V-DE]
 b. DE > RES [V-DE-RES]

The third distinction, which concerns the “actuality entailment” (Bhatt 1999; Hacquard 2006), naturally follows from the second distinction. Bhatt (1999) observes that the French/Italian modal verb *pouvoir/potere*, when expressing the ‘ability’ reading and appearing with perfective morphology, induces what is known as “actuality entailment”.

This means that the complement of the modal verb is obligatorily understood as having occurred in the actual world (as in (21)). Hacquard (2006) extends the same idea to deontic modals, showing that root modals can induce “actuality entailment” with perfective morphology, whereas speaker-oriented modals (epistemic and “true” deontics) cannot.

- (21) a. Jane ha potuto sollevare questo tavolo, #ma non lo ha fatto.
 b. Jane poteva sollevare questo tavolo, ma non lo ha fatto.
 (modified from Hacquard 2006:29)

The situation seems to be different when it comes to [V-DE] and [V-DE-RES]. Specifically, both constructions seem to remain low in the functional domain. As a result, instead of a split between higher epistemic modal constructions and lower root modal constructions, we are dealing with two low modal constructions here. However, this does not imply that the two constructions necessarily behave in the same way with regard to “actuality entailment”. As will be demonstrated shortly, they do differ in their ability to induce “actuality entailment”.

Since Chinese modal auxiliaries do not inflect and resist any form of aspectual markers (Chao 1968; Li&Thompson 1981; Zhu 1982 among others), we appeal to a more “analytical” way, namely using a past-denoting adverbial such as *zotian* ‘yesterday’ to anchor the sentence in the past (cf. Tsai 2015). Interestingly, [V-DE-RES] induces a clear “actuality entailment” while [V-DE] aligns with canonical preverbal modal auxiliaries in not showing any “actuality entailment”. The contrast is illustrated below.

- (22) a. *Ngo3 zo2tian1 ban1 -de2 -dong4 ze4-zang1 zo1zi3, #dan4si4 mei1*
 1SG yesterday carry -DE -move this-CLF table but not.have
ban1.
 move
 ‘I was able to move the table yesterday, #but (I) didn’t start the action.’
 b. *Ngo3 zo2tian1 ban1 -de2 ze4-zang1 zo1zi3, dan4si4 mei1 ban1.*
 1SG yesterday carry -DE this-CLF table but not.have move
 ‘I had the possibility to carry the table yesterday, but I didn’t start the action.’

The above examples demonstrate that [V-DE-RES] induces “actuality entailment” in past contexts, in contrast with [V-DE], which behaves more like a canonical root modal construction in not being able to induce such entailment. According to Hacquard (2006), the different behavior with respect to “actuality entailment” has to do with their

relative height with certain aspect projections: epistemic modals scope above aspect, therefore is immune to “actuality entailment”, while root modals scope under aspect, thereby necessarily inducing “actuality entailment”. If we follow the idea of Hacquard, we can hypothesize, based on this preliminary comparison, that the two DEs in [V-DE] and [V-DE-RES] are also separated by certain aspect projections, probably the inner aspect area. However, further studies are needed to confirm this assumption.

The fourth distinction between the two constructions lies in their ability to form imperative sentences. While [V-DE] can form both positive and negative imperative sentences, as illustrated in (23), [V-DE-RES] (and its negative counterpart [V-NEG-DE]) cannot, as shown in (24).

- (23) a. *Ci2 -de2 fan4 lao3!*
eat -DE rice ATT
‘You should/’d better (come and) have the meal!’
- b. *Pao3 -bu -de2!*
run -NEG -DE
‘(You) must not run!’
- (24) a. **Pao3 -de2 -dong4!*
run -DE -move
- b. **Pao3 -bu -dong4!*
run -NEG -move

This contrast suggests that [V-DE] may be “seen” and modified by a higher speaker-oriented domain, unlike [V-DE-RES], which is presumably too low in the syntactic structure (e.g., inside vP, see Li&Thompson (1981); Sybesma (1999), among others).² Moreover, as widely recognized in the literature, deontic modals can be performative and get involved in imperative sentences (Coates 1983; Palmer 1990, 2001; Von Stechow 2006; also Searle 1983 for “directive”). The fact that [V-DE-RES] cannot form an imperative sentence further indicates that DE in this construction is not deontic, as also shown by its lack of deontic interpretation.

In sum, we have observed that DE in both [V-DE] and [V-DE-RES] differ in their semantic interpretations, scopes, possibility to induce “actuality entailment” in past context, and ability to form imperative sentences. Consequently, in the present work we will focus exclusively on the [V-DE] construction, leaving aside the [V-DE-RES] construction.

²This may be explained by considering vP (or VoiceP, see Sybesma 2021 for discussion) as a phase. Once the entire phase is sent to spell-out, it becomes inaccessible for further syntactic operations. If [V-DE-RES] has all its elements within vP, it naturally follows that it cannot form any imperative sentence.

Chapter 5

Empirical data collection

In response to the research questions and preliminary observations, two rounds of on-site fieldwork are conducted. The fundamental objective of the fieldwork is to systematically examine and analyze the following aspects:

- i) the distinctions between Sichuanese [V-DE] and Standard Chinese [V-DE]
- ii) whether the various modal readings of Sichuanese [V-DE] are structurally distinct with each other
- iii) whether these modal readings can be disambiguated through the co-occurrence of [V-DE] with other functional elements
- iv) the precise semantic contribution of DE in [V-DE], as well as its role in the various modal readings associated with [V-DE]

The first objective provides the empirical foundation for the distinctions between Sichuanese [V-DE] and Standard Chinese [V-DE] discussed in Chapter 4.1, expanding on the discussion with additional examples. The second and third objectives address the first research question concerning Sichuanese [V-DE], while the last objective pertains to the second research question, offering deeper insights into the semantics of DE. The following section outlines the core methodologies employed in the fieldwork.

5.1 Methodologies

Both rounds of fieldwork adhere to the fundamental steps outlined below:

Step 1: Formulation of hypothesis

Step 2: Delimitation of the investigated area

Step 3: Selection of informants

Step 4: Design of questionnaire

Step 5: Data collection

Step 6: Data classification and analysis

As discussed in Chapter 1, a key concern in this study is the strong interference between Sichuanese and Standard Chinese, which inevitably leads to priming effects during interviews with informants. For instance, due to the factors introduced in Chapter 1, when an informant is asked a question such as “How do you say the sentence *Zhangsan hen neng chi*. (‘Zhangsan very can eat’) meaning ‘Zhangsan is very able to eat’ in Sichuanese?”, the informants may simply repeat the given sentence in Sichuanese, despite the fact that the modal auxiliary *neng* is barely used in Sichuanese, and the expected Sichuanese equivalent should instead be *Zanglsan1 ci1-de2*. (‘Zhangsan eat-DE’).

Moreover, younger generations, particularly those born after the year 1990, who predominantly use Standard Chinese in daily communication, are less likely to spontaneously come up with the corresponding Sichuanese sentences. A general tendency that can be noticed among younger generations is the gradual replacement of postverbal DE with preverbal modal auxiliaries (e.g., *ko3yi3 ci2* ‘can eat’ instead of *ci2-de2* ‘can eat’).

Therefore, to minimize the undesirable influence of interference between the two varieties, this study does not employ the traditional translation task; instead, both rounds of fieldwork adopt an acceptability judgement test as the primary method. Nevertheless, as the result of the first round of fieldwork will demonstrate, the use of this particular form of task alone does not sufficiently reduce the interference between Sichuanese and Standard Chinese. The degree of interference observed is significantly greater than what we have expected. Therefore, specific modifications will be implemented in the second round of fieldwork, which finally provides us with satisfactory results.

Based on the preliminary observations, our starting hypotheses for the fieldwork are as the following:

- i) Sichuanese [V-DE] shows fewer structural restrictions than Standard Chinese [V-DE];
- ii) The interpretative ambiguity of Sichuanese [V-DE] is not a purely context-based phenomenon;
- iii) There should be ways to distinguish the various modal readings of Sichuanese [V-DE] at the structural level

In the following sections, we will see in detail how the two rounds of fieldwork are conducted and what kind of insights we can gain from the collected data.

5.2 Fieldwork (I)

The first round of fieldwork is conducted in July and August 2023.

Investigated area

The primary areas of investigation include all urban districts of Shehong City and two communities within Jinhua Town.¹ Shehong City is located in the eastern part of Sichuan Province, in the central area of the Sichuan basin, with a population of approximately 300,000 residents in its urban districts. Jinhua Town, which is located in the northern part of Shehong City, has a total population of around 40,000 residents. In both areas, Sichuanese is the predominant linguistic variety, while Standard Chinese is primarily used in schools.

Informants

A total of 24 informants, ranging in age from 20 to 80 years old, are interviewed. Their age distribution is illustrated in Fig. 5.1 below, while their knowledge of Standard Chinese is shown in Fig. 5.2.

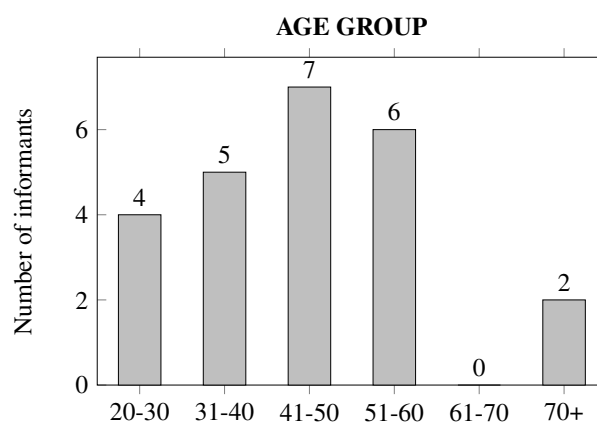


Figure 5.1 Distribution by age

¹For the precise location of Shehong City on the map of Sichuan Province, see Fig. A.1 in Appendix A. For further details regarding the investigated subareas, see Appendix A.

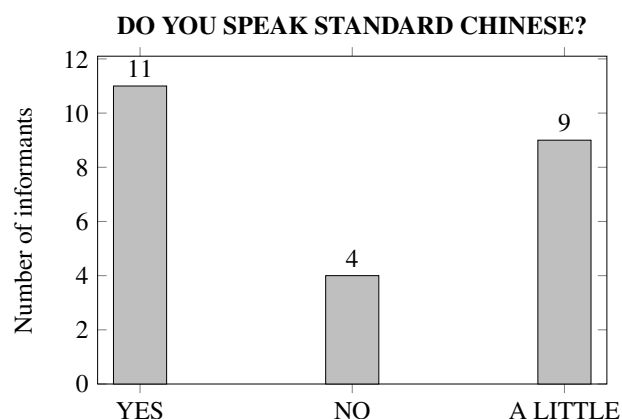


Figure 5.2 knowledge of Standard Chinese

Questionnaire

The questionnaire is made up of 29 Sichuanese sentences, of which 26 are efficient sentences and 3 are fillers. Regarding the first hypothesis, 9 sentences are designed based on examples of [V-DE] presented in Wang (2017), which are claimed to be highly restricted and ungrammatical in Standard Chinese (some of these examples have been introduced in Chapter 4). For the second and third hypotheses, sentences are designed to test the compatibility between DE and other functional elements, including adverbs such as *jincang* ‘often’, *yitian* ‘always’, and *haosen* ‘well’ (appearing with both positive and negative constructions), canonical modal auxiliaries like *koyi* ‘can; be allowed to’, *gai* ‘should’, and the sentence-final particle *-lao* which conveys the speaker’s attitude. To verify the accessibility of the degree reading of ‘ability’, 3 sentences with appropriate contexts are designed, which also test the possible presence of an overt degree adverb. Additionally, 3 more sentences are included to examine the semantic property, specifically the “point of view” of the imperative construction [V-DE-*lao*]. This aims to test whether the “point of view” of the imperative sentence aligns with the addressee’s benefit, rather than the speaker’s benefit.

A summary of the distribution of the aforementioned variables is provided in Table 5.1. All sentences are constructed using familiar, frequently used vocabulary, ensuring that the informants can easily interpret the sentences. Less accessible sentences are accompanied by a preceding context to facilitate understanding.

Variables	Sentences
Structural restrictions on Standard Chinese [V-DE] from Wang (2017)	(1)-(9)
Compatibility between [V-DE]/[V-NEG-DE] and adverbs	(10)-(16)
Compatibility between [V-DE]/[V-NEG-DE] and canonical modal auxiliaries	(17)-(20)
‘ability’	(21)-(23)
“Point of view” of [V-DE- <i>lao</i>]	(24)-(26)

Table 5.1

All the efficient sentences in Questionnaire (I), excluding the fillers, are presented below, organized and grouped according to their respective testing purposes. The order of the sentences will be randomized in the official questionnaire used for the interviews. For the original Chinese version of Questionnaire (I), see Appendix B (and Appendix C for the translated English version).

• **Structural restrictions on Standard Chinese [V-DE] from Wang (2017)**

i) Negative imperative

Context: a mother is shouting at her child who is running in the middle of the street:

- (1) *Ze4'er2 pao3 -bu2 -de2!*
 here run -NEG -DE
 ‘You must not run here!’

ii) postverbal object

Context: I see someone shouting at a child on the street, and when I try to persuade him/her not to do so, he/she responds:

- (2) *Ngo3 so2-de2 ngo3go2ren2 li1 wa2'er2-1, ngi3 mo2 guan3.*
 1SG scold-DE my.self POSS child 2SG not bother
 ‘I can scold my own child, (you) don’t bother me.’

iii) Non-canonical objects

Context: we are planning to fly back to Sichuan.

- (3) a. *Ngo3men fei1 -bu -de2 Cen2du1. Cen2du1 de2 xia4*
 1PL fly -NEG -DE Chengdu Chengdu PROG fall
lui2zen4yu3.
 thunderstorm
 ‘We cannot fly to Chengdu, (because) there is a thunderstorm there.’

- b. *Na4 fei1-de2 Cong2qin4 bu2 ma2?*
 then fly-DE Chongqing INTER SFP
 'Then can we fly to Chongqing?'
- c. *Fei1-de2 Cong2qin4, Cong2qin2 mei1 xia4yu3.*
 fly-DE Chongqing Chongqing not.be rain
 'We can fly to Chongqing, (because) it isn't raining there.'

iv) Double object construction

- (4) *Ng3 ge1 -bu -de2 ta1 ze4xi1 qian2, dou1 si4 liu2 ge1 wa2'er2-1*
 2SG give -NEG -DE him these money all be leave to child
du2su1 li1 qian2.
 study POSS money
 'You cannot/must not give him all these money, (because) they are left for the child's education.'
- (5) *Ta1 jiao1 -de2 gaol2zong1sen1 yin1yu3, ta1 si4 nyian1jiu1sen1*
 3SG teach -DE high.school.students English 3SG is master.graduate
de2ma.
 SFP
 'He can teach English to high school students, since he is a master graduate.'

v) Unergative verb

- (6) *Ze4-go4 wa2'er2-1 ku2 -de2, ku2 yi2-go4 xiao3si2 dou1 bude2*
 this-CLF child cry -DE cry one-CLF hour already not.will
tin2.
 stop.
 'This child is quite able to cry/is able to cry for a long time; he will not stop crying even though he has been crying for an hour.'

vi) Negative construction

- (7) *Xian4zai4 lao3si1 da3 -bu -de2 xuo2sen1, da3 -lao3 yao4 zao2*
 now teacher beat -NEG -DE student beat -PFV will PASS
gao4.
 accuse
 'Nowadays teachers cannot/must not beat students, otherwise they will be accused.'

vii) Unaccusative verb

- (8) a. *Jin1tian1 wan3sang4 Zang1san1 lai2-de2 bu2 a?*
 today night 3SG come-DE INTER SFP
 ‘Can Zhangsan come tonight?’
- b. *Zang1san1 lai2-de2 a, dou1 si4 zi4ji3ren2.*
 3SG come-DE SFP all be insider
 ‘Zhangsan can come, (because) he is one of us/ we are all insiders.’

viii) Non-monosyllabic verb

- (9) a. *Ngo3 jin4lai2-de2 bu2?*
 1SG enter-DE INTER
 ‘Can/May I come in?’
- b. *Jin4lai2-de2./ Jin4lai2 -bu -de2.*
 enter-DE enter -NEG -DE
 ‘You can/may come in./ You cannot/may not/must not come in.’

• Compatibility between [V-DE]/[V-NEG-DE] and adverbs

Context: The child is moving around while having his meal, his mom is a little bit mad at him and asks:

- (10) *Ngi3 hao3sen1 ci2-de2 fan4 bu2?*
 2SG well eat-DE meal INTER
 ‘Can you eat your meal in a proper manner?’
- (11) *Ta1 hao3 zao4nie4 o, yi2tian1 dou1 ci2 -bu -de2 ho3go1.*
 3SG really poor EXCL always all eat -NEG -DE hotpot
 ‘Poor him, it is always impossible for him to have hotpot.’
- (12) *Ta1 hao3 an1yi2 o, yi2tian1 dou1 ci2-de2 ho3go1.*
 3SG really comfortable EXCL always all eat-DE hotpot
 ‘Lucky him, it is always possible for him to have hotpot.’
- (13) *Ngo3 wei4 bu2-hao3, jin1cang2 dou1 ci2 -bu -de2 ho3go1.*
 1SG stomach NEG-good often all eat -NEG -DE hotpot
 ‘I have stomach problems, (so) I often cannot eat hotpot.’
- (14) *Zang1san1 jin1cang2 qi(e)4-de2 Cen2du1.*
 3SG often go-DE Chengdu
 ‘It is often possible for Zhangsan to go to Chengdu.’

Context: There is an apple on the table. Zhangsan says: this apple is not edible. Lisi also says: this apple is not edible. At this point Wangwu comes and says:

- (15) *Ze4-go4 pin2go3 wan2quan2 ci2-de2 a.*
 this-CLF apple completely eat-DE SFP

‘This apple is perfectly edible/ It is completely possible for this apple to be eaten.’

Context: Zhangsan and his friends are drinking together. Lisi says: Zhangsan probably cannot drink beer. Wangwu says: there’s no problem,

- (16) *Zang1san1 wan2quan2 ho1-de2 pi2jiu3.*
 3SG completely drink-DE beer
 ‘It is perfectly possible for Zhangsan to drink beer.’

• **Compatibility between [V-DE]/[V-NEG-DE] and canonical modal auxiliaries**

Context: The porridge is ready; the mother says to the child:

- (17) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
 porridge be.allowed.to eat-DE ATT
 ‘The porridge can be eaten now (, and you’d better eat it now)!’

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (18) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
 no this-CLF rice.cooker still be.allowed.to use-DE
 ‘No, this rice cooker can still be used.’
- (19) *Wa2er2-1, 12-dian3 lao3, gai1 sui4-de2 lao3!*
 child 12-o’clock CRS should sleep-DE ATT
 ‘Child, it’s 12 o’clock, you should/d better go to bed now!’
- (20) *Gai1 xi3 -bu -de2 yi1fu2 lao3!*
 should wash -NEG -DE clothes ATT
 Intended: ‘You should not be able/allowed to wash clothes now!’

• **‘ability’**

- (21) *Ze4-go4 sou3ji1 yong4-de2, dou1 yong4-lao3 wu5-nian2 lao3.*
 this-CLF phone use-DE already use-PFV five-year CRS
 ‘This phone can be used for a long time (i.e., is very durable); It has already been used for five years.’
- (22) *Ze4-go4 wa2’er2-1 ci2 bu da4 de2 fan4.*
 this-CLF child eat NEG big;very DE meal
 ‘This child is not very able to eat.’

- (23) *Ngo3 jin1tian1 you3dian3'er bu2 su1fu2, ko3nen2 ho1 bu2 tai4*
 1SG today a.little NEG comfortable probably drink NEG really
de2.
 DE
 'I am not feeling well today, (so) I am probably not really able to drink.'

- “Point of view” of [V-DE-*lao*]

Among the following sentences, (24) is intended for the addressee's benefit, while (25) and (26) are for the speaker's benefit.

- (24) *Wa2'er2-1, xuo2-lao3 yi2-tian1 lao3, xiu1xi2-de2 lao3!*
 child study-PFV one-day CRS rest-DE ATT
 'Child, (you) have been studying all day; you should/'d better have a rest now!'
- (25) *Gei2/Bang1 ngo3 ca2-de2 hai2zi3 lao3!*
 for/help me wipe-DE shoe ATT
 'You should/'d better wipe the shoes for me now!'
- (26) *Xi3-de2 ngo3li yi1fu2 lao3!*
 wash-DE my clothes ATT
 'You should/'d better wash my clothes now!'

Data collection

The questionnaire is conducted on-site through monolingual interviews. During the interview, all sentences are read to the informants in Sichuanese, who are asked to judge each sentence as *acceptable*, which stands for 'I would say it', 'I have heard someone say it' or 'I think this is a correct Sichuanese sentence', *unacceptable*, which stands for 'I would never say it', 'I have never heard anyone say it' or 'I don't think this is a correct Sichuanese sentence', and *weird* for sentences they find difficult to judge.²

Result and analysis

Overall, the results provide strong support for the first hypothesis, while partially confirm the second and third hypotheses. In this section, each variable will be analyzed in detail.

- Structural restrictions on Standard Chinese [V-DE] from Wang (2017)

²The Likert Scale was not used for judgments due to the common tendency of informants to select higher ratings out of politeness. Since the primary goal of the fieldwork is to support a series of syntactic analyses, only three judgements options are offered to the informants.

The most satisfactory results come from the sentences based on the structural restrictions of [V-DE] in Standard Chinese, as outlined by Wang (2017). A clear pattern is evident in the judgements of all informants – most informants consistently accept the Sichuanese counterparts of Standard Chinese sentences that are shown to be ungrammatical by Wang. Based on the collected data, Sichuanese [V-DE] differs from Standard Chinese [V-DE] in the following aspects (which also serve as the source data for Table 4.1 in Chapter 4):

Can it form...	Standard Chinese [V-DE]	Sichuanese [V-DE]
imperative sentences	✗	✓
double object constructions	✗	✓
Can it have...		
in-situ direct object in cases of transitive verbs	✗	✓
Does it show...		
asymmetry between positive and negative sentences	✓	✗
Can the verb belong to...		
unaccusative verbs	✗	✓
unergative verbs	✗	✓
disyllabic verbs	✗	✓

Table 5.2

- Compatibility between [V-DE]/[V-NEG-DE] and adverbs

Regarding compatibility with adverbs, the fact that more than 80% of informants accept the tested sentences (sentences (10)-(16), excluding (14)) suggests that Sichuanese [V-DE] is generally compatible with the tested adverbs. The only exception is sentence (14), which 46% of informants find semantically odd due to the lexical verb *qi(e)* ‘go’, though they still accepted the adverb itself. However, the co-occurrence with adverbs does not facilitate the disambiguation of the various modal readings of [V-DE]. Furthermore, since DE is consistently postverbal and canonical Chinese adverbs are always preverbal, only one word order is observed, with adverbs invariably preceding [V-DE]. For detailed results of sentences (10)-(16), please refer to Appendix D.

- Compatibility between [V-DE]/[V-NEG-DE] and canonical modal auxiliaries

Most of the informants accept the co-occurrence of [V-DE] and the canonical modal auxiliary *koyi* ‘can’, as demonstrated by the results presented in Fig. 5.3 for

sentence (27) and Fig. 5.4 for sentence (28), which are repeated from (17) and (18), respectively.³

Context: The porridge is ready; the mother says to the child:

- (27) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
 porridge be.allowed.to eat-DE ATT
 ‘The porridge can be eaten now (, and you’d better eat it now)!’

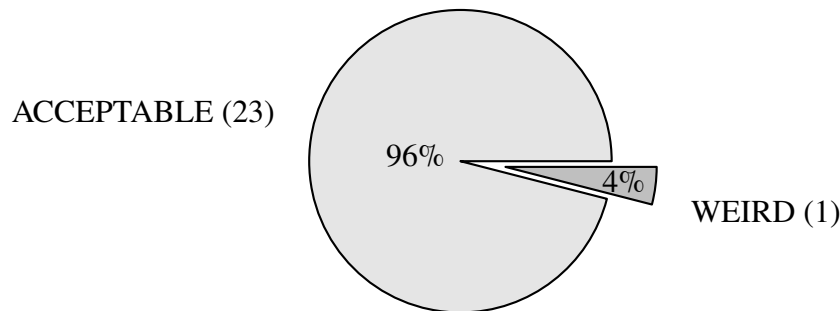


Figure 5.3 Distribution of judgements (sentence (17)/(27))

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (28) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
 no this-CLF rice.cooker still be.allowed.to use-DE
 ‘No, this rice cooker can still be used.’

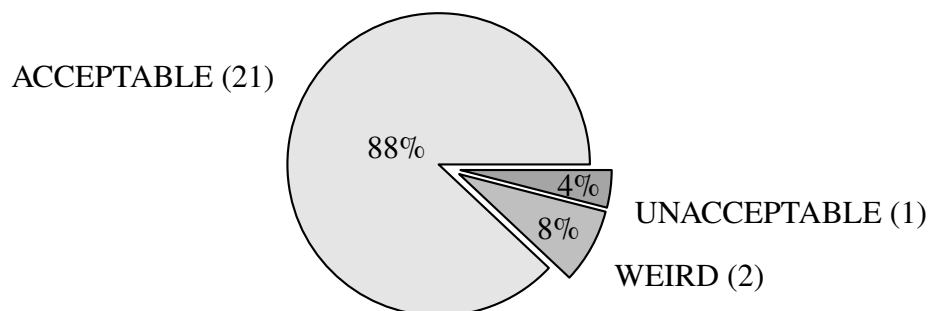


Figure 5.4 Distribution of judgements (sentence (18)/(28))

Since the canonical modal auxiliary *koyi* ‘can’, same as *keyi* in Standard Chinese, is typically used to express a deontic modal reading, the sentences above also convey a deontic reading from the mother (27) or the grandma (28).

³The number in brackets following the labels ACCEPTABLE, UNACCEPTABLE, and WEIRD indicates the number of informants who provided that particular judgment.

The deontic reading can also be made explicit by adding another modal auxiliary *gai* ‘should’, as demonstrated by the result in Fig. 5.5 for sentence (29), which is repeated from (19).

- (29) *Wa2er2-1, 12-dian3 lao3, gai1 sui4-de2 lao3!*
 child 12-o'clock CRS should sleep-DE ATT
 ‘Child, it’s 12 o’clock, you should/’d better go to bed now!’

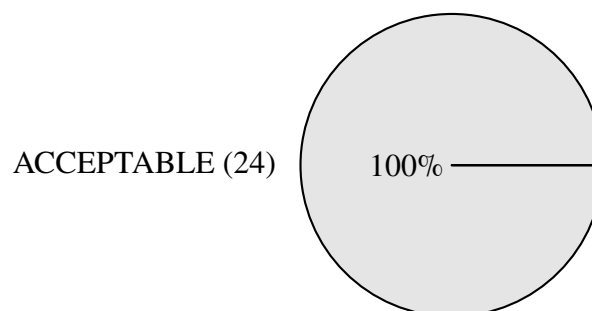


Figure 5.5 Distribution of judgements (sentence (19))/(29))

The above results provide a piece of evidence for the hypothesis that the various modal readings of [V-DE] can be disambiguated at the structural level, through the combination with corresponding modal auxiliaries.

However, the situation is entirely different with the negative construction [V-BU-DE]. As shown by the result in Fig. 5.6 for sentence (30), repeated from (20), [V-BU-DE] resists combination with the canonical modal auxiliary *gai* ‘should’, in sharp contrast to the positive construction [V-DE] shown in (29) above. To determine whether the negative construction [V-NEG-DE] is generally incompatible with canonical modal auxiliaries, or if sentence (30) is simply an exception, further tests of [V-NEG-DE] with other canonical modal auxiliaries are required.

- (30) **Gai1 xi3 -bu -de2 yi1fu2 lao3!*
 should wash -NEG -DE clothes ATT
 Intended: ‘You should not be able/allowed to wash clothes now!’

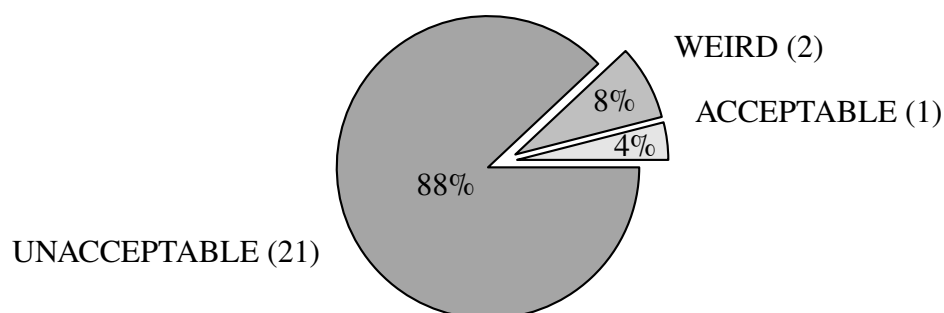


Figure 5.6 Distribution of judgements (sentence (20)/(30))

- ‘ability’

It is shown that all informants have access to the ‘ability’ reading under specific contexts (see the result in Fig. 5.7 for sentence (31), repeated from (21)).

- (31) *Ze4-go4 sou3ji1 yong4-de2, dou1 yong4-lao3 wu5-nian2 lao3.*
 this-CLF phone use-DE already use-PFV five-year CRS
 ‘This phone can be used for a long time (i.e., is very durable); It has already been used for five years.’

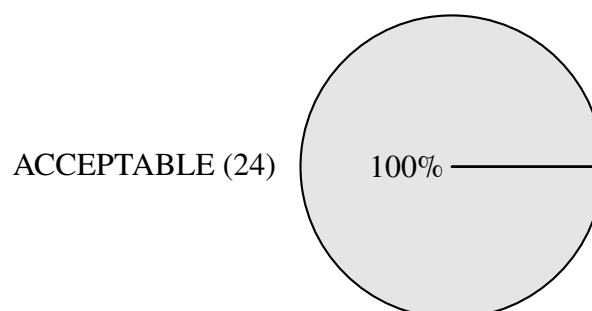


Figure 5.7 Distribution of judgements (sentence (21)/(31))

However, although more than half of the informants acknowledge the existence of an optional degree adverb under this particular reading, there is no consensus on which degree adverb should be the correct one (see the results in Fig. 5.8 for sentence (32) and Fig. 5.9 for sentence (33), repeated from (22) and (23), respectively).

- (32) *Ze4-go4 wa2'er2-1 ci2 bu da4 de2 fan4.*
 this-CLF child eat NEG big;very DE meal
 ‘This child is not very able to eat.’

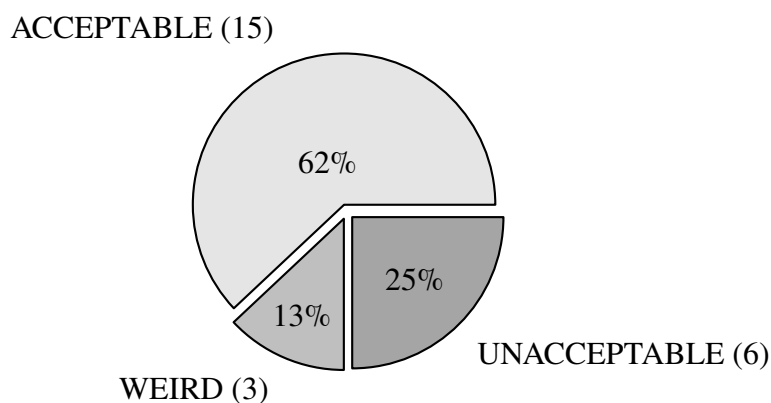


Figure 5.8 Distribution of judgements (sentence (22)/(32))

- (33) *Ngo3 jin1tian1 you3dian3'er bu2 su1fu2, ko3nen2 ho1 bu2 tai4*
 1SG today a.little NEG comfortable probably drink NEG really
de2.
 DE
 'I am not feeling well today, (so) I am probably not really able to drink.'

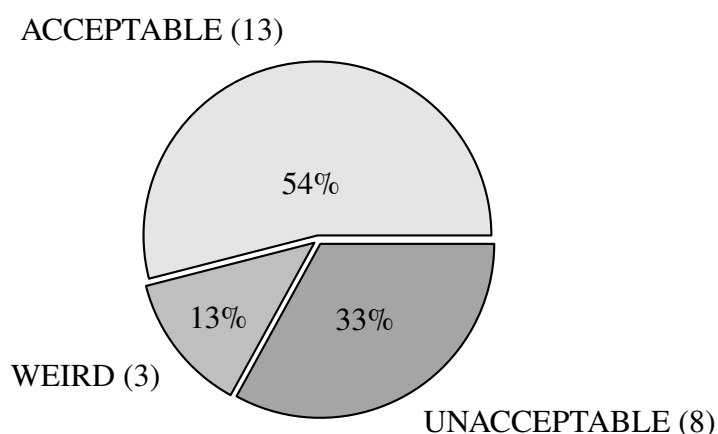


Figure 5.9 Distribution of judgements (sentence (23)/(33))

If we can confirm that this optional degree adverb belongs to the functional category (i.e., it is not a random lexical degree adverb), we would have good evidence to argue that the 'ability' reading is also structurally distinct from the other modal readings. However, the uncertainty between the two possible degree adverbs shown in (32) and (33) complicates the reasoning. As a result, further tests are needed for a better understanding of this degree adverb.

- "point of view" of [V-DE-*lao*]

As previously discussed, imperative sentences in the basic form of [V-DE-*lao*]

express a regular weak ‘necessity’ reading, typically used as a kind suggestion directed toward the addressee. The result shown in Fig. 5.10 for sentence (34), which is repeated from (24), confirms that this particular reading is generally accessible to all native speakers.

- (34) *Wa2'er2-1, xuo2-lao3 yi2-tian1 lao3, xiu1xi2-de2 lao3!*
 child study-PFV one-day CRS rest-DE ATT
 ‘Child, (you) have been studying all day; you should have a rest now!’

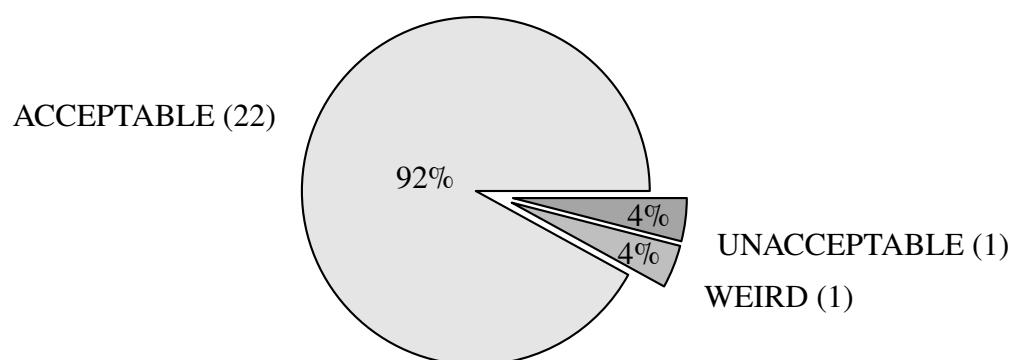


Figure 5.10 Distribution of judgements (sentence (24)/(34))

However, the result in Fig. 5.11 for sentence (35), which is repeated from (25), shows that native speakers tend not to use the imperative [V-DE-*lao*] for their own (i.e., the speaker’s) benefit, although nearly a third of the informants fail to provide a clear judgement (e.g., they choose the “safer” option WEIRD).

- (35) *?Gei2/Bang1 ngo3 ca2-de2 hai2zi3 lao3!*
 for/help me wipe-DE shoe ATT
 ‘You should wipe the shoes for me now!’

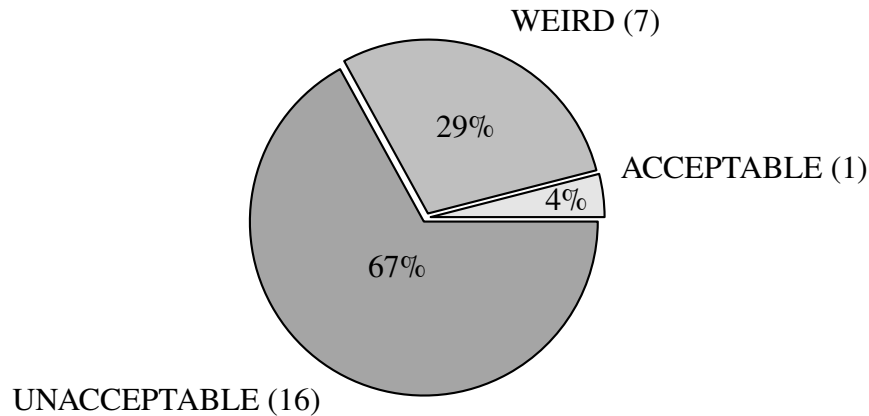


Figure 5.11 Distribution of judgements (sentence (25)/(35))

Despite this, no clear tendency can be observed from the result in Fig. 5.12 for sentence (36), which is repeated from (26).

- (36) ?Xi3-de2 ngo3li yi1fu2 lao3!
 wash-DE my clothes ATT
 'You should wash my clothes now!'

