Obscured universality in Mandarin

by

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Abstract

In this dissertation, I investigate the apparently distinctive syntactic properties associated with the BEI-construction, the BA-construction, and resultative constructions in Mandarin Chinese, which I argue obscure properties that are universal across natural languages.

In the case of the Mandarin BEI-construction, it exhibits both passive-like and *tough*-movement-like properties. I argue for a novel analysis of the BEI-construction as a passive construction, where the passive head/BEI hosts a composite probe [$\phi + \bar{A}$], which triggers composite A/Ā-movement, in the sense of Van Urk (2015). The subject in the BEI-construction is derived via (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement, similar to Longenbaugh's (2017) analysis of English *tough*-movement. Under the proposed analysis, the mixed A/Ā-properties associated with the BEI-construction are direct consequences of composite A/Ā-movement (following Van Urk 2015; Longenbaugh 2017).

In the case of the Mandarin BA-construction, it involves an apparently pre-posed noun phrase (the post-BA NP) with an affectedness interpretation, which can be identified with either the subject of a resultative phrase in a complex predicate or the direct object of a simple transitive verb. I argue for a novel analysis of the Mandarin BA-construction as a causative construction, where the causative head, which selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008), has two additional arguments: a causer and a causee. The post-BA NP, as the causee argument of the causative head, also controls a PRO subject in a resultative phrase (following Huang 1992), which is overt in a complex-predicate BA-construction and is phonologically null in a simple-transitive BA-construction (following Sybesma 1992, 1999). The post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

Lastly, in Mandarin, there is no apparent unaccusative-unergative distinction in resultative constructions, unlike languages like English, where distinctions between resultative constructions with unaccusative and unergative matrix verbs follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986). I argue that resultative constructions in Mandarin are causative constructions, where the causative head has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb). Despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb, I argue that in Mandarin resultative constructions, the sole argument of an unaccusative matrix verb is always a causee ar-

gument, whether or not an additional causer external argument is present, while the sole argument of an unergative matrix verb, which is a causer external argument otherwise, is a causee argument when the causer is an internal argument.

The dissertation showcases how Mandarin provides insight in defending and expanding our knowledge of cross-linguistic properties such as passivization (which embodies Burzio's generalization and feature-driven movement), composite probing, the bi-clausal syntax and bi-eventive semantics of causative constructions, as well as the nature of affectedness (in causative constructions) and implications for the Unaccusativity Hypothesis and the Uniformity of Theta-Assignment Hypothesis (Baker 1988).

Thesis Supervisor: David Pesetsky
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Acknowledgments

"The heart breaks and breaks
and lives by breaking.
It is necessary to go
through dark and deeper dark
and not to turn.
– from *The Testing-Tree*, by Stanley Kunitz"

Strangely, as I was about to write the first line of the acknowledgements, a quote from *The Miraculous Journey of Edward Tulane*, a children's book by Kate DiCamillo, came to mind. Looking back on the six years of my PhD odyssey, I could hardly recall any moments of darkness, but my heart is filled with a bittersweet blend of joy and melancholy as I think of many of you who have kept me company and helped me grow, both linguistically and as a person.

First and foremost, I owe a tremendous debt of gratitude to my committee: David Pesetsky, Danny Fox, and Lisa Cheng.

David has been there for me every step of the way, always offering me the advice and encouragement that I needed the most. Words cannot express enough how much I appreciate the countless ways in which David has not only brought a smile to my face but also taught me invaluable lessons, and I am forever grateful for his unfailing belief in my abilities as a syntactician.

Danny has the incredible ability to reframe and elevate my proposals and ideas. His insights have consistently pushed my research to new heights. I am deeply grateful to Danny for always encouraging me to push the boundaries of my ambitions and for his support in helping me achieve more ambitious goals.

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Diane Massam (my MA advisor), Alex Motut, Becky Tollan, Cristina Cuervo, Elizabeth Cowper, Michela Ippolito, Peter Jurgec, Sali Tagliamonte, Susana Béjar. And I thank UofT Linguistics for continuing to be my linguistic home away from home.

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For friendship, I thank my cohort-mates (*Ling-17*: Boer Fu, Chris Yang, Daniel Asherov, Dóra Kata Takács, Filipe Hisao Kobayashi, Sherry Chen, Stan Zompì, Tanya Bondarenko, Vincent Rouillard), my office-mates (Dóra Kata Takács, Margaret Wang, Omri Doron, and also Itai Bassi, and Naomi Francis, from whom I inherited my desk and drawings of wugs), and mostly, I want to acknowledge the enormous amount of support I have received since the small personal crisis, from Agnes Bi, Boer Fu, Chuchu Guo, Daniel Asherov, Dóra Kata Takács, Jingyi Guo, Jorge Cañada, Margaret Wang, Michele Odisseas Impagnatiello, Ni Luo, Qi Hong, Sherry Chen, Victor Leon, Wentao Xu, Yalei Shi, Yonglin Wang, Zhouyi Sun, and especially Danfeng Wu, who carried me through a particularly difficult period and encouraged me to live my life as strong as I desire.

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Dedication

In Fall 2017, I entered the program as a very naive person who had a very naive take on linguistics, and yet I was accepted for who I was and was respected as an independent researcher since day 1. At this point (day 365 x 5.75?), I am certain that I have not simply become a subset of anyone else. That said, MIT Linguistics has undoubtedly left a permanent mark on me – the way I perceive and think through things, ask and answer questions, approach and solve problems, etc., has been profoundly influenced by many of you, faculty and students alike.

When I was an undergrad, one of my favourite courses was, obviously, intro to syntax. I was fascinated by the transformational relation between a passive and its active counterpart, the unaccusative-unergative distinction, among many other important results and ideas of the last half-century of research in syntax – and I would ask myself: "What about Mandarin?" It is this (very simple) question that brings me to where I am today, and I feel happy that I am able to provide some answers to this question in my dissertation.[1]

I would like to dedicate this dissertation to the Fall 2020 class of 24.902, which was taught by David and which I had the great privilege to be a TA for. To this day, I can still see my (old) self among them – fascinated, and puzzled at times, as the beauty of syntax unfolds.

[1]Looking at the questions I ended up answering (see the beginning of chapter 1), I thought that maybe I did not achieve the more ambitious goal of "putting [my] name on the questions, not the answers", but I hope I have at least provided some answers to some fundamental questions that a linguist is responsible for.

For the Fall 2020 class of 24.902

Contents

Chapter 1

Introduction

This dissertation investigates the syntactic properties of the BEI-construction, the BA-construction, and resultative constructions in Mandarin Chinese, with a specific focus on their relationship with universal properties found across natural languages. While these Mandarin constructions exhibit apparently distinctive syntactic properties, the dissertation argues that they obscure the universal properties that are commonly observed in other languages. In defending the thesis (that the apparently distinctive syntactic properties obscure the universal properties in the Mandarin constructions), the dissertation will provide answers to the following questions:

(i) What are the universal properties that can be defended on the basis of Mandarin?

(ii) How are these universal properties obscured (by apparently distinctive properties) in the relevant Mandarin constructions?

(iii) What is the evidence for these universal properties in Mandarin, despite the apparently distinctive properties associated with the relevant constructions?

(iv) What does Mandarin contribute to our understanding of the universal properties?

Examining the Mandarin BEI-construction, which exhibits both passive-like and *tough*-movement-like properties, the dissertation argues that the BEI-construction is a passive construction, where the passive head/BEI hosts a composite probe $[\phi + \bar{A}]$, which triggers composite A/Ā-movement, as proposed by Van Urk (2015). The derivation of the subject in the BEI-construction involves composite A/Ā-movement, which proceeds successive-cyclically, followed by a terminating step of A-movement, similar to the analysis proposed by Longenbaugh (2017) for English *tough*-movement. Consequently, the mixed A/Ā-properties observed in the BEI-construction emerge as direct consequences of this composite A/Ā-movement (following Van Urk 2015; Longenbaugh 2017).

The Mandarin BA-construction is characterized by an apparently pre-posed noun phrase (the post-BA NP), with an affectedness interpretation. The post-BA NP is identified with either the subject of a resultative phrase in a complex predicate or the direct object of a simple transitive verb. The dissertation argues that the Mandarin BA-construction is a causative construction, which involves a causative head that selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008). The causative head has two additional arguments: a causer and a causee. The post-BA NP, as the causee argument of the causative head, also controls a PRO subject in a resultative phrase (following Huang 1992), which is overt in a complex-predicate BA-construction and is phonologically null in a simple-transitive BA-construction (following Sybesma 1992, 1999). The post-BA NP is interpreted as being affected in the causing event,

in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

Lastly, the dissertation investigates the resultative constructions in Mandarin, which lack an apparent unaccusative-unergative distinction. This is unlike resultative constructions in languages like English, which exhibit unaccusative-unergative distinctions that follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986). The dissertation argues that Mandarin resultative constructions are causative constructions, where the causative head has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb). Despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb, the dissertation argues that in Mandarin resultative constructions, the sole argument of an unaccusative matrix verb is always a causee argument, whether or not an additional causer external argument is present, while the sole argument of an unergative matrix verb, which is a causer external argument otherwise, is a causee argument when the causer is an internal argument.

Overall, the dissertation demonstrates how Mandarin contributes to our understanding of cross-linguistic properties, including passivization (which embodies Burzio's generalization and feature-driven movement), composite probing, the bi-clausal syntax and bi-eventive semantics of causative constructions, as well as the nature of affectedness (in causative constructions) and implications for the Unaccusativity Hypothesis and the Uniformity of Theta-Assignment Hypothesis (Baker 1988).

The remainder of this chapter provides the necessary theoretical and empirical background for and summarizes the main claims of the three main chapters of this dissertation, on the Mandarin BEI-construction, the Mandarin BA-construction, and the Mandarin resultative constructions, respectively. Throughout the dissertation, the sources of the linguistic examples and judgments are cited when they originate from external references; uncited examples and judgements are my own.

1.1 Chapter 2: Passivization and composite A/Ā-movement in the Mandarin BEI-construction

1.1.1 Passivization in canonical passive constructions

A *canonical passive construction*, such as the English *be*-passive, as exemplified by (1b), can be characterized by three apparent differences from its corresponding simple transitive construction (in the active voice) in (1a): object promotion, agent/external argument demotion, and the presence of a passive marker.[1]

[1] A *non-canonical passive construction* is characterized by the lack of object promotion, agent/external argument demotion, or a passive marker (see e.g., Legate 2021). For example, Germanic languages like Dutch allow impersonal passives of unergatives which lack object promotion, as seen in (i).

(i) *Dutch impersonal passive of unergative*
Er wordt hier door de jonge lui veel gedanst.
there becomes here by the young people a lot danced
'It is danced here a lot by the young people.' (Perlmutter & Postal 1984: 107)

(1) a. *Simple transitive (active voice)*
Mary read the book.

b. *English be-passive*
The book was read (by Mary).

An important idea that has been extensively argued for in linguistics is that a passive construction is derived from its corresponding simple transitive construction (in the active voice) via a formal *passivization* process; such an idea has been pursued both within the generative grammar framework (see e.g., Chomsky 1957, 1965, 1981; Burzio 1986; Baker, Johnson & Roberts 1989; Collins 2005; a.o.) and in frameworks such as lexical functional grammar (Bresnan 1982) and relational grammar (Perlmutter & Postal 1984).

Traditionally, passivization is motivated as an instance of *case-driven movement*: according to Burzio's generalization (Burzio 1986), the passive Voice does not assign a theta-role to the external argument of the passivized verb, nor does it assign accusative case; as a result, if there is an object of the passivized verb which cannot be assigned case by the passive Voice, it has to move to a position where it can get case (see e.g., Baker, Johnson & Roberts (1989), who propose that it is actually the passive suffix that 'absorbs' both the external theta-role and the accusative case of the passivized verb).[2]

Contrary to the traditional view, I will provide support to an alternative perspective that passivization embodies Burzio's generalization (which draws a connection between the Voice head's ability of assigning an external theta-role and its ability of assigning accusative case; Burzio 1986), and *feature-driven movement*. Specifically, I adopt an analysis of the English *be*-passive by Bruening (2013), which involves a passive head (Pass), which selects a projection of the Voice head. In a simple transitive construction (in the active voice), the Voice head is responsible for introducing the agent/external argument of the transitive verb (Kratzer 1996), and assigning accusative case (Burzio 1986). In the English *be*-passive, the agent/external argument is demoted, in the sense that it is either introduced in a *by*-phrase (which adjoins to a Voice projection; but see Collins 2005), or is non-overt and is interpreted as existentially bound, hence, the Voice head does not assign case (Burzio 1986). In the latter case, the passive head is responsible for existentially binding the agent/external argument required by the Voice head. Because the *be*-passive exhibits properties of A-movement, I assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (which cannot get case from the Voice head), as illustrated in (2) (but see Collins 2005).

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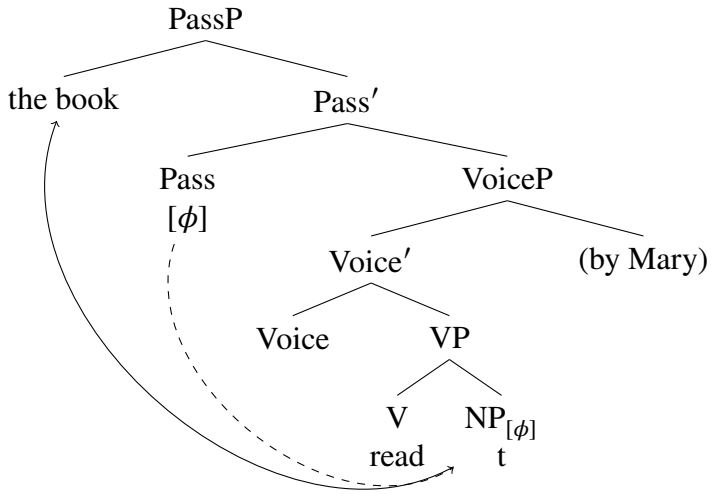
[2]In English, the object that undergoes passivization can be the direct object in a simple transitive construction, or the indirect object in a double-object construction, or an apparent matrix object that is underlyingly the embedded subject in an exceptional case-marking construction, etc.

(2) *English be-passive*



The Voice head, which introduces the agent/external argument of a simple transitive verb, and the passive head, which is present in the passive voice and existentially binds the agent/external argument required by the Voice head, have the definitions in (3).

(3) a. *Definition of agent/external-argument-introducing Voice head (Kratzer 1996)*
Voice: $\lambda x.\ \lambda e.\ \text{Agent}(e, x)$

b. *Definition of passive head (Bruening 2013)*
Pass: $\lambda f_{<(e,)st>}.\ \lambda e.\ (\exists x\ :)f((x,)e)$

1.1.2 Composite A/Ā-movement

It is commonly proposed that phrasal movement in natural languages can be strictly classified as either A-movement or Ā-movement, which are associated with distinct properties (see e.g., Richards 2014). A-movement, such as subject-to-subject raising and passivization, as seen in (4), (i) is restricted to noun phrases; (ii) is local/cannot cross c-commanding noun phrases; (iii) creates new antecedents for anaphor binding; (iv) is not subject to weak crossover; (v) does not reconstruct for Principle C; (vi) does not license parasitic gaps; and (vii) feeds Ā-movement.

(4) *A-movement (e.g., subject-to-subject raising, passivization)*

a. *Restricted to noun phrases*
*__[To John]__ was said __ [that it is raining]. (Richards 2014: ex. 7a)

b. *No long-distance dependency*
*__Those people__ were said that John likes __.

c. *New antecedents for anaphor binding*
[John and Mary]$_i$ seem to [each other$_i$'s parents] __ to be smart. (Richards 2014: ex. 4a)

d. *No Weak Crossover*
[Every priest]$_i$ seems to [his$_i$ parishioners] __ to be smart. (Richards 2014: ex. 5a)

e. *No obligatory reconstruction for Principle C*
[Every argument that John$_i$ is a genius] seems to him$_i$ __ to be flawless. (Richards 2014: ex. 6b)

f. *No parasitic gap licensing*
*__John__ was hired __ [without talking to __] (Richards 2014: ex. 8a)

g. *Feeds Ā-movement*
Who do you think [__ will be told __]? (Richards 2014: ex. 9a)

By contrast, Ā-movement, such as *wh*-movement, as seen in (5), (i) is not restricted to noun phrases; (ii) can cross c-commanding noun phrases and finite clause boundaries to establish long-distance dependencies; (iii) does not create new antecedents for anaphor binding; (iv) is subject to weak crossover; (v) obligatorily reconstructs for Principle C; (vi) licenses parasitic gaps; and (vii) does not feed A-movement/only feeds Ā-movement (the so-called Ban on Improper Movement; see e.g., May 1979; Chomsky 1981; Abels 2007; Neeleman & Van De Koot 2010; Williams 2011).