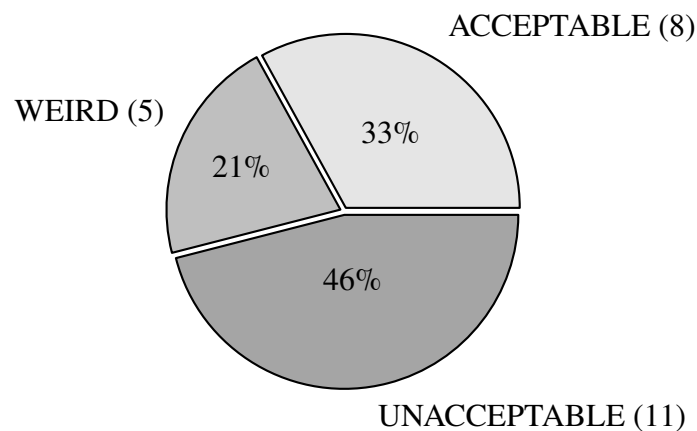


Figure 5.12 Distribution of judgements (sentence (26)/(36))

Based on the results of the first round of fieldwork, we now have sufficient empirical evidence to confirm the first hypotheses: the structural restrictions on Standard Chinese [V-DE] do not apply to Sichuanese [V-DE], which is still freely used as a regular modal construction. The second and third hypotheses are also largely supported. Regarding the strategies for disambiguating the various modal readings of [V-DE], the current results suggest that [V-DE] can co-occur with specific functional elements, including the canonical modal auxiliaries *koyi* 'can; be allowed to', *gai* 'should', the

sentence-final particle *-lao*, and an undetermined, potentially functional degree adverb (*da* or *tai* ‘very’), to yield precise modal readings. This also provides good evidence that the various modal readings differ at the structural level. Further investigation is required to confirm and refine the disambiguating strategies and the elements that function as “disambiguators” for the various modal readings.

Problem and modifications

Several issues emerged from the first round of fieldwork. First of all, there were no informants aged between 60-70 years old, resulting in a gap in the age distribution of informants. Secondly, and most importantly, the fieldwork was conducted in a highly populated city, where the informants are more likely to be influenced by standard Chinese. As a result, the collected data may be less “pure”, making it more difficult to examine subtle linguistic distinctions. This issue is reflected in the results, as some tested sentences lack clear consensus among the informants, and certain informants also struggle to differentiate between sentences that are genuinely “ungrammatical” and those that are simply “personally not used”. For instance, judgements regarding the presence of an overt degree adverb in negative ‘ability’ sentences exhibit significant variation, making it hard to determine whether the sentence is truly ungrammatical or has simply fallen out of use over time.

To address these issues and further confirm our hypotheses, a second round of fieldwork is necessary. At this stage, the most effective approach to minimize interference between the two varieties and obtain “purer” dialectal data is to further narrow down the investigated area and find informants who speak a more “authentic” variety of Sichuanese. Therefore, the second round of fieldwork will be conducted in small and relatively isolated villages, exclusively with informants who have no/quite low knowledge of Standard Chinese. Additionally, a revised version of the questionnaire will be designed, incorporating modifications based on insights from the first round of fieldwork. The next section provides a detailed discussion of the second round of fieldwork.

5.3 Fieldwork (II)

The second round of fieldwork is conducted in November 2023. The main goal of this round is to further investigate and confirm the remaining hypotheses:

- i) The various modal readings of Sichuanese [V-DE] are structurally distinct’

- ii) These modal readings can be disambiguated through the co-occurrence of [V-DE] with specific functional elements.

A key innovation in this round of fieldwork is the introduction of a new role – the local cultural mediator. As will be discussed later, this role is crucial in facilitating the fieldwork process and enhancing the reliability of the collected data.

Investigated area

To further minimize language contact between Sichuanese and Standard Chinese, the investigated area should be relatively isolated (i.e., distant from urban areas) and have a small population. Based on these criteria, three sub-areas in the northwestern area of Shehong City are chosen: Tongshe Town, Fuxin Town, and Shuangxi Village. To further narrow down the investigated area, only one community from each sub-area is selected, each with fewer than 5,000 permanent inhabitants.⁴

Informants

There are two fundamental criteria regarding the selection of informants. First, the exclusively used linguistic variety of the informants must be Sichuanese. Second, all selected informants should have little to no knowledge of Standard Chinese. For each area, a minimum of ten informants, including both male and female informants, will be tested. Their ages should range from at least thirties to eighties, or even older. The questionnaire includes anagraphic information such as age, education level, proficiency in Standard Chinese, most commonly used variety, place of birth, and place of residence.

In the end, a total of 62 informants are interviewed, among whom 57 provided usable judgements. The distribution of these 57 informants according to their age groups and knowledge of Standard Chinese is presented in Fig. 5.13 and Fig. 5.14 below.

⁴For detailed information on the investigated areas, see Appendix A.

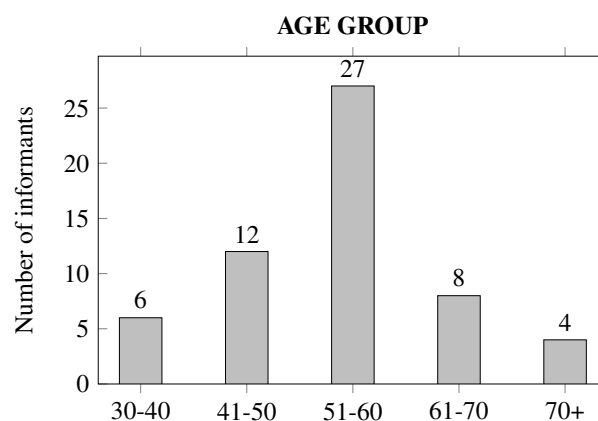


Figure 5.13 Distribution by age

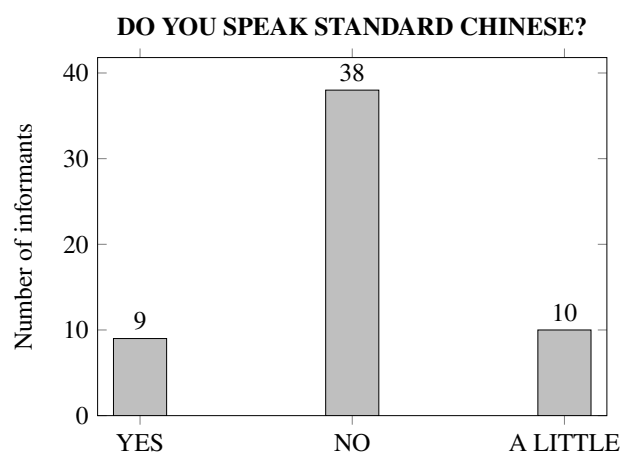


Figure 5.14 knowledge of Standard Chinese

Questionnaire

Always considering the strong interference between Sichuanese and Standard Chinese, the questionnaire is once again designed as an acceptability test. It consists of 23 target sentences and 5 fillers. The stimuli are designed to test, again, i) whether Sichuanese [V-DE] is compatible with specific functional elements and ii) whether their possible co-occurrences can serve to distinguish the various modal readings.

Since this round of fieldwork also includes other uses of DE and additional grammatical particles, only the variables directly relevant to the present study are listed in the summary table. In particular, sentences (1), (2), (9), and (10) below are from the questionnaire of the first round of fieldwork and are retested in the second round to verify consistency. A summary of the tested variables is provided in Table 5.3.

Variables	Sentences
Compatibility between [V-DE] and canonical modal auxiliaries/adverbs	(1)-(5)
Compatibility between [V-NEG-DE] and canonical modal auxiliaries	(6)-(7)
Compatibility between [V-DE] and epistemic/alethic modals (Cinque 1999)	(8)
‘ability’	(9)-(11)
“Point of view” of [V-DE-lao]	(12)-(14)

Table 5.3

All sentences are constructed using vocabulary familiar to the informants to facilitate interpretation. Additionally, sentences are modified to align with the sociocultural background of the informants, whose daily life differ significantly from those in the first round of fieldwork. Less accessible sentences are consistently accompanied by a preceding context.

(Partial) Questionnaire (II) with ordered sentences (excluding currently irrelevant sentences and fillers) is presented below. The order of the sentences will be randomized in the official questionnaire used for the interviews. For the original and complete Chinese version of Questionnaire (II), see Appendix E (and Appendix F for the translated English version).

• **Compatibility between [V-DE] and canonical modal auxiliaries/adverbs**

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (1) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
no this-CLF rice.cooker still be.allowed.to use-DE
‘No, this rice cooker can still be used.’

Context: The porridge is ready; the mother says to the child:

- (2) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
porridge be.allowed.to eat-DE ATT
‘The porridge can be eaten now (, and you’d better eat it now)!’
- (3) *Si2-dian3 lao3, nyi3 ko3yi3 qi(e)4-de2 lao3!*
ten-o’clock CRS 2SG be.allowed.to go-DE ATT
‘It’s ten o’clock now, you can/’d better go now!’
- (4) *Len3-qi3lai2 lao3, (gai1) cuan1-de2 mao2yi1 lao3!*
cold-become CRS should wear-DE sweater ATT
‘It’s getting cold now, you should/’d better wear the sweater now!’

Context: The doctor said that Zhangsan needs to take his medicine after the meal. After lunch, you say to Zhangsan:

- (5) *Ngi3 ze4-go4 yio4 yi3jin1 ko3yi3 ci2-de2 lao3!*
 2SG this-CLF medicine already be.allowed.to eat-DE ATT
 ‘Your medicine can already be taken now (, and you’d better take it now)!’

• **Compatibility between [V-NEG-DE] and canonical modal auxiliaries**

- (6) *Ze4-go4 dian4fan4bao3 ko3yi3 yong4 -bu -de2.*
 this-CLF rice.cooker be.allowed.to use -NEG -DE
 Intended: ‘It is deontically possible for this rice cooker not to be used.’
- (7) *Xi1fan4 ko3yi3 ci2 -bu -de2 lao3.*
 porridge be.allowed.to eat -NEG -DE ATT
 Intended: ‘It is deontically possible for the porridge not to be eaten.’

• **Compatibility between [V-DE] and epistemic/alethic modals (Cinque 1999)**

- (8) *Xiang3 zu4 jiu3sen1yi4, pa4si4 yin1gai1 yao4 ho1-de2 jiu3 o.*
 want do alcohol.business probably possibly need drink-DE alcohol SFP
 ‘If you want to do alcohol business, it is probably possible that you need to be (quite) able to drink alcohol.’

• **‘ability’**

- (9) *Ze4-go4 wa2'er2-1 ci2 bu da4 de2 fan4.*
 this-CLF child eat NEG big;very DE meal
 ‘This child is not very able to eat.’
- (10) *Ngo3 jin1tian1 you3dian3'er bu2 sulfu2, ko3nen2 ho1 bu2 tai4 de2.*
 1SG today a.little NEG comfortable probably drink NEG really
 DE
 ‘I am not feeling well today, (so) I am probably not really able to drink.’
- (11) *Ze4-go4 ren2 cai2 zou3-de2, zou3 yitian1 dou1 bu2de2 lui4.*
 this-CLF person really walk-DE walk one.day already NEG.will get.tired
 ‘This person is quite able to walk (can walk long distance/for a long time) and will not get tired even after walking for an entire day.’

• **“Point of view” of [V-DE-lao]**

- (12) *Ge1-ngo3 sao3-de2 di4 lao3!*
 for-me clean-DE floor ATT
 ‘You should/d better clean the floor for me now!’

- (13) *Ge1-gno3 ce3-de2 cao3 lao3!*
 for-me pull-DE weed ATT
 ‘You should/’d better pull the weeds for me now!’
- (14) *Di4tou2 bao1gu2 bi2xu1 ban1-de2 lao3!*
 field-in corn obligatorily harvest-DE ATT
 Intended: ‘You must/’d better harvest the corn in the field now!’

Cultural mediator

A new role introduced in the second round of fieldwork is a cultural mediator for each subarea. This role is of crucial importance, as this round of fieldwork will be conducted in three small and isolated villages, where all residents are familiar with each other and live in a tight-knit community. A challenge that a stranger would immediately face is the informants’ reluctance to cooperate. In this context, the assistance of a cultural mediator becomes indispensable. A qualified cultural mediator must meet three requirements. First, the mediator should live in the subarea and be well-acquainted with all the residents. Second, the mediator must be literate, which means they should be able to read and write. Third, the mediator must be a native speaker of the local variety.

The responsibilities of the cultural mediator include helping the interviewer to have access to informants, verifying that the vocabulary and morphosyntactic structures in the questionnaire are indeed “local”, and ensuring that the stimuli are pronounced by the interviewer in the “local” way. Some examples from the original version of the questionnaire and the modified version provided by the cultural mediator are shown in Table 5.4 below.

Original version	Modified version
打扫卫生 ‘do the cleaning’	扫地 ‘clean the floor’
收苞谷 ‘collect the corncob’	扳苞谷 ‘break and pick the corncob’
准备洗澡水 ‘prepare bath water’	扯草 ‘pull weeds’
煮饭 ‘cook’	打麻将 ‘play Mahjong’

Table 5.4

Data collection

As in the first fieldwork, the questionnaire is conducted on-site through monolingual interviews. During the interview, all sentences are read to the informants in

Sichuanese, who are asked to judge each sentence as *acceptable*, which stands for ‘I would say it’, ‘I have heard someone say it’ or ‘I think this is a correct Sichuanese sentence’, *unacceptable*, which stands for ‘I would never say it’, ‘I have never heard anyone say it’ or ‘I don’t think this is a correct Sichuanese sentence’, and *weird* for sentences they find difficult to judge. A slight modification in this second round of fieldwork is that the interviewer is first introduced to the informants by the cultural mediator before the official start of the interview.

Result and analysis

The second round of fieldwork provides compelling evidence to confirm the remaining two hypotheses. Crucially, the various modal readings are indeed structurally distinct and can be disambiguated through the co-occurrence of [V-DE] with specific functional elements.

- **Compatibility between [V-DE] and canonical modal auxiliaries/adverbs**

In general, the results confirm the co-occurrence between [V-DE] and canonical modal auxiliaries, as well as their role in disambiguating modal readings.

Regarding the retested sentence (15), repeated from (1), the acceptance of the compatibility between [V-DE] and the deontic modal auxiliary *koyi* ‘can; be allowed to’ increased from 88% in the first test to 93% in the second test (see Fig. 5.15).

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (15) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
 no this-CLF rice.cooker still be.allowed.to use-DE
 ‘No, this rice cooker can still be used.’

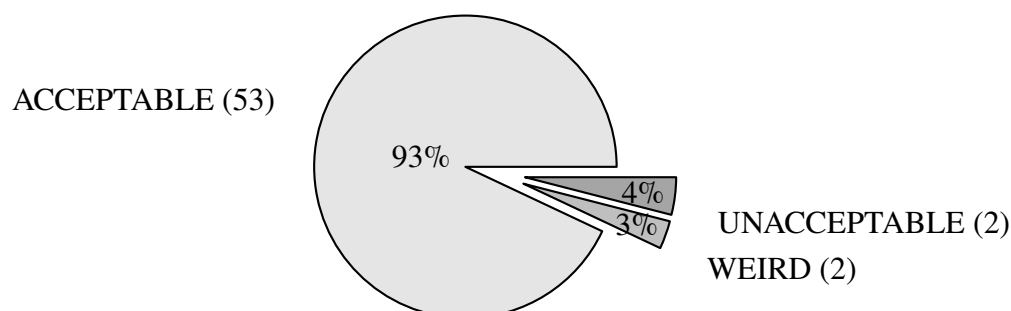


Figure 5.15 Distribution of judgements (sentence (1)/(15))

As for the other retested sentence (16), repeated from (2), its acceptability remains at 96%, aligning with the results of the first round of fieldwork (see Fig. 5.16).

Context: The porridge is ready; the mother says to the child:

- (16) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
 porridge be.allowed.to eat-DE ATT
 ‘The porridge can be eaten now (, and you’d better eat it now)!’

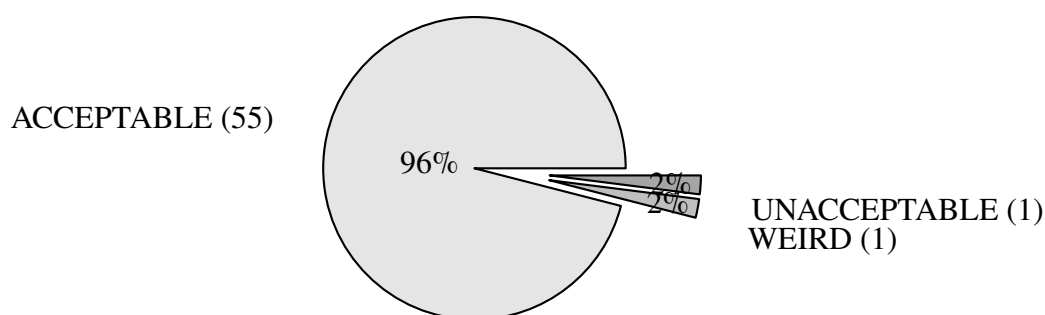


Figure 5.16 Distribution of judgements (sentence (2)/(16))

The results shown in Fig. 5.17, Fig. 5.18 and Fig. 5.19 for sentences (17), (18) and (19), repeated from (3), (4) and (5), further confirm the compatibility between canonical modal auxiliaries and [V-DE], showing a clear and consistent tendency in the informants’ judgements. As for examples (16)-(19), all informants agree that these sentences are typically used as kind suggestions or solicitations from the speaker, as reflected in the translation ‘you’d better...now!’

- (17) *Si2-dian3 lao3, nyi3 ko3yi3 qi(e)4-de2 lao3!*
 ten-o’clock CRS 2SG be.allowed.to go-DE ATT
 ‘It’s ten o’clock now, you can/’d better go now!’

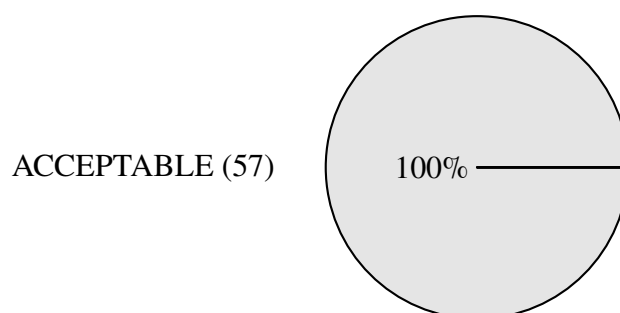


Figure 5.17 Distribution of judgements (sentence (3)/(17))

- (18) *Len3-qi3lai2 lao3, (gai1) cuan1-de2 mao2yi1 lao3!*
 cold-become CRS should wear-DE sweater ATT
 ‘It’s getting cold now, you should/’d better wear the sweater now!’

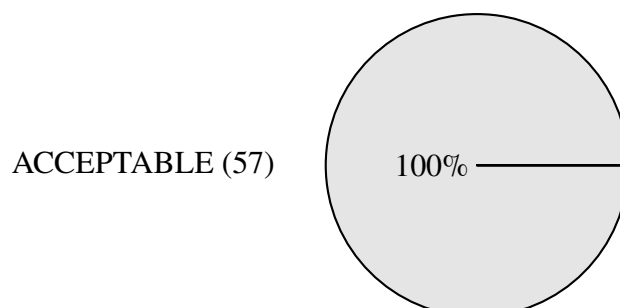


Figure 5.18 Distribution of judgements (sentence (4)/(18))

Context: The doctor said that Zhangsan needs to take his medicine after the meal.
 After lunch, you say to Zhangsan:

- (19) *Ngì3 ze4-go4 yio4 yi3jin1 ko3yi3 ci2-de2 lao3!*
 2SG this-CLF medicine already be.allowed.to eat-DE ATT
 ‘Your medicine can already be taken now (, and you’d better take it now)!’

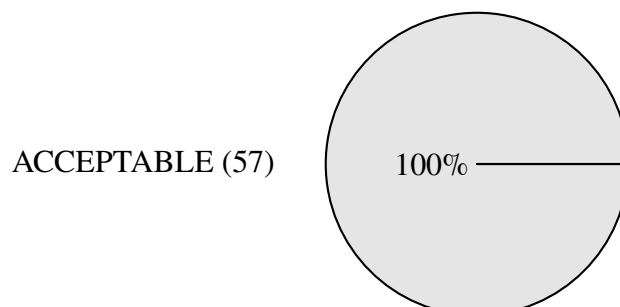


Figure 5.19 Distribution of judgements (sentence (5)/(19))

• **Compatibility between [V-NEG-DE] and canonical modal auxiliaries**

Turning to the negative construction [V-NEG-DE], the results shown in Fig. 5.20 and Fig. 5.21 for sentences (20) and (21), repeated from (6) and (7), reveal that it is incompatible with the modal auxiliary *koyi* ‘can; be allowed to’, which is perfectly compatible with the positive construction [V-DE].

- (20) **Ze4-go4 dian4fan4bao3 ko3yi3 yong4 -bu -de2.*
 this-CLF rice.cooker be.allowed.to use -NEG -DE
 Intended: ‘It is deontically possible for this rice cooker not to be used.’

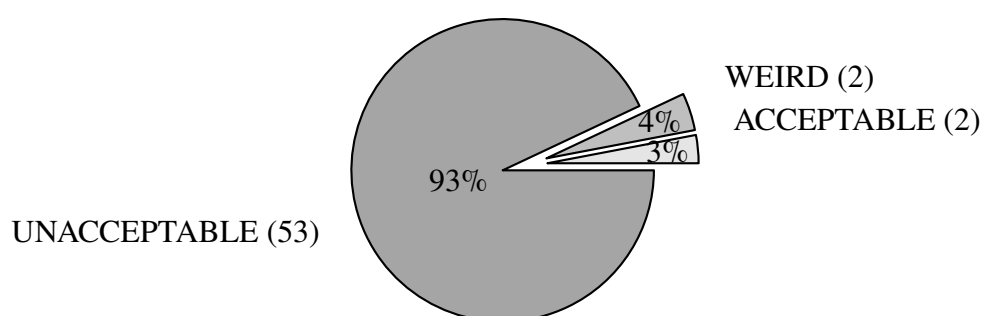


Figure 5.20 Distribution of judgements (sentence (6)/(20))

- (21) **Xi1fan4 ko3yi3 ci2 -bu -de2 lao3.*
 porridge be.allowed.to eat -NEG -DE ATT
 Intended: 'It is deontically possible for the porridge not to be eaten.'

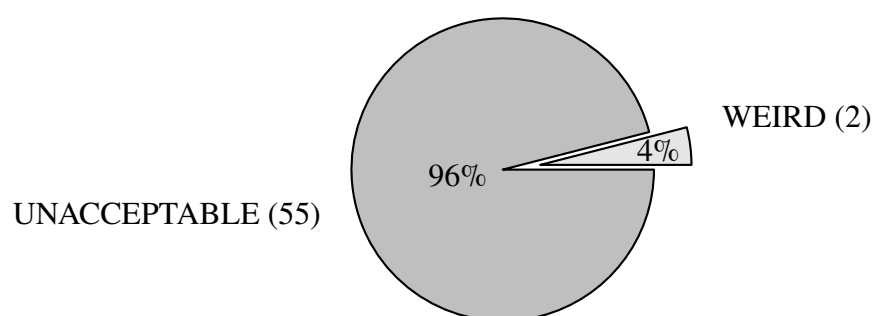


Figure 5.21 Distribution of judgements (sentence (7)/(21))

Moreover, recalling the results from the first round of fieldwork, where [V-NEG-DE] was also found to be incompatible with the modal auxiliary *gai* 'should', we can conclude that [V-NEG-DE] is generally incompatible with canonical modal auxiliaries, which is the exact opposite of the positive construction [V-DE]. This contrast suggests that the positive and negative constructions should be treated separately, as they may differ in their derivational process.

- **Compatibility between [V-DE] and epistemic/alethic modals**

Beyond the domain of non-epistemic modals, [V-DE] is also compatible with higher epistemic and alethic modals (Cinque 1999), as demonstrated by the result shown in Fig. 5.22 for sentence (22), repeated from (8).

- (22) *Xiang3 zu4 jiu3sen1yi4, pa4si4 yin1gai1 yao4 ho1-de2 jiu3 o.*
 want do alcohol.business probably possibly need drink-DE alcohol SFP
 ‘If you want to do alcohol business, it is probably possible that you need to be
 (quite) able to drink alcohol.’

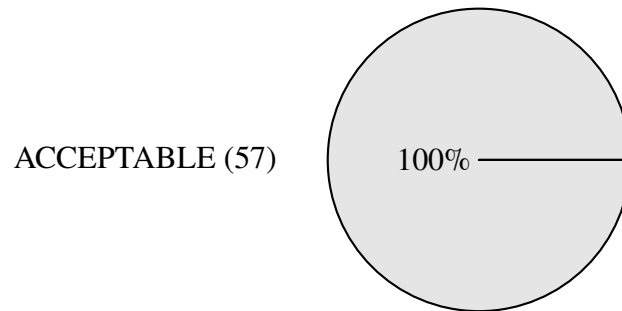


Figure 5.22 Distribution of judgements (sentence (8)/(22))

• ‘ability’

Regarding the optional degree adverb for the ‘ability’ reading, a clear tendency emerges from the results of the second round of fieldwork. Informants exhibit a strong preference for the degree adverb *tai* ‘very’, as shown by the result in Fig. 5.23 for sentence (23) (repeated from (10)), over *da* ‘big;very’, as illustrated by the result in Fig. 5.24 for sentence (24) (repeated from (9)).

- (23) *Ngo3 jin1tian1 you3dian3'er bu2 su1fu2, ko3nen2 ho1 bu2 tai4*
 1SG today a.little NEG comfortable probably drink NEG really
de2.
 DE
 ‘I am not feeling well today, (so) I am probably not really able to drink.’

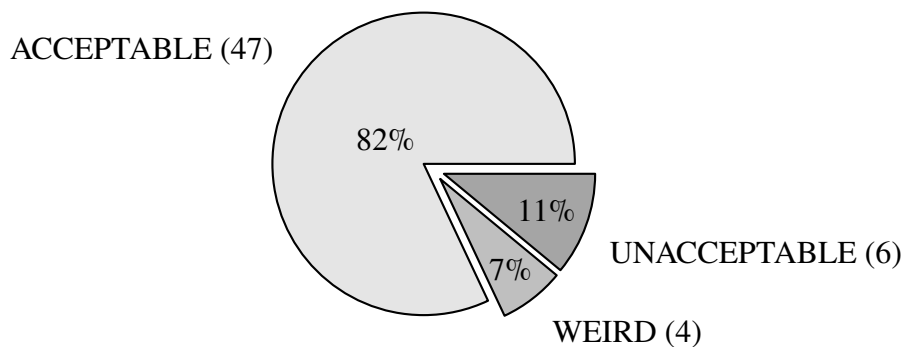


Figure 5.23 Distribution of judgements (sentence (10)/(23))

- (24) *Ze4-go4 wa2'er2-1 ci2 bu da4 de2 fan4.*
 this-CLF child eat NEG big;very DE meal
 'This child is not very able to eat.'

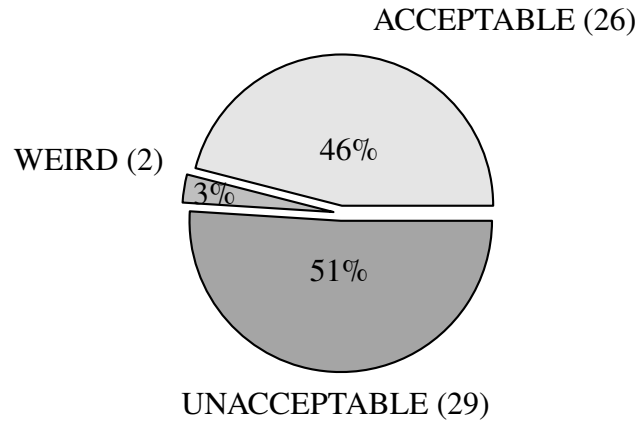


Figure 5.24 Distribution of judgements (sentence (9)/(24))

This clear tendency confirms that, at least in the investigated area, *tai* ‘very’ is not a random lexical degree adverb; rather, it functions as a unique functional degree adverb that serves as a disambiguator for the ‘ability’ reading. The choice of the functional degree adverb, as evidenced by the contrast between *tai* ‘very’ and *da* ‘big;very’, is subject to microvariation across different linguistic areas. In the investigated area of the first round of fieldwork, *da* ‘big;very’ is the relatively more accepted option. Conversely, in the three subareas investigated in the second round of fieldwork, informants tend to prefer *tai* ‘very’. Notably, the two degree adverbs are mutually exclusive for the informants. In any case, the fundamental conclusion remains the same: there is a unique and optional functional degree adverb that can disambiguate the ‘ability’ reading in the negative construction.

- “Point of view” of [V-DE-*lao*]

As for the imperative sentence based on the construction [V-DE-*lao*], the first round of fieldwork failed to determine the “point of view” encoded in this type of imperative sentence, specifically that the imperative sentence is intended for the benefit of the addressee rather than the speaker. In addition, a considerable number of informants failed to provide a clear judgement (i.e., they tend to choose the “safer” option WEIRD). On the contrary, the second round of fieldwork provides more promising results. As indicated by the unacceptability of (25) and (26) (shown in Fig. 5.25 and Fig. 5.26), repeated from (12) and (13), most informants reject using the imperative

[V-DE-*lao*] for their own benefit. This tendency aligns with its typical function as a kind suggestion directed toward the addressee.

- (25) ?*Ge1-ngo3 sao3-de2 di4 lao3!*
 for-me clean-DE floor ATT
 ‘You should/’d better clean the floor for me now!’

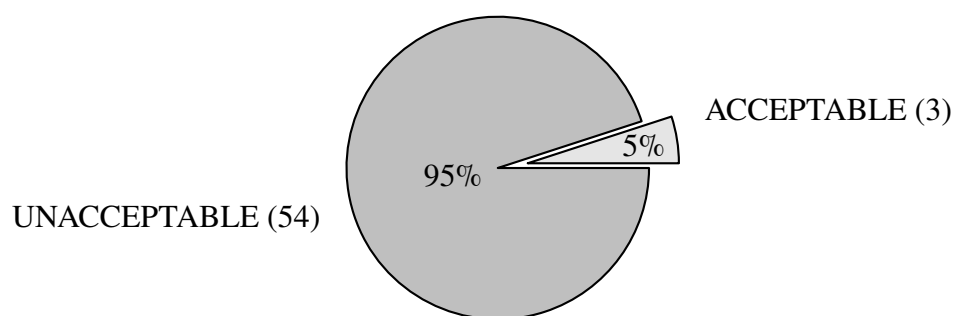


Figure 5.25 Distribution of judgements (sentence (12)/(25))

- (26) ?*Ge1-gno3 ce3-de2 cao3 lao3!*
 for-me pull-DE weed ATT
 ‘You should/’d better pull the weeds for me now!’

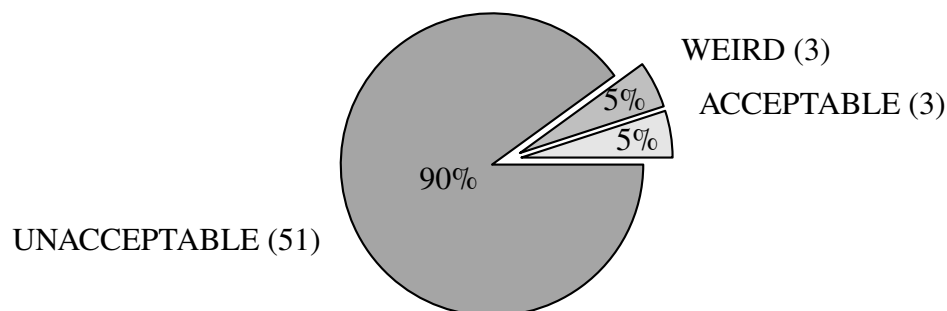


Figure 5.26 Distribution of judgements (sentence (13)/(26))

Moreover, the result presented in Fig. 5.27 for sentence (27), repeated from (14), shows that [V-DE-*lao*] is not compatible with the modal adverb *bixu* ‘obligatorily’, which conveys a strong “deontic necessity” reading. This incompatibility can be attributed to the contrast between the strong modal force of *bixu* ‘obligatorily’ and the weak modal force of the construction [V-DE-*lao*]. The imperative sentence based on [V-DE-*lao*] will be discussed in detail in Chapter 8.

- (27) **Di4tou2 bao1gu2 bi2xu1 ban1-de2 lao3!*
 field-in corn obligatorily harvest-DE ATT
 Intended: ‘You must/’d better harvest the corn in the field now!’

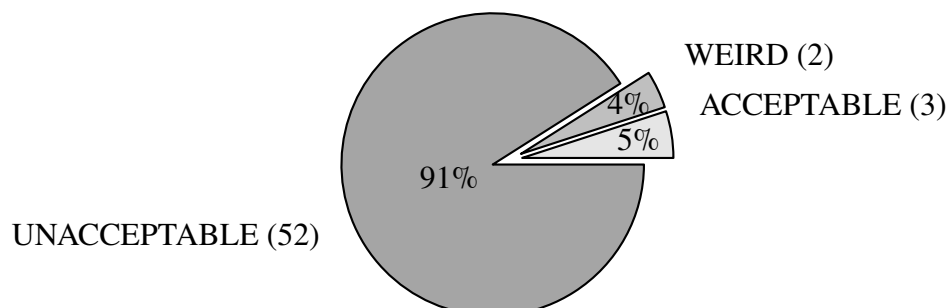


Figure 5.27 Distribution of judgements (sentence (14)/(27))

5.4 Interim conclusion

A concise and direct comparison between the two rounds of fieldwork is presented in Table 5.5.

	Fieldwork (I)	Fieldwork (II)
Average population of investigated areas	Around 150,000	Less than 3,000
Informants number	24	57
Informants' proficiency of Standard Chinese	High	Zero/(Quite) low
Cultural mediator	No	Yes

Table 5.5

Overall, the first round of fieldwork highlights the sharp contrast between Standard Chinese [V-DE] and Sichuanese [V-DE], providing compelling empirical support for the discussion of these two constructions in Chapter 4. Both rounds of fieldwork confirm that the various modal readings, which appear to be conveyed all by [V-DE], are in fact structurally distinct and should not be “squeezed” into a single modal morpheme DE. Notably, several functional disambiguators for the various modal readings have been identified through the fieldwork. Their possible combinations with [(V-)DE] are presented in Table 5.6 below.

(V-)DE+	Functional disambiguators	Basic construction	Relevant interpretation
	-	[V-DE]	objective possibility
	<i>koyi</i> ‘can; be allowed to’	[<i>koyi</i> -V-DE]	permission
	functional degree adverb <i>tai</i> ‘big;very’	[(V- <i>bu</i> -(<i>tai</i>)-DE)]	ability
	(<i>gai</i> ‘should’ +) SFP - <i>lao</i>	[(<i>gai</i> -)V-DE- <i>lao</i>]	obligation (imperative)
	(<i>koyi</i> ‘can’ +) SFP - <i>lao</i>	[(<i>koyi</i> -)V-DE- <i>lao</i>]	permission (imperative)

Table 5.6

Further details on the mechanism of this “compositional strategy” will be discussed in the following chapters.

Chapter 6

The semantics of DE

This chapter focuses on the semantics of DE, aiming to provide a proper definition and to explore its interaction with various disambiguating elements, as shown by the fieldwork results in the last chapter. Specifically, this chapter will demonstrate that the apparent ambiguity, or polysemy of DE is better captured by the idea of “simplicity”. Rather than analyzing DE as a genuinely polysemous modal morpheme, it should be treated as a basic and semantically underspecified modal element, best defined as an alethic modal morpheme. Subsequently, the issue of modal stacking will be addressed, and it will be argued that the combination of DE with the “disambiguating” modal elements is most appropriately accounted for by a modal concord analysis.

6.1 Ambiguity or simplicity

Pertaining to the ultimate objective of the fieldwork, it is fundamental to precisely determine the semantic contribution of DE in [V-DE]. As shown by the fieldwork results, the seemingly diverse modal readings associated with [V-DE] are, in fact, structurally distinct from one another – each specific modal interpretation corresponds to exactly one functional element in the underlying syntactic structure (see Table 6.1, repeated from Table 5.6). Consequently, the most natural analysis is to treat DE as a basic and underspecified modal element, rather than as an inherently ambiguous modal morpheme encompassing multiple readings. The [V-DE] construction, when used in isolation, may convey a range of possible readings largely depending on the context; when combined with specific functional elements, particular modal readings can be disambiguated. In what follows, we will examine whether this analysis is theoretically and empirically tenable.

	Functional disambiguators	Basic construction	Relevant interpretation
(V-)DE+	-	[V-DE]	objective possibility
	<i>koyi</i> ‘can; be allowed to’	[<i>koyi</i> -V-DE]	permission
	functional degree adverb <i>tai</i> ‘big;very’	[(V- <i>bu</i> -(<i>tai</i> -)DE)]	ability
	(<i>gai</i> ‘should’ +) SFP - <i>lao</i>	[(<i>gai</i> -)V-DE- <i>lao</i>]	obligation (imperative)
	(<i>koyi</i> ‘can; be allowed to’ +) SFP - <i>lao</i>	[(<i>koyi</i> -)V-DE- <i>lao</i>]	permission (imperative)

Table 6.1

Let’s now break down each combination of [V-DE] with possible functional disambiguators.

- [*koyi*-V-DE]

An example of [*koyi*-V-DE] is given in (1).

- (1) *Zang1san1 ko3yi3 ho1-de2 pi2jiu3.*
 3SG be.allowed.to drink-DE beer
 ‘Zhangsan is allowed to drink beer.’

First of all, the overt presence of *koyi* ensures that the most salient reading of the sentence is that of deontic possibility, a meaning typically conveyed by the modal auxiliary *koyi*. However, in the absence of a specific context, it is hard to tell whether the ‘objective possibility’ reading of DE also emerges as an underlying interpretation, such as ‘It is objectively possible for Zhangsan to drink beer (e.g., he is not allergic to beer).’ The precise interpretation of the combination of *koyi* and DE will be examined in detail through a brief investigation in a later section. What matters here is that the presence of *koyi* determines the interpretation of the whole construction.

- [V-*bu*-(*tai*-)DE]/[(ADV-)V-DE]

With respect to constructions expressing the ‘ability’ reading, it was demonstrated in the previous chapter that *tai* ‘big;very’ (or *da* ‘big;very’, depending on the investigated area) is a functional degree adverb that serves as a “disambiguator” for the ‘ability’ reading. It is considered a functional element since it is the unique element that can appear in this specific syntactic position to trigger the ‘ability’ reading. This is evidenced by the fact that it cannot be replaced by other lexical degree adverbs, as shown by the ungrammaticality of (2).

- (2) **Zang1san1 ho1 bu hao3/zi1/xiang1dang1 de2 pi2jiu3.*
 3SG drink NEG very/extremely/relatively DE beer
 Intended: ‘Zhangsan is not quite able to drink beer.’

To express a similar meaning using lexical degree adverbs, a different negative morpheme is employed, and the lexical adverbs always precede the main verb, as shown in (3).

- (3) *Zang1san1 mei1de2 hao3 ho1-de2 pi2jiu3.*
 3SG NEG very drink-DE beer
 ‘Zhangsan is not quite able to drink beer.’

This contrast demonstrates that *tai* in [V-*bu*-(*tai*)-DE] is indeed a functional element that triggers a specific ‘ability’ reading of the whole construction.

At this point, an important question arises: How can a degree adverb directly modify DE, a modal morpheme that expresses a non-gradable ‘possibility’ reading? This issue is illustrated in (4a), which demonstrates the incompatibility between the degree adverb and a non-gradable modal meaning.

- (4) *Zang1san1 ho1 bu tai4 de2 pi2jiu3.*
 3SG drink NEG big;very DE beer
 a. *‘It is not very objectively possible for Zhangsan to drink beer.’
 b. ‘Zhangsan is not quite able to drink beer.’

The unacceptability of (4a) suggests that the degree adverb *tai* does not directly modify the basic modal morpheme DE (i.e., not *tai*-DE), but rather a distinct, gradable modal, most plausibly a dynamic modal expressing ‘ability’, as indicated by the translation ‘able’. This hypothesis can be represented as *tai*-(Mod_{Ability}-)DE, where *tai* modifies an unpronounced ‘ability’ modal preceding DE.

Turning to the positive construction [V-DE], although no overt functional element is attested to signal the ‘ability’ reading, a lexical degree adverb is typically added to disambiguate this interpretation, as illustrated in (5). With the overt presence of the degree adverb, the ‘ability’ reading emerges as the only available interpretation. Crucially, also in this case, the degree adverb cannot be interpreted as directly modifying DE, which encodes an ‘objective possibility’ reading. Instead, it must modify a covert Mod_{Ability} ‘able’, further supporting the hypothesis that DE combines with an unpronounced ability modal in such constructions.

- (5) *Zang1san1 zi1/xiang1dang1 ho1-de2 pi2jiu3.*
 3SG extremely/relatively drink-DE beer
 ‘Zhangsan is very able to drink beer.’

In any case, it is evident that the gradable ‘ability’ reading, conveyed either by the negative construction [V-*bu*-(*tai*-)DE] or the positive construction [(ADV-)V-DE], is not contributed by DE itself, but rather by its combination with an unpronounced dynamic modal (Mod_{Ability}).

• [(*gai*/*koyi*-)V-DE-*lao*]

An example of [(*gai*-)V-DE-*lao*] is repeated in (6). First of all, it should be noted that this is an imperative sentence, serving as a kind suggestion directed toward the addressee. For the purposes of the current discussion, we will set aside the specific sentence type, for which the sentence-final particle also plays a role. A detailed analysis of imperative constructions will be deferred to Chapter 8. Here, we will concentrate exclusively on the combination of modal elements within the construction.

- (6) *Wa2er2-1, gai1 xi3-de2 yi1fu2 lao3!*
 child[voc] should wash-DE clothes ATT
 ‘Child, you should/’d better wash the clothes now!’

As evidenced by the translation, the deontic reading arises directly from the canonical modal auxiliary *gai*, which is typically translated as ‘should’. Furthermore, besides the different modal flavor, *gai* also contrasts with DE in terms of quantificational force: *gai* expresses necessity, corresponding to universal quantification, whereas DE expresses possibility, corresponding to existential quantification. Consequently, it is least plausible to analyze DE as a polysemous modal morpheme that expresses also a ‘deontic necessity’ reading.

Moreover, setting aside the particular sentence type, the modal combination in the construction [(*koyi*-)V-DE-*lao*] exhibits the same combinatorial pattern as in [*koyi*-V-DE], where the presence of *koyi* ‘be allowed to’ gives rise to a salient deontic interpretation, even in the absence of a specific context. See the example repeated in (7).

- (7) *Si2-dian3 lao3, ko3yi3 qi(e)4-de2 lao3!*
 ten-o’clock CRS be.allowed.to go-DE ATT
 ‘It’s ten o’clock now, you can/’d better go now!’

As in the case of a declarative deontic sentence (e.g., *koyi*-V-DE), it is difficult to determine whether an underlying ‘objective possibility’ reading is accessible in either

sentence (6) or (7), when they are not uttered in a specific context. We will come back to this point in a later section.

Based on the above analysis of the various combinations between DE and other modal elements, the first conclusion is that DE is not an inherently polysemous modal morpheme. Rather, the range of modal readings associated with [V-DE] can be systematically disambiguated by specific modal elements, either overt or covert, that co-occur with DE. Under this assumption, DE just functions as a basic modal marker expressing an ‘objective possibility’ reading, which is contingent on objective facts in the world of evaluation. To precisely define the modal morpheme DE, the next section turns to how DE has been traditionally described and analyzed by Sichuanese grammarians.

6.2 Traditional view on DE

Traditional Sichuanese grammarians have long acknowledged the “polyfunctionality” of the postverbal modal DE, albeit they deal with it in different ways. Zhou (1983) treats DE as an ambiguous morpheme, whose interpretation varies according to different contexts, while Zhang et al. (2001) posit the existence of distinct DEs with different interpretations (Zhang et al. 2001).

In his descriptive work on the Chengdu variety, Zhou (1983) identifies two subcategories of the postverbal DE, based on their different interpretations: Group DE1 typically expresses an ‘objective possibility’ reading, while Group DE2 conveys an ‘ability’ reading. The latter reading becomes relevant in contexts where DE co-occurs with degree adverbs and speaker-oriented adverbs, as illustrated in (8).

- (8) *Ta1 hao3/ngen4si4 ci2-de2, yi2dun4 yao4 ci2 yi2-jin1 mi3.*
 3SG really/indeed eat-DE one.meal will eat one-catty rice
 ‘He is really/indeed able to eat.’ (modified from Zhou 1983:70)

Although the construction [(gai-)V-DE-lao] may give rise to a completely different ‘necessity’ reading, as illustrated earlier in (6), Zhou does not treat this as a distinct group. Instead, it is analyzed as a simple combination of the basic construction [V-DE1] with the sentence-final particle *lao*. Fundamentally, Zhou (1983:71) does not posit two distinct DEs for the observed readings but regards them as subcategories of a single auxiliary DE, with the different modal readings arising from different grammatical contexts. This classification is summarized in Table 6.2.

	Interpretation	Further combination
DE ₁	‘objective possibility’	+ SFP <i>lao</i> = ‘weak necessity’
DE ₂	‘ability’	

Table 6.2: Classification of Zhou (1983)

In another pioneering study, *Chengdu fangyan yufa yanjiu* ‘A study of the grammar of Chengdu dialect’ by Zhang et al. (2001), a tripartite classification is applied to the postverbal DE. The first group is defined as expressing ‘possibility derived from objective facts’, while the second group conveys the ‘ability’ reading (P380). As in Zhou (1983), most of the examples associated with the ‘ability’ reading are accompanied by overt degree adverbs. However, differing from Zhou, Zhang et al. (2001) distinguishes a third group for the imperative form [V-DE-*lao*]. They note that the sentence-final particle *lao* is obligatory to obtain the correct interpretation (P380). Zhang et al. (2001) further interpret and paraphrase [V-DE-*lao*] using the deontic modal *yingai* ‘should’, suggesting that this construction is used by the speaker to suggest or exhort an action to the hearer. In both studies, DE is regarded as an auxiliary that can express a range of modal interpretations, depending on different grammatical and pragmatic contexts. The categorization presented by Zhang et al. (2001) is summarized in Table 6.3 below.

	Interpretation
DE ₁	‘objective possibility’
DE ₂	‘ability’
DE ₃	‘obligation’

Table 6.3: Classification of Zhang et al. (2001)

Despite differences among traditional analyses, a general consensus can still be reached: bare Sichuanese postverbal DE consistently conveys an ‘objective possibility’ reading, a kind of possibility only related to objective facts. When DE co-occurs with specific disambiguating elements, a broader range of modal readings becomes available.

6.3 Alethic modality

At this point, one might question whether it is appropriate to define Sichuanese DE using the broad term “potential” (as in Chao 1968, Cheng&Sybesma 2003, 2004

for Cantonese DAK), or to roughly interpret it as expressing a ‘possibility/permission’ reading (as in Lü 1980), in the same way as its Standard Chinese counterpart. In fact, the term “potential” is used in Palmer (2001) to cover all sub-categories of “event modality”, which serves as the umbrella term for both “deontic” and “dynamic” modality. However, rather than covering a range of modal readings, DE in Sichuanese conveys only a basic modal reading, which seems to serve as the foundation for all other potential modal readings. Building on this idea, I propose the following definition for Sichuanese postverbal DE:

- (9) DE is not an ambiguous/polysemous modal morpheme itself, but just an alethic modal morpheme (Von Wright 1951) that expresses a basic ‘objective possibility’ reading.¹

As introduced in Chapter 2, “alethic modality” was originally proposed by Von Wright (1951:1) to refer to “what is related to truth” when distinguishing various subtypes of modality. After that, “alethic modality” has been widely discussed among logicians and semanticists (e.g., Montague 1973, Lyons 1977;1983 etc.). In more recent generative grammar works, “alethic modality” is defined as “what is objectively possible or necessary” within the epistemic modal domain (Butler 2003:993). As anticipated in Section 2.2, this study defines “alethic modality” as what is possible or necessary relative to objective facts, not in the epistemic sense (Cinque 1999; Butler 2003), but rather in the sense of circumstantial modality within the root modal domain (Kratzer 1981, 1991, 2012; Palmer 2001[1986]; von Stechow 2006).²

The ‘objective possibility’ reading bears some resemblance to Kratzer’s (2012) interpretation of *kann* in German. Specifically, *kann* expresses a kind of “simple possibility”, “which may depend on brute facts alone – that is, the ordering source may be empty” (Kratzer 2012:57-60). She illustrates the same idea with the example in (10), where the modal base is realistic and the ordering source is empty.

¹Cheng et al. (2016) also uses the label “alethic modality” for postverbal DE in Standard Chinese [V-DE] and [V-DE-C(omplement)] construction, but without any specific explanation. I retain the ideas that a) Sichuanese [V-DE] is way more independent than Standard Chinese [V-DE] and thus should be handled separately and b) Sichuanese DE in [V-DE], where it functions as a canonical modal morpheme, and DE in [V-DE-C], where it is highly constrained and obligatorily followed by a (descriptive or resultative) complement, cannot be dealt with together as their counterparts in Standard Chinese. The distinctions among these constructions have been made explicit in Chapter 4.

²As will be discussed in Chapter 7, the distinction is syntactic rather than semantic; it is simply a matter of similar semantic values encoded in different syntactic projections (Cinque 1999, 2006).

- (10) *Diese Tasse ist zerbrechlich.*
 this cup is fragile
 ‘It is in view of certain properties inherent in the cup that it is possible for it
 to break.’ (Kratzer 2012:60)

In a similar vein, we will treat DE as having only a realistic modal base (e.g., based on existing objective facts in the world of evaluation) with an empty ordering source. What is special about DE is that, while regular modal auxiliaries typically derive their interpretations from specific contexts, DE can also combine with different modal elements to convey a precise modal reading. Thus, the next step is to explore how DE combines with different modal elements. To do this, we will first examine the classical patterns of “modal stacking” across various languages and determine whether the combinatorial pattern observed here aligns with one of these patterns.

6.4 The issue of “modal stacking”

Traditionally regarded as quantifiers over possible worlds, the stacking of modal elements typically comes in two different interpretative patterns. In cases where the stacking of two modals yields a cumulative reading, the second modal is interpreted as embedded within the scope of the first, and both modals contribute independently to the overall interpretation. Conversely, when the stacking of two modals leads to a single modal interpretation, a concord reading arises. Examples illustrating both patterns of “modal stacking” across different languages are provided below.

6.4.1 Cumulative reading

- Hawick Scots

Brown (1991) identifies patterns of double modal auxiliary constructions in Hawick Scots, a variety spoken in the town of Hawick situated in the Scottish Borders. As Brown suggests, the first modal in the double modal construction is always restricted to an epistemic sense, whereas the second modal has a root sense (P76-77). See examples (11) and (12).

- (11) *He should can go tomorrow.*
 ‘He ought to be able to go tomorrow.’ (Hawick Scots, from Brown 1991:74)
- (12) *He might can do it.*
 ‘He might be able to do it.’ (Hawick Scots, from Brown 1991:76)

- Danish

The stacking of two root modal verbs is also possible, as illustrated by the Danish examples in (13) and (14). As demonstrated by Vikner (1988:9-10), among all root modals, only the modal *kunne* ‘can, be able to’ can be embedded under another root modal.

- (13) *Han skal kunne svømme for at få jobbet.*
 he must can swim for to get job-the
 ‘He must be able to swim to get the job.’

(Vikner 1988:9-10; also Thráinsson & Vikner 1995:51)

- (14) *Hun vil kunne forstå fransk.*
 she will can understand French
 ‘She wants to be able to understand French.’

(Vikner 1988:9-10)

- Italian

Italian also exhibits a relatively high degree of flexibility in the stacking of root modals, as illustrated in examples (15) and (16).

- (15) *Gianni vorrebbe poter cantare.*

‘Gianni would want to be allowed/be able to sing.’ (Cinque 1999:80)

- (16) *La fattoria biologica deve poter lavorare con le sue possibilità individuali.*

‘Each organic farm must be able to exploit its individual possibilities.’

(online source)

- Standard Chinese

The cumulative pattern of modal stacking is also observed in Standard Chinese, as illustrated by examples (17) and (18) from Lin (2012). In (17), an epistemic modal adverb precedes a root modal adverb, while in (18), a root modal adverb precedes another root modal auxiliary.

- (17) *Zhangsan keneng bixu lai.*
 3SG be.likely.to must come
 ‘It is likely that Zhangsan must come.’

(Lin 2012: 157)

- (18) *Zhangsan bixu nenggou lai.*
 3SG must be.able.to come
 ‘Zhangsan must be able to come.’

(Lin 2012: 157)

To sum up, the cumulative pattern of modal stacking involving two modal elements reveals three primary combinatorial patterns with respect to modal types, as shown in Table 6.4.

MOD1	MOD2
Epistemic	Epistemic
Epistemic	Root
Root	Root

Table 6.4

The absence of Root + Epistemic stacking pattern aligns with the widely acknowledged hierarchical ordering of modal elements, where the epistemic modal domain always occupies a structurally higher position than the root modal domain (Jackendoff, 1972; McDowell 1987; Picallo 1990; Brennan 1993; Cinque 1999, 2006; Hacquard 2006, among others).

6.4.2 Concord reading

The term “Modal concord” was originally used to describe the phenomenon in which “the combination of a modal adverb with a modal auxiliary seems to be interpreted as if just a single modal operator were expressed” (Guerts&Huitink 2006:1), a phenomenon first observed by Halliday (1970) and Lyons (1977). This is illustrated in examples in (19) and (20).

- (19) *You may possibly have read my little monograph upon the subject.*
 a. ‘The speaker thinks that it is possible that you read his little monograph.’
 b.? ‘The speaker thinks that it is possible that it is possible that you read his little monograph.’ (Guerts&Huitink 2006:1)
- (20) *Power carts must mandatorily be used on cart paths where provided.*
 a. ‘It is obligatory that power carts are used on cart paths where provided.’
 b. ? ‘It is obligatory that it is obligatory that power carts are used on cart paths where provided.’ (Guerts&Huitink 2006:1)

Another example from Dutch, provided by Guerts&Huitink, is presented in (21).

- (21) *Alle deelnemers moeten zich (verplicht) registreren.*
 all participants must SE (obligatorily) register
 ‘All participants must register themselves.’ (Guerts&Huitink 2006:2)

Based on the above observations, Guerts&Huitink (2006:3) propose two constraints on modal concord, which are summarized in (22) (see also Zeijlstra 2007).

- (22) A concord relation can be established between two modal expressions if:
- i) they are of the same modal type (e.g., epistemic, deontic...), and
 - ii) they have the same, or at least similar, quantificational force (e.g., universal or existential)

6.4.3 “modal stacking” with DE

Returning to Sichuanese DE, we first observe that it can combine with modal elements such as *xiang* ‘want’ or *yao* ‘need’, yielding a cumulative reading, as illustrated in examples (23) and (24).³ Let’s use [Mod1-V-DE] to represent this kind of construction.

- (23) *Xiang3 zu4 sen1yi4, yao4 ho1-de2 jiu3.*
 want.to do business need drink-DE alcohol
 ‘If you want to do business, you need to have the objective possibility to drink alcohol.’
- (24) *Ngo3 xiang3 ci1-de2 ho3go1.*
 1SG want.to eat-DE hotpot
 ‘I want to have the objective possibility to eat hotpot.’

Then, how can we account for the constructions involving DE and the functional disambiguating elements listed in Table 6.1, which convey a non-cumulative reading? In order to distinguish these from the cumulative constructions exemplified in (23) and (24), we adopt the representation [Mod2-V-DE] for this type. The representative examples are repeated in (25), (26) and (27). As demonstrated by the unavailability of readings in (25a), (26a), and (27a), these constructions do not yield a cumulative reading.

- (25) *Zang1san1 ko3yi3 ho1-de2 pi2jiu3.*
 3SG be.allowed.to drink-DE beer
 a. *Zhangsan is allowed to have the objective possibility to drink beer.
 b. ‘Zhangsan is allowed to drink beer.’

³In both examples, all the aforementioned modal readings associated with [V-DE] in declarative sentences are possible, including ‘permission’ and ‘ability’. For simplicity, only the basic ‘objective possibility’ reading is provided here.

- (26) *Zhangsan xiangdang ho de pijiu.*
 3SG very drink DE beer
 a. *‘Zhangsan is quite able to have the objective possibility to drink beer.’
 b. ‘Zhangsan is quite able to drink beer.’
- (27) *Wa2er2-I, gai1 xi3-de2 yi1fu2 lao3!*
 child[VOC] should wash-DE clothes ATT
 a. *‘Child, you should have the objective possibility to wash the clothes now!’
 b. ‘Child, you should/’d better wash the clothes now!’

Next, we need to address the issue left unsolved in the previous section, namely, that in cases involving a salient deontic interpretation, such as (25) and (27), it is hard to determine whether an underlying ‘objective possibility’ reading is also accessible in the absence of a specific context. This issue is of crucial importance in determining whether a concord analysis can be pursued for this modal stacking construction. Therefore, the main aim is to understand the precise linguistic interpretation of the [Mod2-V-DE] construction across contexts, with particular attention to whether an underlying ‘objective possibility’ reading is consistently available.

To this end, a brief investigation was designed and conducted, incorporating several representative sentences and corresponding contexts, with the participation of six informants from the first round of fieldwork. The objective of this investigation is twofold: i) to determine whether the ‘objective possibility’ reading, which is typically expressed by DE, is consistently present in the interpretation of [Mod2-V-DE], and, when it is present, ii) to explore whether this reading is linguistically encoded or merely arises as a pragmatic effect.

Among the six informants, two are between the ages of 20-30, three are between 50-60, and one is 80 years old. For each target reading, distinct situational contexts were designed. During the interviews, informants were presented with the previously introduced sentences embedded in corresponding contexts and were asked three core questions. The first question probes the most salient interpretation of the sentence. The second question examines whether the informants could also have access to an ‘objective possibility’ reading, contingent on the objective facts of the given context. For the third question, informants were presented with a minimally altered version of the same sentence, with the modal morpheme DE removed, maintaining only Mod2. They were then asked to judge whether the two sentences were perceived as same or different, and if different, to explain the difference in their interpretations. Each of the three possible readings was tested one by one.

- ‘permission’

Situation 1

Context: We are planning a family lunch and would like Zhangsan to join us for a drink. Therefore, we ask his mother for permission of drinking beer. His mother replies with the sentence in (28).

- (28) *Zang1san1 ko3yi3 ho1-de2 pi2jiu3.*
 3SG be.allowed.to drink-DE beer
 ‘Zhangsan is allowed to drink beer.’

Firstly, all informants indicate that the primary reading of (28) is a ‘permission’ reading, while they also acknowledge the availability of an underlying ‘objective possibility’ reading (e.g., Zhangsan does not have health issues related to alcohol). However, when asked to compare (28) with (29), all informants assert that the two sentences do not differ in interpretation.

- (29) *Zang1san1 ko3yi3 ho1 pi2jiu3.*
 3SG be.allowed.to drink beer
 ‘Zhangsan is allowed to drink beer.’

As commented by one informant, the ‘objective possibility’ reading functions more as background information, since the mother’s permission implies that she is aware of or presupposes Zhangsan’s objective possibility of drinking beer; otherwise, she would not have granted such permission. Another informant shares the same view and suggests that DE sounds redundant in this context. Notably, the ‘objective possibility’ reading can be explicitly canceled or made uncertain through a subsequent negative statement from the mother, as exemplified in (30).

- (30) *Zang1san1 ko3yi3 ho1-de2 pi2jiu3, dan4si4 ngo3 bu2-xiao3de2 ta1*
 3SG be.allowed.to drink-DE beer but 1SG NEG-know 3SG
lai2 zi1qian2 ci2 tou2bao1 mei2de2. Ngi3men zui4hao3 wen4ha4 ta1.
 come before eat cephalosporin not.have 2SG.PL better try.ask him
 ‘Zhangsan is allowed to drink beer, but I am not not sure whether he has taken cephalosporin before coming. You’d better ask him (, just to be sure).’

Situation 2

Context: in the hospital, the doctor tells you:

- (31) *Ngi3 ko3yi3 ci2-de2 hai3jiao1.*
 2SG be.allowed.to eat-DE chili
 ‘You are allowed to eat chili.’

As for (31), all informants acknowledge that this is a permission from the doctor. Moreover, half of the informants suggest that, since it is the doctor granting permission to eat chili, they can infer that their body must be in a sufficiently good state, at least to eat chili, which corresponds to the ‘objective possibility’ reading. Also, in this context, they claim that (31) is equivalent to (32).

- (32) *Ngi3 ko3yi3 ci2 hai3jiao1.*
 2SG be.allowed.to eat chili
 ‘You are allowed to eat chili.’

Similarly, in a situation where the doctor grants permission solely based on whether chili affects the function of a particular medicine, the health-related ‘objective possibility’ reading can also be doubted or canceled, as demonstrated in (33).

- (33) *Ngi3 ko3yi3 ci2-de2 hai3jiao1, dan4si4 ngi3 cang2wei4*
 2SG be.allowed.to eat-DE chili but 2SG digestive.system
gong1nen2 ruo4 dehua4 zui4hao3 bu2 ci2.
 function weak if better NEG eat
 ‘(In theory,) you are allowed to eat chili, but if your digestive system is too weak, you’d better not.’

Situation 3

Context: while talking with a group of friends about another friend’s child, who just turned 18, one friend said:

- (34) *Ta1 wa2’er2-1 18 sui4 lao3, ko3yi3 ho2-de2 pi2jiu3.*
 3SG child 18 years.old CRS be.allowed.to drink-DE beer
 ‘His child is now 18 years old, he is allowed (e.g., by the law) to drink beer.’

In this case, all informants agree that the salient reading is a ‘permission’ reading, as guaranteed by the law that states adults are allowed to drink alcohol. Conversely, the ‘objective possibility’ reading is not guaranteed, since the subject is absent, and there is no way to know about his current state. In this case as well, informants report no difference between (34) and (35) when interpreted in the same context.

- (35) *Ta1 wa2'er2-1 18 sui4 lao3, ko3yi3 ho2 pi2jiu3.*
 3SG child 18 years.old CRS be.allowed.to drink beer
 'His child is now 18 years old, he is allowed (e.g., by the law) to drink beer.'

Notably, under the 'permission' interpretation, the three situations reveal that the 'objective possibility' reading is not consistently available, even when combined with the same deontic modal auxiliary *koyi* 'be allowed to'.

- 'ability'

Situation 4

Context: we are talking about Zhangsan. One friend, who has drunk with him before, says:

- (36) *Zang1san1 xiang1dang1 ho2-de2 pi2jiu3.*
 3SG very drink-DE beer
 'Zhangsan is quite able to drink beer (based on the fact that he has drunk a lot at least once before).'

For all informants, the sentence in (36) is interpreted as referring solely to Zhangsan's ability of drinking beer, without implying anything about his objective possibility of doing so. Although the Standard Chinese modal auxiliary *neng* 'be able to' is rarely used in Sichuanese, they claim that (36) conveys the same reading as (37), which is the typical way of expressing strong 'ability' in Standard Chinese.⁴

- (37) *Zang1san1 xiang1dang1 nen2 ho2 pi2jiu3.*
 3SG very be.able.to drink beer
 'Zhangsan is quite able to drink beer (based on the fact that he has drunk a lot at least once before).'

- 'obligation'

Situation 5

Context: the mother knows that her child needs to wash the clothes today. When she thinks it's a good time, she says to the child:

⁴*Néng* 'be able to' (Sichuanese pronunciation *nen2*) is not considered part of the core Sichuanese vocabulary and is typically used by younger speakers who are strongly influenced by Standard Chinese. However, as introduced in Chapter 1, due to the close relationship between the two varieties, nearly all Standard Chinese words can be pronounced with Sichuanese phonetics and phonology.

- (38) *Wa2er2-1, gai1 xi3-de2 yi1fu2 lao3!*
 child[VOC] should wash-DE clothes ATT
 ‘Child, you should wash the clothes now!’

Firstly, all informants agree on the ‘obligation’ reading, which is expressed by the modal auxiliary *gai* ‘should’. Although they also recognize the ‘objective possibility’ reading, 5 out of 6 informants claim that there is no difference between (38) and (39).

- (39) *Wa2er2-1, gai1 xi3 yi1fu2 lao3!*
 child[VOC] should wash clothes ATT
 ‘Child, you should wash the clothes now!’

The difference claimed by the only informant, however, has nothing to do with the interpretation of DE, but rather with the degree of strength of the two sentences. Moreover, all informants agree that when uttering an imperative sentence, the mother presupposes that the child has the objective possibility to carry out the action. To demonstrate this, when asked to imagine themselves as the mother, all informants stated that they wouldn’t utter the imperative sentences in (38) and (39) if they are aware that the washing machine is broken or that their child is still occupied.

This corresponds to the *preparatory conditions* proposed by Searle&Vanderveken (1985), conditions which are necessary for the successful and nondefective performance of an illocutionary act (P16-18). Crucially, they state that “in the performance of a speech act the speaker presupposes the satisfaction of all the preparatory conditions” (P17). According to the authors, this type of presupposition which arises from illocutionary forces, needs to be distinguished from presuppositions associated with propositional content, for instance, the assertion “the King of France is bald” which presupposes the existence of a King of France. The latter is typically defined as *semantic presuppositions*. In contrast, the former, namely the presupposition at issue here, is better understood as a pragmatic effect (cf. Stalnaker 1972, 1973, 1974). In particular, the authors claim that “all acts whose point is to get the hearer to do something – orders, requests, commands, etc. – have as a preparatory condition that the hearer is able to do the act directed.” (Searle&Vanderveken 1985:18).

Based on the feedback from this brief investigation, it is evident that the ‘objective possibility’ reading is not always present in the [Mod2-V-DE] construction, but rather depends on both Mod2 and the contexts. When Mod2 is a deontic modal and the construction appears in certain contexts, as in situations 1, 2 and 5, a possibility reading contingent on objective facts arises as a pragmatic effect, presumably through conversational implicature (Grice 1975) or pragmatic presupposition. This is evidenced by

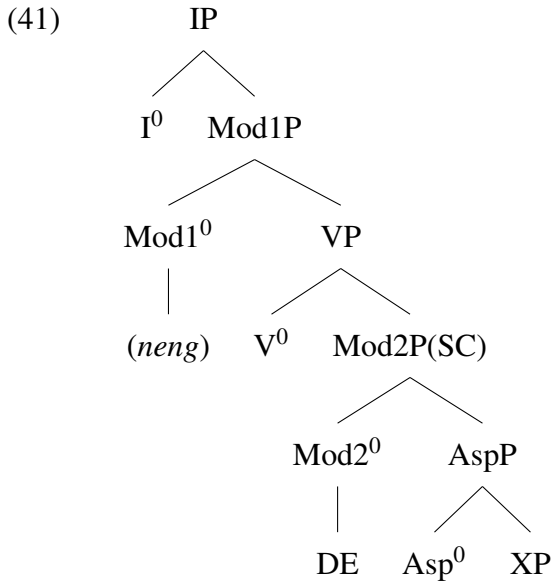
its cancelability and indeterminacy, as demonstrated in the preceding situations (Grice 1975, Hirschberg 1985). In other words, the presence of the ‘objective possibility’ reading has nothing to do with the overt presence of DE, as the [Mod2-V] construction may also give rise to such reading in certain contexts. Therefore, we can conclude that the [Mod2-V-DE] construction, although consisting of two modal operators, consistently conveys a single modal interpretation, as also strongly supported by its equivalence to the [Mod2-V] construction. This observation straightforwardly leads to a concord analysis for [Mod2-V-DE].

Before delving into the details of the concord analysis, it is necessary to review previous proposals for another non-cumulative modal stacking construction in Standard Chinese and to see why a concord analysis better captures the modal stacking phenomenon under investigation here.

Cheng&Sybesma (2003) shows that Standard Chinese *-de-* ‘can’ in the [V-*de*-Res] construction, which conveys a “potential” reading, can sometimes be “doubled” by the canonical modal auxiliary expressing ‘can’, as illustrated in (40).

- (40) *Ta kending neng chi-de-wan zhemo dian fan.*
 3SG surely can eat-DE-finished this bit rice
 ‘She/he can for sure eat this little bit of rice.’ (Cheng&Sybesma 2003:16)

In this case, no double modality reading (i.e., cumulative reading) arises. To account for this phenomenon, Cheng&Sybesma (2003:17) propose that the canonical modal *neng* ‘can’ and the potential modal marker *-de-* together form a single modality, which they dub as “forked modality”. They further clarify that the lower modal *-de-*, which stays in the modal projection within the small clause (SC), is “defective in the sense that it is only realized at PF, but not interpreted (or interpretable) at LF.” (Cheng&Sybesma 2003:21). As a result, it always requires the presence of a higher modal element appearing in canonical modal position in order to get a modal interpretation. This proposal is represented in (41), cited from Cheng&Sybesma (2003:13, see also Cheng&Sybesma 2004:425).



The same double modal construction [*neng*-V-*de*-Res] in Mandarin Chinese has also been discussed by Sparvoli (2017). In line with Cheng&Sybesma (2003, 2004), she argues that *-de-* does not possess a full-fledged modal force, and that the higher, canonical modal contributes a form of modal “reinforcement” (Sparvoli 2017:53).

What the two analyses have in common is the assumption that the modal morpheme *-de-* is in some sense defective. However, the phenomenon labeled “forked modality” or “modal reinforcement” can also be captured through a modal concord analysis, given that the Standard Chinese double modal construction introduced above expresses only a unified modal reading. If the two modal elements *neng* ‘can’ and *-de-* share the same type of quantificational force and modal flavor, the double modal construction may naturally be assumed to yield a concord reading. One piece of empirical evidence in favor of a concord analysis comes from an observation made by Cheng&Sybesma (2003:17) themselves, namely that “although *neng* ‘can’ by itself can express different modal flavors, including potential, ability and permission, when it co-occurs with *-de-*, the only reading available is the potential.” This aligns with the fundamental constraints of modal concord, namely that the two modal elements in concord must express the same type of quantificational force and share the same or a similar modal flavor.

With respect to the Sichuanese data, assuming that DE is semantically defective fails to account for all the empirical facts concerning [Mod2-V-DE], as DE does not always require a higher modal auxiliary to convey a modal interpretation. In fact, when it appears alone in [V-DE], it is able to contribute its own ‘objective possibility’ modal reading. For this reason, DE is considered a regular modal morpheme that stays in the

functional domain of a clause, just as other modal auxiliaries do.⁵ Another empirical issue that this analysis fails to capture is the general incompatibility between the modal auxiliary *gai* ‘should’ and DE in declarative sentences.⁶ This is demonstrated in (42).

- (42) ???*Zang1san1 gai1 xi3-de2 yi1fu2.*
 3SG should wash-DE clothes

If DE were indeed semantically defective and thus no constraints of modal concord were in force, it would be unclear why the co-occurrence of the two modals in (42) is disallowed. Thus, we will adopt a concord analysis for the [Mod2-V-DE] construction in Sichuanese.

6.4.4 Concord analysis

Under a concord analysis, DE is a regular modal morpheme that retains all its semantic components in the stacked construction [Mod2-V-DE]. The unified modal reading expressed by the two distinct modal elements is accounted for by assuming that they concord in quantificational force, while the construction as a whole inherits the modal flavor of the higher, semantically more specific modal. This analysis directly rules out a concord reading for the example in (42), since *gai* ‘should’ carries universal quantificational force, which mismatches with the quantificational force of DE. However, the deontic modal *gai* ‘should’ does co-occur with DE in imperative sentences, in the form of [*gai*-V-DE-*lao*]. See (43).

- (43) *Wa2er2-1, gai1 xi3-de2 yi1fu2 lao3!*
 child[VOC] should wash-DE clothes ATT
 ‘Child, you should/’d better wash the clothes now!’

This seems to pose a challenge for the concord analysis: as discussed above, *gai* is not expected to concord with DE due to a mismatch in their quantificational force. At this point, the only possible solution is to explore the hypothesis that *gai* ‘should’ may undergo a shift in quantificational force in an imperative [V-DE-*lao*] sentence. Although initially this may seem implausible, there are signs that support such a possibility. The first sign comes from the contrast between examples (42) and (43) regarding the interpretation of *gai*. In a declarative sentence such as (42), *gai* can only be understood as

⁵Further empirical evidence in support of this argument will be introduced in the next chapter.

⁶As will be shown in Section 7.3.2 (P122), cooccurrence of the deontic modal *gai* ‘should’ and DE in declarative sentences may be marginally acceptable in certain contexts. In such cases, however, only a cumulative modal reading is observed.

conveying a clear deontic necessity reading. In contrast, when used in an imperative sentence as in (43), *gai* expresses a much weaker, suggestion-like reading. Given also their different compatibility with DE, the two instances of *gai* in declarative and imperative sentences may need to be analyzed as distinct uses. The second sign comes from the fact that the deontic possibility modal *koyi* ‘be allowed to’ can also co-occur with DE in the same imperative sentence pattern, still yielding a unified modal reading (see (44)). This compatibility suggests that the basic structure of the imperative sentence [V-DE-*lao*] is inherently associated with the existential quantificational force contributed by DE. Consequently, if *gai* can concord with DE in this construction, it follows that *gai* must, for reasons that are still unclear to us, carry existential quantificational force in this environment.

- (44) *Si2-dian3 lao3, nyi3 ko3yi3 qi(e)4-de2 lao3!*
 ten-o'clock CRS 2SG be.allowed.to go-DE ATT
 ‘It’s ten o’clock now, you can/’d better go now!’

Further discussion of the concord analysis will be postponed to the following two chapters, where it will be examined alongside the proposed syntactic structures and the discussion on the imperative [V-DE-*lao*] construction.

6.5 Evolving cycle of [Mod-V-DE]

The final issue to be addressed in this chapter is why [Mod1-V-DE] gives rise to a regular cumulative interpretation, whereas [Mod2-V-DE] conveys a concord reading. Alternatively, how do the two groups of modal elements, Mod1 and Mod2, differ from one another?

We can demonstrate that the group of Mod2 elements is indeed special. All possible Mod2 elements and their combinations with DE are listed in Table 6.5, which is revisited from Table 6.1.⁷

⁷An important revision with respect to Table 6.1 is the addition of the covert Mod_{dynamic} to the dynamic modal construction (e.g., ‘ability’), to illustrate that when a degree adverb is included, it always modifies the covert dynamic modal, thereby conveying a gradable ‘ability’ reading.