(5) *Ā-movement (e.g., wh-movement)*

a. *Not restricted to noun phrases*
[To whom] did you say __ [that it is raining]? (Richards 2014: ex. 7b)

b. *Long-distance, cross-clausal dependencies*
Who did you say that John thinks that Mary likes __?

c. *No new antecedents for anaphor binding*
*__[Which children]__$_i$ does it seem to [each other$_i$'s parents] that the teacher should praise __? (Richards 2014: ex. 4b)

d. *Weak Crossover*
*__[Which priest]__$_i$ does it seem to [his$_i$ parishioners] that the bishop should praise __? (Richards 2014: ex. 5b)

e. *Obligatory Reconstruction for Principle C*
*__[Which argument that John$_i$ is a genius]__ did he$_i$ believe __? (Richards 2014: ex. 6a)

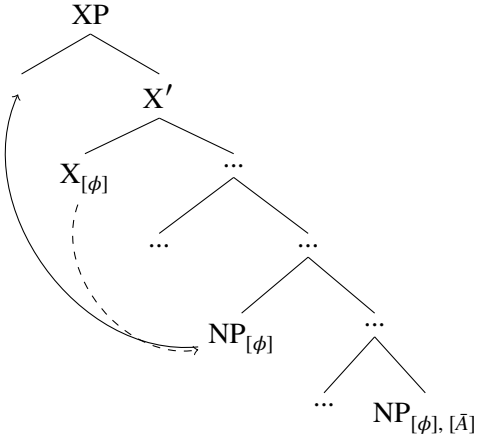
f. *Parasitic gap licensing*
Who did you hire __ [without talking to __]? (Richards 2014: ex. 8b)

g. *Does not feed A-movement/only feeds Ā-movement*
*__Who__ is known [__ [it will be told __]]. (Richards 2014: ex. 9b)

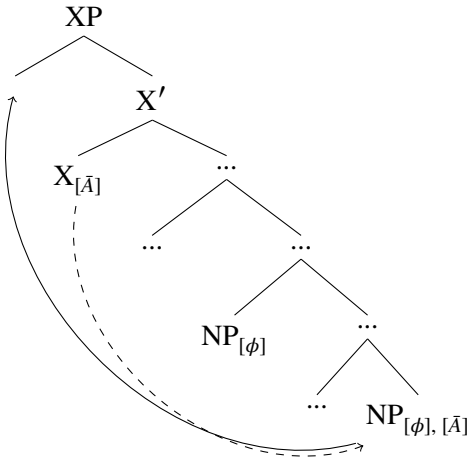
The *positional* view of the A/Ā-distinction holds that the distinct properties associated with A-movement and Ā-movement are derived from the distinct A-positions and Ā-positions that A-movement and Ā-movement target, respectively (see e.g., Chomsky 1981, 1995; Mahajan 1990; Déprez 1990; Miyagawa 2010). Recently, Van Urk (2015) has argued for a *featural* view of the A/Ā-distinction – that the distinct properties associated with A-movement and Ā-movement are derived from the distinct ϕ- and Ā-features which trigger A-movement and Ā-movement, respectively. Furthermore, many researchers have proposed the possibility of *composite probing*, where multiple features on the same head can trigger movement together (see e.g., Coon & Bale 2014; see also Chomsky 2001: 15–19; Bruening 2001: section 5.7; Pesetsky & Torrego 2001; Starke 2001; Haegeman 2013; Rezac 2013; Kotek 2014; Deal 2014). Van Urk (2015) specifically argues for the existence of a *composite probe consisting of both ϕ- and Ā-features, which trigger composite A/Ā-movement*. Note that ϕ- and Ā-features present on the same head may or may not trigger movement together. Following Lohninger, Kovač & Wurmbrand (2022), I use the notation $[\phi + \bar{A}]$ to represent a composite probe which must be satisfied by a single goal with both a matching ϕ-feature and a matching Ā-feature, and use the notation $[\phi], [\bar{A}]$ to represent the presence of both a pure ϕ-probe and a pure Ā-probe on the same head, which can be satisfied independently, by a goal with a matching ϕ-feature and a (different) goal with a matching Ā-feature. Like a pure ϕ- or Ā-probe, which attracts the *closest* NP (which has a ϕ-feature) or non-NP (which lacks a ϕ-feature) with a matching ϕ- or Ā-feature, a composite probe $[\phi + \bar{A}]$ attracts the *closest NP with both a matching ϕ-feature and a matching Ā-feature* (Van Urk 2015). As illustrated in (6) (where the dotted line indicates that the ϕ-, Ā-, or composite probe $[\phi + \bar{A}]$ finds the closest goal with a matching ϕ- or Ā-feature or both a matching ϕ-feature and a matching Ā-feature, and the solid line indicates A-movement, Ā-movement, or composite A/Ā-movement), while A-movement cannot cross an intervening NP (which is a closer goal with a matching ϕ-feature), both Ā-movement and composite A/Ā-movement can cross an intervening NP if it lacks an Ā-feature.

(6) *Featural view of A-movement, Ā-movement, and composite A/Ā-movement*

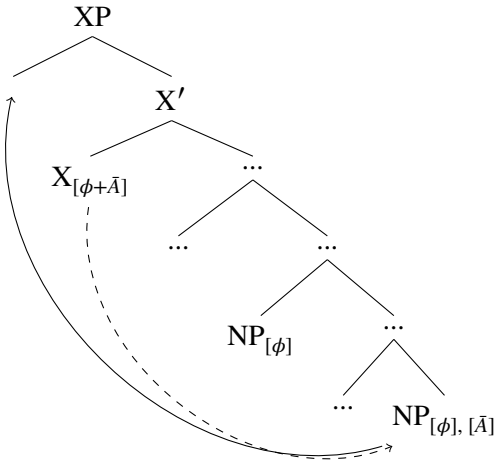
a. *A-movement*



b. *Ā-movement*



c. *Composite A/Ā-movement*



Positive evidence for the featural view of the A/Ā-distinction and the possibility of composite probing by the composite probe $[\phi + \bar{A}]$ has come from the Nilotic language Dinka Bor, where movement targeting Spec, CP, e.g., topicalization and relativization, exhibits properties of both A-movement and Ā-movement under the standard diagnostics (Van Urk 2015). Like A-movement and unlike Ā-movement, Dinka movement to Spec, CP (i) creates new antecedents for anaphor binding; (ii) is not subject to weak crossover; and (iii) does not reconstruct for Principle C. Like Ā-movement and unlike A-movement, Dinka movement to Spec, CP (i) can be long-distance, crossing finite clause boundaries; and (ii) can induce islands for extraction. Van Urk (2015) proposes that the mixed A/Ā-properties associated with Dinka movement to Spec, CP emerge as direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the C head (and the Voice head, for purposes of successive-cyclic composite A/Ā-movement).

In English, *tough*-movement is well known for exhibiting both A-properties and Ā-properties (Longenbaugh 2017; see also Chomsky 1977, 1981; Brody 1993; Rezac 2006; Hicks 2009; Takahashi 2011; Hartman 2011; Keine & Poole 2016). Longenbaugh (2017) notes that English *tough*-movement exhibits the same mix of properties as Dinka movement to Spec, CP. Like A-movement

and unlike Ā-movement, English *tough*-movement (i) creates new antecedents for anaphor binding; (ii) is not subject to weak crossover; and (iii) does not reconstruct for Principle C. Like Ā-movement and unlike A-movement, English *tough*-movement (i) can be long-distance; (ii) induces islands for extraction; and (iii) licenses parasitic gaps. However, unlike Dinka movement to Spec, CP, which can cross finite clause boundaries, English *tough*-movement is possible across non-finite clause boundaries, which arguably lack a CP projection (Wurmbrand 2014), but is degraded for non-subjects and impossible for subjects across a phasal CP-projection (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006).

Following Van Urk (2015), Longenbaugh (2017) proposes that the mixed A/Ā-properties associated with English *tough*-movement are direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the Voice head. Specifically, the *tough*-subject is derived via (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement, without violating the ban on improper (A- after Ā-) movement. To account for the restrictions on long-distance dependencies with English *tough*-movement, Longenbaugh (2017) proposes that the distribution of composite probes can be different in different languages: In Dinka, both the C head and the Voice head host a composite probe $[\phi + \bar{A}]$; hence, composite A/Ā-movement can cross finite clause boundaries (Van Urk 2015). In English, only the Voice head (involved in the path of *tough*-movement) hosts a composite probe $[\phi + \bar{A}]$ while the C head only hosts a pure Ā-probe; hence, composite A/Ā-movement can proceed successive-cyclically through the specifiers of successive VoicePs, but cannot proceed from Spec, CP, i.e., following a step of Ā-movement to Spec, CP triggered by the pure Ā-probe on the C head, due to the ban on improper composite A/Ā- after Ā-movement.

Longenbaugh's (2017) analysis of English *tough*-movement contrasts with Chomsky's (1977, 1981) analysis of English *tough*-movement, which is bipartite in the sense that it attempts to derive the A-properties associated with *tough*-movement by base-generating the *tough*-subject as an argument of the *tough*-predicate, and derives the Ā-properties associated with *tough*-movement via Ā-movement of a null operator (NOP) in the *tough*-predicate's complement.

1.1.3 Chapter 2 overview

In chapter 2 of this dissertation, I argue that the featural view of the A/Ā-distinction and the possibility of composite probing by the composite probe $[\phi + \bar{A}]$ also allow for a passive construction to involve composite A/Ā-movement, if the passive head hosts a composite probe $[\phi + \bar{A}]$. Specifically, I argue that the BEI-construction in Mandarin, which exhibits both passive-like and *tough*-movement like properties, is a passive construction where the passive head/BEI hosts a composite probe $[\phi + \bar{A}]$, which triggers composite A/Ā-movement, in the sense of Van Urk (2015). The subject in the BEI-construction undergoes a derivation that involves successive-cyclic composite A/Ā-movement, followed by a terminating step of A-movement, similar to Longenbaugh's (2017) analysis of English *tough*-movement. Under the proposed analysis, the mixed A/Ā-properties associated with the BEI-construction are direct consequences of composite A/Ā-movement (following Van Urk 2015; Longenbaugh 2017).

Under the proposed analysis of the BEI-construction as a passive construction, the difference between the BEI-construction and a canonical passive construction involving A-movement, such as the English *be*-passive, lies solely in the feature composition of the probe on the passive head, which determines the type of movement involved and the resulting properties of the passive construction.

In the English *be*-passive, passivization is an instance of A-movement, and hence one might assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (but see Collins 2005). In the BEI-construction, the passive head/BEI hosts a composite probe [$\phi + \bar{A}$], which attracts the closest NP with both ϕ- and Ā-features. As a result, the BEI-construction allows for a long-distance dependency between the subject in the BEI-construction and a deeply embedded gap in BEI's complement.

The proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement diverges from a widely accepted analysis that derives the dependency involved in the BEI-construction via base-generation of the subject of BEI as an argument of BEI and NOP movement in BEI's complement, on a par with Chomsky's (1977, 1981) analysis of English *tough*-movement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). While the alternative analysis of the BEI-construction draws inspiration from the similarities between the BEI-construction and English *tough*-movement, it falls short in accounting for the passive-like properties associated with the BEI-construction. By contrast, the proposed analysis of the BEI-construction not only captures the nature of the BEI-construction as a passive construction, but also allow for parallels to be drawn between the BEI-construction and English *tough*-movement, within the proposed analysis of the BEI-construction and Longenbaugh's (2017) analysis of English *tough*-movement.

Support for the proposed analysis of the BEI-construction will come from two restrictions on long-distance dependencies in the BEI-construction – specifically, a requirement that no overt NPs intervene between the subject of BEI and the gap in agent-less BEI-constructions, and a contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap. I will argue that the ban on overt NPs intervening between the subject of BEI and the gap in agent-less BEI-constructions follows from the proposed analysis of the BEI-construction as a passive construction and Burzio's generalization (Burzio 1986), which states that all and only the verbs that can assign a theta-role to the (logical) subject can assign accusative case to an object. Basically, in agent-less BEI-constructions, when there is an overt NP that cannot be assigned case by the matrix Voice head, that NP must become the subject of BEI, where it can receive case from Infl; in such cases, it is predicted that long-distance dependencies between the subject of BEI and a deeply embedded gap in BEI's complement is impossible. I will argue that the subject/object contrast with respect to the possibility of crossing a finite clause boundary to become the subject of BEI follows from the possibility of raising to subject via A-movement to Spec, CP, or *hyper-raising to subject* (see e.g., Fong 2019; Wurmbrand 2019; Lohninger, Kovač & Wurmbrand 2022; a.o.), and the ban on improper Ā-movement to Spec, CP followed by composite A/Ā-movement (see Longenbaugh 2017).

Furthermore, in chapter 2 of the dissertation, I will also argue that composite probing is more generally observed in Mandarin, by arguing for (i) the presence of composite probes on multiple heads in the low IP area of Mandarin, and (ii) the general possibility of the Voice head hosting a composite probe for successive-cyclic composite A/Ā-movement in Mandarin. Support for the first claim will come from IP-internal topicalization and focalization, which exhibit mixed A/Ā-properties, and hence can be analyzed as involving (successive-cyclic) composite A/Ā-movement, triggered by a composite probe present on a IP-internal Top head and a composite probe present on a IP-internal Foc head, respectively. Support for the second claim will come from the possibility of both IP-internal topicalization and focalization, which are instances of composite A/Ā-movement,

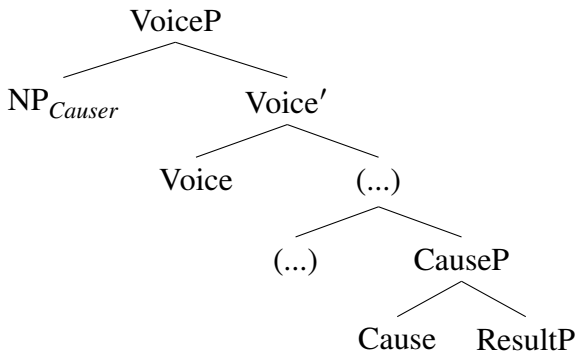
and IP-external topicalization and focalization, which are instances of Ā-movement, involving an intermediate step of composite A/Ā-movement to Spec, VoiceP, triggered by a composite probe on the Voice head.

1.2 Chapter 3: Causation and affectedness in the Mandarin BA-construction

1.2.1 Causative construction

A *causative construction* involves two causally related eventualities – a causing event and a caused/resulting event (Dowty 1979; Parsons 1990; Levin & Rappaport Hovav 1995; a.o.). Pylkkänen (2002, 2008) proposes that a causative construction has a bi-clausal syntax and bi-eventive semantics, due to the presence of a causative head (Cause), which selects a ResultP, a predicate of the caused/resulting event, and projects a CauseP, a predicate of the causing event. Pylkkänen (2002, 2008) (see also Cuervo 2003; Alexiadou, Anagnostopoulou & Schäfer 2006, 2015; Harley 2008, 2013; Legate 2014; a.o.) also argues for the distinctness of Cause and the external-argument introducing head, Voice (Kratzer 1996), which, in a causative construction, is responsible for introducing a *causer* external argument of Cause, as illustrated in (7).

(7) *Causative construction*



The causative head, which introduces causative semantics, and the Voice head, which introduces the causer argument of Cause in a causative construction, have the definitions in (8).

(8) a. *Definition of causative head (Pylkkänen 2002, 2008)*
Cause: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e'\ :\ P(e')$ & Cause(e, e')

b. *Definition of causer-introducing Voice head (Pylkkänen 2002, 2008)*
Voice: $\lambda x.\ \lambda e.$ Causer(e, x)

1.2.2 Affectedness (in causative constructions)

In chapter 3 of this dissertation, I consider the following three perspectives on the nature of *affectedness* (in causative constructions).

First, Alsina (1992) evokes the notion of affectedness when defending an analysis of causative constructions where Cause has a third argument (in addition to the predicate of the caused/resulting event and a causer), which may be identified with either the logical subject or the logical object of the root verb (which heads the predicate of the caused/resulting event). I refer to this argument as the *causee* argument of Cause.[3] One of Alsina's (1992) arguments for such an analysis of causative constructions is based on the interpretation of the causee argument of Cause as being affected in the causing event. Specifically, when the causee argument of Cause is identified with the logical subject of the root verb, it is affected in the causing event in the sense that it is caused to perform an action; when the causee argument of Cause is identified with the logical object of the root verb, it is affected in the causing event in the sense that it is caused to undergo a change of state.

Alsina's (1992) analysis applies to causative constructions in the Bantu language Chichewa. In this language, when a root verb like *phík-a* 'cook' is causativized, the causee argument of Cause (e.g., *kádzīdzi* 'owl' in (9a), *maûngu* 'pumpkings' in (9b)) can be identified with either the logical subject of the root verb, as in (9a), or the logical object of the root verb (in which case the logical subject of the root verb is omitted or expressed as an oblique argument), as in (9b).

(9) *Chichewa causative construction*

a. Nŭngu i-na-phík-íts-a kádzīdzi maûngu.
9 porcupine 9 SBJ-PST-cook-cause-FV 1 a owl 6 pumpkins
'The porcupine made the owl cook the pumpkins.' (Adapted from Alsina 1992: ex. 12b)

[3] Note that the causee often refers specifically to the "logical subject of the root verb" (Harley 2008) or the "embedded external argument" (Harley 2013), which is not an argument of Cause (see also Folli & Harley 2007; Legate 2014; a.o.). I suggest this deviation from the naming conventions in the literature, because the name 'causee', like the name 'causer', allows us to further specify its relation with the matrix verb which specifies the causing event in the following transitive resultative constructions in Mandarin.