	Mod2	Basic construction	Relevant interpretation
(V-)DE+	-	[V-DE]	objective possibility
	<i>koyi</i> ‘can; be allowed to’	[<i>koyi</i> -V-DE]	permission
	(Mod _{Dynamic})	ADV-(Mod _{Dynamic} -)V-DE	ability
	<i>gai</i> ‘should’	[(<i>gai</i> -)V-DE- <i>lao</i>]	obligation (imperative)
	<i>koyi</i> ‘can; be allowed to’	[(<i>koyi</i> -)V-DE- <i>lao</i>]	permission (imperative)

Table 6.5

Recall that all Mod2 elements listed in Table 6.5 are explored and identified as “disambiguators” for the initial [V-DE] construction introduced in Chapter 3, which initially appeared to be a polysemous construction. Two initial examples are repeated below in (45) and (46). This illustrates that what is particular about these elements is their consistent availability even in the bare [V-DE] or [V-DE-*lao*] constructions.

- (45) *Zang1san3 ho1 -de2 pi2jiu3.*
 3SG drink -DE beer
 a. ‘It is objectively possible for Z. to drink beer.’ *objective possibility*
 b. ‘Z. is permitted to drink beer.’ *permission*
 c. ‘Z. is quite able to drink beer.’ *ability*
- (46) *Xi3 -de2 yi1fu2 lao3!*
 wash -DE clothes ATT
 ‘You can/should/’d better wash your clothes (now)!’ *permission/obligation*

This contrasts with Mod1 elements, which yield a cumulative reading when combined with DE. In these cases, they can never be omitted when the corresponding reading is available, as illustrated in (47).

- (47) *Xiang3 zu4 sen1yi4, *(yao4) ho1-de jiu3.*
 want.to do business need drink-DE alcohol
 ‘If you want to do business, you need to have the possibility to drink beer.’

In what follows, it will be demonstrated that the special status of Mod2 elements, functioning as “disambiguators”, is a consequence of the gradual evolution of the “polysemous” [(Mod2-)V-DE] construction. Since we will focus exclusively on the non-cumulative [(Mod2-)V-DE] construction, the general representation [(Mod-)V-DE] will henceforth be used to refer to this type of construction.

The evolution of the [Mod-V-DE] construction can be characterized as a three-stage process. In the initial stage, the construction appears as [V-DE], functioning as an apparently polysemous construction, as it consistently expresses a basic ‘objective possibility’ reading and also appears in contexts where ‘permission’ and ‘ability’ readings typically arise. In this stage, the latter two readings are usually elicited through specific contexts, though this method is not always reliable, and sometimes the sentence may remain ambiguous.⁸ During the intermediate stage, specific modal elements begin to co-occur with [V-DE], serving as overt “disambiguators” that lead to specific modal readings. In the final stage, the postverbal DE is lost, and only the specified modal element remains, resulting in a [Mod-V] construction. This form is fully consistent with the modal construction found in Standard Chinese. Examples (48) and (49) below illustrate this process, with (a), (b) and (c) representing the first, intermediate, and final stages, respectively.

- (48) a. *qie(e)4 -de2*
 go -DE
 ‘objective possibility; permission; ability’
- b. *ko3yi3 -qi(e)4 -de2*
 be.allowed.to -go -DE
 ‘permission’
- c. *ko3yi3 -qi(e)4*
 be.allowed.to -go
 ‘permission’
- (49) a. *ho1 -de2*
 drink -DE
 ‘objective possibility; permission; ability’
- b. *xiang1dang1 (ModDynamic) ho1 -de2*
 very (ModDynamic) drink -DE
 ‘ability’
- c. *xiang1dang1 nen2 ho1*
 very can drink
 ‘ability’

The same process is also observed in the imperative [(Mod-)V-DE-*lao*] construction, as seen in examples (50) and (51) below.

⁸Several examples illustrating this point have been provided in section 3.3.

- (50) a. *Qi(e)4 -de2 -lao3!*
 go -DE -ATT
 ‘permission; obligation’
- b. *Ko3yi3 -qi(e)4 -de2 -lao3!*
 be.allowed.to -go -DE -ATT
 ‘permission’
- c. *Ko3yi3 -qi(e)4 -lao3!*
 be.allowed.to -go -ATT
 ‘permission’
- (51) a. *Qi(e)4 -de2 -lao3!*
 go -DE -ATT
 ‘permission; obligation’
- b. *Gai1 -qi(e)4 -de2 -lao3!*
 should -go -DE -ATT
 ‘obligation’
- c. *Gai1 -qi(e)4 -lao3!*
 should -go -ATT
 ‘obligation’

It should be noticed that the constructions from all three stages are still found in modern Sichuanese, albeit with different frequencies. A first tendency observed in traditional Sichuanese literature is the gradual addition of a specific modal element to the [V-DE]/[V-DE-*lao*] constructions, marking the shift from stage (a) to (b) (Zhang et al. 2001). Subsequently, a new tendency emerges among younger speakers, namely the gradual replacement of postverbal DE with preverbal canonical modal elements, reflecting the shift from stage (b) to (c). A key catalyst for this process may be the growing influence of Standard Chinese, which encourages speakers to use explicitly marked modal elements to disambiguate the various modal interpretations that were previously conveyed by [V-DE] and contextual information.

Chapter 7

The syntax of DE

Having established a proper semantic definition of DE and the underlying mechanism ensuring its combination with various disambiguating modal elements, this chapter turns to the syntactic properties of DE, specifically its position within the universal hierarchy of functional projections (Cinque 1999, 2006) and the syntactic derivation of the constructions in which it occurs. Finally, the aspectual constraints observed in [V-DE] are also examined from both synchronic and diachronic perspectives.

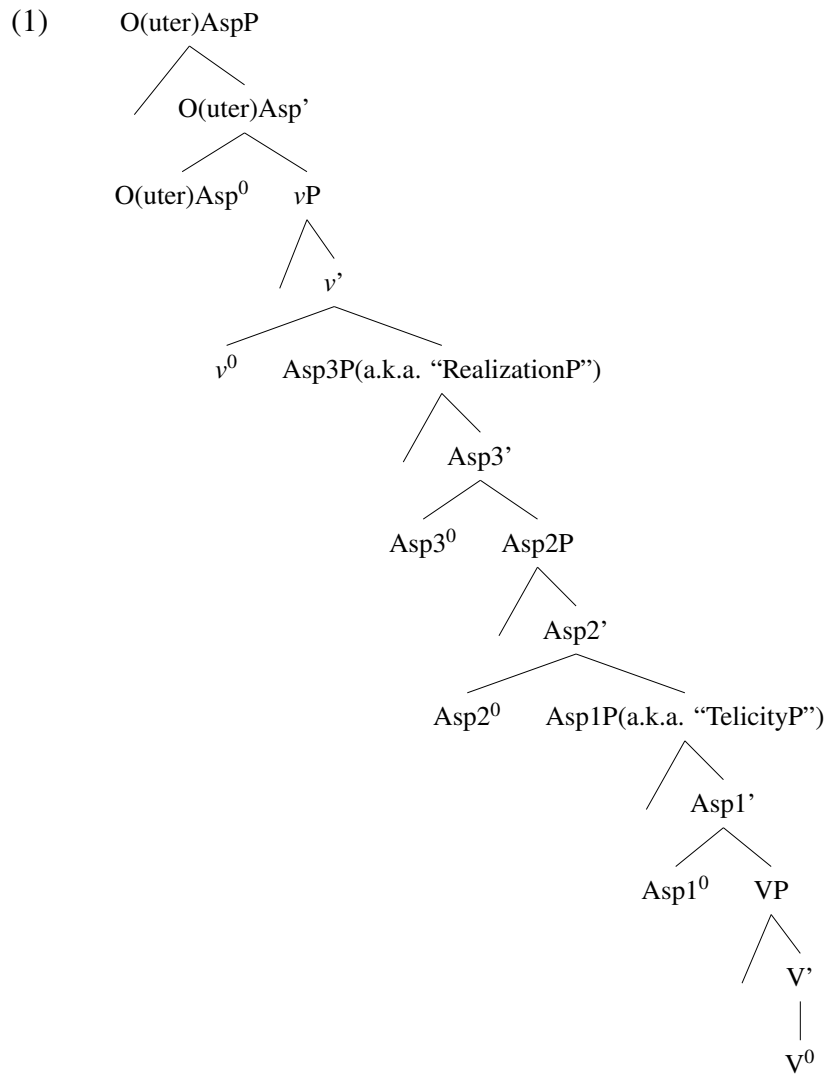
7.1 Inside or outside vP?

When introducing the characteristics of DE in section 3.1, we arrived at the preliminary conclusion that DE is not a suffix, but rather a relatively independent modal morpheme that behaves like a modal auxiliary. Nevertheless, its non-canonical postverbal position remains puzzling from a syntactic perspective, given that Mandarin main verbs are generally assumed to occupy a low position in the clause structure, specifically below the functional domain. Under this classical view, one would be forced to posit that DE occupies an even lower structural position. This section argues against such an analysis by presenting empirical evidence that DE does not function as a vP-internal element, but rather as a modal morpheme situated within the functional domain. Before turning to the relevant examples, it is helpful to briefly introduce Sybesma's (2017, 2021) idea of "inner aspect" in Mandarin Chinese.

7.1.1 Mandarin "inner aspect"

As briefly discussed in section 3.1, Sybesma (1997) argues that "Chinese has no inherently telic predicates because all accomplishments (and, arguably, achievements)

in Chinese are analysable as [activity-result compounds]” (Sybesma 1997:226; see also Tai&Chou (1975), Tai (1984), and Huang 2014). Building on Travis’s (2010) proposal of inner aspect domain, Sybesma (2017) further investigates the inner aspect structure of Mandarin Chinese and argues that the result-denoting elements occupy dedicated projections for encoding telicity within this domain. In particular, he proposes that Mandarin Chinese includes three distinct inner aspect projections (also based on Xuan 2008, 2011), as illustrated in (1).



(from Sybesma 2017:3, 2021:55)

Although only Asp1P is explicitly labeled as TelicityP in the structure above, Asp2P is also considered to contribute to telicity, with the key distinction lying in the types of telic predicates they host. Asp1P corresponds to what has traditionally been identified as “resultative complements”, which retain some lexical content and describe

the endpoint of an event, such as *qiong* ‘poor’ in *chi-qiong* ‘eat-poor’, meaning that the action of eating (e.g., spending money on food) results in someone becoming poor. In contrast, Asp2P hosts what are often referred to as “telic morphemes/elements” or “phase elements” (Chao 1968), which are understood as grammaticalized resultative complements (Xuan 2008, 2011). Examples include *wan* ‘finish’ in *yong-wan* ‘use-finish’, indicating the complete consummation of something, or *cheng* ‘achieve, become’ in *kan-cheng* ‘watch-achieve’, meaning that someone successfully manages to watch something (e.g., a film).

However, a verbal complex consisting of a bare verb and a telic element, either Asp1 or Asp2, still cannot denote the realization of an event on its own. To mark the actual realization of an event, the presence of Asp3P, also referred to as “RealizationP” (Sybesma 1999), is required. Examples (2) and (3) below illustrate this point. Example (2) includes the Asp1 element *qiong* ‘poor’, and (3) contains the Asp2 element *wan* ‘finish’.¹ In both cases, the realization marker *-le* is required to indicate that the event has been brought to completion.²

- (2) *Tamen chi-qiong-le Zhangsan.*
 3PL eat-poor-ASP3 3SG
 ‘They ate Zhangsan poor (i.e. they (e.g., a big group of his friends) ate so much that it resulted in Zhangsan becoming poor).’ (from Sybesma 2021:4)
- (3) *Wo zao-jiu ba-keting ca-wan-le.*
 1SG early-then BA-living.room wipe-finish-ASP3
 ‘I finished cleaning the living room a long time ago.’ (from Sybesma 2021:7)

Furthermore, based on Vendler’s (1957) classification of verb classes, Sybesma associates Asp1 with “accomplishment” predicates and Asp2 with “achievement” predicates. This distinction is supported by the observation that only predicates involving Asp1, but not Asp2, are compatible with the progressive marker (*zheng-*)*zai* ‘(just)-be.at’, which signals durativity. This contrast is illustrated in (4). Moreover, it again

¹ As Sybesma argues, the more lexical nature of Asp1 can be better illustrated by extracting the patient (or “affectee”) and the result-denoting element from both the Asp1 sentence (2) and the Asp2 sentence (3). From the Asp1 sentence (2), we derive *Zhangsan qiong* ‘Zhangsan poor’, which is semantically acceptable. In contrast, from the Asp2 sentence (3) we get *keting wan* ‘living.room finish’, which is not a semantically valid phrase.

² One may wonder why the generally recognized viewpoint aspect marker *-le* can appear in the inner aspect domain. As will be introduced below, Sybesma (2021) clarifies that “the perfective marker *-le* is not always based in the same position” (Sybesma 2021:70), suggesting that its syntactic position varies depending on the type of predicates with which it combines.

shows that Asp1 (in (4a)) encodes a greater degree of lexical content compared to Asp2 (in (4b)).

- (4) a. *Ta (zheng-)zai ca-gan boli.*
 3SG just-be.at wipe-dry glass
 ‘He is wiping the glass dry.’ (from Sybesma 2017:9)
- b. **Wo (zheng-)zai mai-dao mianbao.*
 1SG just-be.at buy-arrive bread
 (from Sybesma 2017:10)

Based on the proposed structure, Sybesma (2021) offers a plausible explanation for the different behaviors of bare verbs, as illustrated in (5), and verbal predicates containing result-denoting elements (including complex verbal compounds and BA-constructions), as shown in (6).

(5) Bare verbs

- a. *Zhangsan sha-le Lisi, keshi ta mei si.*
 3SC kill-PFV 3SG but 3SG not.have die
 ‘Zhangsan killed Lisi, but he (i.e. Lisi) did not die.’ (‘tried to kill’)
- b. *Wo xie-le yi-feng xin, keshi mei xie-wan.*
 1SG write-PFV one-CL letter but not.have write-finish(done)
 ‘I wrote a letter, but I did not finish it.’ (‘did some letter writing’)

(6) Complex verbal compounds (a) and BA-constructions (b)

- a. *Zhangsan sha-si-le Lisi, (*keshi ta mei si).*
 3SG kill-die-PFV 3SG but he not.have die
 Intended: ‘Zhangsan killed Lisi, but he (i.e. Lisi) did not die.’
- b. *Zhangsan ba Lisi sha-le, (*keshi ta mei si).*
 3SG BA 3SG kill-PFV but 3SG not.have die
 Intended: ‘Zhangsan killed Lisi, but he (i.e. Lisi) did not die.’
 (from Sybesma 2021:69)

The above examples demonstrate that only sentences containing a BARE verb can be followed by a denial sentence. In contrast, verbal predicates containing result-denoting elements can never be followed by such a denial sentence. Based on this contrast, Sybesma (2021:69) interprets a bare verb as lacking result-denoting inner aspect projections, whereas complex verbal compounds do project these projections.

Moreover, regarding the perfective marker *-le* appearing after a bare verb, as in (5), Sybesma (2021) argues that in such cases, the inner aspect domain is not activated, and consequently, *-le* stays in an outer aspect position, outside of vP. Under this assumption,

bare verbs move out of vP (or VoiceP) to combine with the aspect marker *-le*, whereas complex verbal compounds, which have the inner aspect domain activated, combine with *-le* within this domain.

In the next section, we will turn to Sichuanese DE and examine whether it resides within the inner aspect domain.

7.1.2 DE is outside vP

In this section, it will be demonstrated that Sichuanese postverbal modal DE does not reside within the inner aspect domain, but rather occupies a position outside vP, within the functional domain of the clause (Cinque 1999). The main accounts are based on the nature of the verbs DE combines with, as well as the syntactic behavior of DE, which parallels that of canonical modal auxiliaries.

The first piece of evidence comes from the type of verbs that DE selects. As introduced earlier in Section 3.1, DE only selects bare verbs, as illustrated in (7). Example (7a) shows the basic configuration of DE with a bare verb, whereas (7b) and (7c) contain result-denoting elements: an Asp1 element in (7b)) and an Asp2 element in (7c).

- (7) a. *ci2-de2*
eat-DE
- b. **ci2-qiong2 de2*
eat-poor DE
- c. **ci2-wan2 de2*
eat-finish DE

Following Sybesma's (2021) proposal regarding bare verbs, I take the incompatibility between DE and verbal compounds involving result-denoting elements as an indication that no inner aspect projections are activated in [V-DE]. The non-accessibility of inner aspect projections is further confirmed by the incompatibility between [V-DE] and the BA-construction, as illustrated in (8).

- (8) **Ngi3 ba3 pi2jiu3 ho1-wan2 de2.*
2SG BA beer drink-finish DE

According to Sybesma (2021:69), the presence of the dispositional marker BA signals the presence of inner aspect projections that express result. Therefore, we can conclude that in the underlying syntactic structure of [V-DE], no inner aspect projections between VP and vP are activated.

The second supporting argument comes from the interaction between DE and vP-level

manner adverbs. When discussing the similar [V-DE] construction in Standard Chinese (introduced in Section 4.1), Wang (2017) observes that manner adverbials (cf. Li&Thompson 1981: 322 – 323; Ernst 2014: 52) are barred from the potential DE construction (cf. T. Wu 2004), as illustrated in (9):

- (9) **Zhe-ben shu manmande kan-de/bude.*
 this-CLF book slowly read-DE/BUDE
 Intended meaning: ‘This book can/could not be read slowly.’

However, this is perfectly acceptable in the Sichuanese [V-DE] construction. See the examples in (10).

- (10) a. *Ze4-ben3 su1 man4man4 kan4-de.*
 this-CLF book slowly read-DE
 ‘This book can be read slowly/It is possible to read this book slowly.’
 b. *Ta1 man4-man4 zou3-de2.*
 3SG slowly walk-DE
 ‘He/She can walk slowly.’

Crucially, the interpretation of (10) indicates that DE takes scope over both the manner adverb and the verb, giving rise to the LF configuration DE > ‘slowly-read/walk’. This scopal behavior aligns precisely with that of canonical modal auxiliaries, as shown in (11).

- (11) a. *Ze4-ben3 su1 ko3yi3 man4man4 kan4.*
 this-CLF book can slowly read
 ‘This book can be read slowly/It is possible for this book to be read slowly.’
 b. *Ngo3 ko3yi3 man4-man4 zou3.*
 1SG can slowly walk
 ‘I can walk slowly.’

Therefore, it can be concluded that Sichuanese modal DE, like canonical modal auxiliaries, is base-generated within the functional domain of a clause, in a position at least higher than VoiceP/vP, which is typically assumed to host manner adverbs.

Additionally, similar postverbal modal morphemes in other Chinese varieties, such as DAK in Cantonese, have also been assumed to stay in the functional domain of a clause (Cheng&Sybesma 2004; Cheng&Sybesma 2003:19; see also Gong Cheng et al. 2015 for the Standard Chinese counterpart).

7.2 Sichuanese root modal hierarchy

Having established that DE resides within the functional domain of a clause, the next step is to determine the specific functional projection it occupies and its precise position within the clausal structure. This investigation will be grounded in the universal hierarchy of functional projections proposed by Cinque (1999), with the relevant modal projections extracted below in (12).

- (12) $\text{ModP}_{\text{Epistemic}} > \text{TP}(\text{Past}) > \text{TP}(\text{Future}) > \text{ModP}_{\text{Alethic necessity}} > \text{ModP}_{\text{Alethic possibility}}$
 $> \text{ModP}_{\text{Volitional}} > \text{TP}(\text{Anterior}) > \text{ModP}_{\text{Obligation}} > \text{ModP}_{\text{Permission/Ability}} > \text{VoiceP}$
 (Cinque 1999)

Based on the assumption established in Chapter 6, DE is identified as an alethic modal element conveying an objective possibility reading. However, as shown in the above hierarchy, there are already two functional projections associated with alethic modality in the hierarchy: one associated with alethic necessity and the other with alethic possibility. Drawing on the traditional idea of logicians, Cinque interprets $\text{ModP}_{\text{Alethic}}$ as expressing pure necessity and possibility in terms of logical truth. As Cinque (1999:78) demonstrates, both projections for alethic modality, $\text{ModP}_{\text{Necessity}}$ and $\text{ModP}_{\text{Possibility}}$, occur relatively high in the functional domain, above all root modal projections, and take scope over a proposition, typically rendered as “It is necessary that...” and “It is possible that...”.

On the other hand, Sichuanese DE, although encoding a similar type of alethic modality, appears to occupy a relatively low position in the structure. This is evidenced by its possible co-occurrence with an epistemic modal and a high alethic modal, as illustrated in example (13) from the fieldwork data. In the absence of an explicit disambiguating element, DE may be interpreted in any of the three possible readings.

- (13) *Xiang3 zu4 jiu3sen1yi4, pa4si4 yin1gai1 yao4 ho1-de2 jiu3*
 want do alcohol.business probably_[E] possibly_[A] need drink-DE alcohol
o.
 SFP
 a. ‘If you want to do alcohol business, it is probably possible that you need to have the objective possibility to drink alcohol.’
 b. ‘If you want to do alcohol business, it is probably possible that you need to have the deontic possibility to drink alcohol.’
 c. ‘If you want to do alcohol business, it is probably possible that you need to be quite able to drink alcohol.’

Following Cinque (1999) in positing multiple projections for similar semantic values (e.g., $\text{AspP}_{\text{Repetitive (I)}}$ and $\text{AspP}_{\text{Repetitive (II)}}$; $\text{AspP}_{\text{Frequentative (I)}}$ and $\text{AspP}_{\text{Frequentative (II)}}$), we label the projection associated with DE as $\text{ModP}_{\text{Alethic(II)}}$.

Having identified the precise functional projection that hosts DE, the next step is to determine its position within the root modal domain. Fieldwork data suggest that DE occupies a position lower than all root modal projections, as it consistently follows them. This is illustrated by examples (14) and (15) from the fieldwork.

- (14) *Ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
 this-CLF rice.cooker still be.allowed.to use-DE
 ‘This rice cooker can still be used.’
- (15) *Len3-qi3lai2 lao3, gai1 cuan1-de2 mao2yi1 lao3!*
 cold-become CRS should wear-DE sweater ATT
 ‘It’s getting cold now, you should/’d better wear the sweater now!’

As *gai* ‘should’ stays in $\text{ModP}_{\text{Obligation}}$ and *koyi* ‘be allowed to’ stays in $\text{ModP}_{\text{Permission}}$, the examples lead to the orders illustrated in (16):

- (16) a. $\text{ModP}_{\text{Obligation}} > \text{ModP}_{\text{Alethic(II)}}$
 b. $\text{ModP}_{\text{Permission}} > \text{ModP}_{\text{Alethic(II)}}$

Regarding the ‘ability’ reading, recall that we have hypothesized the presence of a covert ability modal in the [V-DE] construction. The covert $\text{Mod}_{\text{Ability}}$ can be modified by lexical degree adverbs in positive constructions, as in $\text{ADV}-(\text{Mod}_{\text{Ability}}-)\text{V-DE}$, and by the functional morpheme *tai* ‘very’ in negative constructions, as in $\text{V-bu-tai}-(\text{Mod}_{\text{Ability}}-)\text{DE}$. Based on this observation, we analyze the functional morpheme *tai* and the covert $\text{Mod}_{\text{Ability}}$ as staying in a spec-head configuration within the functional projection for ability modality in Cinque’s hierarchy. Consequently, DE is structurally lower than $\text{Mod}_{\text{Ability}}$ as well. This is illustrated in (17).

- (17) $\text{ModP}_{\text{Ability}} > \text{ModP}_{\text{Alethic(II)}}$

Regarding the ability and permission modal, since they both encode a root possibility reading and can never co-occur, we follow Cinque (1999) in placing them within the same modal projection, as illustrated in (18).

- (18) $\text{ModP}_{\text{Permission/Ability}} > \text{ModP}_{\text{Alethic(II)}}$

As the projection encoding root possibility encompasses both deontic and non-deontic

possibility, it is intuitive to expect that the projection for root necessity also encodes non-deontic necessity, in addition to deontic necessity (e.g., obligation).³ First, there is indeed a modal auxiliary *yao* that expresses a non-deontic, goal-oriented necessity reading. Second, *yao* precedes the permission modal *koyi*, leading to the relative ordering $\text{Mod}_{\text{Goal-oriented Nec(essity)}} > \text{Mod}_{\text{Permission}}$, which aligns with the sequence $\text{Mod}_{\text{Obligation}} > \text{Mod}_{\text{Permission}}$ as proposed by Cinque. This is shown in (19).

- (19) *Xiang3 zu4 jiu3sen1yi4, ngi3 yao4 ko3yi3 ho1-jiu3.*
 want.to do alcohol.business 2SG need be.allowed.to drink-alcohol
 ‘If you want to do alcohol business, you need to be allowed to drink alcohol.’

Thirdly, and most importantly, *yao* is incompatible with the other necessity modal *gai*, suggesting that they compete for the same modal projection and thus occur in complementary distribution. This incompatibility is illustrated in (20) and (21). Example (20) presents a typical construction for goal-oriented modality introduced by a conditional ‘if-clause’, while (21) demonstrates a typical weak obligation construction, marked by the sentence-final particle *lao*, which encodes the speaker’s attitude. In both cases, neither relative order of *yao* and *gai* is acceptable, indicating their absolute incompatibility.

- (20) a. **Xiang3 zang3 gao1, yao4 gai1 ho1-de2 niu2nai3.*
 want grow tall need should drink-DE milk
 b. **Xiang3 zang3 gao1, gai1 yao4 ho1-de2 niu2nai3.*
 want grow tall should need drink-DE milk
- (21) a. **Yao4 gai1 ho1-de2 niu2nai3 lao.*
 need should drink-DE milk ATT
 b. **Gai1 yao4 ho1-de2 niu2nai3 lao.*
 should need drink-DE milk ATT

Based on the above observations, it can be concluded that the functional projections associated with root possibility and root necessity can encode both deontic and non-deontic readings. This is illustrated in the hierarchy below.

- (22) $\text{ModP}_{\text{Obligation/Goal-oriented Nec}} > \text{ModP}_{\text{Permission/Ability}} > \text{ModP}_{\text{Alethic(II)}}$

Referring to different classifications of modality, the hierarchy can alternatively be represented as shown in (23).

³Cinque (1999; 2006) does not take into consideration the non-deontic necessity reading (e.g., goal-oriented).

- (23) a. $\text{ModP}_{\text{Deontic/Non-deontic Nec}} > \text{ModP}_{\text{Deontic/Non-deontic Poss}} > \text{ModP}_{\text{Alethic(II)}}$
 b. $\text{ModP}_{\text{Participant-external/internal Nec}} > \text{ModP}_{\text{Participant-external/internal Poss}} > \text{ModP}_{\text{Alethic(II)}}$

Still, to present the hierarchy in more general terms, the one in (24) aligns with the widely held view that, necessity modals universally precede possibility modals across both epistemic and root modal domains (Cormack&Smith 2002, Butler 2003).

- (24) $\text{ModP}_{\text{Necessity}} > \text{ModP}_{\text{Possibility}} > \text{ModP}_{\text{Alethic(II)}}$

Inserting all the crucial modal elements, I propose the following hierarchy for the root modal domain in Sichuanese, as illustrated in (25).

- (25) $[\text{ModP}_{\text{Obligation/Goal-oriented Nec}} \text{gai 'should'}/\text{yao 'need'} [\text{ModP}_{\text{Permission/Ability}} \text{koyi 'be allowed to'}/\text{tai 'very'} [\text{ModP}_{\text{Alethic(II)}} \text{DE}]]]$

7.3 Derivation of [V-DE]

To investigate the derivation of the [V-DE] construction, this section will focus on the modal interpretations most directly associated with it. Thus, the discussion will be based on the root modal hierarchy outlined below.

- (26) $[\text{ModP}_{\text{Obligation}} [\text{ModP}_{\text{Permission/Ability}} [\text{ModP}_{\text{Alethic(II)}} \text{DE}]]]$

Given that DE functions as a relatively independent modal auxiliary and remains productive in Sichuanese, it is reasonable to assume that it functions as the head of $\text{ModP}_{\text{Alethic(II)}}$.

7.3.1 Head movement vs. Phrasal movement

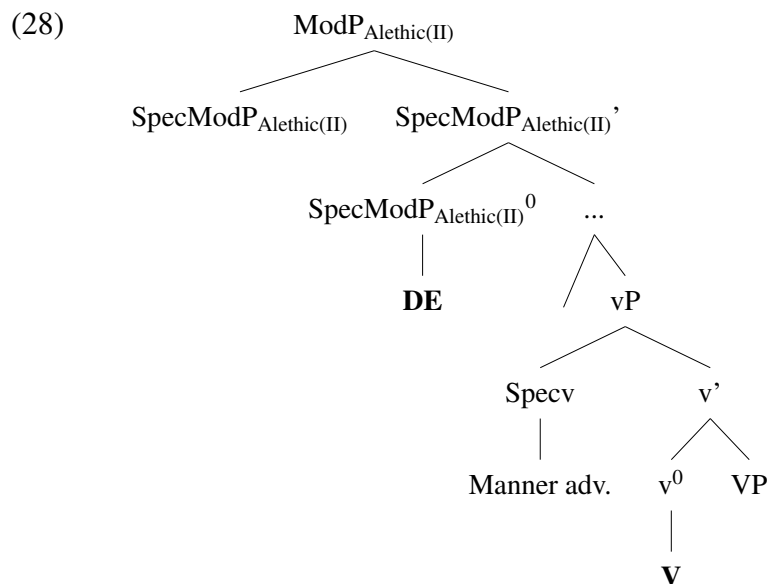
The primary empirical issue to be addressed in the derivation of [V-DE] concerns its linear word order, particularly the non-canonical placement of the verb preceding the modal morpheme. Given the similarity between [V-DE] and serial verb constructions in Mandarin, one may wonder whether a similar strategy is employed in the [V-DE] construction, namely, the verb undergoes head movement to the head position of $\text{ModP}_{\text{Alethic(II)}}$ and forms a compound with DE, much like how a verb combines with an aspectual suffix in Mandarin. While this assumption successfully accounts for both the surface word order and the inseparability of the verb and DE in the positive [V-DE] construction, it fails to capture several empirical facts.

The first empirical challenge to the head movement hypothesis concerns the placement

of the manner adverbs. As discussed in Section 7.1.2, when a manner adverb appears in a [V-DE] construction, both the adverb and the verb precede DE at surface structure. However, at Logical Form (LF), DE consistently takes scope over the entire [Adv-V] sequence. This is illustrated in (27), repeated from (10), where the LF configuration can be represented as $DE > \text{'slowly-walk'}$.

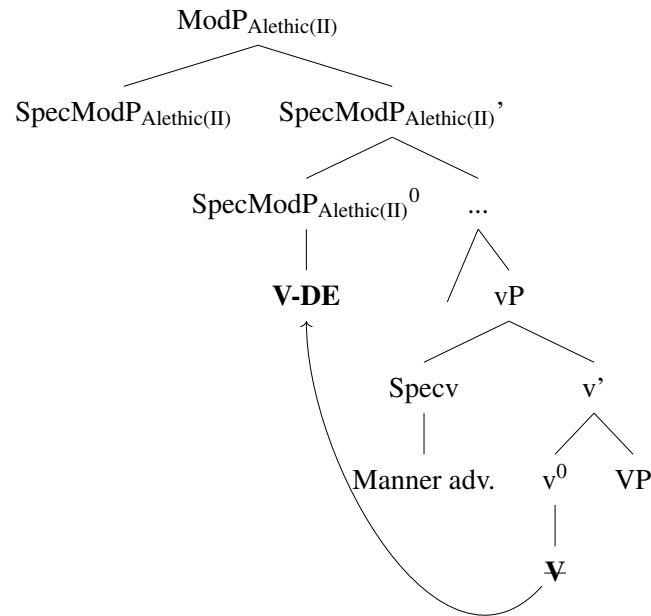
- (27) *Ta1 man4-man4 zou3-de2.*
 3SG slowly walk-DE
 'He/She can walk slowly.'

The LF configuration indicates that the manner adverb merges below DE, presumably in the specifier position of vP, as shown in (28).

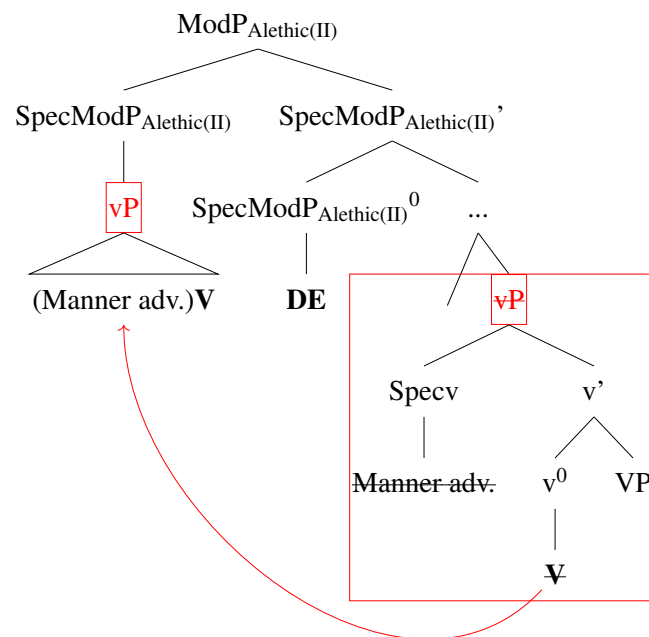


However, the surface word order suggests that the verb cannot undergo head movement alone, otherwise it will end up with the wrong surface order $V\text{-}DE > \text{Adv}$, as illustrated in (29a). Instead, the verb must move together with the adverb to the specifier position of $\text{ModP}_{\text{Alethic(II)}}$, as illustrated in (29b).

(29) a. Wrong order



b. Correct order (to be revised)



Under the movement operation illustrated in (29b), the verb, which resides within the remnant vP, ends up in a spec-head relation with DE, thereby enabling agreement between the two elements.⁴

⁴As evidenced by the aspectual constraints that DE imposes on the preceding verb, the two elements

One challenge that arises with this vP movement analysis concerns the treatment of the VP. Specifically, should the VP be carried along with the vP as a whole? Empirical evidence suggests that this cannot be the case, as we consistently observe both direct and indirect objects remaining in situ, as illustrated in (30).

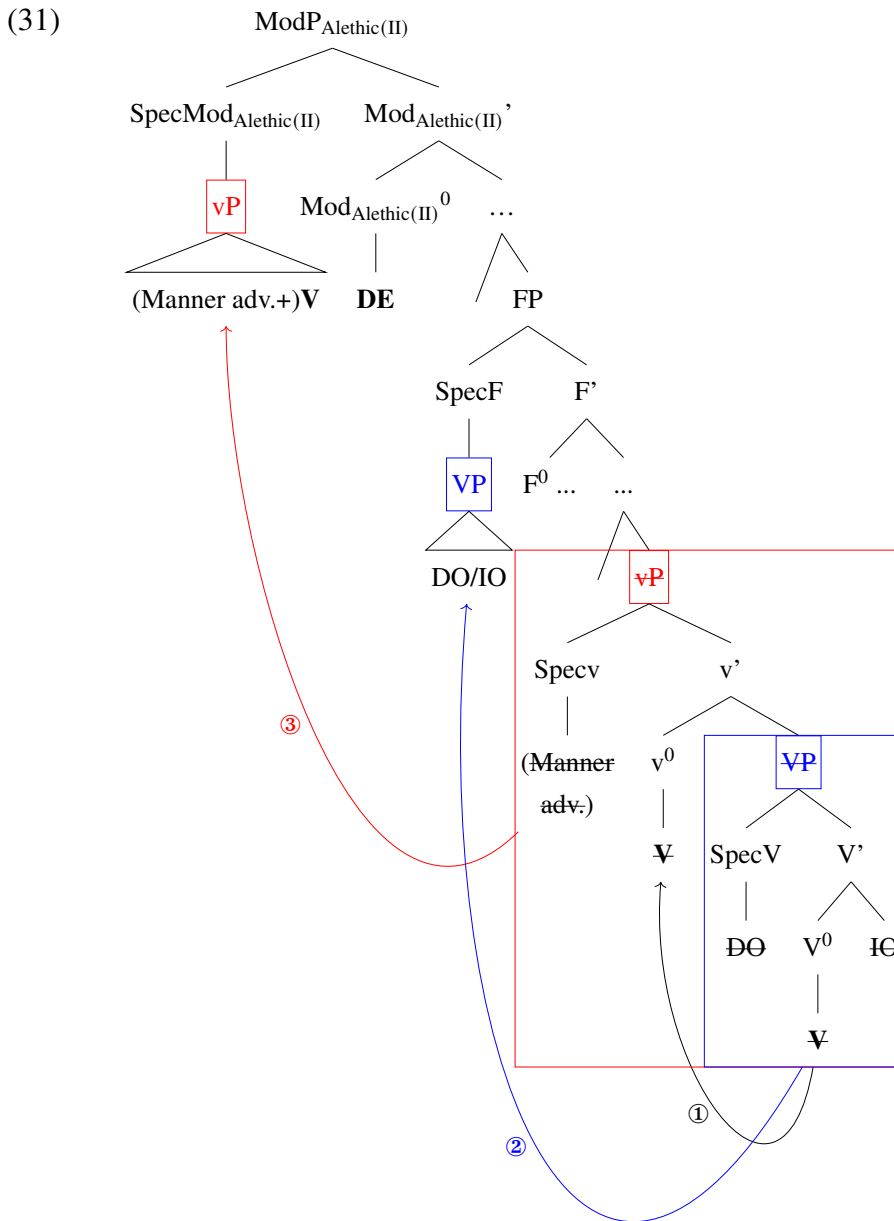
- (30) a. *Zang1san1 da3 de2 lan2qiu2.*
 3SG play DE basketball
 ‘Zhangsan can play basketball.’
- b. *Zang1san1 jiao1 de2 gaol2zong1sen1 yin1yu3.*
 3SG teach DE high.school.student English
 ‘Zhangsan can teach high school students English.’

It appears that the entire VP remains in situ. At this point, the solution can be relatively intuitive:

- (1) First, the verb moves from V^0 to v^0 ;
- (2) Second, the VP moves out of vP to an intermediate position between $\text{ModP}_{\text{Alethic(II)}}$ and vP (let’s call this position FP, standing for Functional Phrase);
- (3) Third, the remnant vP moves to $\text{SpecMod}_{\text{Alethic(II)}}$.

This derivational process is illustrated in (31).

must agree with respect to the form of the verb, in particular the aspectual information it may carry. A detail discussion regarding the aspectual constraints will be presented in Section 7.5.



The spec-head relation between the remnant vP and DE also successfully blocks any intervening elements between the verb and DE, thereby accounting for the inseparability of the two elements in the positive [V-DE] construction.

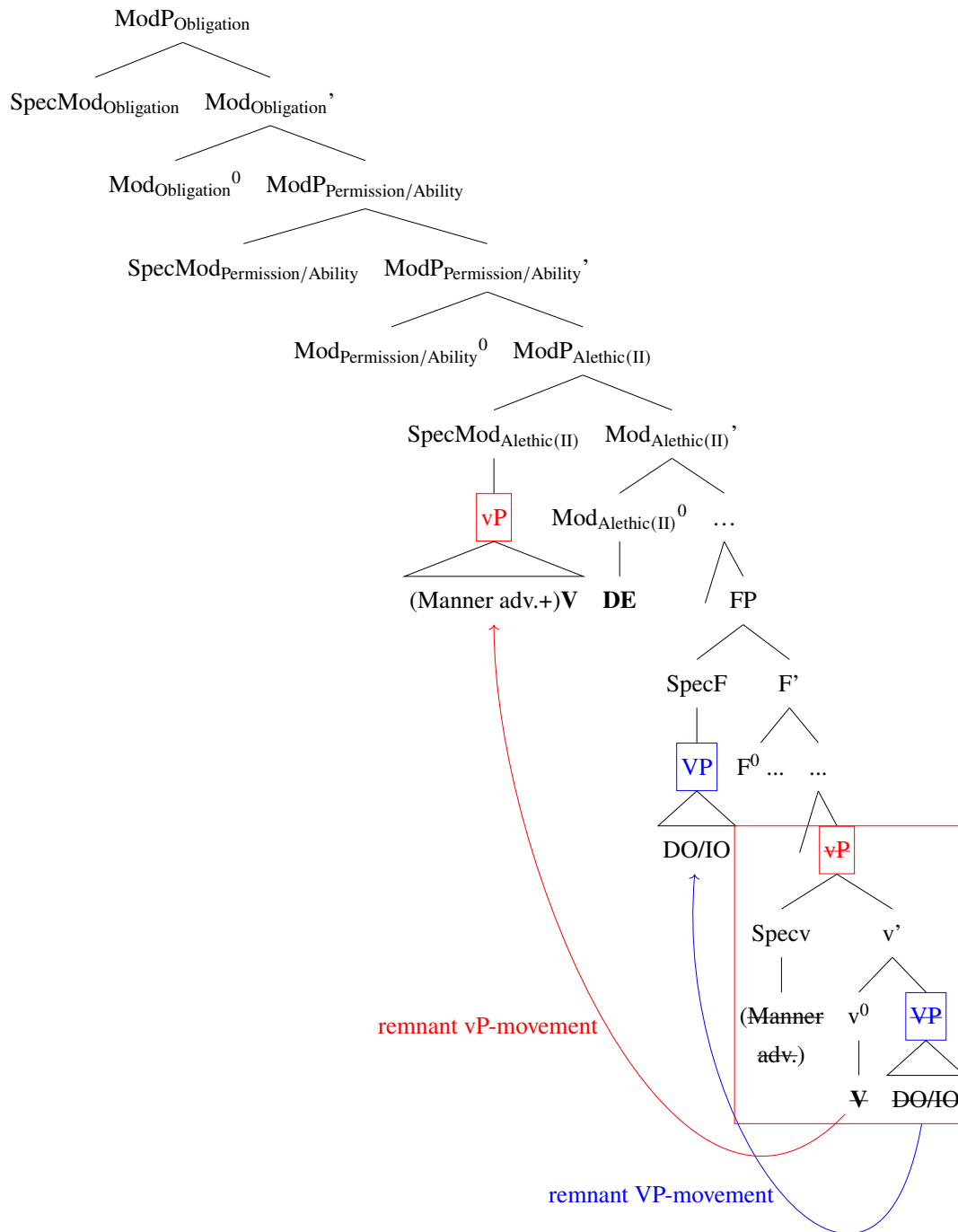
Based on the above discussion, we adopt the vP remnant movement, rather than head movement of the verb, as the fundamental mechanism for deriving the [V-DE] construction. As will be further elaborated in the next section concerning the derivation of

its negative counterpart [V-BU-DE], the vP remnant movement analysis not only provides the most satisfactory account but also appears to be the only approach capable of capturing all the empirical facts exhibited by both [V-DE] and [V-BU-DE] constructions.

Having established the basic mechanism for deriving [V-DE], we now turn to its interpretative “ambiguity”. As extensively discussed in Chapter 6, DE is just an alethic modal morpheme that expresses a simple root possibility reading contingent upon objective facts in the world of evaluation. This is comparable to the circumstantial modal base proposed by Kratzer (1981, 2012) for root modals, which targets facts pertaining to inherent properties or circumstances of individuals or spatio-temporal locations (Kratzer 2012:33). Following Kratzer, I propose that the bare [V-DE] construction lexically encodes only the ‘objective possibility’ reading, which remains underspecified in the absence of specific contexts. Other possible modal readings, including deontic and dynamic interpretations, arise depending on specific contextual factors.

The syntactic structure of the bare [V-DE] construction is illustrated in (32). For convenience, the internal structure of the VP will be ignored hereafter.

(32) Bare [V-DE]



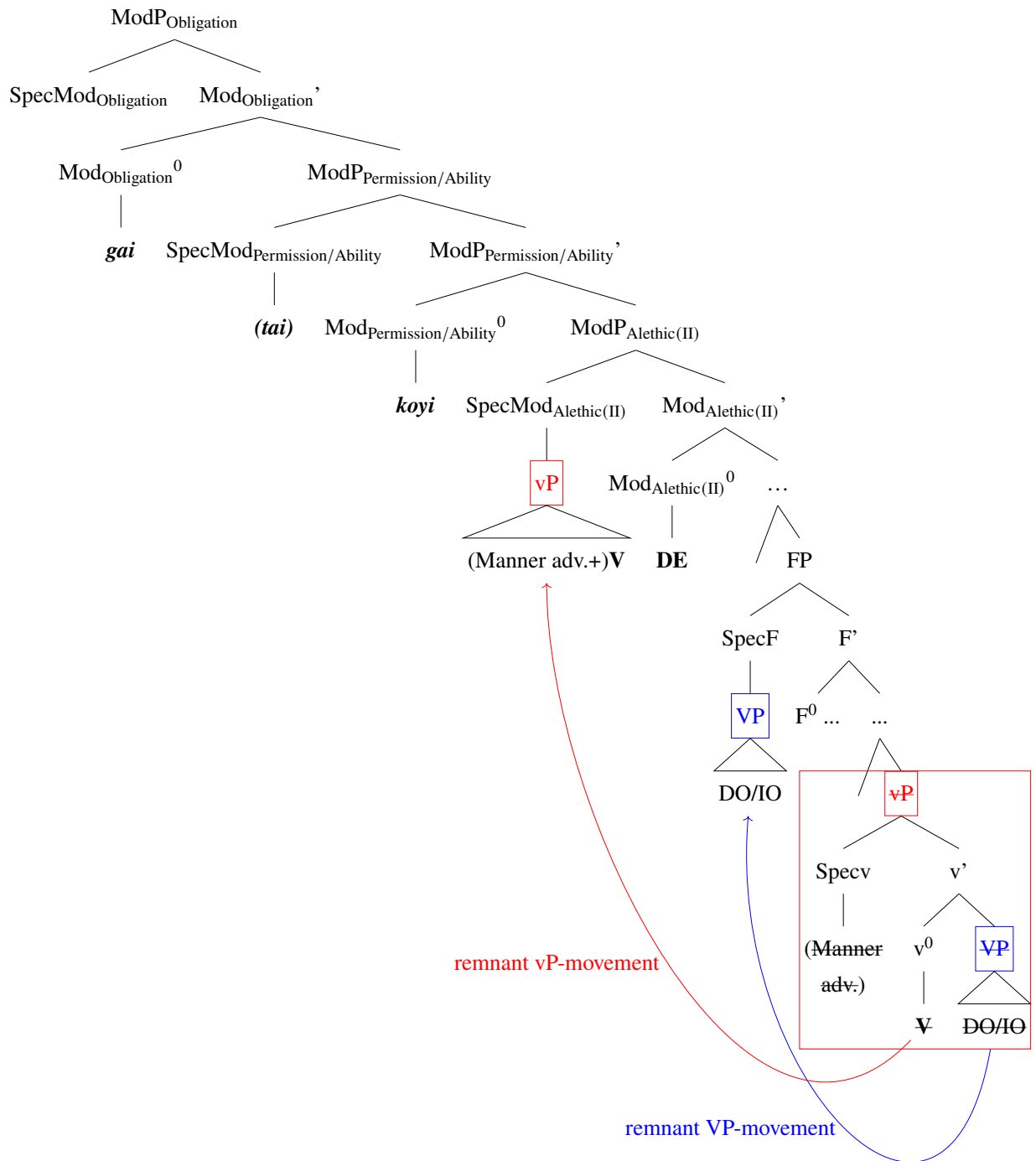
The reason why $\text{ModP}_{\text{Alethic(II)}}$ is placed adjacent to $\text{ModP}_{\text{Permission/Ability}}$ is that the modal auxiliary *koyi* ‘be allowed to’, which occupies the head position of $\text{ModP}_{\text{Permission}}$, and DE can be separated only by the bare verb, as in the form [*koyi*-V-DE], or at most by

a manner adverb and the bare verb, as in [*koyi*-Adv.-V-DE], as shown in (33). This indicates that the two modal projections must be adjacent, and the only elements that can intervene between the two head positions are those that can occur in $\text{SpecMod}_{\text{Alethic(II)}}$.

- (33) *Po2po ko3yi3 man4man zou3-de2 lao3.*
 grandma be.allowed.to slowly walk-DE CRS
 ‘(The doctor says:) (Your) grandma can slowly walk now.’

Furthermore, the [V-DE] construction differs from other root modal constructions in that the various modal readings can also be disambiguated at the structural level — through co-occurrence with specific modal elements that serve as indicators of particular modal interpretations, in the form of [Mod-V-DE]. Naturally, the various modal indicators are mutually exclusive. In particular, the projection $\text{ModP}_{\text{Permission/Ability}}$ can be assigned different semantic values depending on the indicator that is present: when *tai* ‘very’ appears, the projection is interpreted as $\text{ModP}_{\text{Ability}}$; whereas when *koyi* ‘be allowed to’ appears, the projection functions exclusively as $\text{ModP}_{\text{Permission}}$. This is illustrated in (34).

(34) [Mod-V-DE]



7.3.2 Concord analysis

At the end of Chapter 6 we arrived at the conclusion that the stacked modal construction [Mod-V-DE] is best analyzed as a case of modal concord. More specifically, the unified modal reading conveyed by the two distinct modal elements is explained by assuming that they concord in quantificational force, while the construction as a whole inherits the modal flavor of the higher, semantically more specific modal element. Within the traditional kratzerian framework, DE can be understood as a basic alethic modal morpheme that provides only a modal base. In contrast, the various disambiguators, represented by Mod in [Mod-V-DE], appear to function as physical ordering sources that restrict the modal base introduced by DE. This analysis diverges from the classical view, in which ordering sources are typically derived from conversational backgrounds, as originally proposed by Kratzer. In this section, we review classical analyses of modal concord in the literature and argue that [Mod-V-DE] is most adequately captured through a syntactic approach.

Three analyses of modal concord proposed in the literature are discussed below. Guerts & Huitink (2006) analyze modal concord between modal adverbs and auxiliaries as the result of an identity-checking operation, whereby the adverb checks whether the modal auxiliary is identical to it in two respects: modal type (e.g., epistemic, deontic) and quantificational force. If they are identical, the meaning of the adverb is returned as the output. Anand & Brasoveanu (2010:20) review this analysis and refer to the operation as semantic absorption, schematizing it in a more straightforward way, as shown in (35).

$$(35) \quad [[\text{adv modal}]] = [\text{adv}] \text{ iff } [\text{adv}] = [\text{modal}]$$

Instead of a semantic analysis, Zeijlstra (2007) argues for a syntactic agreement approach to modal concord. By analogy with negative concord, he argues that modal adverbs carry interpretable modal feature ([iMOD]), whereas modal auxiliaries are semantically vacuous and carry uninterpretable modal feature ([uMOD]) (P. 325). These uninterpretable features must be checked by operators carrying suitable interpretable features (Zeijlstra 2007:325-327). Since quantificational force is generally assumed to be lexically encoded, the interpretable features are considered “suitable” only if they carry the same quantificational force as the uninterpretable features. This requirement predicts the absence of a concord reading in (36), where the uninterpretable feature with existential force cannot be checked by an interpretable one with universal force.

$$(36) \quad * \text{It may}_{[\text{u}\exists\text{-MOD}]} \text{ necessarily}_{[\text{i}\forall\text{-MOD}]} \text{ be the case.} \quad (\text{Zeijlstra 2007:328})$$

In contrast, (37a) exemplifies modal concord and is expected to have the LF configuration shown in (37b), where *obligatorily* raises to a position dominating *must* to enable the feature-checking process.

- (37) a. The students must obligatorily register themselves.
 b. [_{CP} The students obligatorily_[iV-MOD]_i must_[uV-MOD] [_{ti} register themselves]]
 (Zeijlstra 2007: 328)

In cases where only a single modal auxiliary appears in the sentence, Zeijlstra proposes the presence of a covert modal element carrying interpretable modal features, as shown in (38).

- (38) a. John must go home.
 b. [John OP_[V-MOD]_[iV-MOD] must_[uV-MOD] [_{VP} go home]]
 (Zeijlstra 2007:329)

Zeijlstra's analysis has been argued to be problematic by Huitink (2008[draft version]:14, 2012), who points out that modal auxiliaries often are interpreted and therefore should not always be considered semantically empty. Furthermore, Anand&Brasoveanu (2010) challenge the assumption that modal adverbs always carry interpretable features, showing that deontic adverbs, unlike epistemic ones, "cannot on their own induce modal displacement of their complement and are hence not modal operators by themselves".⁵ See their example in (39).

- (39) *John obligatorily is home. (Anand&Brasoveanu 2010 (abstract))

Alternatively, Huitink (2008[draft version], 2012) proposes a mixed analysis, which follows Zeijlstra (2007) in assuming syntactic agreement for modal force, while maintaining the restriction on modal flavor by treating the concord adverb as a domain restrictor for the modal base. Following standard semantics in treating the modal base and the ordering source as the first and second argument of modals (Kratzer 1981, 1991), Huitink (2008[draft version]:18, 2012) proposes that, in a concord construction, modal adverbs may be used to fill the ordering source argument slot of modal aux-

⁵ Anand&Brasoveanu (2010) argue that modal concord is best understood as modal modification (e.g., reinforcement) by the concord adverb, based on the observation that certain modal adverbs can strengthen the force of the modal auxiliary, as in the sentence *There is no choice, he absolutely must stay in the lineup*. Since such strengthening or weakening effects are not observed in Sichuanese [Mod-V-DE], this analysis will not be discussed in detail here.

iliaries. Take the sentence in (40) as an example: the modal auxiliary *moeten* ‘must’ provides the modal base, and instead of a traditional ordering source, which is typically derived from the conversational background, the modal adverb *verplicht* functions as the ordering source. Of course, they agree in terms of modal force.

- (40) *Iedereen in Nederland moet verplicht Nederlands leren.*
 everyone in Netherlands must obligatorily Dutch learn
 ‘Everyone in the Netherlands has to learn Dutch.’

(Huitink 2008[draft version]:4, 2012)

The proposals reviewed above can be summarized as follows:

- a. Guerts&Huitink (2006): an identity function applied to the concord element.
- b. Zeijlstra (2007): syntactic agreement between the concord elements in terms of modal force.
- c. Huitink (2008[draft version], 2012): syntactic agreement between the concord elements in terms of modal force + specification of modal flavor by the modal adverb.

Given the properties of Sichuanese [Mod-V-DE], the first two proposals can be set aside at the outset. First, Mod and DE are not fully identical: DE expresses a basic modal reading, whereas the modal elements that concord with it vary in type and carry a more specific modal flavor. Second, DE consistently functions as an independent modal morpheme, and the higher modal elements are never necessary for DE to be interpreted. Therefore, DE cannot be regarded as semantically empty. The third, mixed proposal appears to align more closely with the current analysis, as it captures the concord reading of [Mod-V-DE] while also justifying the disambiguating function of Mod in specifying the modal flavor of the construction. Moreover, although not explicitly discussed by the author, the observation that an overtly present element can serve as ordering source provides support to the idea that the disambiguation of a modal base may occur at the syntactic level, and not exclusively at the semantic level, as traditionally assumed.

Based on the above discussion, I propose the following analysis for Sichuanese [Mod-V-DE]:

- i) Both Mod and DE are NOT semantically empty;
- ii) With respect to modal force, Mod syntactically agrees with DE, in a way similar to other instances of syntactic doubling;

- iii) Regarding modal flavor, DE remains underspecified and functions merely as a bare modal base; the specific modal flavor of the whole construction is contributed by the syntactically higher concord element Mod.

What ultimately sets Sichuanese [Mod-V-DE] apart from typical cases of modal concord is that the disambiguating elements are not limited to modal adverbs but may include a range of functional categories. Crucially, despite their semantic differences, these disambiguators are also structurally distinct: each occupies a dedicated syntactic projection associated with a particular modal feature, and these projections are hierarchically ordered in a fixed way. This is in line with the root modal hierarchy proposed by Cinque (1999).

As already mentioned in the previous chapter, one remaining technical issue to be addressed in order to complete this proposal concerns how to account for the concord in quantificational force between the two modal elements in the construction [(*gai*-)V-DE-*lao*], a typical imperative structure used to express kind solicitation or invitation. An example is repeated in (41).

- (41) *Wa2er2-l, gai1 xi3 -de2 yi1fu2 lao3!*
 child[voc] should wash -DE clothes ATT
 ‘Child, you should/’d better wash the clothes now!’

At first glance, this construction appears problematic, as the two modal elements do not seem to encode the same type of quantificational force: the first modal element *gai* ‘should’ typically expresses universal force, whereas DE can only encode existential force. To determine whether this construction is a real case of force mismatch, we must first identify the type of modal force carried by the basic construction of this imperative sentence type. Assuming the core construction to be [V-DE-*lao*], which is presumed to inherit the existential force of DE, a concord analysis would naturally predict that it should also be able to concord with a modal morpheme with existential force, e.g., *koyi* ‘can;be allowed to’. This prediction is indeed borne out, as illustrated in (42).

- (42) *Ko3yi3 xi3 -de2 yi1fu2 lao3!*
 be.allowed.to wash -DE clothes ATT
 ‘You can/may wash your clothes (now)!’

Since both *gai* ‘should’ and *koyi* ‘be allowed to’ can concord with DE in the imperative [V-DE-*lao*] construction, it can be concluded that the two modal auxiliaries encode the same type of quantificational force within this specific construction.

Conversely, in declarative sentences, although generally incompatible with the basic

modal DE, the deontic modal *gai* ‘should’ can occur in the basic [V-DE] construction in certain contexts, particularly when accompanied by the emphatic particle *jiu*. In such cases, only a stacked modal reading is possible, indicating that the two modal elements in this construction cannot enter into a concord relationship. This is shown in (43).

- (43) *Zang1san1 si4 lan2qiu2dui4zang3, jiu4 gai1 da3-de2 lan2qiu2.*
 3SG COP basketball.captain EMPH should play-DE basketball
 ‘Zhangsan is the captain of the basketball team, (so) he should (naturally) have
 the possibility to play basketball.’

Therefore, based on the contrast between *gai* ‘should’ in the declarative [V-DE] and *gai* in the imperative [V-DE-*lao*], specifically:

- i) in the former, it cannot concord with DE, while in the latter, concord is the only choice;
- ii) in the former, *gai* conveys a clear deontic reading, while in the latter, it expresses a much weaker, suggestion-like reading.

The only plausible hypothesis at this stage is that *gai* in the imperative [V-DE-*lao*] construction carries existential force, which enables it to concord with DE in this context. How such a shift in modal force is possible will be addressed in the next chapter, where we examine case studies within a modal approach to imperatives, alongside a detailed discussion of the imperative [V-DE-*lao*] construction.

In the following section, we turn to explore an even more particular disambiguating mechanism found in the negative construction [V-BU-DE].

7.4 Derivation of [V-BU-DE]

The representative example of [V-BU-DE] is repeated in (44). Before exploring its derivational process, the first issue to be addressed is the syntactic placement of the negative morpheme BU within the proposed root modal hierarchy, repeated in (45).

- (44) *Zang1san1 ho1 bu de2 pi2jiu3.*
 3SG drink NEG DE beer
 a. ‘It is not objectively possible for Z. to drink beer.’ *objective impossibility*
 b. ‘Z. is not permitted (e.g. by the doctor) to drink beer.’ *permission denial*
 c. ‘Z. is not quite able to drink beer.’ *ability*
 d. ‘Z. must not drink beer (e.g. he is a minor).’ *prohibition*

- (45) [ModP_{Obligation} [ModP_{Permission/Ability} [ModP_{Alethic(II)} **DE**]]]

Understanding the position of the negative morpheme is of crucial importance to the present study, as it surfaces in a non-canonical postverbal position, whereas its canonical position is pre-modal and preverbal, as illustrated in (46).

- (46) *Ta1 bu2 ko3yi3 jin4lai2.*
 3SG NEG be.allowed.to enter
 ‘He is not allowed to enter.’

Comparing the surface form [V-NEG-DE] with the canonical form [NEG-AUX-V], it appears that the verb raises not only above the modal auxiliary, as in the positive [V-DE] construction, but even higher than the negative morpheme BU in the negative construction. In order to determine the precise position of BU within the root modal hierarchy, we need to examine cases in which BU co-occurs with other functional elements that are also part of this hierarchy.

As discussed in previous chapters, the only functional disambiguating element that can co-occur with [V-BU-DE] is the degree adverb *tai* ‘very’, as illustrated in (47).

- (47) *Zang1san1 ho1 bu (tai4) de2 pi2jiu3.*
 3SG drink NEG very DE beer
 ‘Zhangsan is not quite able to drink beer.’

As established in the previous section, *tai* ‘very’, when functioning as the indicator of the ‘ability’ reading, is located in the specifier position of ModP_{Permission/Ability}, thereby marking the projection as encoding ‘ability’. This suggests that the negative morpheme BU must occupy a position at least higher than ModP_{Permission/Ability}. Additional support for this claim comes from the fact that [V-BU-DE] cannot be preceded by the modal auxiliary *koyi* ‘be allowed to’, which is assumed to occupy Mod_{Permission/Ability}⁰, as shown in (48). This ungrammaticality follows if BU is indeed positioned higher than *koyi* in the root modal hierarchy.

- (48) **Zang1san1 ko3yi3 ho1 bu de2 pi2jiu3.*
 3SG be.allowed.to drink NEG DE beer

Given the hierarchy in (45), the next step is to determine the relative position of ModP_{Obligation} with respect to BU. In the absence of other co-occurring functional elements, we resort to the interpretation of [V-BU-DE] as our primary diagnostic.

An important observation to be made at this point is that the [V-NEG-DE] construction, as illustrated in (44), has only the ‘not possible’ and ‘necessary not’ readings, never the

‘possible not’ and ‘not necessary’ readings. This suggests that the scope of the negative morpheme in [V-NEG-DE] is rigid, and that the only possible underlying sequence is as follows:⁶

- (49) Necessity > NEG > Possibility
(cf. Cormack&Smith 2002, Butler 2003, Iatridou&Zeijlstra 2009, Meisterernst 2018)

Given that $\text{ModP}_{\text{Obligation}}$ is assumed to be the projection encoding necessity within the root modal hierarchy, the sequence in (49) can be naturally mapped onto the following hierarchy:

- (50) [$\text{ModP}_{\text{Obligation}}$ [**BU** [$\text{ModP}_{\text{Permission/Ability}}$ [$\text{ModP}_{\text{Alethic(II)}}$ **DE**]]]]]

Traditionally, the canonical preverbal or pre-auxiliary BU has been analyzed either as a bound morpheme that cliticizes onto the following V^0 element (Huang 1988), or as a proclitic adverb that appears in the specifier position of both the verb phrase and the auxiliary phrase (Ernst 1995). Nevertheless, in [V-BU-DE], BU can be separated from DE by the functional adverb *tai* ‘very’ (see (47)), making it less plausible to treat BU in this context as either a bound morpheme or a proclitic located in the specifier position of an auxiliary phrase. Instead, BU will be analyzed as a head element projecting its own Negation Phrase (NegP) within the syntactic structure of [V-BU-DE] (Lin 2003), in line with the Pol[NEG] projection proposed by Cormack&Smith (2002).⁷ Accordingly, the root modal hierarchy of a negative [V-BU-DE] construction is illustrated in (51).

- (51) [$\text{ModP}_{\text{Obligation}}$ [**NegP BU** [$\text{ModP}_{\text{Permission/Ability}}$ [$\text{ModP}_{\text{Alethic(II)}}$ **DE** [**vP V**]]]]]]]

Parallel to the analysis proposed for the positive construction [V-DE], a similar vP-remnant movement account will be adopted for the negative counterpart. From a purely structural standpoint, this account is supported by the following empirical observations. First, assuming head movement for the verb leads to the wrong surface order [V-DE-

⁶Here I assume that the ‘prohibition’ reading (i.e., ‘necessary not’) is derived through negation placement (Sparvoli 2015), namely by having a covert necessity modal operator scoping over the negative morpheme, rather than a simple logical equivalence of negated ‘permissison’ (i.e., $\neg\Diamond P \equiv \Box\neg P$).

⁷Inspired by Cormack&Smith (2002), Meisterernst (2020) examines the interaction between negation and modal auxiliaries in Late Archaic Chinese and Early Medieval Chinese. In a similar vein, she proposes the existence of a Polarity Phrase (PolP) within the root modal domain, which divides the modal auxiliaries in deontic necessity modals and circumstantial possibility modals.

BU], since BU would be the final element incorporated by the verb, contrary to the attested order. Second, when a vP-level manner adverb is present, it consistently appears in the preverbal position, as in [Adv-V-BU-DE], suggesting that it undergoes movement together with the verb to SpecNeg. See the example in (52).

- (52) *Ze4-go4 wa2'er hao3sen1 ci2 bu de2 fan4.*
 this-CL child well eat NEG DE meal
 'This child cannot eat in a good manner.'

Similarly to the positive construction, the negative [V-BU-DE] construction also requires the presence of a functional phrase (FP) to host the moved VP, since both in-situ direct and indirect objects are attested in this configuration as well, as shown in (53).

- (53) a. *Zang1san1 da3 bu de2 lan2qiu2.*
 3SG play NEG DE basketball
 'Zhangsan cannot play basketball.'
 b. *Zang1san1 jiao1 bu de2 gao1zong1sen1 yin1yu3.*
 3SG teach NEG DE high.school.student English
 'Zhangsan cannot teach high school students English.'

Having established the underlying syntactic configuration and the basic derivational mechanism, we now turn to the derivation of the interpretative ambiguity associated with [V-BU-DE]. Specifically, I will demonstrate that remnant vP movement is not just syntactically driven, but also semantically required as a last resort to activate specific modal projections.

As shown earlier in (44), beyond the basic 'objective possibility' reading associated with DE, [V-BU-DE] can also give rise to three additional interpretations: 'permission denial', 'ability', and 'prohibition'. These can be divided into a non-deontic group ('ability') and a deontic one ('permission denial' and 'prohibition'). In what follows, I argue that the interpretative distinction between these two groups arises from syntactic differences — specifically, from the distinct modal projections that are activated either through the insertion of a functional indicator, or through the movement of a remnant vP into the relevant modal projections. We begin by examining the construction with the non-deontic interpretation of 'ability'.

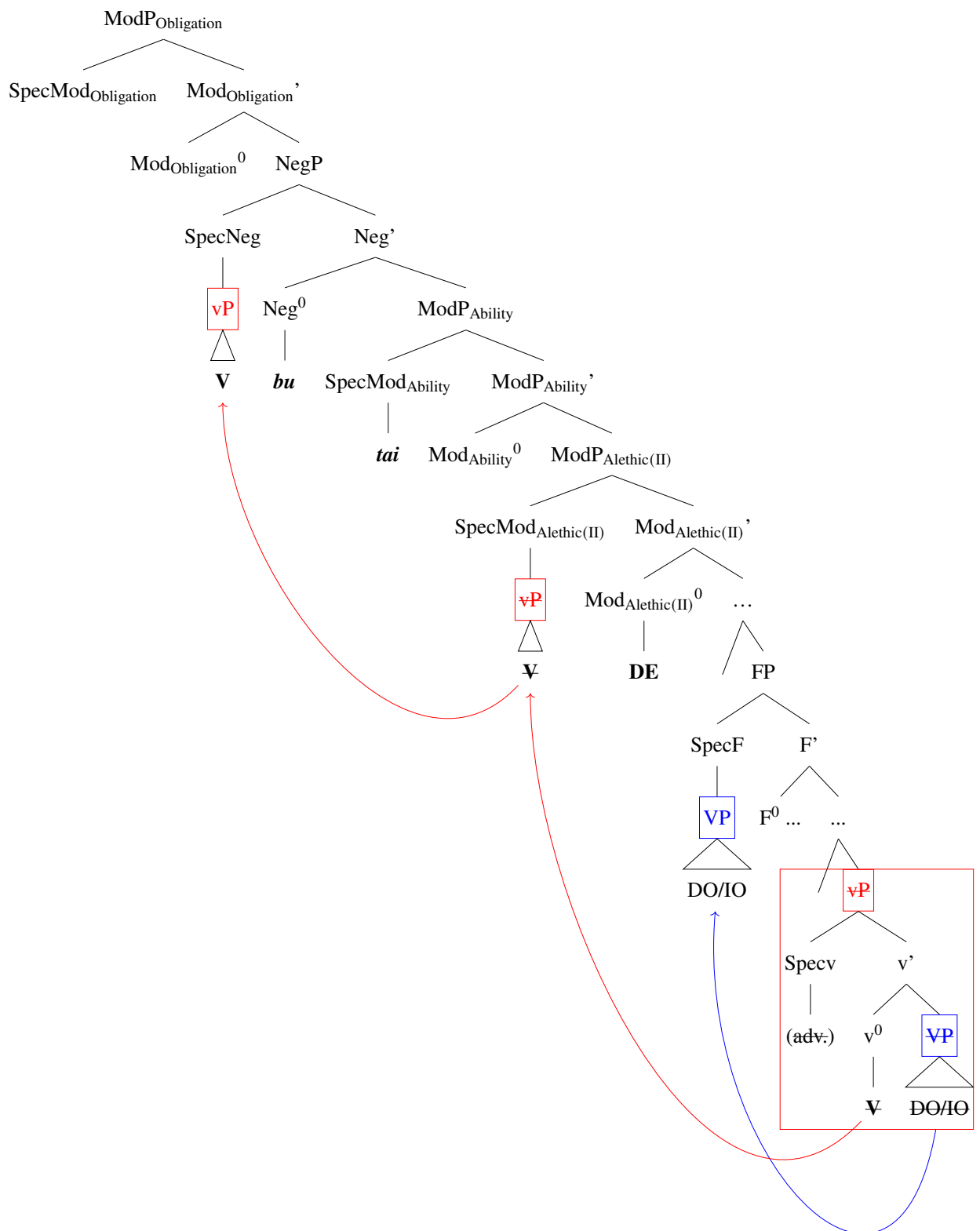
• **Non-deontic [V-BU-(*tai*-)DE]**

Under the 'ability' reading, the underlying syntactic structure should invariably be [V-BU-(*tai*-)DE], with a functional degree adverb – either overt or covert – occurring in the specifier position of ModP_{Permission/Ability}. This degree adverb serves to mark the

projection as $\text{ModP}_{\text{Ability}}$, thereby ruling out the ‘permission’ reading.

From a strictly structural perspective, the presence of the functional degree adverb in $\text{SpecMod}_{\text{Ability}}$ blocks the remnant vP from moving into that position, forcing it to move directly to SpecNeg . Consequently, the entire construction is constrained to a non-deontic ‘ability’ reading, indicating that only $\text{ModP}_{\text{Ability}}$ is activated, through the insertion of a functional element in its specifier position. The derivational process is illustrated in the syntactic structure in (54).

(54) Non-deontic [V-BU-(*tai*-)DE]



In this case, what is negated by BU is just the degree of ability expressed by *tai*

‘vey’, while the basic reading of ‘objective possibility’ associated with DE remains consistently available. To better illustrate this point, the complete interpretation of example (47) can be rendered as: ‘Zhangsan is not quite able to drink beer, but he can still drink beer.’

• **Deontic [V-BU-DE]**

When the functional adverb marking ‘ability’ is structurally absent, the modality expressed by [V-BU-DE] can only be interpreted deontically, encompassing readings such as ‘permission denial’ and ‘prohibition’.

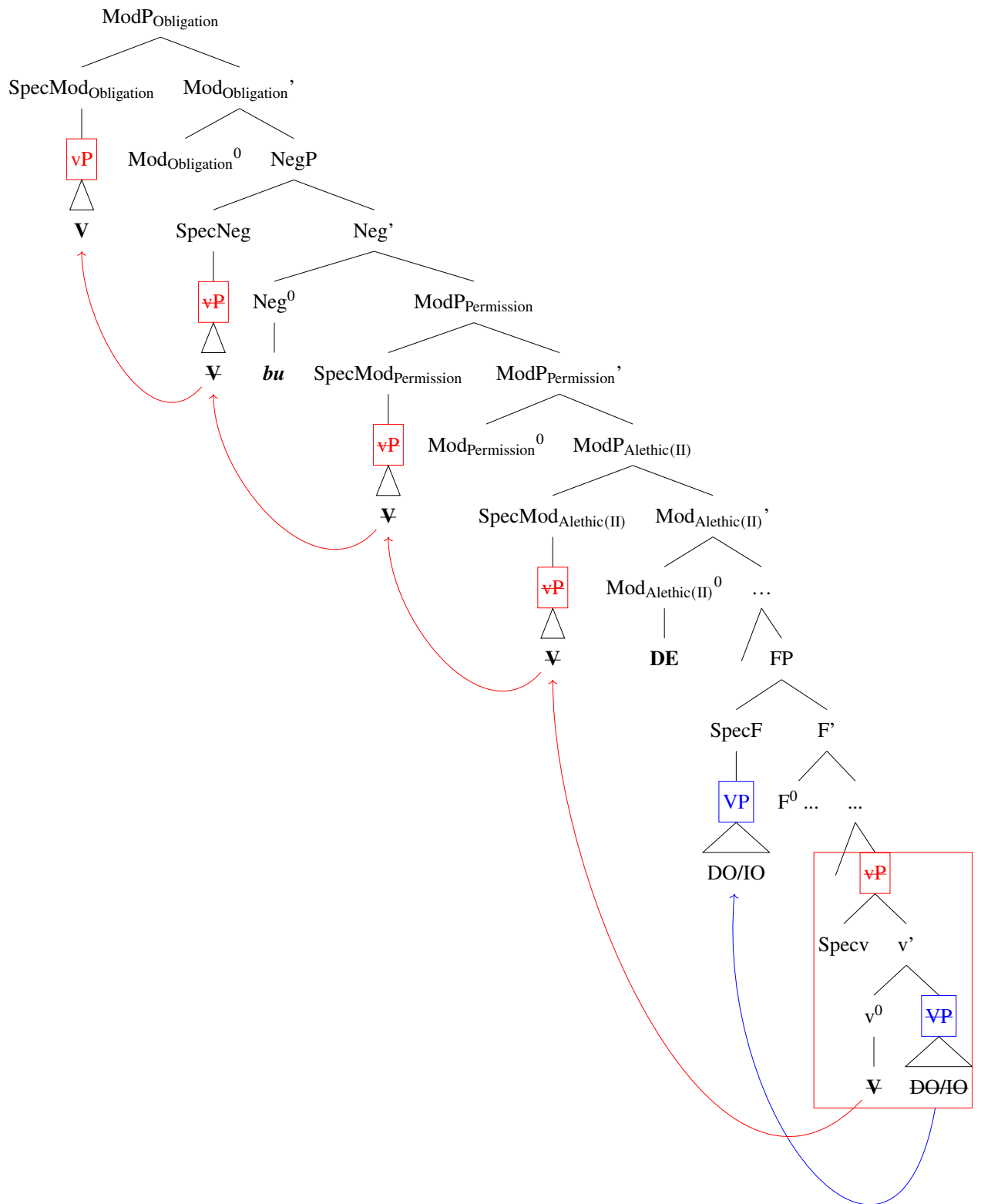
The availability of the ‘permission’ reading follows straightforwardly: in the absence of any element explicitly marking $\text{ModP}_{\text{Permission/Ability}}$ as $\text{ModP}_{\text{Ability}}$, the projection can only be marked by default as $\text{ModP}_{\text{Permission}}$. Regarding the mechanism through which this projection is activated, I propose that, without any specific functional indicator directly merged within the projection, the system resorts to internal merge as a last resort strategy to activate the projection. Specifically, something must be moved either to the specifier or head position of the projection.