(i) a. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*
Lisi qi-de zhe-pi ma lei-le.
Lisi ride-DE this-CL horse be.tired-PRF
'Lisi rode this horse, as a result (this horse) was tired.'

b. *Non-canonical transitive (transitive matrix verb)*
Zhe-pi ma qi-de Lisi lei-le.
this-CL horse ride-DE Lisi be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

In (ia), the matrix subject is a causer which is also identified with the agent argument of the matrix verb, and the post-verbal NP is a causee which is also identified with the theme argument of the matrix verb. In (ib), the matrix subject is a causer which is also identified with the theme argument of the matrix verb, and the post-verbal NP is a causee which is also identified with the agent argument of the matrix verb. I will provide an analysis of canonical transitive resultative constructions in chapter 3 of the dissertation and an analysis of non-canonical transitive resultative constructions in chapter 4 of the dissertation.

b. Nŭngu i-na-phík-íts-a maûngu (kwá kádzīdzi).
9 porcupine 9 SBJ-PST-cook-cause-FV 6 pumpkins to 1 a owl
'The porcupine made the pumpkins cooked (by the owl).' (Adapted from Alsina 1992: ex. 12a)

By contrast, when a root verb like *mv-a* 'hear' (also *kōnd-a* 'like', *ōp-a* 'fear', "whose object is the stimulus of perception or emotion") is causativized, the causee argument of Cause cannot be identified with the logical object of the root verb, as seen in (9b).

(10) *Chichewa causative construction*

a. Chatsalĭra a-ku-mv-éts-á aná phokŏso.
1 NAME 1 SBJ-PRS-hear-cause-FV 2 children 5 noise
'Chatsalira is making the children hear the noise.' (Adapted from Alsina 1992: ex. 28a)

b. *Chatsalĭra a-ku-mv-éts-á phokŏso (kwá ăina).
1 NAME 1 SBJ-PRShear-cause-FV 5 noise to 2 children
INT: 'Chatsalira is making the noise be heard by the children.' (Adapted from Alsina 1992: ex. 28b)

The contrast between (9b) and (10b) follows from Alsina's (1992) proposal that the causee argument of Cause, when identified with the logical object of the root verb, must be affected in the causing event in the sense that it is caused to undergo a change of state: in (9b), *maûngu* 'pumpkings', the logical object of the root verb *phík-a* 'cook', is affected in the causing event, in the sense that it is caused to undergo a change of state, from not being cooked to being cooked; by contrast, in (10b), *phokŏso* 'noise', the logical object of the root verb *mv-a* 'hear', is not affected in the causing event, because it does not undergo a change of state (from not being heard to being heard).

In contrast to Alsina (1992), Sybesma (1992, 1999) proposes that it is the subject of the resultative phrase in a causative construction (rather than a causee argument of Cause) that is linked to an interpretation of affectedness. Hence, according to Sybesma (1992, 1999), causative constructions involving a resultative phrase inherently involve affectedness.

A third perspective on affectedness, based on Li & Thompson (1981: 466-480) (see also Li 2006, 2017; Huang, Li & Li 2009; a.o.), defines affectedness of an object based on how it is physically or non-physically affected, or "handled, manipulated, dealt with", "disposed of" by the subject. This definition of affectedness is not limited to causative constructions.]Huang (1992), Li (2006, 2017), Huang, Li & Li (2009) and others specifically assume that an object with an affectedness interpretation is associated with a distinct *affected theme* or *affectee* theta-role.

1.2.3 Chapter 3 overview

In chapter 3 of the dissertation, I contend that Mandarin is an ideal testing ground for adjudicating between different views of affectedness (in causative constructions), because the Mandarin BA-construction prominently features an apparently pre-posed noun phrase (the post-BA NP), which is associated with an affectedness interpretation. The post-BA NP is identified with either the sub-

ject of a resultative phrase in a complex-predicate BA-construction or the direct object of a simple transitive verb in a simple-transitive BA-construction. I argue that the Mandarin BA-construction is a causative construction, which involves a causative head that selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008), where Cause has two additional arguments: a causer and a causee. The post-BA NP, as the causee argument of Cause, also controls a PRO subject in a resultative phrase (following Huang 1992), which is overt in a complex-predicate BA-construction and is phonologically null in a simple-transitive BA-construction (following Sybesma 1992, 1999). The post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

The proposed analysis of the BA-construction as a causative construction where the affectedness of the post-BA NP arises from it being the causee argument of Cause and controlling a PRO subject in the resultative phrase aligns with Alsina's (1992) view of affectedness (in causative constructions) and diverges from two alternative analyses of the BA-construction. It contrasts with Sybesma's (1992, 1999) causative analysis of the BA-construction, where the post-BA NP is the underlying subject of the resultative phrase not thematically related to the matrix verb, in identifying the post-BA NP as a causee argument of Cause which also controls a PRO subject in the resultative phrase (following Huang 1992). It also contrasts with a more prevalent affective analysis of the BA-construction (see e.g., Li & Thompson 1981; Li 2006, 2017; Huang, Li & Li 2009; a.o.), which appeals to an idiosyncratic affectee theta-role when accounting for the affectedness of the post-BA NP, in assuming the presence of a null resultative phrase in simple-transitive BA-constructions (following Sybesma 1992, 1999) and defining the affectedness of the post-BA NP in terms of it being caused to perform an action or undergo a change of state (following Alsina 1992).

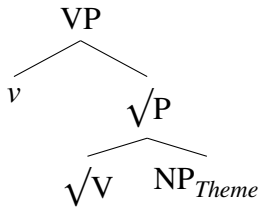
Evidence for the proposed analysis of the BA-construction and Alsina's (1992) view of affectedness (in causative constructions) as being associated with the causee argument of Cause and in terms of it being caused to perform an action or undergo a change of state and against Sybesma's (1992, 1999) causative analysis of the BA-construction and view of affectedness (in causative constructions) as being associated with the subject of the resultative phrase in a causative construction will be based on a comparison between the BA-construction and another causative construction in Mandarin (the *shi*-construction), which contains the causative verb *shi* 'make'. I will show that an affectedness interpretation is always imposed on the post-BA NP in canonical complex-predicate BA-constructions; by contrast, no affectedness interpretation is imposed on the post-*shi* NP in a *shi*-construction, which is a causative construction containing the causative verb *shi* 'make'. Hence, I will argue that the post-BA NP in the BA-construction is a causee argument of Cause being caused to perform an action or undergo a change of state, in the sense of Alsina (1992); by contrast, the post-*shi* NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause. Moreover, to challenge the affective analysis of the BA-construction which accounts for the affectedness of the post-BA NP by appealing to an idiosyncratic affectee theta-role, I will provide a principled explanation for the variable telicity of simple-transitive BA-constructions and two well-formedness constraints on simple-transitive BA-constructions under the proposed analysis of simple-transitive BA-constructions, where a null resultative is present, and the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state.

1.3 Chapter 4: The unaccusative-unergative distinction in Mandarin resultative constructions

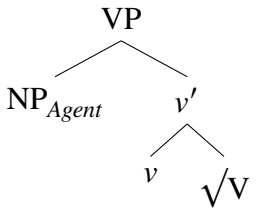
1.3.1 Unaccusativity Hypothesis

The *Unaccusativity Hypothesis* (Perlmutter 1978; Burzio 1986) posits that intransitive verbs can be categorized into two types, unaccusatives and unergatives, which are associated with distinct argument structures. The sole argument of an unaccusative verb is underlyingly an object/internal argument, which is introduced by the unaccusative verbal root, as schematized in (11a). The sole argument of an unergative verb is a subject/external argument, which is introduced by a functional head (*v*, which categorizes the unergative verbal root as a VP, see e.g., Massam 2009; Tollan 2018; a.o.), as schematized in (11b).

(11) a. *Unaccusative construction*



b. *Unergative construction*



The Unaccusativity Hypothesis has received empirical support from various linguistic phenomena that distinguish between unaccusative and unergative constructions. In languages like Italian, one such distinction is observed in the placement of the sole argument of an intransitive verb. In Italian, post-verbal subjects are generally possible, as seen in (12), (13) and (14).

(12) *Italian unaccusative construction*

a. Molti esperti arnveranno.
Many experts will arrive

b. Arriveranno molti esperti.
will arrive many experts
'Many experts will arrive.'

(13) *Italian unergative construction*

a. Molti esperti telefoneranno.
Many experts will telephone

b. Telefoneranno molti esperti.
will telephone many experts
'Many experts will telephone.'

(14) *Italian transitive construction*

a. Molti esperti esamineranno il caso.
Many experts will examine the case

b. Esamineranno il caso molti esperti
will examine the case many experts
'Many experts will examine the case.'

However, a bare quantifier whose restriction is given by the clicic *ne* cannot be a post-verbal subject of an unergative verb, as seen in (15b).

(15) a. *Italian unaccusative construction*

Ne arrivano molti.
of-them arrive many
'Many of them arrive.' (Burzio 1986: 20, ex. 2a)

b. *Italian unergative construction*

*Ne telefonano molti.
of-them telephone many
INT: 'Many of them telephone.' (Burzio 1986: 20, ex. 2b)

Another distinction between unaccusative and unergative constructions in Italian can be observed in the choice of the aspectual auxiliary. Specifically, an unaccusative verb is paired with the auxiliary *essere* 'to be', as exemplified by (16a), while an unergative verb is paired with the auxiliary *avere* 'to have', as exemplified by (16b).

(16) a. *Italian unaccusative construction*

Giovanni è arrivato.
Giovanni is arrived
'Giovanni has arrived.' (Burzio 1986: 20, ex. 3a)

b. *Italian unergative construction*

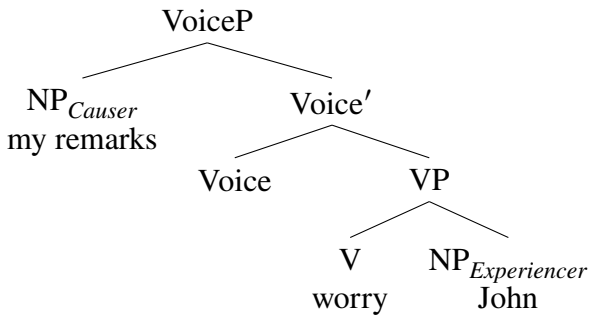
Giovanni ha telefonato.
Giovanni has telephoned
'Giovanni has telephoned.' (Burzio 1986: 20, ex. 3b)

The impossibility of passivization serves as another diagnostic for unaccusativity – that the construction under consideration lacks an external argument (see e.g., Perlmutter & Postal 1984). Based on the (im)possibility of passivization, Pesetsky (1995) has argued for a non-unified analysis of *experiencer-object psych-verb constructions*. In languages like English, there is a class of experiencer-object psych-verb constructions which allows passivization, as seen in (17). Hence, Pesetsky (1995) argues that this class of experiencer-object psych-verb constructions has the argument structure in (18), where the grammatical subject, which is a causer, is an external argument of the psych-verb.

(17) *A class of experiencer-object psych-verb construction allows passivization (Pesetsky 1995: ex. 46)*

a. Bill was angered by Mary's conduct.
b. The paleontologist was pleased by the discovery of the fossil.
c. Bill was irritated by the loud noises coming from next door.
d. Bill would not be satisfied by halfway measures.
e. Sue was embittered by her experiences with discrimination.
f. Mary was cheered by the French victory.
g. John was worried by my remarks.
h. Harry was puzzled by Sue's curious behavior.
i. Harry was grieved by the court's decision.
j. Sue was bored by her work on lexical entries.
k. Bill was frightened by strange noises.

(18) *Causer-subject experiencer-object psych-verb construction*

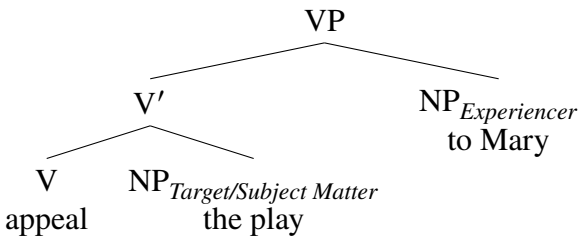


By contrast, there is also a class of experiencer-object psych-verb constructions which resists passivization, as seen in (19). Hence, Pesetsky (1995) (see also Perlmutter 1983; Belletti & Rizzi 1988; a.o.) argues that this class of experiencer-object psych-verb constructions has the argument structure in (20), where the grammatical subject, which is a *target* or *subject matter* (T/SM), and the experiencer object are underlyingly the direct object and the indirect object of the psych-verb, respectively.

(19) *A class of experiencer-object psych-verb constructions resists passivization (Pesetsky 1995: ex. 153b, 154b, 155b, 156b, 157b)*

a. *We were escaped by Smith's name.
b. *Panini was eluded by the correct generalization.
c. *Mary wasn't appealed to by the play.
d. *John was mattered to by this.
e. *Mary was occurred to by the same idea.

(20) *T/SM-subject experiencer-object psych-verb construction*



In Japanese, lexical causatives are associated with a so-called adversity interpretation, as seen in (21a) (Pylkkänen 2002, 2008; see also Oehrle & Nishio 1981; Miyagawa 1989; Harley 1996). In the adversity causative, the grammatical subject, which is interpreted as being affected, is not an external argument, because it is impossible to passivize the adversity causative and get a meaning involving an implicit affected argument, as seen in (21b) (Pylkkänen 2002, 2008).

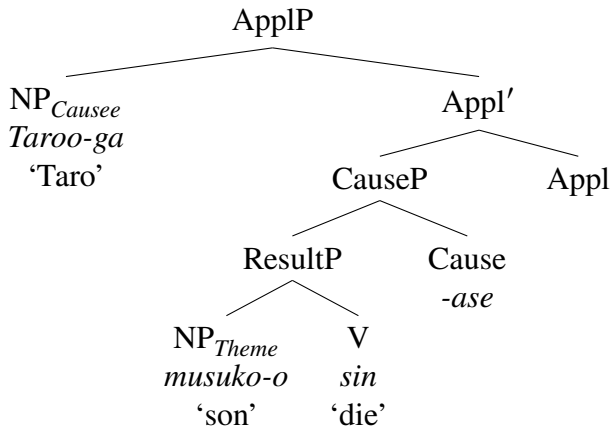
(21) *Japanese lexical causative/adversity causative*

a. Taroo-ga musuko-o sin-ase-ta.
Taro-NOM son-ACC die-CAUSE-PST
'Taro caused his son to die.'
'Taro's son died on him.' (adversity causative) (Pylkkänen 2008: 90, ex. 19)

b. Musuko-ga sin-ase-rare-ta.
son-NOM die-CAUSE-PASS-PST
'The son was caused to die.'
NOT: 'Somebody's son died on them.' (passive of adversity causative, with implicit affected argument) (Pylkkänen 2008: 90, ex. 20)

Hence, in languages like Japanese, a causative construction may lack an external argument (Pylkkänen 2002, 2008). Specifically, the adversity causative in Japanese might be analyzed as having the argument structure in (22), where the affected argument is not an external argument of Cause (which is introduced by the Voice head), but an indirect object of Cause, which I assume to be introduced by an Appl(icative) head (following Marantz 1993; Bruening 2010).

(22) *Japanese adversity causative*



In Mandarin, supporting evidence for the Unaccusativity Hypothesis can also be found. Specifically, the sole argument of an unaccusative verb can surface post-verbally (in the thematic object position) when it is indefinite, as seen in (23); by contrast, the sole argument of an unergative verb can only surface pre-verbally, as seen in (24) (see e.g., Huang 1989).

(23) *Unaccusative construction*

a. Si/Lai/Zou-le yi-ge ren.
die/come/leave-PRF one-CL person
'(There) died/came/left a person.'

b. Lisi si/lai/zou-le.
Lisi die/come/leave-PRF
'Lisi died/came/left.'

(24) *Unergative construction*

a. *Ku/*Xiao-le yi-ge ren.
cry/laugh-PRF one-CL person
INT: '(There) cried/laughed a person.'

b. Lisi ku/xiao-le.
Lisi cry/laugh-PRF
'Lisi cried/laughed.'

1.3.2 Chapter 4 overview

In chapter 4 of this dissertation, I investigate the resultative constructions in Mandarin, which lack an apparent unaccusative-unergative distinction. This is unlike resultative constructions in languages like English, which exhibit unaccusative-unergative distinctions that follow from the Un-

accusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986). The apparent lack of an unaccusative-unergative distinction in resultative constructions in Mandarin seems to pose challenges to the Unaccusativity Hypothesis.

Contrary to appearances, I argue that Mandarin does have an unaccusative-unergative distinction in resultative constructions. Specifically, I argue that Mandarin resultative constructions are causative constructions, where the causative head has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb). Importantly, under the proposed analysis, despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb, I argue that the sole argument of an unaccusative matrix verb is always a causee argument, whether or not an additional causer external argument is present, while the sole argument of an unergative matrix verb, which is a causer external argument otherwise, is a causee argument when the causer is an internal argument.