Applying this analysis to the deontic [V-BU-DE], we would expect $\text{ModP}_{\text{Permission}}$ to be activated via movement of the remnant vP into its specifier position. This is a totally plausible operation, given that now $\text{SpecMod}_{\text{Permission}}$ is structurally available. As for the ‘prohibition’ reading, in a similar vein, we can posit that the remnant vP proceeds one step further, moving into $\text{SpecMod}_{\text{Obligation}}$ to activate this projection, following its intermediate landing in SpecNeg .⁸

The derivation of the deontic [V-BU-DE] construction is represented in the syntactic structure in (55).

(55) Deontic [V-BU-DE]

⁸Therefore, the surface word order of [V-BU-DE] cannot be simply attributed to PF-movement (contr. Cheng&Sybesma 2003; Cheng et al. 2015), as all movements proposed here are motivated by both syntactic and semantic considerations.



Unlike the non-deontic [V-BU-(*tai*)-DE], in the syntactic structure of the deontic

[V-BU-DE], DE is directly negated by BU. As a result, the ‘objective possibility’ reading is also negated in the interpretation, as in example (44), where it is rendered as ‘It is not objectively possible for Zhangsan to drink beer’.

Further evidence supporting remnant vP movement as a last resort strategy to activate modal projections can also be found in a similar construction from another Chinese variety. Cheng&Sybesma (2004) report the modal morpheme *tet* in Hailu Hakka, a Hakka variety spoken in Taiwan. Similar to Sichuanese DE, *tet* is represented by the same Chinese character 得 and can convey several root modal readings, including ‘permission’ and ‘ability’. What makes *tet* particularly interesting is that, rather than involving verb raising, it employs do-support, as illustrated in (56).

- (56) a. *Ngai co-tet shit niot.*
 1SG do-TET eat meat
 ‘I can eat meat’ (both permission and ability)
- b. *Ngai co-m-tet shit niot.*
 1SG do-NEG-TET eat meat
 ‘I cannot eat meat.’ (Cheng&Sybesma 2004:442)

The insertion of a ‘do’ element in the pre-*tet* position indicates that it is indeed a syntactic requirement for a verbal element to occupy a position higher than *tet*, and even higher than the negative morpheme in negative constructions. Within the cartographic approach adopted in the present study, it is totally plausible to assume that other root modal projections, which are higher than the projection hosting *tet* or DE, may serve as potential hosting sites for the verbal element — either the ‘do’ element or the verb within the remnant vP. In the absence of overt indicators, the presence of verbal elements in specific modal projections may activate those projections as a last resort strategy.

In conclusion, the above derivations demonstrate that the semantic ambiguity of [V-BU-DE] is also reflected in the syntax, specifically in the presence or absence of certain functional indicators and in the particular projection into which the remnant vP moves.

7.5 Interaction between DE and aspect markers

In this section, we examine the interaction between DE and aspect markers, focusing on the aspectual restrictions of DE introduced in Chapter 3. As illustrated by the examples repeated below, DE is systematically incompatible with overt aspect markers, including both Aktionsart and viewpoint aspect, contrary to canonical modal aux-

iliaries. This pattern suggests that DE exclusively selects a bare verb.

i) Aktionsart markers

- (57) a. *Zang1san1 ko3yi3 yong4 -wan2 ze4xi qian2.*
 3SG be.allowed.to use -finish these money
 ‘Zhangsan is allowed to use up these money.’
- b. **Zang1san1 yong4 -wan2 de2 ze4xi1 qian2.*
 3SG use -finish DE these money
- (58) a. *Ngo3 ko3yi3 da3 -si3 ze4-zi1 cong2 bu2?*
 1SG be.allowed.to beat -die this-CLF bug INTER
 ‘Can I beat and kill this bug?’
- b. **Ngo3 da3 -si3 de2 ze4-zi1 cong2 bu2?*
 1SG beat -die DE this-CLF bug INTER

ii) Viewpoint aspect markers

- (59) a. *Xiang3 man3fen1 bi4ye4, jiu4 bu2 ko3yi3 gua4 -go4 ko1.*
 want full.grade graduate then NEG be.allowed.to fail -EXP subject
 ‘If you want to graduate with the full grade, then you cannot have failed
 any subjects.’
- b. **Xiang3 man3fen1 bi4ye4, jiu4 gua4 -go4 bu2 de2 ko1.*
 want full.grade graduate then fail -EXP NEG DE subject

In this section, it will be demonstrated that the incompatibility between DE and both types of aspect markers is systematically governed by coherent semantic and syntactic constraints.

7.5.1 Incompatibility with aktionsart markers

As introduced in previous chapters, DE imposes a semantic constraint on the event it scopes over: DE neither guarantees nor renders possible the realization of the endpoint of an event. In other words, whether the event can or cannot reach an endpoint remains unspecified in a [V-DE] construction.

Recall that inherently telic predicates in Mandarin Chinese have been argued to be generally analyzable as [activity-result compounds] (Sybesma 1997:226), in which the “result” is overtly marked by telic aktionsart markers. Therefore, DE can easily leave aside the endpoint of an event by blocking all telic markers. Given that Mandarin aktionsart markers are argued to be realized within the inner aspect domain (Sybesma 2017, 2021), a straightforward hypothesis is that the inner aspect domain is never ac-

tivated in a [V-DE] construction. This is further supported by the incompatibility between DE and the BA-construction, which requires the overt realization of an aktionsart marker (see Section 7.1.2).

As a result, the incompatibility between DE and aktionsart markers can be understood as the syntactic manifestation of DE's semantic constraint. This hypothesis, that the inner aspect domain remains blocked in the [V-DE] construction, will be further supported by empirical evidence from the grammaticalization path of DE in the next section.

7.5.2 Incompatibility with viewpoint aspect markers

An important observation is that DE and viewpoint aspect markers exhibit strict complementary distribution, in contrast to canonical modal auxiliaries. As shown in (60), DE is incompatible with the viewpoint aspect markers *lao* and *go*, both of which signal the realization or completion of an event, regardless of their linear order.

- (60) a. **Zang1san1 ci2 -de2 -lao3/go4 pin2go3.*
 3SG eat -DE -PFV/EXP apple
 b. **Zang1san1 ci2 -lao3/go4 -de2 pin2go3.*
 3SG eat -PFV/EXP -DE apple

Moreover, DE combines with disyllabic verbal phrases, whether separable or inseparable, in the same way as aspect markers do — they both appear between the two syllables of the verb. See (61) and (62) for minimal pairs illustrating this pattern.

- (61) a. *Ta1men1 da3 -lao3 jia4.*
 3PL hit -PFV fight
 'They fought/have fought (with each other)'
 b. *Ta1men1 da3 -de2 jia4*
 3PL hit -DE fight
 'They can fight (with each other)'
- (62) a. *Ta1 sou1si2 -lao3 fang2jian1.*
 3SG organize/clean -PFV room
 'He/She organized/cleaned the room.'
 b. *Ta1 sou1si2 -de2 fang2jian1.*
 3SG organize/clean -DE room
 'He/She can organize/clean the room.'

The interaction between DE and the viewpoint aspect markers appears to reflect a classical pattern of elements competing for the same syntactic position. Based on this

observation, it can be hypothesized that DE is base-generated in the same syntactic projection as the abovementioned viewpoint aspect markers and subsequently moves to $\text{ModP}_{\text{Alethic(II)}}$, thereby excluding all viewpoint aspect markers that originate in the same aspectual projection. To explore the possibility of such a hypothesis, we must first determine the structural position of the viewpoint markers *lao* and *go* within the functional domain of the clause and evaluates whether their projection occupies a fairly low position in the clausal hierarchy, potentially within the same syntactic zone as that of DE.

Since Sichuanese *lao* and *go* are functionally equivalent to *le* and *guo* in Standard Chinese (differing only in phonological form), examples drawn from Standard Chinese ((64)-(67)) are used here to test the syntactic position of the viewpoint aspect markers. For reference, a partial version of Cinque's (2006) hierarchy is repeated in (63).

- (63) $\text{AspP}_{\text{Retrospective}} > \text{AspP}_{\text{Proximative}} > \text{AspP}_{\text{Durative}} > \text{AspP}_{\text{Progressive}} > \text{AspP}_{\text{Prospective}}$
 $> \text{AspP}_{\text{Inceptive(I)}} > \text{ModP}_{\text{Obligation}} > \text{ModP}_{\text{Ability}} > \text{AspP}_{\text{Frustrative/Success}} >$
 $\text{ModP}_{\text{Permission}} > \text{AspP}_{\text{Conative}} > \text{AspP}_{\text{Completive(I)}} > \text{VoiceP}$
 (Cinque 2006:175)

First, example (64) shows that the adverb *ganggang* 'just', which stays in $\text{AspP}_{\text{Retrospective}}$, precedes both *le* and *guo*.

- (64) *Wo ganggang chi -le/guo fan.*
 1SG just eat -PFV/EXP meal
 'I just had my meal.'

Second, the root modal auxiliary *budebu* expressing 'obligation' is shown to precede *le*, as demonstrated in (65).

- (65) *Ta budebu mai-le yi-liang motuoche.*
 3SG NEG.DE.NEG buy-PFV one-CL motorcycle
 'He had to buy a motorcycle.'

Third, the adverb *chenggong(de)* 'successfully', associated with $\text{AspP}_{\text{Frustrative/Success}}$, also precedes *le*, as shown in (66).

- (66) *Ta chenggong dengding-le ouzhou zuigao-feng e'erbulushi-shan.*
 3SG successfully summit-PFV Europe highest-peak Elbrus-mountain
 'He successfully reached the summit of Mount Elbrus, the highest peak in Europe.'
 (modified from CCL)

Finally, even the lowest root modal auxiliary in Cinque's hierarchy, $\text{ModP}_{\text{Permission}}$, is attested in a position preceding *guo*, as shown in (67).

- (67) *Canjia jingxuan de tongxue bu neng/keyi gua-guo ke.*
 participate election *de* students NEG can;be.allowed.to failed-EXP course
 'Students who participate in the election campaign cannot/are not permitted to have failed a course.'

The above examples indicate that the viewpoint aspect markers *le* and *guo* occupy a position at least lower than $\text{ModP}_{\text{Permission}}$ in the clausal hierarchy. Given that viewpoint aspect markers are generally assumed to be located within the outer aspect domain, I consider the relevant sub-hierarchy between $\text{ModP}_{\text{Permission}}$ and VoiceP to be the possible syntactic domain hosting *le* and *guo*. See (68) for illustration.

- (68) $\text{ModP}_{\text{Permission}} > \text{AspP}_{\text{Conative}} > \text{AspP}_{\text{Completive(I)}} > \text{VoiceP}$

At this point, we are left with two potential candidate projections: $\text{AspP}_{\text{Conative}}$ and $\text{AspP}_{\text{Completive(I)}}$. Given the clear semantic discrepancy between *le/guo* and $\text{AspP}_{\text{Conative}}$ — the latter marking the notion that “a certain action may require some effort” and typically represented by the verb ‘try’ (Cinque 1999:105) — $\text{AspP}_{\text{Completive(I)}}$ emerges as the most plausible candidate position for the syntactic position of the two viewpoint aspect markers.

Cinque defines $\text{AspP}_{\text{Completive(I)}}$ as “signaling that a telic process has reached completion (namely, the natural end point of the process)” (Cinque 1999:100), which clearly indicates that $\text{AspP}_{\text{Completive(I)}}$ scopes over a whole event. This stands in contrast to $\text{AspP}_{\text{Completive(II)}}$, which scopes only over the natural endpoint of an event and is situated below VoiceP , within the inner aspect domain. To illustrate this contrast, Cinque (1999:178, Note 57 of Chap.1) provides the following pair of examples, showing that the adverb ‘completely’ can appear either in a pre-VP (see (69a)) or post-VP position (see (69b)), corresponding to $\text{SpecAsp}_{\text{Completive(I)}}$ and $\text{SpecAsp}_{\text{Completive(II)}}$, respectively.

- (69) a. John completely forgot her instructions.
 ‘Her instructions did not occur to John at the appropriate moment.’
 b. John forgot her instructions completely.
 ‘John forgot every part of each of her instructions.’ or
 ‘Her instructions did not occur to him at the appropriate moment.’

Given that *le* and *guo* share both the same semantic definition and very likely the structural position attributed to $\text{AspP}_{\text{Completive(I)}}$, I propose that the two viewpoint aspect markers are more accurately analyzed as markers of completive aspect, occupying $\text{AspP}_{\text{Completive(I)}}$ within the functional hierarchy of the clause (see also Chao 1968:266). Having identified the position of *le* and *guo* in the clausal hierarchy, we can now proceed to compare their syntactic distribution with that of DE. The relevant portion of the hierarchy, including $\text{ModP}_{\text{Alethic(II)}}$ or $\text{AspP}_{\text{Completive(I)}}$, is illustrated in (70) and (71), respectively.

(70) $\text{ModP}_{\text{Ability/Permission}} > \text{ModP}_{\text{Alethic(II)}} \text{ (DE)} > \text{VoiceP}$

(71) $\text{ModP}_{\text{Ability/Permission}} > \text{AspP}_{\text{Completive(I)}} \text{ (le/guo)} > \text{VoiceP}$

Apparently, the viewpoint aspect markers occupy the same sub-hierarchy as DE, which is situated quite low in the overall functional hierarchy. To integrate the above two hierarchies, we next test the relative ordering of $\text{ModP}_{\text{Alethic(II)}}$ and $\text{AspP}_{\text{Completive(I)}}$. Given the structural proximity of these two projections, the only available diagnostic is the adverb ‘completely’, which occupies the specifier position of $\text{AspP}_{\text{Completive(I)}}$ and can serve as a potential reference point.

Unfortunately, this diagnostic fails. As noted in Cinque (1999:101), the adverb ‘completely’ is incompatible with situations lacking internal stages and a natural end point. Given also that DE is incompatible with all telic markers, we would predict that the adverb ‘completely’ is likewise incompatible with DE. As demonstrated by the ungrammaticality of the examples in (72), this is indeed the case.

- (72) a. **Zang1san1 wan2quan2 ci1-wan2-de2 ze4-go4 dan4gao1*.
 3SG completely eat-finish-DE this-CL cake
 Intended: ‘Zhangsan can completely eat up this cake.’
 b. **Zang1san1 wan2quan2 ba3 ze4-go4 dan4gao1 ci1-wan2-de2*.
 3SG completely BA this-CL cake eat-finish-DE
 Intended: ‘Zhangsan can completely eat up this cake.’

As a result, the relative ordering between $\text{ModP}_{\text{Alethic(II)}}$ and $\text{AspP}_{\text{Completive(I)}}$ cannot be determined at this stage.

Nevertheless, the empirical evidence discussed above remains consistent with our hypothesis that DE is base-generated in the aspectual projection associated with completive viewpoint aspect, namely $\text{AspP}_{\text{Completive(I)}}$, and subsequently moves to its modal projection $\text{ModP}_{\text{Alethic(II)}}$, as part of a synchronic derivational process. As a result, viewpoint aspect markers that compete for the same aspectual projection are excluded

from the [V-DE] construction. This hypothesis aligns with, and hopefully, contributes a small piece of empirical support for van Gelderen's (2003, 2004: 155) influential proposal that “(deontic) modals merge as ASP”.

In the next section, we turn to the grammaticalization path of DE, which provides further empirical evidence in favor of the current hypotheses.

7.6 The diachrony of DE

As stated by Bybee (1985:166ff) and Bybee, Perkins, and Pagliuca (1994), “in order to understand the range of modal meanings in a language, one must understand the diachronic developments of modal elements”. In this section, we examine the diachronic development of DE, with particular attention to its grammaticalization path from a full lexical verb to a perfective aspect marker, and ultimately to a modal morpheme.⁹ The primary focus will be on the period during which DE transitions from marking perfective aspect marker to expressing modality. Specifically, this section aims to address the following questions concerning the specific properties of DE, as introduced in previous chapters:

- i) What is the origin of the aspectual constraints it imposes on the selected verb?
- ii) What is the source of the alethic modality encoded by DE, and how can such an underspecified reading remain stable in Sichuanese?

7.6.1 Grammaticalization path of DE

As a complex element with more than 2,000 years of history, it is unsurprising that there exists no consensus among scholars regarding the exact grammaticalization path of DE. Nonetheless, a general tendency can be identified from the existing literature. Before delving into the long history of DE, it is important to provide some background information. Traditionally, it is believed that two modal elements sharing the same character 得 have existed in the history of Chinese: i) the preverbal *de* 得 (*de*-V), expressing ‘possibility’, and ii) the preverbal *bude* 不得 (*bude*-V), expressing ‘negative potentiality’ (Shi 1985; cf. Wang 2017). Unlike the focus of this study — the postverbal DE — these two modal elements initially appeared as modal markers since Late

⁹DE enters the broader class of ‘acquisitive’ modals attested across languages of Mainland South-east Asia, which typically grammaticalize from lexical verbs meaning ‘acquire; come to have’ (Enfield 2001, 2003). For detailed discussions on ‘acquisitive’ modals, see Enfield (2001, 2003), Sybesma (2008), Sparvoli (2017), among others.

Archaic Chinese.¹⁰ Notably, both preverbal modal *de* and *bude* have persisted over the centuries and continue to appear in Contemporary Mandarin, albeit with limited deontic modal readings.

In contrast, the postverbal DE under investigation here initially emerges as a lexical verb meaning ‘get’ in Late Archaic Chinese. It subsequently occurs in serial verb construction [V-DE] in Early Medieval Chinese, where it begins to function as an aspect marker. From Early Medieval to Late Medieval Chinese, DE starts its grammaticalization process toward modality, eventually becoming a stable modal morpheme in Pre-modern Mandarin.

With the existence of the two preverbal modal elements in mind, we now turn to examine the various perspectives on DE’s evolution. From the perspective of mechanism, two main types of hypotheses have been proposed:

1. Movement hypothesis: the postverbal DE is derived by moving the preverbal modal DE to a postverbal position (Zhou, F. G. 1959, Zhu, M. C. 1960, Yue, J. F 1984, among others).
2. Grammaticalization hypothesis: the postverbal DE derives from the second verb in a serial verb construction via grammaticalization (Ohta 1958[1987] for the postverbal positive DE, Yang, P. 1989, Jiang, S. Y 1994, Shimura 1995, Sun, C. F. 1996, Zhao, C. C 2000, Wang, C. S. 2017, among others; see also Traugott&Dasher 2002, Meisterernst 2020).

Moreover, some scholars appear undecided between the two hypotheses. For instance, Wang, L. tentatively proposes both hypotheses. In the chapter on verbs, Wang (1983, 1990:117-118) proposes that beginning in the Han dynasty, the verb DE appears postverbally in the form [V-DE], where it retains its concrete meaning of ‘get’. By the Tang dynasty, DE also acquires the meaning of “realization of an aim” (Wang 2013:294 *Hanyu shigao*, 王力文集 Volume 1). Subsequently, DE undergoes grammaticalization toward a modal element denoting ‘possibility’. Whereas in a later chapter on modal verbs, Wang (1983, 1990:342, see also 2014:284) suggests that the preverbal modal verb DE in [DE-V] moves to a postverbal position, resulting in the [V-DE] construction, where DE functions as the same modal element.¹¹

The fundamental difference between these two hypotheses lies in their starting points

¹⁰This study follows Peyraube’s (1996) periodization of Chinese language.

¹¹Wang (1990) is an anthology of his earlier works, systemized by Guo, X., L. It includes *Hanyu yufa shi* (1983), an adapted version of *Hanyu Shigao* 1957. Other versions of *Hanyu shigao/Hanyu yufa shi* were published in 2000, 2013, and 2014 by *Zhonghua Shuju* 中华书局. Since all editions published

for the evolutionary path of DE. The movement hypothesis, which posits that DE derives from preexisting preverbal modal auxiliaries, fails to capture the close interaction between aspect and modality, such as the link between DE as a perfective aspect marker in [V-DE] and its subsequent development into a modal marker with the same form. For this reason, I adopt the second “grammaticalization hypothesis” in the following discussion, setting aside the “movement hypothesis”. We now turn to an overview of the generalized grammaticalization path of DE.

According to inscriptions on ancient bronze objects, DE started out as a full lexical verb meaning ‘get; obtain’ in Late Archaic Chinese (Zhou 1953), as shown in (73).

- (73) *er de tianxia.*
and obtain world
‘and have the kingdom.’ (300 B.C. *Mengzi Gongsun Chou Shang* [Sun 1996:112])

In Early Medieval Chinese, DE began to appear postverbally, typically within serial verb constructions of the form [V-DE], where it retained its concrete lexical meaning of ‘obtain’ (Ohta 1958[1987], Shimura 1967). During this earliest stage, DE followed verbs with relatively concrete meanings such as *bu* ‘catch’, as illustrated in (74). Sun (1996) interprets this pattern as a sequence of two full lexical verbs, with the latter verb (e.g. *de* ‘obtain’) “perhaps indicating the result of the former verb” (Sun 1996:115).

- (74) *Bu de shengkou.*
catch obtain captive/slave
‘caught and got (a) captive’ (111 A.D. *Hanshu*)

When the preceding verb became less concrete, such as *shi* ‘look’, and deviated from the original sense of ‘obtain’, DE began to undergo a process of “semantic abstraction” (Ohta 1958[1987], Shimura 1967, Sun 1996). According to Sun, DE in this context still denotes the result of the preceding verb but with a more abstract meaning, as the verb *shi* ‘look’ does not imply any notion of “physical possession” (Sun 1996:116). See example (75) cited in Sun (1996) for illustration.

- (75) *Shi de yi lao li.*
look attain one old LI (an animal that looks like a raccoon)
‘(One) saw an old LI.’
(977-983 A.D. *Lieyizhuan Taipingyulan* [Sun 1996:116])

after 1983 are based on the original 1983 version, citations of Wang’s work will henceforth be referred to as Wang (1983), with the page numbers corresponding to the specific edition cited.

Further examples illustrating the more abstract use of DE can be found in much earlier texts, as exemplified in (76), where DE follows a perception/psychological verb.¹²

- (76) *Wen de jingshi shu.*
 hear/receive.news attain capital letter/news
 ‘(He) received/heard news from the capital.’
 (190-200 A.D. *Fengsu Tongyi*)

Gradually, towards the end of Early Medieval Chinese, DE came to function in a way comparable to a perfective aspect marker in modern terms, as illustrated in example (77).¹³

- (77) *Xian jia de fuli, hou jia de langjun.*
 first marry PFV government.clerk later marry PFV nobleman
 ‘She first married a government clerk, and later married a nobleman.’
 (420-589 A.D. *Kongque Dongnan Fei/Jiaozhongqin Qi*)

Zhao, C. C. (2000) also suggests that the semantic weakening of DE at this stage results from its frequent occurrence in postverbal position as a simple marker denoting “completion”. As widely acknowledged in the literature, this stage represents the final phase before DE acquires its modal meaning (Sun, C. F. 1996, Zhao, C. C 2000, Wang, L. 1983, among others).

Opinions among scholars begin to diverge at the next stage, when DE acquires its modal meaning. The central point of divergence concerns whether the positive DE in [V-DE] and negative BU-DE in [V-BU-DE] derive from the same source, namely the postverbal verb DE meaning ‘get’. Broadly speaking, two main hypotheses have been proposed to address this issue:

1. Dual-source hypothesis: [V-DE] and [V-BU-DE] originate from different sources. The positive DE derives from the verb ‘get’, while the negative BU-DE stems from the preexisting preverbal modal auxiliary *bude* (Ohta 1958[1987]).¹⁴
2. Single-source hypothesis: Both [V-DE] and [V-BU-DE] derive from the same lexical verb ‘get’ in a serial verb construction (i.e. V-DE ‘get’) (Jiang, S.Y 1994, Wang, L. 1983, Zhao, C. C 2002, Traugott&Dasher 2002).

Again, since the movement hypothesis has been set aside in this study, we follow

¹²From Chinese Text Project, source.

¹³Cited in Yue J.F. (1984:11).

¹⁴Jiang, S. Y (1994), Wei, P. Q. (2004:669) argues against the postposition of preverbal *bude*.

the second hypothesis, which provides a unified analysis best understood through the perspective of grammaticalization. Following Zhao (2000), we will show that such an analysis can effectively account for the development of both [V-DE] and [V-BU-DE]. The key transition of DE from a perfective aspect marker to a modal marker in Medieval Chinese can be outlined as follows.

As Jiang, S. Y. (1994) and Zhao, C. C (2000) argue, when the perfective construction [V-DE] appears in irrealis contexts, an ambiguity emerges between a result-denoting reading and a potentiality-denoting reading, as illustrated in the following examples (78) and (79).¹⁵ By contrast, such ambiguity is absent in indicative positive sentences.

- (78) *Cangtian bianhua shui liao-de?*
 world change who predict-DE
 ‘Who has predicted the change of the world?’ (Wang, L. 1990:360) or
 ‘Who can predict the change of the world?’ (Ohta 1958)
 (712-770 A.D. *Dujuanxing, Dufu*)
- (79) *Junwang yanmian jiu bu de.*
 king cover.face save NEG DE
 ‘The king covered his face and didn’t manage to save (her).’ or
 ‘The king covered his face, unable to save (her).’
 (806 A.D. *Changheng, Libai*)

To quote Jiang, S. Y. (1994:196, my translation), “at first, the two forms [V-DE-O] for perfectivity and for possibility differ only in the contexts in which they appear: in realis contexts, the construction expresses ‘realization/completion’, while in irrealis contexts, it conveys ‘possibility’. To support this claim, Jiang cites an example from Yang, P. (1989), which is repeated and translated below in (80).

- (80) a. *Ruhe jiu de a-niang huo nan zhi ku.*
 how save DE[irrealis] mother fire difficulty of suffering
 ‘How can (it) save mother from her suffering.’
 (618-907 A.D. *Dunhuang Pianwenji*)
- b. *Meng shizun cibe, jiu de a-niang huo nan zhi ku.*
 bear/receive Buddha mercy save DE[realis] mother fire difficulty of
 suffering
 ‘Received the mercy from Buddha, who saved mother from her suffering.’
 (618-907 A.D. *Dunhuang Pianwenji*)

¹⁵For example, Zhao (2000) and Wang (2000) do not provide a clear interpretation with respect to the example in (77); they merely note that the grammaticalization process begins at this stage.

Additional empirical evidence from the same literature is provided in (81).¹⁶

- (81) a. (...) *ming yue henghe zhi shui, yi ying jiu de*
 (...) name called Ganges.River of water also should save DE[irrealis]
a-niang huo nan zhi ku.
 mother fire difficulty of suffering
 ‘Named the water of Ganges River, it also should be possible to save
 mother from her suffering.’
 (618-907 A.D. *Dunhuang Pianwenji*, volume four)
- b. *Zun-shi jiu de qizi zai huo, en zhong*
 honored-master save DE[realis] wife again survive grace heavy
yueshan, wei wei jiang he chouda.
 Mount.Yue not.have entrust will/shall how repay
 ‘The honored master saved my wife and gave her life again. His grace is
 as heavy as Mount Yue, how shall I ever repay it?’
 (618-907 A.D. *Dunhuang Pianwenji*, volume six)

Based on the above observation, it can be concluded that the transition of DE from a perfective aspect marker to a modal marker is triggered by the semantic obscuration of event realization/completion in irrealis contexts. When the realization/completion of an event becomes unclear, an ambiguity arises between the interpretation that ‘the event has not been realized/completed’ and the interpretation that ‘it is not possible to carry out the event’.

Under this view, the negative [V-BU-DE] construction does not require a separate analysis, as it inherently constitutes an irrealis context. In particular, the use of the negative marker *bu* in [V-BU-DE] is quite significant. It is important to note that throughout the diachronic development of Mandarin Chinese, two distinct types of negative markers have existed, and continue to exist: one associated with aspectual negation, typically translated as ‘not have’, and another with stative negation, generally translated as ‘not’ (Lin 2003). Thus, to negate the whole perfective [V-DE] construction, one would intuitively expect that the aspectual negative marker will be used in the canonical preverbal position, yielding a form as [Neg_{ASP}-V-DE]. Quite to the contrary, it is the stative negative marker BU that is used to negate [V-DE], and notably, it appears in a non-canonical postverbal position, giving rise to a form as [V-BU-DE]. The situation becomes more transparent when we consider that the stative negative marker BU does not negate the entire event, but rather targets the result state represented by DE; it appears between the verb and DE exactly because it is the final state of the event, not the event as a whole,

¹⁶From Chinese Text Project, source.

that is negated. In this way, the realization/completion of an event is obscured.

This idea regarding the crucial transition of DE is further supported by proposals that rhetorical questions and negation serve as marked environments that can trigger the development of deontic readings of possibility modals in Late Archaic Chinese (Liu, L. 2000, Li, M. 2001, cited in Meisterernst 2020:39; cf. Roberts&Roussou 2003). Furthermore, as Jiang, S. Y. (1994) notes, once the use of modal [V-DE] stabilizes, it is no longer restricted to irrealis contexts.

This grammaticalization path outlined above is summarized in Table 7.1:

Stages	Grammatical status of DE
1	lexical verb ‘gain;obtain’
2	concrete result-denoting element in [V-DE]
3	abstract result-denoting element in [V-DE]
4	perfective aspect marker marking realization/completion in [V-DE]
5	ambiguity between a perfective aspect marker and a modal marker in [V-DE] appearing in irrealis contexts
6	stable modal marker expressing ‘possibility’ in [V-DE]

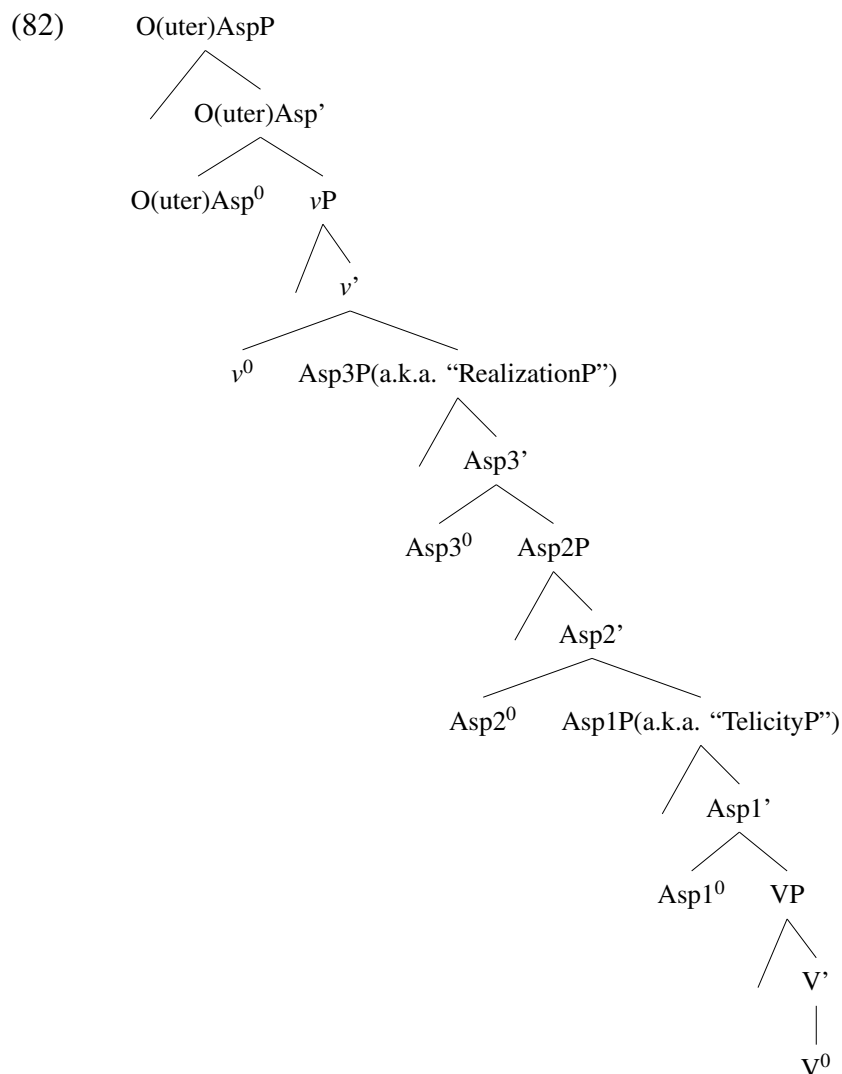
Table 7.1

7.6.2 Hypothesis on the specific properties of DE

This section seeks to find clues to the specific properties of DE through its grammaticalization path, with particular focus on the aspectual constraints it imposes and the source of its alethic modality.

- Aspectual constraints

Recall that DE imposes aspectual constraints on the verb it follows, disallowing both aktionsart and viewpoint aspect markers. If we look back at the grammaticalization path of DE, as summarized in Table 7.1 above, it can be noticed that stages 2, 3 and 4 can find correspondent positions in the Mandarin aspect structure proposed by Sybesma (2017, 2021), which is repeated below in (82) for convenience.



(from Sybesma 2017:3, 2021:55)

At stage 2, DE began to appear in serial verb constructions as a concrete result-denoting verb, corresponding to Asp1. At stage 3, DE continued to denote the result of an event, but in a more abstract sense, corresponding to Asp2. In the following stage, rather than indicating the result of an event, DE evolved into a genuine perfective aspect marker, encoding the realization/completion of the entire event. Once it had evolved into an aspect marker, DE appears to have functioned primarily as a viewpoint aspect marker, without reference to the internal structure of the event. Empirical support for this intuition comes from its parallel with the modern viewpoint aspect marker LE. As discussed by Cao (1986), Mei (1981) and Sun (1996), in Medieval Chinese, a group of verbs meaning ‘to complete’, including *de*, *que*, *qu*, among others, functioned as perfective aspectual affixes in the immediate postverbal position. Between the 7th and 13th

centuries, LE started to increase in frequency and gradually replaced some of these earlier perfective markers (Sun 1996:88). In a similar vein, Yue, J. F. (1984:11) observes that the aspectual DE, which previously signaled the completion of an event, is replaced in modern Chinese by LE, other verbs, adjectives, or is simply lost. Accordingly, we treat DE in stage 4 (i.e., Medieval Chinese) as an aspect marker comparable to modern viewpoint aspect markers. As for its projection in Sybesma's aspect structure, DE, like the perfective marker *-le*, may correspond to one of the two projections, Asp3 or O(uter)AspP. Recall the distinction between the two projections in the case of *-le*:

- when *-le* follows a complex verbal compound which contains a result-denoting element (e.g., [V-Asp1-*le*] or [V-Asp2-*le*]), the inner aspect domain is activated. In such cases, *-le* stays in Asp3P, located within the inner aspect domain.
- When *-le* follows a bare verb, the inner aspect domain is not activated, and accordingly *-le* is hosted in O(uter)AspP, outside the inner aspect domain.

Given that DE in stage 4 exclusively combines with bare verbs, I propose that the perfective marker DE at this stage occupies the same position in O(uter)AspP as its modern counterpart *-le* does. Under this assumption, the constraints on aktionsart markers follow naturally: once DE evolved into a perfective marker situated in the outer aspect domain, the inner aspect domain is no longer activated. Consequently, all aktionsart markers that would otherwise merge within the inner aspect domain are systematically blocked from appearing in the perfective [V-DE] construction, and in the subsequent modal [V-DE] construction.

Furthermore, if we follow Roberts&Roussou (2003) in assuming an upward direction of grammaticalization in the syntax, we can suppose that DE evolved from a viewpoint aspect marker to a modal marker by moving upward in the syntactic structure, specifically from AspP to ModP. This diachronic development appears to be mirrored in the synchronic syntax as well, paralleling the observations made in the preceding section. As proposed there, DE is first merged in the same structural position as perfective viewpoint aspect markers (e.g., *-le*), and subsequently raises to its own functional projection, ModPAlethic(II). This derivation blocks all other viewpoint aspect markers competing for the same aspectual projection. Moreover, it also accounts for DE's postverbal surface position, as DE likely retains its original postverbal placement as an aspect marker. And finally, it provides a plausible explanation for the relatively low position of ModPAlethi(II) within the clausal hierarchy.

- Alethic modality

Based on the grammaticalization path outlined above, a possible explanation for the development of DE's distinctive alethic modal reading can be proposed as follows. Initially, when the perfective [V-DE] construction appears in irrealis contexts, the only information available to the hearer is that the event in question has not been realized or completed. Naturally, the lack of realization or completion may arise from a wide range of potential factors. Through pragmatic inference, the non-realization/completion of the event begins to be reinterpreted as a lack of possibility for the event to occur. Over time, the various potential factors responsible for incompletion are perceived as factors leading to the impossibility of the event. Consequently, DE comes to express an underspecified sense of possibility, which has also been described as the wildest sense of possibility (cf. Von Stechow 2006).

Finally, the stable status of DE as an important modal morpheme in Sichuanese may be attributed to the systematic disambiguating strategies available in the language, as discussed in the previous sections. Standard Chinese, by contrast, chose to develop a full system of modal auxiliaries to avoid the potential ambiguity associated with DE; as a result, no such disambiguating strategies are available in Standard Chinese, which directly leads to the reduced frequency and gradual marginalization of DE.

Chapter 8

Imperative [V-*lao*!] and [V-DE-*lao*!]

In this chapter, I focus on the imperative [V-DE-*lao*!] construction, which is commonly used in Sichuanese to express a kind suggestion. Notably, since the [V-*lao*!] construction is also frequently used alone to express commands or suggestions, I treat [V-*lao*!] as the core structural skeleton of the [V-DE-*lao*!] construction.

Before proceeding to the discussion, the labels adopted in this chapter will first be clarified. Cross-linguistically, “directive” sentences are typically used when the speaker tries to get the hearer to do something, and they can be of varying degrees (Searle 1979:13). Accordingly, Bybee et al. (1994:179) suggest that directives can be used to express commands, demands, requests, entreaties, warnings, exhortations, and recommendations. In general, there are two ways for expressing “directives”: i) through explicit performatives (e.g., *I order you to leave the room*; Searle 1979:36), which involves a lexical classification; and ii) through distinct sentence types (e.g., imperative, exhortative), which constitute a syntactic classification (Sadock&Zwicky 1985:158, Rivero&Terzi 1995). The present chapter is concerned exclusively with the latter, i.e., syntactically encoded directive forms. These typically include constructions such as imperatives, exhortatives, and prohibitives. Following standard definitions in the literature, I use the term “imperative” to refer to syntactically marked directives with second-person subject (i.e., where the subject is the addressee), and “exhortative” to refer to those involving both first- and second-person subjects (i.e., speaker-inclusive) (Lyons 1977, Sadock&Zwicky 1985, Palmer 2001[1986], Pak, Portner&Zanuttini 2004, among others).

This chapter aims to explore how the basic [V-*lao*!] construction differs from other canonical imperative constructions in Sichuanese, and what kind of “point of view” is conveyed by the [V-DE-*lao*!] construction, based on fieldwork data. Representative examples of [V-DE-*lao*!] are presented below to illustrate its fundamental function of

expressing a kind suggestion.

- (1) *Tian1 len3 lao, cuan1 de2 mao2yi1 lao3!*
 weather cold CRS wear DE sweater ATT
 ‘It’s getting cold, you should/’d better wear sweaters now.’
- (2) *Wa2’er2-1, xuo2 lao yi2-tian1 lao, xiu1xi de2 lao3!*
 child[VOC] study PFV one-day CRS rest DE ATT
 ‘Child, (you) have been studied all day, you should/’d better have a rest now.’

In particular, this chapter demonstrates that unlike other canonical imperative constructions, a deontic modal element is consistently activated in the underlying structure of [V-*lao*!]. Following a modal approach to imperatives, it also addresses the remaining issue of modal concord introduced in the previous chapters, namely whether the modal element *gai* ‘should’ may be shifted to have existential force in the imperative [*gai*-V-DE-*lao*!] construction, thereby enabling a concord relation with the basic modal DE. Furthermore, drawing on fieldwork data, it is demonstrated that the imperative [V-DE-*lao*!] construction consistently encodes “point of view” (POV) on the addressee: the suggestion expressed is always given for the benefit of the addressee. This observation provides empirical support for the idea that imperative sentences always encode the notion of point of view — either on the speaker, or the addressee (Poletto&Zanuttini 2003).

8.1 [V-*lao*!] and [V-DE-*lao*!]

This section begins with an examination of the [V-*lao*!] construction, investigating how it differs from other canonical imperative forms and why it serves as the structural basis for the [V-DE-*lao*!] construction.

8.1.1 Distinguish [V-*lao*!] from other imperative forms

Traditionally, syntactically marked directives in Mandarin Chinese are often grouped under the same label “imperative” (Zhu 1982, Li&Thompson 1981, among others). As a result, no clear distinction has been drawn between imperatives and exhortatives. The fundamental reason for this lack of differentiation lies in the fact that Chinese languages lack inflectional morphology and therefore cannot mark imperative force in the same way as languages like Italian. For example, Italian uses morphological marking in imperatives, as in *Mangia!* ‘(You) eat!’; by contrast, in Sichuanese, the subject of

an imperative or exhortative can only be understood either through an overt subject or from the context it appears in. This point will be further clarified below.

Sichuanese, as a Mandarin variety, shares the following imperative properties with Standard Chinese:¹

- i) Syntactically, a subject is usually absent in Mandarin imperatives, if present, the subject is either a second person pronoun (e.g., ‘you’, ‘you-pl’) or a plural first person pronoun (e.g., ‘we’) (Zhu 1982).
- ii) Semantically, Mandarin imperatives are used to express commands, suggestions, requests, prohibitions and dissuasions (e.g., ‘Don’t leave today!’) (Jin 1992; Yuán 1993).

Generally, there are three syntactic ways to express positive directive sentences in Sichuanese, which may be schematically represented as follows for simplicity:

- a) V!
- b) V-*ma*! (correspondent with Standard Chinese sentence-final particle *ba* (吧))
- c) V-*lao*! (correspondent with Standard Chinese sentence-final particle *le* (了))

Type (a) construction typically consists of a bare verb or verb phrase (vP) and expresses a direct command. Type (b) construction contains the sentence-final particle *ma*, whose counterpart in Standard Chinese, *ba* (吧), has been defined by Chao (1968:809) as an “advisative particle”, generally associated with imperative sentences that have a more softened force (e.g., “weak imperative”; Pan 2019). Type (c) construction involves the sentence-final particle *lao*, whose counterpart in Standard Chinese *le* (了), is traditionally analyzed as a marker signaling the beginning of a “currently relevant state”. According to Li&Thompson (1981:240), this means that “the statement signaled by the sentence with *le* is relevant to now, that is, to the situation of the speech context in which the speaker and hearer are engaged”.² As will be shown in later sections, *lao* in Sichuanese imperative sentences diverges from this traditional use and instead encodes the speaker’s attitude and subjective evaluation. The degree of directive force conveyed by these three constructions is represented in (3).

¹From *Imperatives* in Encyclopedia of Chinese Language and Linguistics Online (2016), Chapter written by Guo&Shen.

²Although *lao* is not traditionally considered a marker of imperative force, its occurrence in directive sentences has been noted by scholars, among which Chao (1968), Li&Thompson (1981), Zhu (1982), etc.

- (3) V! > V-*ma*! > V-*lao*!

This hierarchy of directive force follows from Guo&Shen's (2016) discussion, which suggests that imperative sentences expressing requests, dissuasions and suggestions tend to have a relatively mild tone and often involve sentence-final particles such as *ba* (吧), *ne* (呢) and *a* (啊) (see also Li 1924:268).³

Regarding the three directive constructions introduced above, the central questions are as follows: why does [V-*lao*!] express the weakest directive force among the three imperative forms? And, subsequently, how should *lao* in [V-*lao*!] be defined? The following discussion presents a series of observations on the three constructions, revealing both semantic and syntactic distinctions among them.

Observation 1: in the absence of an overt subject, only [V!] refers to a second-person subject, whereas [V-*ma*!] and [V-*lao*!] exhibit ambiguity regarding the inclusion of the speaker, which depends on the specific contexts.

- V!

- (4) *Ho1 ca2!*
 drink tea
 'Drink tea!'

- V-*ma*!

- (5) *Ho1 ca2 ma!*
 drink tea IMP
 'You drink tea (please)!' *I'm serving tea to a friend.*
 'Let's drink tea (please)!' *I'm inviting my friends to drink tea together with me.*

- V-*lao*!

- (6) *Ci2 fan4 lao3!*
 eat meal ATT
 'You/We (can/should) have the meal now!/it's time to have the meal!'

A straightforward way to resolve this ambiguity is to overtly specify the subject, as shown in (7) and (8).

³The use of these particles, including the sentence-final particles *ba* and *lao* illustrated above in Sichuanese imperatives, assumes functions similar to those of modal particles in imperatives in German and Italian, which interact with illocutionary force and express the speaker's intention (Coniglio&Zegrean 2010).

- V-*ma*!

- (7) a. *Ngi3 ho1 ca2 ma!*
 2SG drink tea IMP
 ‘You drink tea (please)!’
- b. *Ngo3men1 ho1 ca2 ma!*
 1PL drink tea IMP
 ‘Let’s drink tea (please)!’

- V-*lao*!

- (8) a. *Ngi3 ci2 fan4 lao3!*
 2SG eat meal ATT
 ‘You (can/should) have the meal now!’
- b. *Ngo3men1 ci2 fan4 lao3!*
 1PL eat meal ATT
 ‘We (can/should) have the meal now!’

Otherwise, the subject can only be understood through the specific context. However, given that the second-person addressee is consistently encoded across all three forms, regardless of whether an overt subject is present, I propose that at least the second-person addressee is syntactically encoded in these constructions. Whether the subject is speaker-inclusive, particularly in [V-*ma*!] and [V-*lao*!], depends on the presence of an overt subject or on contextual factors. This contrasts with Korean, a language that also employs sentence-final particles to mark directive force but exhibits clear subject specification. For example, the sentence-final particle *la* marks imperatives, while *ca* marks exhortatives. See examples in (9), cited from Zanuttini, Pak&Portner (2008, 2012).

- (9) a. *Cemsim-ul sa-la.* *Imperative*
 lunch-ACC buy-IMP
 ‘Buy lunch!’
- b. *Cemsim-ul sa-ca.* *Exhortative*
 lunch-ACC buy-EXH
 ‘Let’s buy lunch.’

Based on these observations, I consider the three types of directive sentences in Sichuanese to be intrinsically imperative, with subjects that may in some cases be lexically specified as speaker-inclusive.⁴

⁴The encoding of addressee across different types of directives is not the focus of the present study. For detailed discussion, see Bennis (2006, 2007), Portner (2007), Zanuttini (2008), Zanuttini, Pak&Portner (2012), among others.

Observation 2: [V-*lao*!] involves an additional layer of speaker-oriented meaning, specifically, a subjective evaluation that the utterance time is the appropriate or expected moment for the action to be performed. It often corresponds to interpretations like ‘time to/for...’.⁵ Therefore, it may sound unnatural in contexts where the action is entirely arbitrary or introduced out of the blue, thereby making it impossible for the speaker to evaluate the action. This contrast is illustrated in (10) and (11).

- Situation 1: The mother is walking down the street when she happens to notice her child in a fruit store. She says to him:

- (10) a. *Wa2'er2-1, mai3 xiang1jiao1!*
 child[voc] buy banana
 ‘Child, you buy bananas!’
- b. *Wa2'er2-1, mai3 xiang1jiao1 ma!*
 child[voc] buy banana IMP
 ‘Child, you buy bananas (please)!’
- c. *?Wa2'er2-1, mai3 xiang1jiao1 lao!*
 child[voc] buy banana ATT
 ‘Child, you (can/should) buy bananas now!’/‘It’s time to buy bananas now!’

- Situation 2: I’m having party with a group of friends and I’m preparing the hotpot by myself. When it’s ready, they are still out on the balcony drinking, so I call out to them:

- (11) a. *?Ci2 ho3go1!*
 eat hotpot
 ‘Eat hotpot!’
- b. *?Ci2 ho3go1 ma!*
 eat hotpot IMP
 ‘Eat hotpot (please)!’
- c. *Ci2 ho3go1 lao!*
 eat hotpot ATT
 ‘You/we (can/should) eat hotpot now!’/‘It’s time to eat hotpot now!’

⁵In other words, *lao* in imperative sentences imposes a requirement that the action suggested by the imperative be carried out immediately. This use is comparable to the sentence-final particle *mo* in Venetian, which, as proposed by Munaro&Poletto (2003:101), “seems to be sensitive to the tense of the utterance, as it signals that the utterance time and the performance time must coincide” when used in imperatives.

Based on this contrast, it is more appropriate to analyze *lao* in [V-*lao*!] as a particle expressing the speaker's attitude or subjective evaluation, rather than as a mere imperative marker akin to *ma*.

Observation 3: [V-*lao*!] is typically used in polite contexts, as it is the least direct among the three imperative forms. Moreover, [V-*lao*!] appears to convey a distinct modal interpretation, which is absent in both [V!] and [V-*ma*!]. This is illustrated in (12).

- Situation 3: During a meeting of directors, there is a session in which everyone fills out a form and hands it back. When Director Li starts to collect the forms, the secretary says to Director Wang:

- (12)
- | | | |
|----|--|---------------------------|
| a. | <i>Wang2-ju2zang3, jiao1 biao3!</i> | <i>unpolite/direct</i> |
| | Director-Wang[voc] hand.in form | |
| | ‘Director Wang, hand in your form!’ | |
| b. | <i>Wang2-ju2zang3, jiao1 biao3 ma!</i> | <i>polite/less direct</i> |
| | Director-Wang[voc] hand.in form IMP | |
| | ‘Director Wang, hand in your form (please)!’ | |
| c. | <i>Wang2-ju2zang3, jiao1 biao3 lao!</i> | <i>polite/indirect</i> |
| | Director-Wang[voc] hand.in form ATT | |
| | ‘Director Wang, you (can/should) hand in your form now!’ | |

However, *lao* is not a politeness marker itself. The indirect and polite effect seems to arise from the (weak) deontic modal interpretation (cf. Palmer 2001[1986]). At this point, a question arises naturally: where does this modal interpretation come from? Is it encoded in some covert modal element, or does it emerge as a pragmatic effect? This question leads to the following observation 4.

Observation 4: only in [V-*lao*!] can a weak deontic modal be overtly realized. Specifically, the following patterns are observed across the three imperative forms.

- No *lao*, no overt modal

- (13)
- | | | |
|----|---------------------------------------|-----------------------|
| a. | <i>(*Gai1/*ko3yi3) mai3 tang2!</i> | <i>[(*Mod-)V!]</i> |
| | should/can buy candy | |
| b. | <i>(*Gai1/*ko3yi3) mai3 tang2 ma!</i> | <i>[(*Mod-)V-ma!]</i> |
| | should/can buy candy IMP | |

- Overt *lao*, optional overt modal

- (14) *(Gai1/ko3yi3) mai3 tang2 lao!* [(Mod-)V-lao!]
 should/can buy candy ATT
 ‘You should/can buy candies now!’

- Overt modal, obligatory overt *lao*

- (15) *Gai1/ko3yi3 mai3 tang2 *(lao)!* [Mod-V-*(lao)!]
 should/can buy candy ATT
 ‘You should/can buy candies now!’

The above observation demonstrates that the weak deontic modal may be optionally realized on the surface structure (see (14)), and that the overt presence of weak deontic modals is enabled by *lao*, as illustrated by the contrast between (13) and (15). In other words, *lao* functions as the licenser of an overt modal element. Given that the interpretation of the weak deontic modal is consistently accessible in the [V-*lao*] construction, as introduced in Observation 3, I propose that the deontic modal, although appearing optional on the surface structure, is always present in the underlying structure. This leads to the underlying structure [(Mod)-V-*lao*!]. This hypothesis aligns closely with Lü’s (1980:353) intuition, who suggests that imperative sentences with *le* (i.e., Sichuanese *lao*) are typically preceded by modal auxiliaries such as *gai* ‘should’ or *keyi* ‘be allowed to’. Accordingly, she paraphrases the Standard Chinese sentence in (16a) with the sentence in (16b).

- (16) a. *Xiuxi le!*
 rest LE
 b. *Keyi/gai xiuxi le!*
 can/should rest LE
 ‘You/We can/should have a rest now!’ (from Lü 1980:353)

The appearance of modal elements in imperative sentences is not a big surprise to us. The association between deontic modals and the subjectivity and performative force of a sentence has long been recognized in the literature (Lyons 1977; Coates 1983; among others). For example, Palmer (2001[1986]:80) suggests that “notionally, imperative is closely associated with deontic modals.” From a syntactic perspective, Kayne (2000:Chap.6) argues for the presence of an empty, phonologically unrealized modal in Italian negative imperatives. However, although imperatives are often paralleled with sentences containing modals, it is less common for modals to be overtly realized within imperative constructions. To understand whether the fixed pattern [(Mod)-V-*lao*!] is particular to imperative sentences, or is also observed in declarative sentences, we now

turn to the next observation.

Observation 5: the close relationship between a modal element and *lao* is observed exclusively in imperative sentences, not in declarative sentences. As illustrated in (17), the overt presence of a deontic modal in a declarative sentence is not accompanied by *lao* (see (17a)), and the presence of *lao* in declarative sentences neither leads to a modal reading nor permits the optional overt presence of a deontic modal (see (17b)).

- (17) a. *Zang1san1 gai1/ko3yi3 lai2.*
 3SG should/be.permitted.to come
 ‘Zhangsan should/is permitted to come.’
 b. *Zang1san1 lai2 lao3.*
 3SG come CRS
 ‘Zhangsan has come.’

This observation leads to the following hypotheses:

- i) *lao* in imperative [V-*lao*!] is a distinct particle from the one found in declarative sentences;
- ii) the former functions as an attitude marker encoding the speaker’s attitude and subjective evaluation, which in turn enables the activation of deontic modals in the imperative [V-*lao*!].

In the next section, we have a close examination of the sentence-final particle *lao* to determine whether the proposal of an attitude marker *lao* is both theoretically and empirically plausible.

8.1.2 Attitude-marker *lao*

As briefly introduced at the beginning of this chapter, the sentence-final particle *lao* is traditionally defined as a marker signaling change into a new situation. In this section, I will demonstrate that there exists a distinct particle, sharing the same apparent form as the change-of-state *lao*, which is related to the speaker’s attitude and subjective evaluation.

Cross-linguistically, the use of particles to encode the speaker’s attitude has long been recognized as a common strategy in the literature. This group of particles is referred to as “modal particles” in Germanic languages (Thurmair 1989; Abraham 1995; Coniglio 2005, 2006, 2007, among others), and more generally as “discourse particles” (Abraham 1991, Fisher 2006, Bayer&Obenauer 2011, Haegeman 2014, among others). These

particles may appear either at the edge of a clause, as in some Veneto dialects (Munaro&Poletto 2003, 2009) and West Flemish (Haegeman 2014), or in the middle of a clause, as in German and Italian (Coniglio 2008). Specifically, sentence-final particles have been analyzed as heads of high CP projections, taking wide scope over the whole clausal complement and permitting the movement of the whole clausal complement into their specifier positions (Munaro&Poletto 2002, 2005, 2009).⁶ Various labels have been proposed for this functional projection, including DiscourseP (Benincà 2001), PragmaticP (Hill 2006), and Speech ActP (Hill 2007), etc.

In the same vein, Paul (2009) proposes a similar functional projection for Chinese sentence-final particles, which encode the speaker's attitude and occupy the highest position of the C-domain. Given that Chinese sentence-final particles are generally assumed to fall into three distinct layers (cf. Zhu 1982), and following the split CP hypothesis (Rizzi 1997, 2004), Paul (2009, 2014) maps these three layers of sentence-final particles in Standard Chinese onto three functional projections:

- (18) low C < medium C (Force) < high C (Attitude)⁷

Paul (2014:7) locates the canonical change-of-state *le* in lowC, which she considers the lowest subprojection of the C domain. As Paul suggests, a general function of the change-of-state *le* is to relate the event to the speech time, signaling a transition into a new situation (Paul 2014:7).

Building on this, Pan (2015, 2019) further divides the highest Attitude Phrase into two distinct layers, based on the observation that the two attitude particles *ne* and *ba* in Standard Chinese can cooccur in a fixed order [*ne ba*]. An example is provided in (19). In this configuration, the particle *ne* is argued to function as a marker attracting the co-speaker's attention, while *ba* is proposed to express the speaker's uncertainty.

- (19) *Xiaowang ye qu Faguo nian shu ne ba!*
 3SG also go France study book NE_{att2} BA_{att1}
 'Probably, Xiaowang went to study in France as well!' (from Pan 2015:853)

The relevant hierarchy proposed by Pan (2015) is presented in (20), where S.AspP (Sen-

⁶For arguments against locating sentence-final particles within the C domain, see Cardinaletti's (2011) discussion on Italian sentence-final particles.

⁷Paul adopts the neutral label "low C", instead of Rizzi's "FiniteP", based on the consideration that the status of "finiteness" in Chinese is still controversial, and that several differences exist between Rizzi's hierarchy and the one proposed for Chinese. For a detailed discussion, see Paul (2005); see also Paul (2014) and Paul&Pan (2016).

tential Aspect Phrase) corresponds to Paul’s (2014) LowC projection, iForceP corresponds to mediumC, and the two AttPs (Attitude Phrase) fall under Paul’s (2014) highC projection.⁸

(20) S.AspP < iForceP < AttP2 < AttP1⁹

Pan (2019:84) provides an overview of all Chinese sentence-final particles in Table 8.1 reproduced below. Again, irrelevant projections are omitted.

Projections		Particles/operators	Discourse function
S.AspP (Sentential Aspect)		<i>laizhe1</i>	Recent past
		<i>le</i>	State changing
		<i>ne1</i>	Progressive aspect
iForceP (illocutionary force)		<i>ma</i>	Standard yes-no question
		<i>meiyou</i>	Perfective yes-no question
		<i>ba1</i>	Confirmation yes-no question
		<i>ba2</i>	Weak imperative
		Op-wh (null)	Wh-question operator
AttitudeP (speaker’s attitude)	Low layer	<i>ne2</i>	Speaker’s attitude, subjective opinion, etc.
	High layer	<i>a, ei, bei, la, lei, na, ya, ma, laizhe2, ba3, etc.</i>	

Table 8.1

As *lao* in [V-*lao*!] also encodes the speaker’s attitude and subjective evaluation, it seems theoretically plausible to suppose that this *lao* occupies the highest AttP projection. However, a small empirical issue arises with this assumption: the imperative

⁸Pan (2019) labels Paul’s (2014) LowC projection as “sentential aspect”, following definitions given in the traditional literature (Chao 1968, Li&Thompson 1981, Zhu 1982). However, the term “aspect” may be somewhat misleading in this context. For example, the sentence-final *le* does not express any kind of event-related aspect but rather relates to situations and encodes temporal information. Indeed, as Zhu (1982:209) points out, *le* signals the emergence of a new situation or a change into a new state of affairs.

⁹The two projections related to focus particles (OnlyP) and special questions (SQP) are omitted here, as they are irrelevant to the present discussion. The complete hierarchy proposed in Pan (2015) is: (TP) < S.AspP < OnlyP < iForceP < SQP < AttP2 < AttP1.

[V-lao!] can be followed by the sentence-final particle *ma* (嘛), which corresponds to Standard Chinese *ba* (吧) in the above table. An example is provided in (21).

- (21) *Qi3cuang2 lao3 ma!*
 get.up LAO MA
 ‘(Come on,) you (should) get up now!’

Since Sichuanese *ma* (嘛) can also assume different functions within the middle and high C domain (i.e., iForceP and AttitudeP; Zhang et al. 2001, 12.1-12.2), largely corresponding to those of Standard Chinese *ba* (吧) (i.e., *ba1*, *ba2* and *ba3* in Table 8.1), it is important to determine which *ma* (嘛) is present in (21). Starting with the middle C domain, *ma* (嘛) can be first excluded from any function related to yes-no questions (e.g., *ba1*), as the sentence in question is clearly restricted to imperative use. As to whether this *ma* (嘛) is the same as the one marking weak imperatives in [V-*ma*_{imp}!](e.g., *ba2*), if it is indeed the Sichuanese imperative marker *ma*_{imp}, then it would follow naturally that the proceeding *lao* is the lower change-of-state particle, resulting in the sequence [*lao*_{crs} *ma*_{imp}].¹⁰ Given that the imperative marker *ma*_{imp} has been shown to be incapable of licensing deontic modals, and that only the attitude marker *lao* enables such licensing, we would expect that a deontic modal cannot be licensed in (21), since it lacks the attitude marker *lao*. However, as illustrated in (22), a deontic modal can be normally realized in (21), just as in other [V-lao!] imperatives.

- (22) *Gai1 qi3cuang2 lao3 ma!*
 should get.up LAO MA
 ‘(Come on,) you (should) get up now!’

The availability of an overt deontic modal in (22) indicates that the *lao* in (21) and (22) must be the same *lao* found in imperative [V-lao!], which is related to the speaker’s attitude. Consequently, the *ma* that follows *lao*_{att} can only be analyzed as occupying an even higher attitude-related position, thereby yielding the sequence [*lao*_{att} *ma*_{att}]. In fact, the *ma* in (21) and (22) conveys the speaker’s impatience and contributes a sense of solicitation to the imperative expressed by [V-lao!]. Following Pan’s (2015) analysis of the cooccurrence of the two attitude particles [*ne ba*], I propose that in (21) and

¹⁰Another piece of evidence comes from the discussion in Pan (2019), where it is shown that the imperative particle *ba2* is incompatible with *le* implying a change of state (P51). Pan further argues that this incompatibility arises from the fact that “an imperative force cannot be compatible with an action in the past, which, descriptively, means that it is impossible to order someone to realize an action that has already been realized in the past” (P52).

(22), *lao* occupies the lower layer of the Attitude Phrase (AttP2), while *ma* occupies the higher layer (AttP1).

Having established the underlying structure of [V-*lao*!], namely [(Mod-)V-*lao*!], we now turn to [V-DE-*lao*!] to examine how [(Mod-)V-*lao*!] interacts with DE.

8.1.3 [V-*lao*!] and DE

An important observation at this point is that only the [V-*lao*!] type of imperative is compatible with the alethic modal morpheme DE, as demonstrated by the contrast in (23). Given that only [V-*lao*!] allow for overt modal elements, as shown above, a possible explanation for this compatibility, at this stage, is that only [V-*lao*!] permits the occurrence of modal elements, in other words, only [V-*lao*!] provides a modalized environment.

- (23) a. **Xi3-de2 yi1fu2!*
wash-DE clothes
b. **Xi3-de2 yi1fu2 ma!*
wash-DE clothes IMP
c. *Xi3-de2 yi1fu2 lao!*
wash-DE clothes ATT
'You should/'d better wash your clothes (now)!'

Accordingly, the basic structure of [V-DE-*lao*!], as illustrated in (23c), is supposed to be [(Mod-)V-DE-*lao*!], in line with the discussion in previous chapters. In Chapter 7, it was argued that the cooccurrence of a specific modal element and DE is best accounted for through a concord analysis, whereby DE concords with the higher modal element in terms of quantificational force, and the entire construction inherits the modal flavor of the higher modal element. However, a problem remains from Chapter 7.3: the imperative construction [V-DE-*lao*!] seems to challenge the concord analysis by permitting the presence of the necessity modal *gai* 'should'. This issue is exemplified by the sentence repeated in (24).

- (24) *Gai1 xi3 -de2 yi1fu2 lao3!*
should wash -DE clothes ATT
'You should/'d better wash the clothes now!'

Based on the previous observation that the cooccurrence of *gai* 'should' and DE in declarative sentences results only in a stacked modal reading, I proposed in Chapter 7.3 the hypothesis that *gai* in the imperative [V-DE-*lao*!] carries an existential force,

which enables it to concord with DE. In the next section, I examine the plausibility of this hypothesis.

8.2 Modal approach to imperatives

The presence of a modal element in imperative sentences aligns with the modal approach to imperatives proposed in the literature, which holds that a modal operator is always involved in the semantics of imperative sentences (Schwager 2006; Kaufmann 2012; Oikonomou 2016, 2022).¹¹ Under this approach, it has been proposed that imperatives typically involve a necessity modal operator, therefore an imperative like “Close the door!” is semantically comparable to a sentence containing a universal modal operator like “You (must/should) close the door!”, conveying an obligation imposed on the addressee (Schwager 2006, Kaufmann 2012). The modal approach makes it possible to analyze imperatives within the theoretical system of modality established by Kratzer (1981). In a similar vein, different conversational backgrounds function as distinct ordering sources that derive the various readings of imperatives: requests (according to what the speaker orders), wishes (according to what the speaker wants), and advice (according to the addressee’s preferences, or what is considered to be generally preferred) (Kaufmann 2012, Section 4.1; summarized in Oikonomou 2016:1046). However, the introduction of a necessity operator can account only for the prototypical functions of imperatives and fails to capture those with a weaker directive force, such as permission-like readings (e.g., “acquiescence” imperatives; von Fintel&Iatridou 2017: 291) or certain types of suggestions that appear to carry an existential quantificational force. Kaufmann (2012) discusses the *for-example* imperatives, as illustrated in (25), suggesting that these can be interpreted as containing a possibility operator when used to give advice, and are therefore problematic for her modal approach. She provides the paraphrases in (26) for the example in (25).

¹¹Another important approach proposed to account for the variety of meanings conveyed by imperatives is the “minimal approach”, which differs from the “modal approach” in that it does not assume the presence of a modal operator in the semantics of imperative sentences, but resorts to pragmatics to derive the directive force. Since the focus of this chapter is to explore the interaction between modal elements and imperative sentences in Sichuanese in order to justify the concord analysis proposed in the previous chapter, only the modal approach will be considered here. For a detailed discussion of the “minimal approach” to imperatives, see Portner (2004, 2007), Mastop (2005), Pak et al. (2008), von Fintel&Iatridou (2017), and Roberts (2018).

- (25) *Kauf zum Beispiel keine Zigaretten.*
 buy.IMP for example no cigarettes
 ‘For example, don’t buy any cigarettes.’ (Kaufmann 2012:180)
- (26) a. How could I save money?
 b. One of the things you could do is not buy cigarettes.
 → It is necessary that you don’t buy cigarettes. (Kaufmann 2012:181)

To account for this exception, she argues that the necessity operator is decomposed into a possibility operator and an exhaustifier in this case. Following Zimmerman (2000), she adopts the view that exhaustive possibility amounts to necessity, as illustrated by the example in (27), which may serve as an answer to the question “What could I possibly do to stop smoking?”

- (27) *Du kannst nur aufhören, Zigaretten zu kaufen.*
 you can only stop cigarettes to buy
 ‘The only possibility you have (to achieve your task) is to stop buying cigarettes.’
 → It is necessary that you stop buying cigarettes. (Kaufmann 2012:181)

As for the *for-example* imperatives, she argues that *for example* functions as an anti-exhaustifier, thereby blocking the necessity reading and rendering visible the possibility operator.

In contrast, Oikonomou (2016, 2022) proposes that imperatives intrinsically involve a modal with existential force, which can be strengthened to have universal force. As a result, the ‘permission’ reading is derived for free. According to her, a necessary condition for strengthening the existential force is that the interpretation is not blocked, for example, by an overt possibility modal, as illustrated in (28).

- (28) You can open the door. Oikonomou (2016:1054)

For the purpose of this study, the above discussion is sufficient to show that a necessity modal in imperatives can be decomposed into a possibility modal and other factors that can strengthen the possibility modal into a necessity one. This can be represented as in (29).

- (29) Necessity = Possibility + Exhaustifier/Strengthener

This supports my hypothesis concerning the imperative [(*Gai*-)V-DE-lao!], namely that the modal auxiliary *gai* ‘should’, which is the intrinsic modal operator of the imperative clause, can cooccur with the possibility modal DE since it also has in its basis a possibil-

ity modal, whose strengthening to a necessity modal is blocked. Following Oikonomou (2016), I propose that it is the overt presence of the possibility modal DE that blocks the possible strengthening of the underlying possibility modal of *gai*, similar to the case in (28). This contrasts with the necessity modal *bixu* ‘obligatorily’, which is incompatible with [V-DE-lao!] because it carries a much stronger quantificational force and therefore cannot be reduced to a possibility modal to concord with DE.¹² This contrast is illustrated in (30).

- (30) **Bi2xu1 xi3 de2 yi1fu2 lao3!*
 obligatorily wash DE clothes ATT
 Intended: ‘You must/’d better harvest the corn in the field now!’

In this sense, the basic construction [Mod-V-lao!] can be understood as a case where the underlying modal of an imperative is overtly realized.

8.3 Point of view

Intuitively, all imperatives should be able to express the notion of “Point of view”, which Poletto&Zanuttini (2003) interpret as whether a command is given from the vantage point of the speaker or the hearer. In this section, “POV on speaker” and “POV on hearer” are used to refer to a command given from the vantage point of the speaker and the hearer, respectively. They provide examples in (31) to illustrate this notion (Poletto&Zanuttini 2003:3).

- (31) a. Bring me a cup of coffee! *POV on speaker*
 b. Have a cup of coffee! *POV on hearer*

They investigate four particles that are obligatory in positive imperatives in Badiotto, a Rhaetoromance variety spoken in northeastern Italy, and identify two particles, *ma* and *mo*, as encoding the notion of point of view. Specifically, *ma* signals advice or permission given from the vantage point of the hearer, while *mo* expresses an order given from the vantage point of the speaker, as illustrated in (32).

¹²Regarding the invitation and acquiescence use of imperatives, Kaufmann (2024:186, fn. 12) notes that while a strong modal like *must* clearly fails to serve such conversational functions, “the differences between *should*, imperatives, and *can* seem less clear-cut”. That is, while *You must have another cookie* makes an intuitively different contribution than an invitation *Have another cookie!*, it is less straightforward to rule out the possibility that *You should have a cookie!* can be used as an invitation, similarly to imperatives.

- (32) a. *Tète ma n dé de vacanza!*
 take-yourself ma a day of vacation (2nd sg)
 ‘Take a day off for vacation!’
- b. *Arjigneme mo cà le bagn!*
 prepare-me mo here the bath
 ‘Get my bath ready!’ (from Poletto & Zanuttini 2003:4-5)

They take point of view to be a modal notion and propose that Badiotto imperatives encode this notion in the syntax, through a functional projection with modal properties (ModP).

- (33) [CP [c^0 ...[ModP *ma* ...[TP]]]]

Building on the idea that all imperatives encode the notion of point of view, either syntactically or contextually, this section demonstrates that Sichuanese [V-DE-lao!] consistently conveys point of view oriented toward the hearer, and thus represents a case of syntactically encoded point of view. The hearer-oriented POV of [V-DE-lao!] is primarily evidenced by its incompatibility with the benefactive phrase *geil-ngo3* ‘for-me’, as confirmed by fieldwork data. Relevant examples from the fieldwork are provided in (34) and (35).

- (34) **Ge1-gno3 sao3 de2 di4 lao3!*
 for-me clean DE floor ATT
 Intended meaning: ‘You should’d better clean the floor (*for me).’
 (unacceptable for 95% of informants)
- (35) **Ge1-gno3 ce3 de2 cao3 lao3!*
 for-me pull-DE weed ATT
 Intended meaning: ‘You should’d better pull the weeds (*for me).’
 (unacceptable for 95% of informants)

Further evidence comes from the fact that [V-DE-lao!] cannot be followed by a sentence expressing a negative consequence for the hearer, in contrast to the imperative forms [V!] and [V-ma!] in Sichuanese, as illustrated in (36).

The show is about to start. A says to B:

- (36) a. *Nyi3 qi(e)4, qi(e)4 -lao yao4 zao2 ji3 -si3.*
 2SG go go -PFV will PASS crush -dead
 ‘Go, and you’ll be crushed to death (exaggeration)’

- b. *Nyi3 qi(e)4 ma3, qi(e)4 -lao yao4 zao2 ji3 -si3.*
 2SG go IMP go -PFV will PASS crush -dead
 ‘Go, and you’ll be crushed to death (exaggeration)’
- c. **Nyi3 qi(e)4 de2 lao, qi(e)4 -lao yao4 zao2 ji3 -si3.*
 2SG go de ATT go -PFV will PASS crush -dead

The consistent hearer-oriented POV reading suggests that [V-DE-*lao*!] should also encode this notion in the syntax, either through a dedicated morpheme, such as the particle *ma* in Badiotto, or by other means. In the case of Badiotto, Poletto&Zanuttini (2003:10) posit a functional projection encoding the notion of point of view, which is modal in nature and labeled ModP for simplicity. According to the authors, this projection occupies a position below CP, at the edge of TP, where other modal notions are normally encoded. Following Poletto&Zanuttini (2003), I propose that a functional projection related to POV is likewise consistently activated in the syntax of [V-DE-*lao*!], which I label Mod_{POV}P here.

Regarding the activation of this construction, it is less likely to be attributed to a dedicated morpheme, as in Badiotto. First, it cannot be associated with the attitude particle *lao*, since [V-*lao*!] can express POV either on the speaker or on the hearer, depending on the context. See examples in (37) and (38).