Unlike the proposed analysis, previous studies by Huang (1988, 2006), Sybesma (1992, 1999) and others have accepted the absence of an unaccusative-unergative distinction in Mandarin resultative constructions without further investigation. As a result, they propose uniform analyses for resultative constructions with unaccusative and unergative matrix verbs. In particular, Huang (2006) proposes an analysis in which Mandarin differs from English in its ability to have either an unaccusative verb or an unergative verb modifying a Become head within a resultative construction. Such an analysis implies that in Mandarin, the theta-role(s) needed by a verb may not be (fully) specified as part of the lexical properties of the verb, as is the case in English. A further implication is that there is no basis for Mandarin to conform to the Uniformity of Theta-Assignment Hypothesis (which posits that identical thematic relationships between items are represented by identical structural relationships between these items at the level of D-structure; Baker 1988).

To support the proposed analysis of resultative constructions in Mandarin as causative constructions where Cause has four possible argument structures, I will draw upon the main claims established in chapters 2 and 3 of this dissertation – namely, that the Mandarin BEI-construction is a passive construction and that the Mandarin BA-construction is a causative construction where Cause has two additional arguments – and synthesize evidence based on resultative constructions' (im)possibility of passivization with BEI and exhibiting a BA-non-BA variation. Specifically, in chapter 2 of the dissertation, I have established that the Mandarin BEI-construction is a passive construction (involving composite A/Ā-movement). Hence, I will use a resultative construction's impossibility of passivization with BEI to indicate that Cause lacks an external argument. In chapter 3, I have established that the Mandarin BA-construction is a causative construction where Cause has two additional arguments: the subject of BA is an agentive or non-agentive causer, and the post-BA NP is a causee. Hence, I will use the possibility of a resultative construction exhibiting a BA-non-BA variation to indicate that Cause has two additional arguments: a causer and a causee. I will show that resultative constructions with unaccusative, unergative and transitive matrix verbs in Mandarin differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction, which supports the proposed non-uniform analysis of resultative constructions in Mandarin.

Chapter 2

Passivization and composite A/Ā-movement in the Mandarin BEI-construction[1]

2.1 Introduction

Passivization in a canonical passive construction, such as the English *be*-passive, derives three characteristics of a canonical passive construction that are apparently different from its corresponding simple transitive construction (in the active voice): object promotion, agent/external argument demotion, and the presence of a passive marker. Bruening (2013) proposes that the English *be*-passive involves a passive head, which selects a projection of the agent/external-argument-introducing Voice head (Kratzer 1996). When the *be*-passive is agent-less, where the agent/external argument is non-overt and is interpreted as existentially bound, the passive head is responsible for existentially binding the agent/external argument required by the Voice head. Because the *be*-passive exhibits properties of A-movement, one might assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (but see Collins 2005).

It is well-known that A-movement, such as subject-to-subject raising and passivization, and Ā-movement, such as *wh*-movement, are associated with distinct properties (see e.g., Richards 2014). The *featural* view of the A/Ā-distinction, which suggests that the distinct properties associated with A-movement and Ā-movement are derived from the distinct ϕ- and Ā-features which trigger A-movement and Ā-movement, respectively, and the possibility of *composite probing* by the composite probe $[\phi + \bar{A}]$, which attracts the closest NP with both a matching ϕ-feature and a matching Ā-feature, predict that mixed properties in terms of A-movement vs. Ā-movement emerge as direct consequences of *composite A/Ā-movement* (Van Urk 2015). Positive evidence has been found in languages such as Dinka Bor, a Nilotic language, where movement to Spec, CP (e.g., topicalization and relativization) exhibits properties of both A-movement and Ā-movement under the standard diagnostics (Van Urk 2015), and English, where *tough*-movement exhibits the same mix of properties as Dinka movement to Spec, CP (Longenbaugh 2017; see also Chomsky 1977, 1981; Brody 1993; Rezac 2006; Hicks 2009; Takahashi 2011; Hartman 2011; Keine & Poole 2017).

In this chapter, I argue that the featural view of the A/Ā-distinction and the possibility of composite probing by the composite probe $[\phi + \bar{A}]$ also allow for a passive construction to involve composite A/Ā-movement, if the passive head hosts a composite probe $[\phi + \bar{A}]$. Specifically, I

[1] This chapter is revised and expanded from Chen (2022).

argue for a novel analysis of the BEI-*construction* in Mandarin, which exhibits both passive-like and *tough*-movement-like properties, as a passive construction where the passive head/BEI hosts a composite probe [$\phi + \bar{A}$], which triggers composite A/Ā-movement, as proposed by Van Urk (2015). The derivation of the subject in the BEI-construction involves composite A/Ā-movement, which proceeds successive-cyclically, followed by a terminating step of A-movement, which is akin to the analysis proposed by Longenbaugh (2017) for English *tough*-movement. Consequently, the mixed A/Ā-properties observed in the BEI-construction emerge as direct consequences of this composite A/Ā-movement (following Van Urk 2015; Longenbaugh 2017).

Under the proposed analysis of the BEI-construction as a passive construction, the difference between the BEI-construction and a canonical passive construction involving A-movement, such as the English *be*-passive, lies solely in the feature composition of the probe on the passive head, which determines the type of movement involved and the resulting properties of the passive construction. In the English *be*-passive, passivization is an instance of A-movement, and hence one might assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (but see Collins 2005). In the BEI-construction, the passive head/BEI hosts a composite probe [$\phi + \bar{A}$], which attracts the closest NP with both ϕ- and Ā-features. As a result, the BEI-construction allows for a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement.

The proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement diverges from a widely accepted analysis that derives the dependency involved in the BEI-construction via base-generation of the subject of BEI as an argument of BEI and NOP movement in BEI's complement, on a par with to Chomsky's (1977, 1981) analysis of English *tough*-movement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). While the alternative analysis of the BEI-construction takes inspiration from the similarities between the BEI-construction and English *tough*-movement, it falls short in accounting for the passive-like properties associated with the BEI-construction. In contrast, the proposed analysis of the BEI-construction not only captures its nature as a passive construction but also allows for parallels to be drawn between the BEI-construction and English *tough*-movement, under the proposed analysis of the BEI-construction and Longenbaugh's (2017) analysis of English *tough*-movement.

I will argue that two restrictions on long-distance dependencies in the BEI-construction follow from the proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement. The first restriction involves the ban on overt NPs intervening between the subject of BEI and the gap in agent-less BEI-constructions. This restriction can be accounted for under the proposed analysis of the BEI-construction as a passive construction and Burzio's generalization (Burzio 1986), which states that all and only the verbs that can assign a theta-role to the (logical) subject can assign accusative case to an object. Basically, in agent-less BEI-constructions, when there is an overt NP that cannot be assigned case by the matrix Voice head, that NP must become the subject of BEI, where it can receive case from Infl; in such cases, it is predicted that long-distance dependencies between the subject of BEI and a deeply embedded gap in BEI's complement is impossible. The second restriction concerns the contrast between subject and object gaps in the BEI-construction involving a cross-clausal dependency. This contrast can be derived from the possibility of raising to subject via A-movement to Spec, CP, or *hyper-raising to subject* (see e.g., Fong 2019; Wurmbrand 2019; Lohninger, Kovač & Wurmbrand 2022; a.o.), and the ban on improper Ā-movement to Spec,

CP followed by composite A/Ā-movement (see Longenbaugh 2017).

Furthermore, I will also argue that composite probing is more generally observed in Mandarin, in the sense that (i) composite probes are present on multiple heads that project in the low IP area in Mandarin, and (ii) the Voice head generally hosts a composite probe for purposes of successive-cyclic composite A/Ā-movement in Mandarin. To support the first claim, I will propose to analyze IP-internal topicalization and focalization, which exhibit mixed A/Ā-properties, as involving (successive-cyclic) composite A/Ā-movement, triggered by a composite probe present on a IP-internal Top head and a composite probe present on a IP-internal Foc head, respectively. To support the second claim, I will argue for the possibility of both IP-internal topicalization and focalization, which are instances of composite A/Ā-movement, and IP-external topicalization and focalization, which are instances of Ā-movement, involving an intermediate step of composite A/Ā-movement to Spec, VoiceP, triggered by a composite probe on the Voice head.

The rest of this chapter is organized as follows: In section 2, I will provide a primer on the BEI-construction, which exhibits both passive-like properties and *tough*-movement-like properties. In section 3, I will provide the details of the proposed analysis of the BEI-construction as a passive construction, where the passive head/BEI hosts a composite probe [$\phi + \bar{A}$] and the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement. In section 4, I will briefly review a few alternative analyses of the BEI-construction and identify their major problems. In section 5, I will show that the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement, which, under the proposed analysis, is the result of composite A/Ā-movement, triggered by the composite probe [$\phi+\bar{A}$] on the passive head/BEI. In section 6, I will argue that two restrictions on long-distance dependencies in the BEI-construction – specifically, a requirement that no overt NPs intervene between the subject of BEI and the gap in agent-less BEI-constructions, and a contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap – follow from the proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement. In section 7, I will reconcile two conflicting arguments on the base-generated vs. derived status of the subject of BEI in the literature, and extend the proposed analysis of the BEI-construction to cases where the subject of BEI is identified with an indirect object in BEI's complement (a.k.a. indirect passives; see e.g., Huang, Li & Li 2009). In section 8, I will argue for generalized composite probing in Mandarin by analyzing IP-internal topicalization and focalization, which exhibit mixed A/Ā-properties, as involving (successive-cyclic) composite A/Ā-movement, triggered by a composite probe present on a IP-internal Top head and a composite probe present on a IP-internal Foc head, respectively, and by revealing the possibility of both IP-internal topicalization and focalization, which are instances of composite A/Ā-movement, and IP-external topicalization and focalization, which are instances of Ā-movement, involving an intermediate step of composite A/Ā-movement to Spec, VoiceP, triggered by a composite probe on the Voice head. Finally, in section 9, I will conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the BEI-construction.

2.2 A primer on the BEI-construction

The BEI-construction in Mandarin is a well studied construction known for exhibiting both passive-like properties and *tough*-movement-like properties (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). As schematized in (1), a BEI-construction has a subject, followed by BEI, followed by one or multiple (extended) verbal projections. The agent/external argument of the matrix verb may be overtly expressed, in which case it immediately follows BEI, or it may be non-overt, in which case it is interpreted as existentially bound. The BEI-construction involves a dependency between the subject and a gap embedded in the verbal projection(s).

(1) BEI-*construction*
NP_i BEI (NP) V (... V ...) $\_\__i$ (...)

This section is organized as follows: in section 2.1, I will show the passive-like properties associated with the BEI-construction; in section 2.2, I will show the possibility of and two restrictions on long-distance dependencies in the BEI-construction – specifically, a requirement that no overt NPs intervene between the subject of BEI and the gap in agent-less BEI-constructions, and a contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap; in section 2.3, I will present evidence that BEI is best analyzed as the head of a projection taking an extended verbal projection as its complement, rather than a preposition taking the agent/external argument of the matrix verb as its complement.

2.2.1 Passive-like properties

Like a canonical passive construction, such as the English *be*-passive, a BEI-construction involving just a simple transitive verbal projection appears to involve object promotion, agent/external argument demotion, and the presence of BEI. Compared with the simple transitive construction (in the active voice) in (2a), (2b) and (2c) appear to involve the promotion of the theme/internal argument of the simple transitive verb from the post-verbal direct object position to the grammatical subject position; in the *overt-agent* BEI-*construction* in (2b), the agent/external argument of the simple transitive verb is overtly expressed and immediately follows BEI, instead of surfacing in the grammatical subject position; in the *agent-less* BEI-*construction* in (2c), the agent/external argument of the simple transitive verb is non-overt and is interpreted as existentially bound.[2]

[2]Due to the existential nature of the non-overt agent in agent-less BEI-construction, the agent-less BEI-construction in (i) is judged true if and only if Lisi was not scolded by *anyone*, and is judged false if Lisi was (not) scolded by *someone*.

(i) $Lisi_i$ mei-you bei ma $\_\__i$.
Lisi not-have BEI scold
'Lisi was not scolded (by anyone).' (NOT: 'Lisi is not scolded by someone.')

That said, given that Mandarin generally allows for subject pro-drop (see e.g., Huang 1984, 1987, 1989), it is interesting to note that agent-less BEI-constructions simply cannot involve a null pronoun as the agent/external argument of the matrix verb.

(2) a. *Simple transitive (active voice)*
Wo ma-le Lisi.
1SG scold-PRF Lisi
'I scolded Lisi.'

b. *Overt-agent* BEI-*construction*
Lisi_i bei wo ma-le $\_\__i$.
Lisi BEI 1SG scold-PRF
'Lisi was scolded by me.'

c. *Agent-less* BEI-*construction*
Lisi_i bei ma-le $\_\__i$.
Lisi BEI scold-PRF
'Lisi was scolded.'

It is worth mentioning that Chao (1968) (see also Li & Thompson 1981) describes BEI as being confined primarily to signal adversity (e.g., *bei ma* 'be scolded'). However, even Chao (1968) (see also Li & Thompson 1981) has noted that BEI has been used (productively) also in non-adverse contexts (e.g., *bei biaoyang* 'be praised').

(3) Lisi_i bei (wo) biaoyang-le $\_\__i$.
Lisi BEI 1SG praise-PRF
'Lisi was praised (by me).'

BEI is also compatible with stative predicates like *ai* 'love', *xiangnian* 'miss', *hen* 'hate', as seen in (4).

(4) Lisi bei (henduo ren) ai/xiangnian/hen-zhe.
Lisi BEI many person love/miss/hate-DUR
'Lisi was love/missed/hated (by many people).'

A distinguishing property of the passive construction is the semantic presence of the non-overt agent/external argument in agent-less passive constructions. Concretely, in the English *be*-passive, a non-overt agent/external argument must be semantically present, because it can be modified by a 'deliberately'-type adverb, as seen in (5a), and can control the PRO subject of an infinitival purpose clause, as seen in (5b) (see e.g., Bhatt & Pancheva 2006, 2017).

(5) *Implicit agent in English be-passive*
a. The boat was sunk deliberately. (Bhatt & Pancheva 2017: ex. 25a)
b. The boat was sunk to collect the insurance. (Bhatt & Pancheva 2017: ex. 24b)

Similarly, in the BEI-construction, a non-overt agent/external argument must be semantically present,

because it can be modified by a 'deliberately'-type adverb, as seen in (6a), and can control the PRO subject of an infinitival purpose clause (headed by *lai* 'in order to'), as seen in (6b).

(6) *Implicit agent in* BEI*-construction*

a. Chuan$_i$ bei (Lisi) guyi chen-le __$_i$.
boat BEI Lisi deliberately sunk-PRF
'The boat was sunk (by Lisi) deliberately.'

b. Chuan$_i$ bei (Lisi$_j$) chen-le __$_i$ [lai PRO$_j$ huode peichang].
boat BEI Lisi sunk-PRF in order to receive compensation
'The boat was sunk (by Lisi) in order to receive compensation.'

c. Lisi$_i$ guyi chen-le zhe-sou chuan [lai PRO$_i$ huode peichang].
Lisi deliberately sink-PRF this-CL boad in order to receive compensation
'Lisi deliberately sank the boat in order to receive compensation.'

By contrast, neither modification by 'deliberately'-type adverbs nor control into purpose clauses is possible with unaccusative constructions, which lack an implicit agent/external argument, both in English, as seen in (7) (see e.g., Bhatt & Pancheva 2006, 2017), and in Mandarin, as seen in (8).

(7) *No implicit agent in English unaccusative construction*

a. *The boat sunk deliberately. (Bhatt & Pancheva 2017: ex. 25b)
b. *The boat sunk to collect the insurance. (Bhatt & Pancheva 2017: ex. 24a)

(8) *No implicit agent in Mandarin unaccusative construction*

a. Chuan$_i$ (*guyi) chen-le __$_i$.
boat deliberately sunk-PRF
'The boat sunk (*deliberately).'

b. *Chuan$_i$ chen-le __$_i$ [lai PRO huode peichang].
boat sunk-PRF in order to receive compensation
INT: 'The boat sunk in order to receive compensation.'

Lastly, it is worth mentioning that BEI is only compatible with a thransitive verb and is incompatible with an intransitive verb. Specifically, BEI is incompatible with an unaccusative verb that lacks a transitive variant, as seen in (9b) and (10b). The incompatibility of BEI and an unaccusative verb follows if BEI spells out a passive head which selects a projection of the Voice head (see Bruening 2013).

(9) a. *Unaccusative construction*
Lisi$_i$ si/pao-le __$_i$.
Lisi die/run away-PRF
'Lisi died/escaped.'

b. *Lisi$_i$ bei si/pao-le ___$_i$.
Lisi BEI die/run away-PRF
INT: 'Lisi was died/escaped.'

(10) a. *Unaccusative construction*
Zheli si/pao-le yi-ge ren.
here die/run away-PRF one-CL person
Lit. 'Here died/escaped a person.'

b. *Zheli bei si/pao-le yi-ge ren.
here BEI die/run away-PRF one-CL person
INT: 'Here was died/escaped a person.'

BEI is also incompatible with an unergative verb, as seen in (11b) and (12b). The incompatibility of BEI and an unergative verb follows if BEI is a passive head probing for movement to Spec, PassP (see section 3 of this chapter).

(11) a. *Unergative construction*
Lisi ku/xiao-le.
Lisi cry/laugh-PRF
'Lisi cried/laughed.'

b. *Lisi bei ku/xiao-le.
Lisi BEI cry/laugh-PRF
INT: 'Lisi was cried/laughed.'

(12) a. *Unergative construction*
*Zheli ku/xiao-le yi-ge ren.
here cry/laugh-PRF one-CL person
INT: 'Here cried/laughed a person.'

b. *Zheli bei ku/xiao-le yi-ge ren.
here BEI cry/laugh-PRF one-CL person
INT: 'Here was cried/laughed a person.'

2.2.2 Restricted long-distance dependencies

While the BEI-construction exhibits passive-like properties, it cannot be analyzed as a canonical passive construction involving A-movement, on a par with the English *be*-passive, because unlike the English *be*-passive and like English *tough*-movement, the BEI-construction can also involve multiple verbal projections and a long-distance dependency between the subject of BEI and a deeply

embedded gap in BEI's complement.

Concretely, the BEI-construction allows for a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries, as seen in (13b) and (14b) (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.).[3]

(13) a. *Object control construction*

Lisi bipo jingcha$_i$ [PRO$_i$ zhuazou-le Zhangsan].
Lisi force police arrest-PRF Zhangsan
'Lisi forced the police to arrest Zhangsan.'

b. *Long-distance dependency in* BEI*-construction (object control)*

Zhangsan$_i$ bei *(Lisi) bipo jingcha$_j$ [PRO$_j$ zhuazou-le __$_i$].
Zhangsan BEI Lisi force police arrest-PRF
Lit. 'Zhangsan was forced the police to arrest *(by Lisi).'

(14) a. *Object control construction*

Wo jiao Li$_i$ [PRO$_i$ qing Wang$_j$ [PRO$_j$ tuo Zhang$_k$ [PRO$_k$ ji-chu-le na-feng xin]]].
1SG order Li ask Wang entrust Zhang send-out-PRF that-CL letter
'I ordered Li to ask Wang to entrust Zhang to send out that letter.'

b. *Long-distance dependency in* BEI*-construction (object control)*

Na-feng xin$_i$ bei *(wo) jiao Li$_j$ [PRO$_j$ qing Wang$_k$ [PRO$_k$ tuo Zhang$_l$ [PRO$_l$ ji-chu-le __$_i$]]].
that-CL letter BEI 1SG order Li ask Wang entrust Zhang send-out-PRF
Lit. 'That letter was ordered Li to ask Wang to entrust Zhang to send out *(by me).'
(Adapted from Huang, Li & Li 2009: 132: ex. 47b)

The BEI-constructions in (15b) and (16b) also involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries.[4]

[3]Following Huang (1989), I assume that object control verbs, including *bi(po)* 'force', *jiao* 'order', *qing* 'ask', *(bai)tuo* 'entrust', take a non-finite clausal complement, because their complement cannot contain a modal verb. See section 6 of this chapter for more details.

[4]Following Huang (1989), I assume that subject control verbs, including *changshi* 'try', *qitu* 'attempt', *shefa* 'manage', take a non-finite clausal complement, because their complement cannot contain a modal verb. See section 6 of this chapter for more details.

(15) a. *Subject control construction*

Heike$_i$ changshi/qitu [PRO$_i$ ruqin gongsi-de wangluo].
hacker try/attempt hack company's network
'The hacker tried/attempted to hack the company's network.'

b. *Long-distance dependency in* BEI*-construction (subject control)*

Gongsi-de wangluo$_i$ bei (heike$_j$) changshi/qitu [PRO$_j$ ruqin __$_i$].
company's network BEI hacker try/attempt hack
Lit. 'The company's network was tried/attempted to hack (by the hacker).' (Adapted from Her 2009: ex. 21a)

(16) a. *Subject control construction*

Xiaotou$_i$ shefa [PRO$_i$ kaobei-le ziliao].
thief manage copy-PRF document
'The thief managed to copy the documents.'

b. *Long-distance dependency in* BEI*-construction (subject control)*

Ziliao$_i$ bei (xiaotou$_j$) shefa [PRO$_j$ kaobei-le __$_i$].
document BEI thief manage copy-PRF
Lit. 'The documents were managed to copy (by the thief).' (Adapted from Her 2009: ex. 21b)

One restriction on long-distance dependencies in the BEI-construction is instantiated by the contrast between (13b), (14b) and (15b), (16b): In (13b) and (14b), the agent/external argument of the matrix verb must be overtly expressed – Huang, Li & Li (2009) (see also Ting 1995, 1998; Huang 1999; a.o.) take this to indicate that only overt-agent BEI-constructions but not agent-less BEI-constructions can involve a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement. However, in (15b) and (16b), the agent/external argument of the matrix verb can be overtly expressed or non-overt. Based on (15b) and (16b), I suggest that both overt-agent and agent-less BEI-constructions can involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (see also Her 2009; Bruening & Tran 2015; a.o.).[5] Note that (13b) and (14b), which are ill-formed when the agent/external argument of the matrix verb is non-overt, involve an overt NP, the matrix object, intervening between the subject of BEI and the deeply embedded object gap; by contrast, (15b) and (16b), which are well-formed when the agent/external argument of the matrix verb is non-overt, involve no overt NPs between the subject of BEI and the deeply embedded object gap. Hence, I suggest that the ill-formedness of (13b) and (14b) the well-formedness of (15a) and (16a) when the agent/external argument of the matrix verb is non-overt instantiate a requirement

[5]One might try to analyze well-formed agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries as involving *(voice) restructuring* in BEI's complement, on a par with Wurmbrand's (2001, 2007) analysis of the German long passive. I will rule out this possibility in section 6 of this chapter.

that no overt NPs intervene between the subject of BEI and the gap in agent-less BEI-constructions. I will account for this requirement in section 6 of this chapter.

Another restriction on long-distance dependencies in the BEI-construction is instantiated by a contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap. Unlike English *tough*-movement, which is degraded for non-subjects across a phasal CP-projection and impossible for subjects across a phasal CP-projection (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006), the BEI-construction does not allow for a long-distance, cross-clausal dependency between the subject of BEI and an object gap, as seen in (17b) (see e.g., Ting 1995, 1998; a.o.), but allows for a cross-clausal dependency between the subject of BEI and a subject gap, as seen in (17c) (see e.g., Her 2009).[6] I will account for this subject/object (with respect to the possibility to cross a finite clause boundary to become the subject in the BEI-construction) contrast also in section 6 of this chapter.

(17) a. Jingcha renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan hui mousha Lisi].
police think/suspect/believe Zhangsan will murder Lisi
'The police thought/suspected/believed that Zhangsan will murder Lisi.'

b. *Long-distance, cross-clausal dependency in* BEI*-construction (finite clause object gap)*
*Lisi$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan hui mousha $\_\__i$].
Lisi BEI police think/suspect/believe Zhangsan will murder
INT: 'Lisi was thought/suspected/believed that Zhangsan will murder (him) (by the police).' (Adapted from Ting 1998: ex. 28c)

c. *Cross-clausal dependency in* BEI*-construction (finite clause subject gap)*
Zhangsan$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ $\_\__i$ hui mousha Lisi].
Zhangsan BEI police think/suspect/believe will murder Lisi
Lit. 'Zhangsan was thought/suspected/believed that (he) will murder Lisi (by the police).' (Adapted from Her 2009: ex. 25a)

In addition to the possibility of long-distance dependencies, the BEI-construction is like English *tough*-movement in many other respects. As mentioned previously, English *tough*-movement exhibits mixed properties in terms of A-movement vs. Ā-movement, which are the same mix of properties as Dinka movement to Spec, CP. In section 5 of this chapter, I will show that the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement.

2.2.3 Syntactic properties of BEI and the BEI-construction

In this section, I present evidence that BEI is best analyzed as the head of a projection taking an extended verbal projection (which, under the proposed analysis, is a VoiceP, with the agent/external argument of the matrix verb being introduced in Spec, VoiceP) as its complement, as schema-

[6]Following Huang (1989), I assume that verbs like *renwei* 'think', *huaiyi* 'suspect', *xiangxin* 'believe', take a finite CP complement, because their complement can contain a modal verb. See section 6 of this chapter for more details.

tized in (18a) (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). Crucially, BEI should not be analyzed as a preposition taking the agent/external argument of the matrix verb as its complement and projecting a PP adjunct, as schematized in (18b) (contra Chao 1968; Li 1990; a.o.).

(18) a. *VoiceP-complementation analysis of* BEI
NP_i [BEI [$_{VoiceP}$ (NP) V (... V ...) $\_\__i$ (...)]]

b. *NP-complementation analysis of* BEI *(*BEI *as preposition)*
NP_i [$_{VoiceP}$ [$_{PP}$ BEI (NP)] V (... V ...) $\_\__i$ (...)]

The first piece of evidence for the constituent structure in (18a) and against the constituent structure in (18b) comes from reflexive binding. In Mandarin, the reflexive *ziji* 'self' can only be bound by a grammatical subject (Tang 1989; Huang & Tang 1991; Huang, Li & Li 2009; a.o.); hence, in the prepositional-dative construction in (19), *ziji* 'self' must take the subject *Lisi* and not the direct object *Zhangsan* as its antecedent.

(19) $Lisi_i$ jieshao-le $Zhangsan_j$ gei $ziji_{i/*j}$-de pengyou.
Lisi introduce-PRF Zhangsan to self's friend
'$Lisi_i$ introduced $Zhangsan_j$ to $his_{i/*j}$ friend.' (Adapted from Tang 1989: ex. 27)

In addition, long-distance binding is possible with the reflexive *ziji* 'self' (Tang 1989; Huang & Tang 1991; Huang, Li & Li 2009; a.o.); hence, in (20), *ziji* 'self' can take either the embedded subject *Lisi* or the matrix subject *Zhangsan* as its antecedent.

(20) $Zhangsan_i$ shuo [$Lisi_j$ ma-guo $ziji_{i/j}$].
Zhangsan say Lisi scold-EXP self
'$Zhangsan_i$ said that $Lisi_j$ once scolded (him)self.' (Adapted from Huang & Tang 1991: ex. 1a, 4)

In contrast, the compound reflexive *ta-ziji* '3SG-self' is subject to Principle A – it is bound in its minimal governing category with an accessible SUBJECT (see e.g., Huang, Li & Li 2009). Hence, in the prepositional-dative construction in (21), *ta-ziji* '3SG-self' can take either the grammatical subject *Lisi* or the direct object *Zhangsan* as its antecedent.

(21) $Lisi_i$ jieshao-le $Zhangsan_j$ gei ta-$ziji_{i/j}$-de pengyou.
Lisi introduce-PRF Zhangsan to 3SG-self's friend
'$Lisi_i$ introduced $Zhangsan_j$ to $his_{i/j}$ friend.'

As a side note, in (22a), *ta-ziji* '3SG-self' can take the embedded subject *Lisi* but not the matrix subject *Zhangsan* as its antecedent, which also follows from Principle A.

(22) Zhangsan$_i$ shuo [Lisi$_j$ ma-guo ta-ziji$_{*i/j}$-de pengyou].
Zhangsan say Lisi scold-EXP 3SG-self's friend
'Zhangsan$_i$ said that Lisi$_j$ once scold his$_{*i/j}$ friend.' (Adapted from Huang & Tang 1991: ex. 1b, 34a)

In the BEI-construction, both the subject of BEI and the agent/external argument of the matrix verb c-command, and hence either the subject of BEI or the agent/external argument of the matrix verb can bind, the (subject-oriented) reflexive, *ziji* 'self', as seen in (23a) (see also Ting 1995, 1998; Huang 1999; Huang, Li & Li 2009).[7] By contrast, an NP embedded in a PP does not c-command, and hence cannot bind, the compound reflexive *ta-ziji* '3SG-self', as seen in (23b).

(23) a. Lisi$_i$ [bei [Zhangsan$_j$ jieshao-gei-le ziji$_{i/j}$-de pengyou]].
Lisi BEI Zhangsan introduce-to-PRF self's friend
'Lisi$_i$ was introduced by Zhangsan$_j$ to his$_{i/j}$ friend.' (Adapted from Ting 1998: ex. 35a)

b. Lisi$_i$ [$_{PP}$ dui Zhangsan$_j$] shuo-guo ta-ziji$_{i/*j}$-de mimi.
Lisi to Zhangsan say-EXP 3SG-self's secret
'Lisi$_i$, to Zhangsan$_j$, once said his$_{i/*j}$ secret.'

The second piece of evidence for the constituent structure in (18a) and against the constituent structure in (18b) comes from the impossibility of BEI and the agent/external argument of the matrix verb moving as a constituent, as seen in (24a) (see also Huang 1999; Huang, Li & Li 2009). In contrast, a PP adjunct can surface at various positions in a sentence, as seen in (24b).

(24) a. {*Bei Lisi}, shu {bei Lisi} fang-zai-le zhuozi-shang.
BEI Lisi book BEI Lisi put-be.at-PRF desk-on
'The book was put on the desk by Lisi.'

b. {[$_{PP}$ Zai zhuozi-shang]}, Lisi {[$_{PP}$ zai zhuozi-shang]} fang-le yi-ben shu.
be.at desk-on Lisi be.at desk-on put-PRF one-CL book
'Lisi put a book on the desk.' (Adapted from Huang, Li & Li 2009: 116, ex. 13)

Hence, unlike the English *be*-passive, where the agent/external argument of the passivized verb, when overtly expressed, is introduced in a *by*-phrase, which adjoins to a Voice projection (see e.g., Bruening 2013; but see Collins 2005), in the BEI-construction, the agent/external argument

[7]Note that in agent-less BEI-constructions, the non-overt agent/external argument of the matrix verb cannot bind *ziji* 'self', as seen in (i). This also suggests that the non-overt agent/external argument of the matrix verb is not a null pronoun.

(i) Lisi$_i$ bei jieshao-gei-le ziji$_{i/*j}$-de pengyou.
Lisi BEI introduce-to-PRF self's friend
'Lisi$_i$ was introduced to his$_{i/*j}$ friend.'

of the matrix verb, when overtly expressed, is arguably located in its thematic position, which I assume to be Spec, VoiceP, following Kratzer (1996).

Having established that BEI is not a preposition taking the agent/external argument of the matrix verb as its complement, it can be further shown that BEI's complement must be structurally smaller than an IP/AspP but as large as an extended verbal projection (which I assume to be a VoiceP). Hence, temporal adverbs (*zuotian* 'yesterday'), aspectual adverbs (*yijing*, 'already'), modal verbs (*hui* 'will', *yinggai* 'should'), and negation (*mei-you* 'not-have') must precede BEI and cannot follow the agent/external argument of the matrix verb, as seen in (25a) and (25b), but event-internal adverbs (e.g., manner adverbs) can occur either before BEI or after the the agent/external argument of the matrix verb, as seen in (25c) (see Ernst 2010).

(25) a. Shu {zuotian/yijing} bei (wo) {*zuotian/*yijing} fang-zai-le zhuozi-shang.
book yesterday/already BEI 1SG yesterday/already put-be.at-PRF table-on
'The book yesterday/already was put on the table (by me).'

b. Shu {hui/yinggai/mei-you} bei (wo) {*hui/*yinggai/*mei-you} fang-zai
book will/should/not-have BEI 1SG will/should/not-have put-be.at
zhuozi-shang.
table-on
'The book will be/should/was not put on the table (by me).'

c. Shu {xiaoxin-de} bei (wo) {xiaoxin-de} fang-zai-le zhuozi-shang.
book carefully BEI 1SG carefully put-be.at-PRF table-on
'The book was put on the table carefully (by me).'

As mentioned previously, *guyi* 'deliberately' can occur in BEI's complement and modify the agent/external argument of the matrix verb, whether it is overt or non-overt, as seen in (26).

(26) Zhangsan$_i$ bei (Lisi) guyi da-le __$_i$.
Zhangsan BEI Lisi deliberately hit-PRF
'Zhangsan was hit (by Lisi) deliberately.'

In addition, *guyi* 'deliberately' can also occur before BEI and modify the subject of BEI, as seen in (27) (see e.g., Huang 1999, 2013; Huang, Li & Li 2009; Bruening & Tran 2015; Liu & Huang 2016; a.o.).

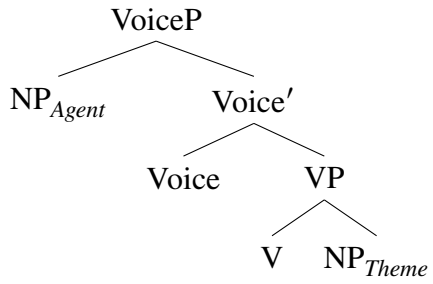
(27) Zhangsan$_i$ guyi bei (Lisi) da-le __$_i$.
Zhangsan deliberately BEI Lisi hit-PRF
'Zhangsan deliberately got hit (by Lisi).' (Huang, Li & Li 2009: 115, ex. 6-7)

I will account for the distribution and interpretation of *guyi* 'deliberately' in the BEI-construction in section 7 of this chapter.