- (37) *Xiuxi lao!*
 take.rest ATT
 ‘(You can/should) have a rest now!’ POV on hearer
- (38) *Ge1-ngo3 zu3fan4 lao3!*
 for-me cook.meal ATT
 ‘(You can/should) Cook meal for me now!’ POV on speaker

Moreover, since the notion of POV is assumed to be encoded in the higher domain of the clausal hierarchy, the alethic modal DE is excluded as well. If Mod_{POV}P cannot be activated via external merge, could it instead be activated via internal merge, namely by moving an element into the relevant projection? The answer is yes. As discussed in Section 8.1.2, sentence-final particles are cross-linguistically analyzed as heads of high CP projections, taking wide scope over the whole clausal complement and permitting the movement of the whole clausal complement into their specifier positions (Munaro&Poletto 2002, 2005, 2009; Paul 2009 for Mandarin Chinese). Therefore, in both [V-*lao*!] and [V-DE-*lao*!], the sentence-final particle *lao*, as an attitude marker heading the projection AttP2, also requires the clausal complement to move into its specifier position. Given that [V-DE-*lao*!] also predicts the activation of Mod_{POV}P, it

may be further assumed that, in [V-DE-*lao!*], the clausal complement, before ultimately landing in SpecAtt2, makes an intermediate stop in SpecMod_{POV} to activate this relevant projection.

Although further investigation is needed to confirm this hypothesis, the presented data provide sufficient empirical support for the claim that all imperatives encode the notion of POV, either through syntactic marking or contextual factors. This distinction is illustrated by the two imperative constructions discussed in this chapter. In [V-*lao!*], the speaker evaluates only whether it is the right moment for the speaker to act; however, whether the action to be performed by the hearer is of benefit to the hearer or the speaker is not encoded in the syntax and therefore depends on contextual factors (as shown above in (37) and (38)). In contrast, in [V-DE-*lao!*], an additional projection for POV is consistently activated in the syntax, for which the point of view is always oriented toward the hearer, regardless of the context.

Conclusion

This dissertation offers a fieldwork-based investigation of Sichuanese postverbal modal morpheme *de* (得), which appears to be highly polysemous at first sight. Fundamentally, I show that this concrete case offers empirical support for the idea that modals are not intrinsically polysemous, and the apparent polysemy can be achieved in various ways, either through contextual factors, or structural mechanisms.

Adopting a cartographic approach to syntax, this study confirms the root modal hierarchy identified by Cinque (1999, 2006), according to which some macro-categories of modal readings are systematically encoded in the syntax. By introducing a $\text{ModP}_{\text{Alethic(II)}}$ for the modal morpheme DE encoding “alethic possibility” in the modal hierarchy, I depict a more complete version of modal hierarchy:

- (39) $\text{ModP}_{\text{Epistemic}} > \text{ModP}_{\text{Alethic(I)}} > \text{ModP}_{\text{Volitional}} > \text{ModP}_{\text{Obligation/Goal-oriented Nec(essity)}}$
 $> \text{ModP}_{\text{Permission/Ability}} > \text{ModP}_{\text{Alethic(II)}}$

With the aim of exploring whether and how the various modal readings of DE can be disambiguated at the structural level, the core part of this dissertation, the two rounds of fieldwork, illustrate the interactions between the basic modal DE and other disambiguating elements, which serve as “indicators” of specific modal readings encoded in different modal projections.

Under the traditional kratzerian framework of modality, this disambiguating configuration is characterized by two crucial points. First, the alethic modal DE in the [V-DE] construction provides only a modal base of root possibility, while with empty ordering sources in its semantics. Second, the function of ordering sources, traditionally assumed by “conversational backgrounds”, is assumed in this case by concrete “indicators” situated in relevant modal projections, capable of activating those projections in the syntax.

In positive constructions, the possible combinations with these modal “indicators” allow the basic modal construction [V-DE] to inherit the specific modal flavor of the

higher modal indicator and therefore surface with various modal readings. This empirical case offers a fairly “concrete” version of compositionality in the modal system, which is rarely found among the languages of the world. Conversely, in negative constructions, the activation of specific modal projections is enabled by remnant vP movement into the corresponding projection, a typical last-resort solution of an analytic language like Mandarin Chinese.

Moreover, the investigation on the aspectual constraints illustrates the close relationship between modality and aspect, offering reflections on their interaction from both synchronic and diachronic perspectives. In particular, I show that the grammaticalization process of DE corresponds to the general tendency of cross-linguistic grammaticalization process of modals (Hopper & Traugott 2003, Traugott 2011).

Finally, the imperative forms [(Mod-)V-*lao*!] and [(Mod-)V-DE-*lao*!] illustrate the close relationship between modals and imperatives, offering furthermore useful insights into the different mechanisms for encoding “point of view”, either via contextual factors or through syntactic configurations.

Appendix A

Investigated areas in Fieldwork (I) and Fieldwork (II)



Figure A.1 Location of Shehong City within Sichuan Province (Modified from:
(Source))

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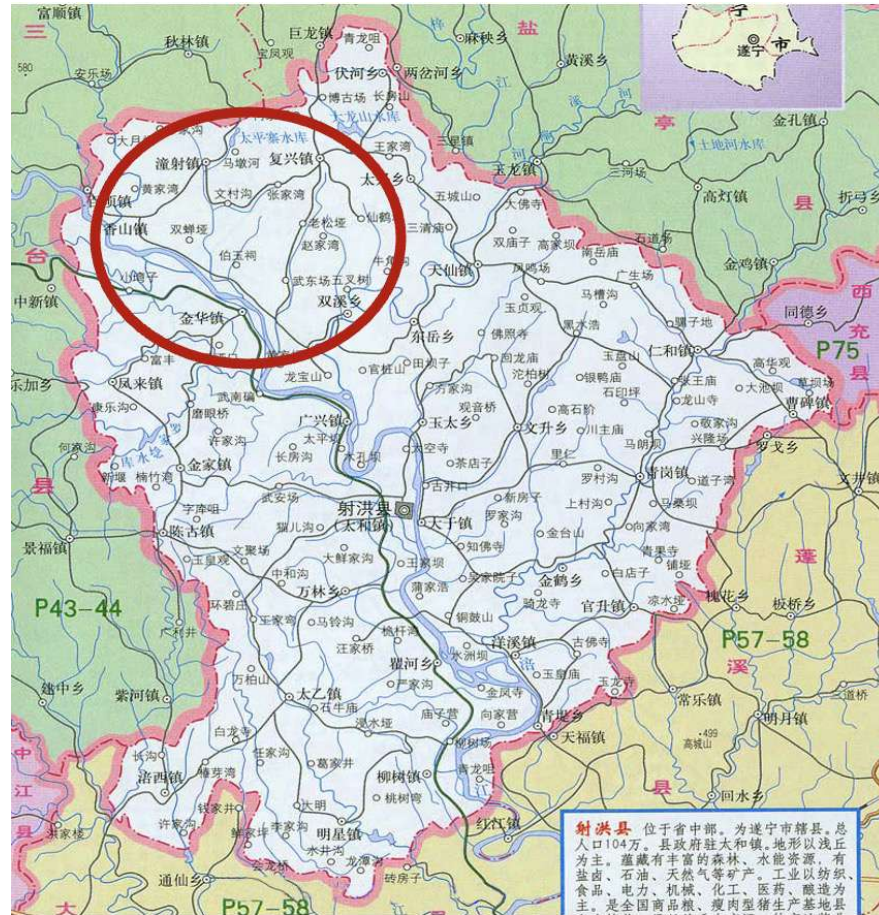


Figure A.2 Investigated sub-areas (Fieldwork (I) and (II)) on the map of Shehong City
Modified from: 2011-2023 SHIJIEDITU.NET (Source)

Investigated areas in Fieldwork (I)

1. Shehong City

- Location: the eastern part of Sichuan province
- Surface area: 1496 km²
- Permanent population: 732,380 (till 2020)
- Sub-areas: 2 sub-districts + 21 towns
- Investigated area: Taihe sub-district and Ping'an sub-district (around 294,293 inhabitants)

2. Jinhua Town

- Location: the northern part of Shehong City

- Surface area: 100,09 km²
- Permanent population: 38,611 (till 2020)
- Sub-areas: 4 communities + 15 sub-villages
- Investigated area: Xinglong community and Huayuan community (around 11,000 inhabitants)

Investigated areas in Fieldwork (II)

1. Tongshe Town

- Location: the northwestern part of Shehong City
- Surface area: 47,36 km²
- Population: 19450 (till 2018)
- Permanent population: around 30% of the whole population
- Sub-areas: 1 community + 9 sub-villages
- Investigated area: Lianhua Community (less than 3000 inhabitants)

2. Fuxin Town

- Location: the northwestern part of Shehong City
- Surface area: 52,1 km²
- Population: 22,444 (till 2018)
- Permanent population: 16378 (till 2021)
- Sub-areas: 2 community + 15 sub-villages
- Investigated area: Jinfeng Community (less than 5000 inhabitants)

3. Shuangxi Village

- Location: the northern part of Shehong City
- Surface area: 40,47 km²

- Population: 10789 (till 2017)
- Permanent population: around 30% of the whole population
- Sub-areas: 1 community + 13 sub-(sub)villages
- Investigated area: Zijiang Community (less than 1000 inhabitants)

Appendix B

Questionnaire (I) (original Chinese version)

【本问卷所收集到的所有回答及个人信息都将做匿名处理，均只用于个人调查研究。】

年龄：

受教育程度：

是否会说普通话：

日常使用得更多的是：

出生城市：

目前居住城市：

这个问卷一共有 29 个句子，麻烦你听到每个句子过后根据第一反应来判断。你可以回答：接受，不接受，有点儿怪。“接受”意思是你自己要这么说，你听到别个这么说过，或者你觉得四川话要这么说。“不接受”意思是你自己不得这么说，你从来没听别个这么说过，或者你觉得四川话不得这么说。如果你确实判断不了，请回答“有点儿怪”。

背景：娃儿吃饭的时候到处乱动，妈妈有点生气，问他：

(1) 你好生吃得饭不？

背景：稀饭煮好了，妈妈给娃儿说：

(2) 稀饭可以吃得了。

- (3) 他好造孽哦，一天都吃不得火锅。

背景：娃儿在马路上乱跑，妈妈朝他喊：

- (4) (这儿)跑不得！
(5) 我胃不好，经常都吃不得火锅。
(6) 娃儿，12点了，该睡得了。
(7) 张三经常去得成都。

背景：妈妈说：这个电饭煲用了好多年了，该换得了。奶奶说：

- (8) 不，这个电饭煲还可以用得。
(9) 娃儿，学了一天了，休息得了
(10) 我吃了碗大碗面，胀得很。
(11) 他好安逸哦，一天都吃得火锅。

背景：桌子上有一个苹果。张三说：这个苹果吃不得。李四也说：这个苹果吃不得。这时候王五来了，说：

- (12) 这个苹果完全吃得啊。
(13) 该洗不得衣服了。
(14) 这个手机用得，都用了五年了。

背景：张三和几个朋友一起喝酒。李四说：张三可能喝不得啤酒。王五说：没得问题。

- (15) 张三完全喝得啤酒。
(16) 这个娃儿吃不大得饭。
(17) 我们屋头个是个娃儿都吃得。
(18) 给/帮我擦得鞋子了！
(19) 你给不得他这些钱，都是留到给娃儿读书的钱。
(20) 洗得我的衣服了！

(21) 我今天有点儿不舒服，可能喝不太得。

(22) 他教得高中生英语，他是个研究生得嘛。

背景：我们准备坐飞机回四川。

(23) a. 我们飞不得成都。成都得下雷阵雨。

b. 那飞得重庆不嘛？

c. 飞得重庆，重庆没下雨。

(24) 这个娃儿哭得，哭一个小时都不得停。

(25) 现在老师打不得学生，打了要遭告。

背景：我看到有个人得街上吼娃儿，我去劝他/她。这个人说：

(26) 我说得我个人的娃儿，你莫管。

(27) 桌子上大个大个的苹果，吃嘛。

(28) a. 今天晚上张三来得不啊？

b. 张三来得啊，都是自己人。

(29) a. 我进来得不？

b. 进来得。/进来不得。

【感谢您对本次问卷调查的配合和支持！】

Appendix C

Questionnaire (I) (translated English version with glossed sentences)

【All responses and personal information collected in this interview will be anonymized and will only be used for personal research purposes.】

Age:

Level of education:

Do you speak Standard Chinese?:

Which variety do you use more frequently in daily life?:

City of birth:

Current city of residence:

This questionnaire contains 29 sentences. After listening to each sentence, please make a judgment based on your first reaction on whether you accept the sentence. You can respond “acceptable”, which means you would say it yourself, have heard someone else say it, or think the sentence is correct in Sichuanese and “unacceptable”, which means you would not say it, have never heard someone say it, or think the sentence is incorrect in Sichuanese. Please respond “weird” only when you find it difficult to judge, i.e., undecidable between the other two options.

Context: The child is moving around while having his meal, his mom is a little bit mad at him and asks:

- (1) *Ngɿ3 hao3sen1 ci2-de2 fan4 bu2?*
2SG well eat-DE meal INTER

‘Can you eat your meal in a proper manner?’

Context: The porridge is ready; the mother says to the child:

- (2) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
porridge be.allowed.to eat-DE ATT
‘The porridge can be eaten now (, and you’d better eat it now)!’
- (3) *Ta1 hao3 zao4nie4 o, yi2tian1 dou1 ci2 -bu -de2 ho3go1.*
3SG really poor EXCL always all eat -NEG -DE hotpot
‘Poor him, it is always impossible for him to have hotpot.’

Context: a mother is shouting at her child who is running in the middle of the street:

- (4) *Ze4'er2 pao3 -bu2 -de2!*
here run -NEG -DE
‘You must not run here!’
- (5) *Ngo3 wei4 bu2-hao3, jin1cang2 dou1 ci2 -bu -de2 ho3go1.*
1SG stomach NEG-good often all eat -NEG -DE hotpot
‘I have stomach problems, (so) I often cannot eat hotpot.’
- (6) *Wa2er2-1, 12-dian3 lao3, gai1 sui4-de2 lao3!*
child 12-o'clock CRS should sleep-DE ATT
‘Child, it’s 12 o’clock, you should/d better go to bed now!’
- (7) *Zang1san1 jin1cang2 qi(e)4-de2 Cen2du1.*
3SG often go-DE Chengdu
‘It is often possible for Zhangsan to go to Chengdu.’

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (8) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
no this-CLF rice.cooker still be.allowed.to use-DE
‘No, this rice cooker can still be used.’
- (9) *Wa2'er2-1, xuo2-lao3 yi2-tian1 lao3, xiu1xi2-de2 lao3!*
child study-PFV one-day CRS rest-DE ATT
‘Child, (you) have been studying all day; you should/d better have a rest now!’
- (10) *Ngo3 ci2-lao3 wan3-da4-wan3 mian4, zang4 de2hen3.*
1SG eat-PFV bowl-big-bowl noodle full very
‘I have eaten one big bowl of noodles, and I am very full now.’
- (11) *Ta1 hao3 an1yi2 o, yi2tian1 dou1 ci2-de2 ho3go1.*
3SG really comfortable EXCL always all eat-DE hotpot
‘Lucky him, it is always possible for him to have hotpot.’

Context: There is an apple on the table. Zhangsan says: this apple is not edible. Lisi also says: this apple is not edible. At this point Wangwu comes and says:

- (12) *Ze4-go4 pin2go3 wan2quan2 ci2-de2 a.*
 this-CLF apple completely eat-DE SFP
 ‘This apple is perfectly edible/ It is completely possible for this apple to be eaten.’
- (13) *Gai1 xi3 -bu -de2 yi1fu2 lao3!*
 should wash -NEG -DE clothes ATT
 ‘You should not be able/allowed to wash clothes now!’
- (14) *Ze4-go4 sou3ji1 yong4-de2, dou1 yong4-lao3 wu5-nian2 lao3.*
 this-CLF phone use-DE already use-PFV five-year CRS
 ‘This phone can be used for a long time (i.e., is very durable); It has already been used for five years.’

Context: Zhangsan and his friends are drinking together. Lisi says: Zhangsan probably cannot drink beer. Wangwu says: there’s no problem,

- (15) *Zang1san1 wan2quan2 ho1-de2 pi2jiu3.*
 3SG completely drink-DE beer
 ‘It is perfectly possible for Zhangsan to drink beer.’
- (16) *Ze4-go4 wa2’er2-1 ci2 bu da4 de2 fan4.*
 this-CLF child eat NEG big;very DE meal
 ‘This child is not very able to eat.’
- (17) *Ngo3men wu2tou2 go4-si4-go4 wa2’er2-1 dou1 ci2-de2.*
 1PL family CLF-SI-CLF child all eat-DE
 ‘Every child in our family is quite able to eat.’
- (18) *Gei2/Bang1 ngo3 ca2-de2 hai2zi3 lao3!*
 for/help me wipe-DE shoe ATT
 ‘You should/’d better wipe the shoes for me now!’
- (19) *Ng3 ge1 -bu -de2 ta1 ze4xi1 qian2, dou1 si4 liu2 ge1 wa2’er2-1 du2su1 li1 qian2.*
 2SG give -NEG -DE him these money all be leave to child study
 POSS money
 ‘You cannot/must not give him all these money, (because) they are left for the child’s education.’
- (20) *Xi3-de2 ngo3li yi1fu2 lao3!*
 wash-DE my clothes ATT
 ‘You should/’d better wash my clothes now!’

- (21) *Ngo3 jin1tian1 you3dian3'er bu2 su1fu2, ko3nen2 ho1 bu2 tai4*
 1SG today a.little NEG comfortable probably drink NEG really
de2.
 DE
 'I am not feeling well today, (so) I am probably not really able to drink.'
- (22) *Ta1 jiao1 -de2 gao1zong1sen1 yin1yu3, ta1 si4 nyian1jiu1sen1*
 3SG teach -DE high.school.students English 3SG is master.graduate
de2ma.
 SFP
 'He can teach English to high school students, since he is a master graduate.'

Context: we are planning to fly back to Sichuan.

- (23) a. *Ngo3men fei1 -bu -de2 Cen2du1. Cen2du1 de2 xia4 lui2zen4yu3.*
 1PL fly -NEG -DE Chengdu Chengdu PROG fall thunderstorm
 'We cannot fly to Chengdu, (because) there is a thunderstorm there.'
- b. *Na4 fei1-de2 Cong2qin4 bu2 ma2?*
 then fly-DE Chongqing INTER SFP
 'Then can we fly to Chongqing?'
- c. *Fei1-de2 Cong2qin4, Cong2qin2 mei1 xia4yu3.*
 fly-DE Chongqing Chongqing not.be rain
 'We can fly to Chongqing, (because) it isn't raining there.'
- (24) *Ze4-go4 wa2'er2-1 ku2 -de2, ku2 yi2-go4 xiao3si2 dou1 bude2 tin2.*
 this-CLF child cry -DE cry one-CLF hour already not.will stop.
 'This child is quite able to cry/is able to cry for a long time; he will not stop crying even though he has been crying for an hour.'
- (25) *Xian4zai4 lao3si1 da3 -bu -de2 xuo2sen1, da3 -lao3 yao4 zao2 gao4.*
 now teacher beat -NEG -DE student beat -PFV will PASS accuse
 'Nowadays teachers cannot/must not beat students, otherwise they will be accused.'

Context: I see someone shouting at a child on the street, and when I try to persuade him/her not to do so, he/she responds:

- (26) *Ngo3 so2-de2 ngo3go2ren2 li1 wa2'er2-1, ngi3 mo2 guan3.*
 1SG scold-DE my.self POSS child 2SG not bother
 'I can scold my own child, (you) don't bother me.'
- (27) *Zo2zi-sang1 da4-go4 da4-go4 li pin2go3, ci2 ma.*
 table-on big-CLF big-CLF PART apple eat SFP
 'There are many big apples on the table, eat!'

- (28) a. *Jin1tian1 wan3sang4 Zang1san1 lai2-de2 bu2 a?*
 today night 3SG COME-DE INTER SFP
 ‘Can Zhangsan come tonight?’
- b. *Zang1san1 lai2-de2 a, dou1 si4 zi4ji3ren2.*
 3SG COME-DE SFP all be insider
 ‘Zhangsan can come, (because) he is one of us/ we are all insiders.’
- (29) a. *Ngo3 jin4lai2-de2 bu2?*
 1SG enter-DE INTER
 ‘Can/May I come in?’
- b. *Jin4lai2-de2./ Jin4lai2 -bu -de2.*
 enter-DE enter -NEG -DE
 ‘You can/may come in./ You cannot/may not/must not come in.’

【Thank you for your cooperation and support in this questionnaire survey!】

Appendix D

Complete result of Fieldwork(I)

The sentence numbers correspond to Questionnaire (I) in Appendix B and C, in which (10) (17) and (27) are fillers.

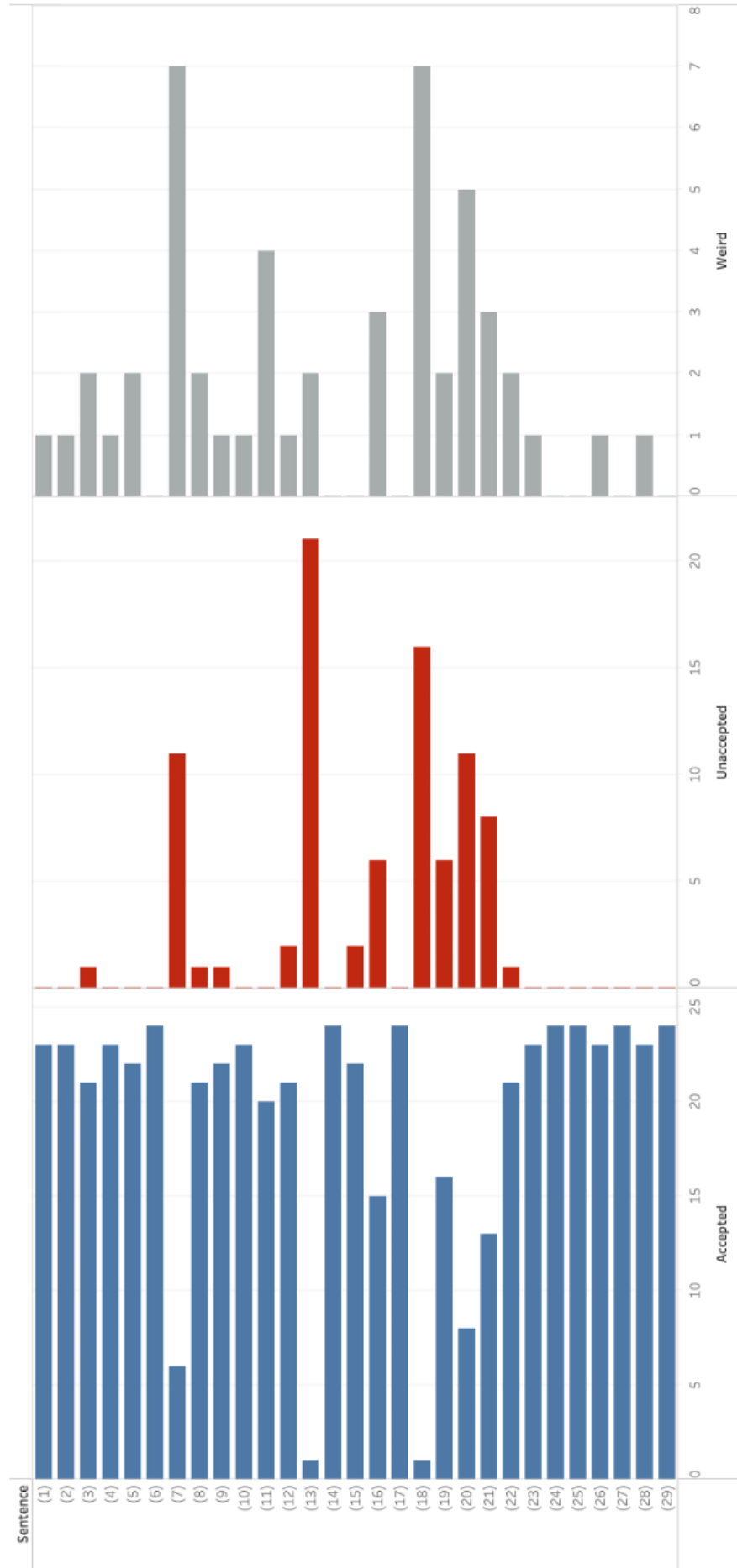


Figure D.1 Result of Fieldwork (I)

Appendix E

Questionnaire (II) (original Chinese version)

【本问卷所收集到的所有回答及个人信息都将做匿名处理，均只用于个人调查研究。】

年龄：

受教育程度：

是否会说普通话：

日常使用得更多的是：

出生城市：

目前居住城市：

这个问卷一共有 28 个句子，麻烦你听到每个句子过后根据第一反应来判断。你可以回答：接受，不接受，有点儿怪。“接受”意思是你自己要这么说，你听到别个这么说过，或者你觉得四川话要这么说。“不接受”意思是你自己不得这么说，你从来没听别个这么说过，或者你觉得四川话不得这么说。如果你确实判断不了，请回答“有点儿怪”。

(1) 这个娃儿吃不大得饭。

背景：稀饭煮好了，妈妈给娃儿说：

(2) 稀饭可以吃得了。

(3) 你搬家了，我就不得经常过来了。

(4) 十点了，你可以去得了。

学校门卫说：

(5) 只有学生家长进来得，其他人不准进来。

(6) 他怪得很，我专门不得张他。

(7) 这个电饭煲可以用不得。

(8) 这个人才走得，走一天都不得累。

(9) 我这件衣服买成五十块钱。

(10) 想做酒生意，怕是应该要喝得酒哦。

(11) 我会打得来麻将。

(12) 给我扫得地了。

(13) 这块地修成学校了。

(14) 我今天有点儿不舒服，可能喝不太得。

(15) 冷起来了，(该)穿得毛衣了。

背景：一个朋友对你说：莫去拔牙，拔了想吃海椒囊个弄？你说：

(16) 我不得想吃海椒。

背景：医生说张三的药要午饭过后吃。午饭过后，你给张三说：

(17) 你这个药已经可以吃得了。

(18) 我们(饭)都吃起了。

(19) 地头苞谷必须扳得了。

(20) 稀饭可以吃不得了。

(21) 给我扯得草了。

(22) 他那儿有点远，我不得专门去找他。

(23) 我想不得吃海椒。

(24) a. 你这个车车拉得起走不？

b. 拉得起走。/拉不起走。

(25) 事情没做好，又做过就是了。

(26) 我们已经走结束了。

背景: 妈妈说: 这个电饭煲用了好多年了, 该换得了。奶奶说:

(27) 不, 这个电饭煲还可以用得。

(28) 我会打麻将。

【感谢您对本次问卷调查的配合和支持!】

Appendix F

Questionnaire (II) (translated English version with glossed sentences)

【All responses and personal information collected in this interview will be anonymized and will only be used for personal research purposes.】

Age:

Level of education:

Do you speak Standard Chinese?:

Which variety do you use more frequently in daily life?:

City of birth:

Current city of residence:

This questionnaire contains 29 sentences. After listening to each sentence, please make a judgment based on your first reaction on whether you accept the sentence. You can respond “acceptable”, which means you would say it yourself, have heard someone else say it, or think the sentence is correct in Sichuanese and “unacceptable”, which means you would not say it, have never heard someone say it, or think the sentence is incorrect in Sichuanese. Please respond “weird” only when you find it difficult to judge, i.e., undecidable between the other two options.

- (1) *Ze4-go4 wa2'er2-1 ci2 bu da4 de2 fan4.*
this-CLF child eat NEG big;very DE meal
‘This child is not very able to eat.’

Context: The porridge is ready; the mother says to the child:

- (2) *Xi1fan4 ko3yi3 ci2-de2 lao3!*
porridge be.allowed.to eat-DE ATT
'The porridge can be eaten now (, and you'd better eat it now)!'
- (3) *Ngi3 ban1jia1 lao3, ngo3 jiu4 bu2-de2 jin1sang2 go4lai2 lao3.*
2SG move CRS 1SG then NEG-DE often come CRS
'Since you have moved, then I won't often come (from now on).'
- (4) *Si2-dian3 lao3, nyi3 ko3yi3 qi(e)4-de2 lao3!*
ten-o'clock CRS 2SG be.allowed.to go-DE ATT
'It's ten o'clock now, you can/'d better go now!'

Context: The doorman of the kindergarten says:

- (5) *Zi3you3 xuo2sen1 jia1zang3 jin4lai2-de2, qi2ta1 ren2 bu2zun3 jin4lai2.*
only student parent enter-DE other people not.permitted enter
'Only students' parents can enter (the school), others cannot.'
- (6) *Ta1 guai4 de2hen3, Ngo3 zuan1men2 bu2-de2 zang1 ta1.*
3SG strange very 1SG intentionally NEG-DE show.interest.in him
'I intentionally not show interest in/ignore him.'
- (7) *Ze4-go4 dian4fan4bao3 ko3yi3 yong4 -bu -de2.*
this-CLF rice.cooker be.allowed.to use -NEG -DE
'It is deontically possible for this rice cooker not to be used.'
- (8) *Ze4-go4 ren2 cai2 zou3-de2, zou3 yitian1 dou1 bu2de2 lui4.*
this-CLF person really walk-DE walk one.day already Neg.will get.tired
'This person is quite able to walk (can walk long distance/for a long time) and will not get tired even after walking for an entire day.'
- (9) *Ngo3 ze4-jian4 yi1fu2 mai3-cen2 wu3si-kuai4 qian2.*
1SG this-CLF clothes buy-RESULT fifty-UNIT money
'I bought this piece of clothing for fifty yuan.'
- (10) *Xiang3 zu4 jiu3sen1yi4, pa4si4 yin1gai1 yao4 ho1-de2 jiu3 o.*
want do alcohol.business probably possibly need drink-DE alcohol SFP
'If you want to do alcohol business, it is probably possible that you need to be (quite) able to drink alcohol.'
- (11) *Ngo3 hui4 da3-de2-lai2 ma2jiang4.*
1SG know.how play-DE-LAI mahjong
'I know how to play mahjong.'
- (12) *Ge1-ngo3 sao3-de2 di4 lao3!*
for-me clean-DE floor ATT

‘You should/’d better clean the floor for me now!’

- (13) *Ze4-kuai4 di4 xiu1-cen2 xuo2xiao4 lao3.*
 this-piece place build-RESULT school CRS
 ‘This place has been converted into a school.’
- (14) *Ngo3 jin1tian1 you3dian3’er bu2 su1fu2, ko3nen2 ho1 bu2 tai4*
 1SG today a.little NEG comfortable probably drink NEG really
de2.
 DE
 ‘I am not feeling well today, (so) I am probably not really able to drink.’
- (15) *Len3-qi3lai2 lao3, (gai1) cuan1-de2 mao2yi1 lao3!*
 cold-become CRS should wear-DE sweater ATT
 ‘It’s getting cold now, you should/’d better wear the sweater now!’

Context: A friend says to you, ‘Don’t get your tooth pulled. What will you do if you want to eat chili afterward?’ You respond:

- (16) *Ngo3 bu2-de2 xiang3 ci1 hai3jiao1.*
 1SG NEG-DE want eat chilly
 ‘I won’t want to eat chilly.’

Context: The doctor said that Zhangsan needs to take his medicine after the meal. After lunch, you say to Zhangsan:

- (17) *Ngi3 ze4-go4 yio4 yi3jin1 ko3yi3 ci2-de2 lao3!*
 2SG this-CLF medicine already be.allowed.to eat-DE ATT
 ‘Your medicine can already be taken now (, and you’d better take it now)!’
- (18) *Ngo3men (fan4) dou1 ci2-qi3 lao3.*
 1PL (meal) already eat-DUR CRS
 ‘We are already eating.’
- (19) *Di4tou2 bao1gu2 bi2xu1 ban1-de2 lao3!*
 field-in corn obligatorily harvest-DE ATT
 ‘You must/’d better harvest the corn in the field now!’
- (20) *Xi1fan4 ko3yi3 ci2 -bu -de2 lao3.*
 porridge be.allowed.to eat -NEG -DE ATT
 ‘It is deontically possible for the porridge not to be eaten.’
- (21) *Ge1-gno3 ce3-de2 cao3 lao3!*
 for-me pull-DE weed ATT
 ‘You should/’d better pull the weeds for me now!’
- (22) *Ta1 nei4’er you3dian3’er yuan3, ngo3 bu2-de2 zuan1men2 qi(e)4 zao3*
 3SG there a.little far 1SG NEG-DE intentionally go find

ta1.

him

‘He lives a little bit far, so I won’t intentionally go and find him.’

- (23) ?*Ngo3 xiang3-bu-de2 ci2 hai3jiao1.*

1SG want-NEG-DE eat chilly

- (24) a. *Ngi3 ze4-go4 ce1-ce1 la1-de2-qi3zou3 bu2?*
2SG this-CLF tricycle-tricycle pull-DE-go INTER
‘Can you pull this tricycle away?’

b. *La2-de2-qi3zou3./ La2-bu-qi3zou3.*
pull-DE-go pull-NEG-go
‘I can pull it away/ I can’t pull it away.’

- (25) *Si4qin2 mei2 zu4 hao3, you4 zu4-go4 jiu4 si4 lao3.*
things not.have do well again do-EXP then ok LAO
‘(If) Things are not well done, then do it again and it will be ok.’

- (26) *Ngo3men yi3jin1 zou3 jie2su4 lao.*
1PL already walk finish CRS
‘We have already finished walking.’

Context: The mother says to the grandma: “This rice cooker has been used for so many years, you should change it.” The grandma says:

- (27) *Bu2, ze4-go4 dian4fan4bao3 hai2 ko3yi3 yong4-de2.*
no this-CLF rice.cooker still be.allowed.to use-DE
‘No, this rice cooker can still be used.’

- (28) *Ngo3 hui4 da3-ma2jiang4.*
1SG know.how play-mahjong
‘I know how to play mahjong.’

【Thank you for your cooperation and support in this questionnaire survey!】

Appendix G

Complete result of Fieldwork (II)

The sentence numbers correspond to Questionnaire (II) in Appendix 4, in which (9) (13) (18) (25) and (26) are fillers.

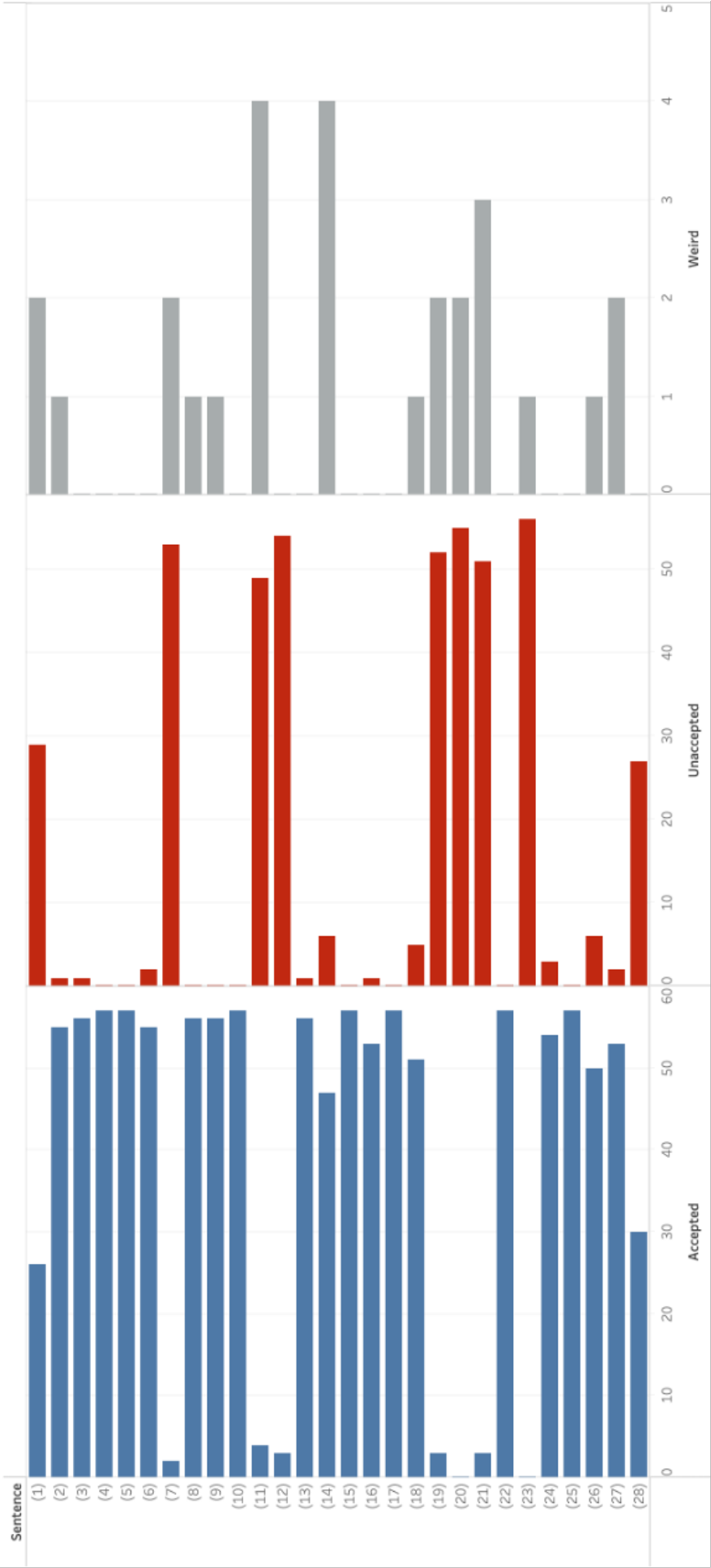


Figure G.1 Result of Fieldwork (II)

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