2.3 Proposed analysis

I propose to analyze the BEI-construction as a passive construction where BEI spells out a passive head which selects a VoiceP with or without an agent/external argument. Specifically, I assume, following Kratzer (1996), that a simple transitive construction (in the active voice) has the structure in (28), where the agent/external argument of the transitive verb is introduced by the agent/external-argument-introducing Voice head in Spec, VoiceP.

(28) *Simple transitive (active voice)*

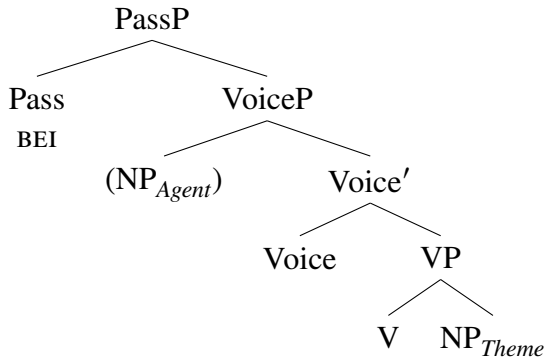


a. $\text{VP}_{<s,t>}$: $\lambda e.\ \text{V}(e, \text{NP}_{Theme})$
b. $\text{Voice}_{<e,<s,t>>}$: $\lambda x.\ \lambda e.\ \text{Agent}(e, x)$
c. $\text{Voice'}_{<e,<s,t>>}$: $\lambda x.\ \lambda e.\ \text{V}(e, \text{NP}_{Theme})$ & $\text{Agent}(e, x)$[8]
d. $\text{VoiceP}_{<s,t>}$: $\lambda e.\ \text{V}(e, \text{NP}_{Theme})$ & $\text{Agent}(e, \text{NP}_{Agent})$

I propose that the BEI-construction has structure in (29). In overt-agent BEI-constructions, the agent/external argument of the matrix verb is introduced in Spec, VoiceP – this accounts for the possibility for the the agent/external argument of the matrix verb to bind a subject-oriented reflexive in BEI's complement, as seen previously. In this case, I assume that the passive head/BEI assigns case to the agent/external argument of the matrix verb. In agent-less BEI-constructions, I assume that the passive head/BEI is responsible for existentially binding the agent/external argument required by the Voice head (following Bruening 2013; see also Bach 1980; Keenan 1980, 1985; Williams 1987; a.o.). Because the agent/external argument of the matrix verb is semantically present (due to the semantics of the Voice head), it can be modified by a 'deliberately'-type adverb and control the PRO subject of an infinitival purpose clause, as seen previously.

[8]The Voice head and the VP combine via *Event Identification* (Kratzer 1996).

(29) BEI-*construction as passive construction*



a. VoiceP (with overt agent): $\lambda e.\ \mathrm{V}(e, \mathrm{NP}_{Theme})$ & $\mathrm{Agent}(e, \mathrm{NP}_{Agent})$
b. VoiceP (agent-less): $\lambda x.\ \lambda e.\ \mathrm{V}(e, \mathrm{NP}_{Theme})$ & $\mathrm{Agent}(e, x)$
c. PassP (with overt agent): $\lambda e.\ \mathrm{V}(e, \mathrm{NP}_{Theme})$ & $\mathrm{Agent}(e, \mathrm{NP}_{Agent})$
d. PassP (agent-less): $\lambda e.\ \mathrm{V}(e, \mathrm{NP}_{Theme})$ & $\exists x : \mathrm{Agent}(e, x)$

To account for the possibility of long-distance dependencies in the BEI-construction, I propose that the passive head/BEI hosts a composite probe $[\phi + \bar{A}]$; the subject in the BEI-construction is derived via (successive-cyclic) composite A/Ā-movement to Spec, PassP, triggered by the composite probe $[\phi + \bar{A}]$ on the passive head/BEI, as illustrated in (30a), followed by a terminating step of A-movement to Spec, IP, as illustrated in (30b), which is akin to the analysis proposed by Longenbaugh (2017) for English *tough*-movement.

(30) *Proposed analysis of* BEI-*construction*

a. *Step 1: (Successive-cyclic) composite movement to Spec, PassP*

$[_{\mathrm{PassP}}\ \mathrm{NP}_{[\phi],[\bar{A}]}\ \ \mathrm{BEI}_{[\phi+\bar{A}]}\ \ [_{\mathrm{VoiceP}}\ (\mathrm{NP}_{[\phi]})\ \ \mathrm{V}\ (\ldots\ \mathrm{V}\ \ldots)\ \ \mathrm{t}\ \ (\ldots)\ ]]$

A/Ā-movement

b. *Step 2: A-movement to Spec, IP*

$[_{\mathrm{IP}}\ \mathrm{NP}_{[\phi],[\bar{A}]}\ \ \mathrm{Infl}_{[\phi]}\ \ [_{\mathrm{PassP}}\ \mathrm{t}\ \ \mathrm{BEI}\ \ldots\ \mathrm{t}\ \ (\ldots)\ ]]$

A-movement

As mentioned previously, under the proposed analysis of the BEI-construction as a passive construction, the difference between the BEI-construction and a canonical passive construction involving A-movement, such as the English *be*-passive, lies solely in the feature composition of the probe on the passive head, which determines the type of movement involved and the resulting properties of the passive construction. In the English *be*-passive, passivization is an instance of A-movement, and hence one might assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (but see Collins 2005).

In the BEI-construction, the passive head/BEI hosts a composite probe [$\phi + \bar{A}$], which attracts the closest NP with both ϕ- and Ā-features. As a result, the BEI-construction allows for a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement.

A few clarifications are in order: First, I have assumed that in canonical passive constructions and the BEI-construction, the pure ϕ-probe and composite probe [$\phi+\bar{A}$], which trigger A-movement and composite A/Ā-movement, respectively, are located on the passive head/BEI. Alternatively, one might assume that it is the matrix Voice head below the passive head/BEI that hosts the pure ϕ-probe in canonical passive constructions and hosts the composite probe [$\phi + \bar{A}$] in the BEI-construction. Under the alternative assumption, in the BEI-construction, the agent/external argument of the matrix verb, which is introduced in Spec, VoiceP, would be outside the search domain for the composite probe; hence, it is correctly predicted that the agent/external argument of the matrix verb cannot become the subject of BEI, as seen in (31).

(31) *Zhangsan$_i$ bei __$_i$ ma-le Lisi.
Zhangsan BEI scold-PRF Lisi
INT: 'Zhangsan was scolded Lisi (by him).'

However, in the BEI-construction, the agent/external argument of the matrix verb resists extraction in general, as seen in (32).

(32) *Zhangsan$_i$, Lisi$_j$ bei __$_i$ ma-le __$_j$.
Zhangsan Lisi BEI scold-PRF
INT: 'Zhangsan, Lisi was scolded (by him).'

The ill-formedness of (31) and (32) might suggest that BEI does behave like a preposition in not permitting stranding (although BEI and agent/external argument of the matrix verb do not behave like a PP with respect to the reflexive binding and under the constituency test, as discussed previously).[9] I leave this issue for future research.

Second, under the proposed analysis of the BEI-construction, other NPs between the passive head/BEI, which hosts the composite probe [$\phi+\bar{A}$], and the closest NP with both ϕ- and Ā-features are not interveners if they lack an Ā-feature. One might wonder what happens when there is more than one NP with both ϕ- and Ā-features in BEI's complement. The answer depends on the nature of the Ā-feature on the passive head/BEI. I assume, following Rizzi (1997, 2004), Abels (2012), and others, that Ā-probes may be *relativized to specific features* (e.g., [*Wh*] for *wh*-movement, [*Top*] for topicalization, [*Foc*] for focalization, [*Rel*] for relativization, etc.), or be *flat*: while a relativized Ā-probe must be satisfied by a goal that has a specific Ā-feature that matches with the specific feature on the probe, a flat Ā-probe can be satisfied by any Ā-feature on the goal. I propose that the Ā-feature on the passive head/BEI is flat; hence, the proposed analysis predicts that when there are more than one NP with both ϕ- and Ā-features in BEI's complement, the passive head/BEI will

[9] I hesitate to suggest that the ill-formedness of (31) and (32) is due to anti-locality (i.e., movement from Spec, VoiceP to Spec, PassP, without crossing a maximal projection other than the VoiceP, is too local, in the sense of Erlewine 2016; see also Bošković 1994, 1997; Saito & Murasugi 1999; Grohmann 2003; a.o.), because in section 7 of this chapter, I will assume that it is possible for the indirect object of a double-object construction to undergo movement from Spec, ApplP to Spec, VoiceP, without crossing a maximal projection other than the ApplP.

attract the closest NP with both ϕ- and Ā-features. In section 5 of this chapter, I will show that multiple instances of Ā-movement in Mandarin can proceed in either a nested or a crossed fashion, which follows if pure Ā-probes in Mandarin are relativized to specific features. In contrast, when two NPs with both ϕ- and Ā-features move from BEI's complement, only the NP closer to BEI can be the subject of BEI. This follows if the Ā-feature on BEI is flat.

Third, a few more words are in order on successive-cyclic composite A/Ā-movement involved in (step 1 of) the derivation of the BEI-construction. I assume that in the passive voice, the passive head (instead of the Voice head below the passive head) heads a phase (see e.g., Collins 2005: 98), and that in the active voice, the Voice head heads a phase (Chomsky 2001). Hence, in addition to the passive head/BEI, which hosts a composite probe $[\phi + \bar{A}]$, the Voice head, when it heads a phase, must also host a composite probe $[\phi + \bar{A}]$, for purposes of successive-cyclic composite A/Ā-movement. Concretely, I propose that when the BEI-construction involves multiple verbal projections and a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement, the subject of BEI is derived via successive-cyclic composite A/Ā-movement through the specifiers of successive VoicePs, terminating at Spec, PassP, as illustrated in (33). In section 8 of this chapter, I will argue that the Voice head, when it heads a phase, generally hosts a composite probe for purposes of successive-cyclic composite A/Ā-movement. Hence, not only other instances of composite A/Ā-movement but also instances of Ā-movement can involve an intermediate step of composite A/Ā-movement to Spec, VoiceP, triggered by a composite probe on the Voice head.

(33) *Successive-cyclic composite movement in* BEI*-construction*

$$[_{\text{PassP}}\ \text{NP}_{[\phi],[\bar{A}]}\ \text{BEI}_{[\phi+\bar{A}]}\ [_{\text{VoiceP}}\ (\text{NP}_{[\phi]})\ \text{Voice ...}\ [_{\text{VoiceP}}\ \text{t}\ \text{Voice}_{[\phi+\bar{A}]}\ \text{...}\ \text{t}\ (\text{...})\ ]]]$$

A/Ā-movement; A/Ā-movement

Lastly, I assume, following Longenbaugh (2017), that in (step 2 of) the derivation of the BEI-construction, (successive-cyclic) composite A/Ā-movement (to Spec, PassP) can be followed by A-movement (to Spec, IP), without violating the ban on improper (A- after Ā-) movement.[10]

[10]For Longenbaugh (2017), this assumption builds on Neeleman & van De Koot's (2010) insight that A-movement can feed Ā-movement, because A-movement does not reconstruct, but Ā-movement cannot feed A-movement, because Ā-movement must reconstruct, which renders the highest copy of an Ā-movement chain unavailable for (carrying the relevant selectional feature for) further A-movement. Because composite A/Ā-movement does not show reconstruction effects (which I will show in section 5 of this chapter) – it is equivalent to A-movement from the perspective of Neeleman & van De Koot (2010) – hence, it should be able to feed A-movement. In addition, the assumption that (successive-cyclic) composite A/Ā-movement can feed A-movement can be made also on the basis of Obata & Epstein's (2011) insight that the ban on improper (A- after Ā-) movement follows if a pure Ā-probe only triggers Ā-movement of the matching Ā-feature on the goal and not the goal itself: if it is only the Ā-feature that undergoes Ā-movement, it is expected that the Ā-feature alone cannot undergo further A-movement. Because a composite probe $[\phi + \bar{A}]$ must at least trigger movement of both the matching ϕ-feature and the matching Ā-feature on the goal, it is expected that at least the ϕ-feature can undergo further A-movement.

2.4 Alternative analyses

As mentioned previously, the proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement diverges from a widely accepted analysis that derives the dependency involved in the BEI-construction via base-generation of the subject of BEI as an argument of BEI and NOP movement in BEI's complement, on a par with to Chomsky's (1977, 1981) analysis of English *tough*-movement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). While the alternative analysis of the BEI-construction takes inspiration from the similarities between the BEI-construction and English *tough*-movement, it falls short in accounting for the passive-like properties associated with the BEI-construction. In contrast, the proposed analysis of the BEI-construction not only captures its nature as a passive construction but also allows for parallels to be drawn between the BEI-construction and English *tough*-movement, under the proposed analysis of the BEI-construction and Longenbaugh's (2017) analysis of English *tough*-movement.

In sections 4.1 and 4.2, I will briefly review two representative analyses of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement, by Huang, Li & Li (2009) and by Bruening & Tran (2015). As a preview, both analyses assume that (i) in both overt-agent and agent-less BEI-constructions, BEI is a two-place predicate, both introducing the subject of BEI as its argument and selecting a secondary predicate of the subject of BEI, and (ii) overt-agent BEI-constructions involve Ā-movement of a NOP, which is co-indexed with the subject of BEI. The major difference between the two analyses lies in the analysis of agent-less BEI-constructions: Huang, Li & Li (2009) propose that agent-less BEI-constructions involve A-movement of a PRO, controlled by the subject of BEI, rather than NOP movement; in contrast, Bruening & Tran (2015) maintain that NOP movement is involved in agent-less BEI-constructions.

There is also an analysis in which the subject in the BEI-construction may be base-generated or derived via movement (e.g., Liu & Huang 2016), and an analysis of the BEI-construction as a passive construction (e.g., Pan 1998), among many other analyses. But unlike the proposed analysis, which derives the dependency involved in the BEI-construction via composite A/Ā-movement, the alternative analyses try to derive long-distance dependencies in the BEI-construction via A-movement. In sections 4.3 and 4.4, I will review Liu & Huang's (2016) analysis which builds on Huang, Li & Li's (2009) analysis, and Pan's (1998) analysis (as discussed by Pan & Hu 2021), respectively.

2.4.1 Huang, Li & Li (2009)

Huang, Li & Li (2009) (see also Ting 1995, 1998; Huang 1999; a.o.) analyze BEI as a two-place predicate (meaning 'undergo' or 'experience'), both introducing the subject of BEI (as an experiencer argument of BEI) and selecting a secondary predicate of the subject of BEI. Additionally, they assume that different types of dependencies are involved in overt-agent BEI-constructions, which they dub *long-passives*, and agent-less BEI-constructions, which they dub *short-passives*.[11]

[11] As is pointed out by Bruening & Tran (2015), their naming of overt-agent and agent-less BEI-constructions as long- and short-passives is misleading, as there is nothing "passive" – e.g., neither object promotion nor agent/external argument demotion – in their analysis of the BEI-construction.

Specifically, in their analysis of long-passives/overt-agent BEI-constructions, as illustrated in (34), BEI's complement is an IP, which contains an Ā-moved NOP, which is co-indexed with the subject of BEI; at the level of Logical Form (LF), the NOP serves as a lambda operator, which turns a proposition into a predicate via lambda abstraction.[12]

(34) *Huang, Li & Li's (2009) long-passive*

NP_i BEI $[_{IP}$ NOP_i NP V (... V ...) t (...)]

Ā-movement

In their analysis of short-passives/agent-less BEI-constructions, BEI's complement is a VP, which contains an A-moved PRO, controlled by the subject of BEI, as illustrated in (35) (see Hoshi 1991, 1994a, 1994b for a similar analysis of the English *get*-passive and the Japanese *ni*-passive).

(35) *Huang, Li & Li's (2009) short-passive*

NP_i BEI $[_{VP}$ PRO_i V t (...)]

A-movement

Recall that, for Huang, Li & Li (2009) (see also Ting 1995, 1998; Huang 1999; a.o.), the lack of Ā-dependencies in short-passives/agent-less BEI-constructions is evidenced by the ill-formedness of certain agent-less BEI-constructions which involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (e.g., the ill-formedness of (13b) and (14b) when the agent/external argument of the matrix verb is non-overt). However, Huang, Li & Li's (2009) analysis of short-passives/agent-less BEI-constructions fails to account for the well-formedness of certain agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (e.g., the well-formedness of (15b) and (16b) when the agent/external argument of the matrix verb is non-overt). In addition, Huang, Li & Li's (2009) analysis (and any other analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement) cannot account for the contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap, as seen previously.

2.4.2 Bruening & Tran (2015)

Like Huang, Li & Li (2009), Bruening & Tran (2015) also analyze BEI as a two-place predicate, both introducing the subject of BEI as its argument and selecting a secondary predicate of the subject of BEI, and provide different analyses for overt-agent and agent-less BEI-constructions. But unlike Huang, Li & Li (2009), Bruening & Tran (2015) propose that BEI selects an active VoiceP in overt-agent BEI-constructions and a passive VoiceP in agent-less BEI-constructions; both overt-agent and

[12] As is pointed out by Ernst (2010), an apparent problem with Huang, Li & Li's (2009) analysis of long-passives/overt-agent BEI-constructions is that BEI's complement cannot be as large as an IP; such a problem can be avoided by simply reanalyzing BEI's complement as an extended verbal projection while maintaining other components of Huang, Li & Li's (2009) analysis of long-passives/overt-agent BEI-constructions (e.g., the base-generation of the subject of BEI and NOP movement in BEI's complement).

agent-less BEI-constructions involve an Ā-moved NOP, which is co-indexed with the subject of BEI, as illustrated in (36a) and (36b).

(36) a. *Bruening & Tran's (2015) active-voice-selecting* BEI*-construction*

NP_i BEI $[_{VoiceP}$ NOP_i NP Voice V (... V ...) t (...)]

(Ā-movement: NOP_i … t)

b. *Bruening & Tran's (2015) passive-voice-selecting* BEI*-construction*

NP_i BEI $[_{PassP}$ NOP_i Pass $[_{VoiceP}$ Voice V (... V ...) t (...)]]

(Ā-movement: NOP_i … t)

Bruening & Tran's (2015) analysis of the agent-less BEI-constructions has the opposite problem: it accounts for the well-formedness of certain agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (e.g., the well-formedness of (15b) and (16b) when the agent/external argument of the matrix verb is non-overt), but fails to account for the ill-formedness of certain agent-less BEI-constructions which involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (e.g., the ill-formedness of (13b) and (14b) when the agent/external argument of the matrix verb is non-overt). In addition, Bruening & Tran's (2015) analysis, like Huang, Li & Li's (2009) analysis (and any other analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement), cannot account for the subject/object contrast with respect to the possibility of crossing a finite clause boundary to become the subject of BEI, as seen previously.

2.4.3 Liu & Huang (2016)

Liu & Huang (2016) follow Huang (2013) in arguing that both a base-generation analysis and a raising analysis of the subject in the BEI-construction could be appropriate, in an attempt to reconcile two conflicting arguments on the base-generated vs. derived status of the subject of BEI, which I will discuss in section 7 of this chapter. Specifically, they propose to decompose BEI into a two-place predicate meaning 'experience' (Exp) and a raising predicate meaning 'become' (Bec), and suggest that overt-agent and agent-less BEI-constructions involving just a simple transitive verbal projection (which they dub *local long-passives* and *short-passives*, respectively) can be analyzed as involving either base-generation of the subject of BEI (as an argument of the Exp head) and A-movement of a PRO (to Spec, BecP), controlled by the subject of BEI, as illustrated in (37a), or a derived subject of BEI via A-movement (to Spec, BecP, in which case the Exp head is absent), as illustrated in (37b).

(37) a. *Liu & Huang's (2016) control analysis of local long- and short-passives*

$[_{IP}$ NP_i Infl $[_{ExpP}$ t Exp $[_{BecP}$ PRO_i Bec $[_{VoiceP}$ t (NP) Voice V t (...)]]]]

(A-movement: NP_i … t; A-movement: PRO_i … t; A-movement: t … t)

b. *Liu & Huang's (2016) raising analysis of local long- and short-passives*

$[_{IP}$ NP Infl $[_{BecP}$ t Bec $[_{VoiceP}$ t (NP) Voice V t (...)]]]

A-movement A-movement A-movement

For BEI-constructions involving multiple verbal projections (which they dub *non-local long-passives*), Liu & Huang (2016) maintain Huang, Li & Li's (2009) analysis involving base-generation of the subject of BEI and NOP movement in BEI's complement. Hence, the problems with Huang, Li & Li's (2009) analysis – namely, its failure to account for the possibility of (apparent) long-distance dependencies in agent-less BEI-constructions and the subject/object contrast with respect to the possibility of crossing a finite clause boundary to become the subject of BEI – remain unresolved.

2.4.4 Pan (1998)

Pan (1998) analyzes the BEI-construction as a passive construction where BEI is a passive marker. To account for the possibility of long-distance dependencies in the BEI-construction, such as in (38), Pan (1998) assumes that the multiple verbal projections in examples like (38) form a complex predicate which constitutes the passivization domain in Mandarin; hence, long-distance passivization is possible as an instance of A-movement in Mandarin.

(38) *Long-distance dependency in* BEI*-construction (object control)*

Na-feng xin$_i$ bei *(wo) jiao Li$_j$ [PRO$_j$ qing Wang$_k$ [PRO$_k$ tuo Zhang$_l$ [PRO$_l$
that-CL letter BEI 1SG order Li ask Wang entrust Zhang
ji-chu-le __$_i$]]].
send-out-PRF

Lit. 'That letter was ordered Li to ask Wang to entrust Zhang to send out *(by me).' (Adapted from Huang, Li & Li 2009: 132: ex. 47b)

Pan (1998) further shows that any NP within the complex predicate can undergo passivization, as seen in (39).[13]

(39) a. Li$_i$ bei (wo) jiao-qu __$_i$ qing Wang tuo Zhang ji-chu-le na-feng xin.
Li BEI 1SG order-go ask Wang entrust Zhang send-out-PRF that-CL letter
'Li was ordered to ask Wang to entrust Zhang to send out that letter (by me).' (Adapted from Pan & Hu 2021: ex. 29a)

[13]In (39), the additional morpheme *qu* 'go' inserted before the gap or the disyllabic *baituo* 'entrust' (instead of its monosyllabic synonym *tuo* 'entrust') is necessary for phonological reasons (see Tang 2002).

b. Wang$_i$ bei *(wo) jiao Lisi qing-qu __$_i$ tuo Zhang ji-chu-le na-feng xin.
Wang BEI 1SG order Li ask-go entrust Zhang send-out-PRF that-CL letter
Lit. 'Wang was ordered Li to ask to entrust Zhang to send out that letter *(by me).'
(Adapted from Pan & Hu 2021: ex. 29b)

c. Zhang$_i$ bei *(wo) jiao Lisi qing Wang baituo __$_i$ ji-chu-le na-feng xin.
Zhang BEI 1SG order Li ask Wang entrust send-out-PRF that-CL letter
Lit. 'Zhang was ordered Li to ask Wang to entrust to send out that letter *(by me).'
(Adapted from Pan & Hu 2021: ex. 29c)

A technical problem with Pan's (1998) analysis has to do with *minimality*: even if the probe on the passive head in Mandarin is able to search for a goal across multiple verbal projections, it must target the *closest* goal. Hence, the well-formedness of (38a), (39b) and (39c), where the subject of BEI is not identified with the NP closest to BEI, remains problematic for Pan's (1998) analysis. A fatal problem for Pan's (1998) analysis is the fact that the BEI-construction is unlike the English *be*-passive, which exhibits properties of A-movement, and like English *tough*-movement, which exhibits mixed properties in terms of A-movement vs. Ā-movement, as I will show in section 5 of this chapter. Hence, the BEI-construction cannot be analyzed as a passive construction involving A-movement, on a par with the English *be*-passive.

2.5 Mixed A/Ā-properties as direct consequences of composite A/Ā-movement

As mentioned previously, it has long been recognized that A-movement and Ā-movement are associated with distinct properties (see e.g., Richards 2014). A-movement, such as subject-to-subject raising and passivization, (i) is restricted to noun phrases; (ii) is local/cannot cross c-commanding noun phrases; (iii) creates new antecedents for anaphor binding; (iv) is not subject to weak crossover; (v) does not reconstruct for Principle C; (vi) does not license parasitic gaps; and (vii) feeds Ā-movement. By contrast, Ā-movement, such as *wh*-movement, (i) is not restricted to noun phrases; (ii) can cross c-commanding noun phrases and finite clause boundaries to establish long-distance dependencies; (iii) does not create new antecedents for anaphor binding; (iv) is subject to weak crossover; (v) obligatorily reconstructs for Principle C; (vi) licenses parasitic gaps; and (vii) does not feed A-movement/only feeds Ā-movement (the so-called *Ban on Improper Movement*; see e.g., May 1979; Chomsky 1981; Abels 2007; Neeleman & Van De Koot 2010; Williams 2011).

The featural view of the A/Ā-distinction, namely, that the distinct properties associated with A-movement and Ā-movement are derived from the distinct ϕ- and Ā-features which trigger A-movement and Ā-movement, respectively, and the possibility of composite probing by the composite probe $[\phi + \bar{A}]$, which attracts the closest NP with both a matching ϕ-feature and a matching Ā-feature, predict that mixed properties of both A-movement and Ā-movement emerge as direct consequences of composite A/Ā-movement (Van Urk 2015). Positive evidence has come from the Nilotic language Dinka Bor, where movement targeting Spec, CP, e.g., topicalization and relativization, exhibits properties of both A-movement and Ā-movement under the standard diagnostics (Van Urk 2015), as well as English *tough*-movement, which exhibits the same mix of properties as Dinka movement to Spec, CP (Longenbaugh 2017; see also Chomsky 1977, 1981; Brody 1993;

Rezac 2006; Hicks 2009; Takahashi 2011; Hartman 2011; Keine & Poole 2017).

The remainder of this section is organized as follows: In sections 5.1 and 5.2, I will review the mixed A/Ā-properties associated with Dinka movement to Spec, CP and Van Urk's (2015) analysis of Dinka movement to Spec, CP as involving (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the C head (and the Voice head), as well as the same mix of properties associated with English *tough*-movement and Longenbaugh's (2017) analysis of *tough*-movement as involving (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the Voice head. In section 5.3, I will show that the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement. Under the proposed analysis of the BEI-construction as a passive construction involving composite A/Ā-movement, the mixed A/Ā-properties associated with the BEI-construction are direct consequences of composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the passive head/BEI.

As a preview, the mixed A/Ā-properties associated with Dinka movement to Spec, CP, English *tough*-movement, and the Mandarin BEI-construction are summarized in (40).

(40) *Mixed A/Ā-properties associated with Dinka movement to Spec, CP, English tough-movement, and the Mandarin* BEI*-construction*

Properties	A	Ā	Dinka mvmt to Spec, CP	English *tough*-mvmt	Mandarin BEI-constrn
New antecedents for anaphor binding	√	*	√	√	√
No weak crossover	√	*	√	√	√
No reconstruction for Principle C	√	*	√	√	√
Long-distance	*	√	√	√	√
Islands for extraction	*	√	√	√	√
Parasitic gap licensing	*	√	NA	√	NA

2.5.1 Dinka

In Dinka, movement targeting Spec, CP, e.g., topicalization and relativization, behaves like A-movement in that it (i) creates new antecedents for anaphor binding, as seen in (41); (ii) is not subject to weak crossover, as seen in (42); and (iii) does not show reconstruction effects for Principle C, as seen in (43).

(41) *Dinka topicalization: new antecedents for anaphor binding*

a. Bòl$_i$ à-cíi [$_{DP}$ àkḛ̈kô̤o̤l-tí ḛ̈ rɔ̀t-dè$_i$] ___ piɔ̂ɔlìc.
Bol 3S-PRF.OV story-that P self-SG.3SG criticize.NF
'Bol, that story about himself has criticized.' (Van Urk 2015: 111, ex. 37a)

b. Bòl$_i$ à-cíi [$_{DP}$ thṳ̀rá ḛ̈ rɔ̀t-dè$_i$] nyɔ̂ɔth [$_{CP}$ kḛ̈ cṳ̀ṳkṳ̀ ___ tî̤iŋ].
Bol 3S-PRF.OV picture P self-SG.3SG show.NF C PRF.1PL see.NF
'Bol, a picture of himself has shown that we have seen.' (Van Urk 2015: 111, ex. 37b)

(42) *Dinka topicalization: no weak crossover*

a. Dhù̱k ɛ́bɛ̱́n$_i$ à-c̱íi thɔ̱́k-dè$_i$ __ kâac.
boy every 3S-PRF.OV goat.CS-SG.SG bite.NF
'Every boy$_i$, his$_i$ goat bit.' (Van Urk 2015: 110, ex. 35a)

b. Mòc ɛ́bɛ̱́n$_i$ à-yíi tiéeŋ-dè$_i$ luêeel [$_{CP}$ è̱ __ thɛ̱̀t].
man every 3S-HAB.OV wife-SG.3SG say.NF C cook.SV
'Every man$_i$, his$_i$ wife says is cooking.' (Van Urk 2015: 110, ex. 36a)

(43) *Dinka topicalization: no reconstruction for Principle C*

a. [$_{DP}$ Mánh è̱ Máyèn kù̱ Àyén$_i$] c̱ìikɛ̱̀$_i$ __ tî̱iŋ.
brother P Mayen.GEN and Ayen PRF.3PL see.NF
'The brother of Mayen and Ayen$_i$, they$_i$ have seen.' (Van Urk 2015: 114, ex. 43a)

b. [$_{DP}$ Mánh è̱ Máyèn kù̱ Àyén$_i$] à-yù̱u̱kù̱ tàak [$_{CP}$ c̱ìikɛ̱̀$_i$ __ tî̱iŋ].
brother P Mayen.GEN and Ayen 3S-HAB.PL think.NF PRF.3PL see.NF
'The brother of Mayen and Ayen$_i$, we think they$_i$ have seen.' (Van Urk 2015: 114, ex. 44a)

Dinka movement to Spec, CP behaves like Ā-movement in that (i) topicalization can be long-distance, crossing finite clause boundaries, as seen in (41b), (42b) and (43b); and (ii) relativization induces islands for extraction, as seen in (44).

(44) *Dinka relativization: islands for extraction*

a. Àyén à-cɛ̱́ [$_{DP}$ ràan [$_{CP}$ mɛ̱̀r tɔ̱̀ony]] tî̱iŋ.
Ayen 3S-PRF.SV person.CS decorate.SV pot see.NF
'Ayen has seen someone who is decorating a pot.' (Van Urk 2015: 99, ex. 13a)

b. *Yè ŋɔ̱́ [$_{CP}$ *Op* c̱íi Áyèn [$_{DP}$ ràan [$_{CP}$ mɛ̱̀r __]] tî̱iŋ]?
be what PRF.OV Ayen.GEN person.CS decorate.SV see.NF
Lit. 'What has Ayen seen someone [who is decorating __]?' (Van Urk 2015: 99, ex. 13b)

c. *Tɔ̱̀ony à-c̱íi Áyèn [$_{DP}$ ràan [$_{CP}$ mɛ̱̀r __]] tî̱iŋ.
pot 3S-PRF.OV Ayen.GEN person.CS decorate.SV see.NF
Lit. 'A pot, Ayen has seen someone who is decorating __.' (Van Urk 2015: 99, ex. 13c)

Van Urk (2015) proposes that the mixed A/Ā-properties associated with Dinka movement to Spec, CP emerge as direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe [$\phi + \bar{A}$] on the C head (and the Voice head, for purposes of successive-cyclic composite A/Ā-movement), as illustrated in (45).

(45) *Van Urk's (2015) analysis of Dinka movement to Spec, CP*

$[_{CP}\ NP_{[\phi],[\bar{A}]}\ C_{[\phi+\bar{A}]}\ \ldots\ [_{CP}\ t\ C_{[\phi+\bar{A}]}\ \ldots\ t\ \ldots\ ]]$

A/Ā-movement A/Ā-movement

2.5.2 English

As noted by Longenbaugh (2017), English *tough*-movement exhibits the same mix of properties as Dinka movement to Spec, CP. Specifically, English *tough*-movement behaves like A-movement in that it (i) creates new antecedents for anaphor binding, as seen in (46a); (ii) is immune to weak crossover, as seen in (46b); and (iii) does not show reconstruction effects for Principle C, as seen in (46c).

(46) *English tough-movement: A-properties*

a. *New antecedents for anaphor binding*
[Jon and Mary]$_i$ were hard for each other$_i$'s friends to get along with $\_\__i$. (Longenbaugh 2017: ex. 14b; see also Ruys 2000; Pesetsky 2013)

b. *No weak crossover*
No employee$_i$ will be easy for us to get his$_i$ boss to fire $\_\__i$. (Longenbaugh 2017: ex. 14a; see also Lasnik & Stowell 1991)

c. *No reconstruction for Principle C*
[Mary$_i$'s father]$_j$ is tough for her$_i$ to get along with $\_\__j$. (Longenbaugh 2017: ex. 14c; see also Mulder & den Dikken 1992; Takahashi 2011)

English *tough*-movement behaves like Ā-movement in that it (i) can be long-distance, as seen in (47a); (ii) induces weak islands for *wh*-adjunct extraction, as seen in (47b);[14] and (iii) licenses parasitic gaps, as seen in (47c).

(47) *English tough-movement: Ā-properties*

a. *Long-distance*
Aspects$_i$ was annoying to be asked by Joan to convince Matt to read $\_\__i$. (Longenbaugh 2017: ex. 15a)

b. *Islands for extraction*
*Where$_i$ was *Syntactic Structures*$_j$ enjoyable to read $\_\__j$ $\_\__i$? (Longenbaugh 2017: ex. 15c; see also Chomsky 1977; Rezac 2006)

[14]Note that it is possible to extract a *wh*-argument from the *tough*-predicate's complement, as seen in (i).

(i) What balalaika$_i$ are these partitas$_j$ easy to play $\_\__j$ on $\_\__i$. (Pesetsky 1982: ex. 38a)

c. *Parasitic gap licensing*
?*On Raising*$_i$ is easy to admire $\_\__i$ without having read $\_\__i$. (Longenbaugh 2017: ex. 15b; see also Chomsky 1982)

However, unlike Dinka movement to Spec, CP, which can cross finite clause boundaries, English *tough*-movement is possible across non-finite clause boundaries, which arguably lack a CP projection (Wurmbrand 2014), as seen in (47a), but is degraded for non-subjects and impossible for subjects across a phasal CP-projection, as seen in (48) and (49) (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006).[15]

(48) *Long-distance dependency in English tough-movement (finite object gap)*

a. ??[*]John$_i$ was easy to show [$_{CP}$ that Bill killed $\_\__i$]. (Longenbaugh 2017: ex. 38a; see also Lasnik & Fiengo 1974)

b. ?[*]Kim$_i$ is tough for me to believe [$_{CP}$ that Sandy would ever marry $\_\__i$]. (Longenbaugh 2017: ex. 38b; see also Hukari & Levine 1991)

c. ?[ ]Mary$_i$ is tough for me to believe [$_{CP}$ that John would ever marry $\_\__i$]. (Longenbaugh 2017: ex. 38c; see also Kaplan & Bresnan 1982)

d. ?[%]Mary$_i$ is hard for me to believe [$_{CP}$ Leslie kissed $\_\__i$]. (Longenbaugh 2017: ex. 38d; see also Dalrymple & King 2000)

e. ?[?]This boulder$_i$ would be easy for me to claim [$_{CP}$ that I had lifted $\_\__i$]. (Longenbaugh 2017: ex. 38e; see also Heycock 1991)

f. ?[ ]This book$_i$ is difficult to convince people [$_{CP}$ that they ought to read $\_\__i$]. (Longenbaugh 2017: ex. 38f; see also Chomsky 1981)

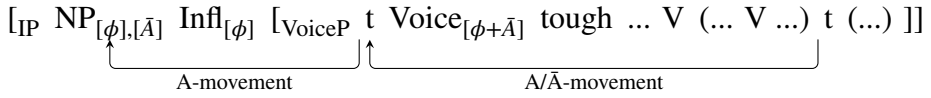
(49) *Long-distance dependency in English tough-movement (finite subject gap)*

a. *Jon$_i$ is hard to believe [$_{CP}$ $\_\__i$ liked Sue]. (Longenbaugh 2017: ex. 37a)
b. *That book$_i$ was easy to show [$_{CP}$ $\_\__i$ sold well when it was first released]. (Longenbaugh 2017: ex. 37b)

Following Van Urk (2015), Longenbaugh (2017) proposes that the mixed A/Ā-properties associated with English *tough*-movement are direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe [$\phi + \bar{A}$] on the Voice head. Specifically, the *tough*-subject is derived via (successive-cyclic) composite A/Ā-movement to Spec, VoiceP, followed by a terminating step of A-movement to Spec, IP, as illustrated in (50).

[15]Judgements immediately preceding square brackets and in square brackets and are provided by Longenbaugh (2017) and the other cited author(s), respectively.

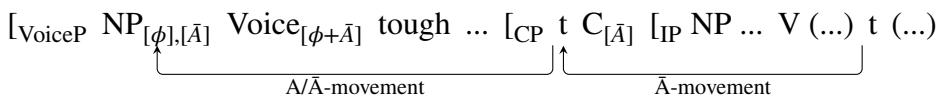
(50) *Longenbaugh's (2017) analysis of English tough-movement*



Importantly, Longenbaugh (2017) suggests that in English *tough*-movement, (successive-cyclic) composite A/Ā-movement to Spec, VoiceP can be followed by A-movement to Spec, IP without violating the ban on improper (A- after Ā-) movement (see footnote 10).

In addition, Longenbaugh (2017) suggests that the ban on improper A-after-Ā-movement also implies a ban on composite A/Ā-movement after Ā-movement.[16] Specifically, to account for the restrictions on long-distance dependencies with English *tough*-movement, Longenbaugh (2017) proposes that the distribution of composite probes can be different in different languages: In Dinka, both the C head and the Voice head host a composite probe $[\phi + \bar{A}]$; hence, composite A/Ā-movement can cross finite clause boundaries (Van Urk 2015). In English, only the Voice head (involved in the path of *tough*-movement) hosts a composite probe $[\phi + \bar{A}]$ while the C head only hosts a pure Ā-probe; hence, composite A/Ā-movement can proceed successive-cyclically through the specifiers of successive VoicePs, but cannot proceed from Spec, CP, i.e., following a step of Ā-movement to Spec, CP triggered by the pure Ā-probe on the C head, due to the ban on improper composite A/Ā-movement after Ā-movement, as illustrated in (51).[17]

(51) *Improper composite-after-Ā-movement in English tough-movement*

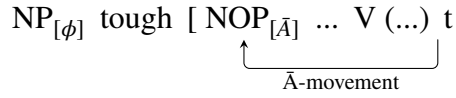


Longenbaugh's (2017) analysis of English *tough*-movement contrasts with Chomsky's (1977, 1981) analysis of English *tough*-movement, in which the *tough*-predicate is analyzed as a two-place predicate, both introducing the *tough*-subject and selecting a secondary predicate of the *tough*-subject, which contains an Ā-moved NOP, which is co-indexed with the *tough*-subject, as illustrated in (52); at LF, the NOP serves as a lambda operator, which turns a proposition into a predicate via lambda abstraction.

[16] One can derive the ban on composite A/Ā-movement after Ā-movement from the perspective of either Neeleman & van De Koot (2010) or Obata & Epstein (2011). From the perspective of Neeleman & van De Koot (2010), if Ā-movement must reconstruct, which renders the highest copy of an Ā-movement chain unavailable for (carrying the relevant selectional feature for) further A-movement, then it should also render the highest copy of an Ā-movement chain unavailable for (carrying the relevant selectional feature for) further composite A/Ā-movement. From the perspective of Obata & Epstein (2011), if it is only the Ā-feature that undergoes Ā-movement, then it is predicted that the Ā-feature alone cannot undergo further composite A/Ā-movement (just like how the Ā-feature alone cannot undergo further A-movement).

[17] Longenbaugh (2017) suggests that degraded (but acceptable) instances of *tough*-movement, as seen in (48), are derived without an intermediate step of Ā-movement to Spec, CP. Alternatively, one might assume that for speakers who generally accept cross-clausal *tough*-movement (e.g., David Pesetsky, p.c.), the C head (involved in the path of *tough*-movement) also hosts a composite probe $[\phi + \bar{A}]$.

(52) *Chomsky's (1977, 1981) analysis of English tough-movement*



Chomsky's (1977, 1981) analysis of English *tough*-movement is bipartite, in the sense that it attempts to derive the A-properties associated with *tough*-movement by base-generating the *tough*-subject as an argument of the *tough*-predicate, and derives the Ā-properties associated with *tough*-movement via Ā-movement of a null operator (NOP) in the *tough*-predicate's complement. As is pointed out by Lasnik & Stowell (1991), Chomsky's (1977, 1981) analysis must be complemented by the assumption that *tough*-movement involves Ā-movement of a *non-quantificational* NOP, which is not subject to weak crossover and Principle C reconstruction effects; by contrast, other instances of Ā-movement that are subject to weak crossover and Principle C reconstruction effects (e.g., *wh*-movement) involve Ā-movement of a (*wh*)-*quantifier* which binds its trace as a variable at LF.

2.5.3 Mandarin

Turning now to Mandarin. In section 5.3.1, I will establish the baseline that IP-external topicalization and relativization in Mandarin are instances of Ā-movement. In section 5.3.2, I will show that the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement. Under the proposed analysis of the BEI-construction as a passive construction involving composite A/Ā-movement, the mixed A/Ā-properties associated with the BEI-construction are direct consequences of composite A/Ā-movement, triggered by a composite probe [ϕ+$\bar{A}$] on the passive head/BEI. In section 5.3.3, I will show that multiple instances of Ā-movement in Mandarin can proceed in either a nested or a crossed fashion, which suggests that pure Ā-probes in Mandarin are relativized to specific features. In contrast, when two NPs with both ϕ- and Ā-features move from BEI's complement, only the NP closer to BEI can be the subject of BEI. This follows if the Ā-feature on BEI is flat.

2.5.3.1 Ā-movement

In Mandarin, IP-external topicalization, as exemplified by (53a), and relativization, as exemplified by (54a), involve a movement dependency between a topicalized NP, which surfaces IP-externally, and a gap, and between a relativized NP and a gap, respectively, as evidenced by the fact that IP-external topicalization and relativization are subject to island constraints, as seen in (53b) and (54b), respectively.

(53) a. *IP-external topicalization*

Lisi$_i$, [$_{IP}$ wo ma-guo __$_i$].
Lisi 1SG scold-EXP
'Lisi, I once scolded (him).'

b. *IP-external topicalization: island-sensitive*
*Lisi$_i$, jingcha zhuazou-le [$_{NP}$ yi-ge ___$_i$ ma-guo de ren].
Lisi police arrest-PRF one-CL scold-EXP REL person
INT: 'Lisi, the police arrested a person who (he) once scolded.'

(54) a. *Relativization*
[$_{IP}$ wo xihuan ___$_i$] de ren$_i$
1SG like REL person
'the person who I like'

b. *Relativization: island-sensitive*
*wo renshi [$_{NP}$ henduo ___$_i$ xihuan de ren] de na-ge ren$_i$
1SG know many like REL person REL that-CL person
INT: 'that person who I know many people who (he) likes' (Adapted from Huang, Li & Li 2009: 219, ex. 82)

IP-external topicalization and relativization exhibit properties of Ā-movement. Specifically, IP-external topicalization (i) does not create new antecedents for anaphor binding, as seen in (55); (ii) is subject to weak crossover, as seen in (56); and (iii) shows reconstruction effects for Principle C, as seen in (57) (see e.g., Huang 1993; Qu 1994; Shyu 1995; Kuo 2009; a.o.).[18]

(55) *IP-external topicalization: no new antecedents for anaphor binding*

a. *Lisi$_i$, (ta-)ziji$_i$-de pengyou ma-guo ___$_i$.
Lisi 3SG-self's friend scold-EXP
INT: 'Lisi$_i$, his$_i$ friend once scolded (him$_i$).'

b. *Lisi$_i$, (ta-)ziji$_i$-de tonghuo bipo Zhangsan pai jingcha zhuazou-le ___$_i$.
Lisi 3SG-self's complice force Zhangsan send police arrest-PRF
INT: 'Lisi$_i$, his$_i$ complice forced Zhangsan to send the police to arrest (him$_i$).'

(56) *IP-external topicalization: weak crossover*

a. *Mei-ge ren$_i$, ta$_i$-de pengyou dou ma-guo ___$_i$.
every-CL person 3SG's friend DOU scold-EXP
INT: 'Every person$_i$, his$_i$ friend once scolded (him$_i$).'

b. *Mei-ge xiaotou$_i$, ta$_i$-de tonghuo dou bipo Zhangsan pai jingcha zhuazou-le ___$_i$.
every-CL thief 3SG's complice DOU force Zhangsan send police arrest-PRF
INT: 'Every thief$_i$, his$_i$ complice forced Zhangsan to send the police to arrest (him$_i$).'

[18] Judgements concerning Principle C reconstruction effects show speaker variation (see Huang 1993, footnote 17).

(57) *IP-external topicalization: reconstruction for Principle C*

a. ?*Lisi$_i$-de pengyou$_j$, ta$_i$ ma-guo __$_j$?
Lisi's friend 3SG scold-EXP
INT: 'Lisi$_i$'s friend$_j$, he$_i$ once scolded (him$_j$).' (Adapted from Huang 1993: ex. 54a)

b. ?*Lisi$_i$-de tonghuo$_j$, ta$_i$ bipo Zhangsan pai jingcha zhuazou-le __$_j$.
Lisi's complice 3SG force Zhangsan send police arrest-PRF
INT: 'Lisi$_i$'s complice$_j$, he$_i$ forced Zhangsan to send the police to arrest (him$_j$).'

Relativization induces (strong) islands for both argument and non-argument extraction. As seen previously in (53b) and (54b), extraction of an argument out of a relative clause (via topicalizion or relativization) is impossible. In addition, a relative clause cannot contain the *wh*-adjunct *weishenme* 'why', which undergoes covert movement to its scope position in the matrix Spec, CP, hence is subject to island constraints, as seen in (58a) (cf. English *wh*-phrases, which undergo overt movement to the matrix Spec, CP, hence are subject to island constraints) (Huang 1982; Tsai 1994); by contrast, a relative clause can contain the *wh*-argument *shei* 'who', which is subject to unselective binding without movement, hence is not subject to island constraints, as seen in (58b) (Tsai 1994).

(58) *Relativization: islands for non-argument extraction*

a. *Wh-adjunct: island-sensitive*
*Ni xiang-zhidao [Zhangsan weishenme mousha __$_i$] de ren$_i$?
you want-know Zhangsan why murder REL person
INT: 'What is the reason x such that you what to know about the person whom Zhangsan murdered for x?'

b. *Wh-argument: island-insensitive*
Ni xiang-zhidao [shei mousha __$_i$] de ren$_i$?
you want-know who murder REL person
'Who is x such that you want to know about the person whom x murdered?'

Similarly, a relative clause cannot contain a so-called *A-not-A* question, which involves an interrogative Infl of the form A-not-A, which undergoes covert head-movement to its scope position in the matrix C, hence is subject to island constraints, as seen in (59a); by contrast, a relative clause can contain a disjunctive question, which involves conjunct reduction and no movement, hence is not subject to island constraints, as seen in (59b) (Huang 1991).

(59) *Relative clause: island for non-argument extraction*

a. *A-not-A question: island-sensitive*
*Xiaotou tou-le [shi-bu-shi jia-de __$_i$] de na-fu hua$_i$?
thief steal-PRF be-not-be fake-MOD REL that-CL painting
INT: 'Did the thief steal that painting which is fake or (that painting which is) not fake?'

b. *Disjunctive question: island-insensitive*
Xiaotou tou-le [shi jia-de haishi bu-shi jia-de $\_\__i$] de na-fu hua_i?
thief steal-PRF be fake-MOD or not-be fake-MOD REL that-CL painting
'Did the thief steal that painting which is fake or (that painting which is) not fake?'

2.5.3.2 The BEI-construction

In the BEI-construction, the dependency between the subject of BEI and the gap in BEI's complement is also derived (entirely or partially) via movement, as evidenced by the fact that the dependency is subject to island constraints, as seen in (60).

(60) BEI-*construction: island-sensitive*

*$Lisi_i$ bei (jingcha) zhuazou-le [$_{NP}$ yi-ge ma-guo $\_\__i$ de ren].
Lisi BEI police arrest-PRF one-CL scold-EXP REL person
INT: 'Lisi was arrested a person who once scolded (him) (by the police).'

Unlike IP-external topicalization and relativization, the BEI-construction exhibits properties of both A-movement and Ā-movement under the standard diagnostics. Like A-movement and unlike Ā-movement, the BEI-construction (i) creates new antecedents for anaphor binding, as seen in (61a); (ii) is immune to weak crossover, as seen in (61b); and (iii) does not show reconstruction effects for Principle C, as seen in (61c) (see also Kuo 2009).

(61) BEI-*construction: A-properties*

a. *New antecedents for anaphor binding*
$Lisi_i$ bei (ta-)$ziji_i$-de pengyou ma-guo $\_\__i$.
Lisi BEI 3SG-self's friend scold-EXP
'$Lisi_i$ was once scolded by his_i friend.'

b. *No weak crossover*
Mei-ge ren_i dou bei ta_i-de pengyou ma-guo $\_\__i$.
every-CL person DOU BEI 3SG's friend scold-EXP
'Every $person_i$ was once scolded by his_i friend.'

c. *No reconstruction for Principle C*
$Lisi_i$-de $pengyou_j$ bei ta_i ma-guo $\_\__j$.
Lisi's friend BEI 3SG scold-EXP
'$Lisi_i$'s friend was once scolded by him_i.'

Like Ā-movement and unlike A-movement, however, the BEI-construction allows for a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement. Note that the A-properties exhibited by BEI-constructions involving just a simple transitive verbal projection, as seen in (61), are also exhibited by BEI-constructions involving multiple verbal projections, as

seen in (62).

(62) BEI-*construction: A-properties*

a. *New antecedents for anaphor binding*

Lisi$_i$ bei (ta-)ziji$_i$-de tonghuo bipo Zhangsan pai jingcha zhuazou-le __$_i$.
Lisi BEI 3SG-self's complice force Zhangsan send police arrest-PRF
Lit. 'Lisi was forced Zhangsan to send the police to arrest by his complice.'

b. *No weak crossover*

Mei-ge xiaotou$_i$ dou bei ta$_i$-de tonghuo bipo Zhangsan pai jingcha zhuazou-le
every-CL thief DOU BEI 3SG's complice force Zhangsan send police arrest-PRF
__$_i$.

Lit. 'Every thief$_i$ was forced Zhangsan to send the police to arrest (him$_i$) by his$_i$ complice.'

c. *No reconstruction for Principle C*

Lisi$_i$-de tonghuo$_j$ bei ta$_i$ bipo Zhangsan pai jingcha zhuazou-le __$_j$.
Lisi's complice BEI 3SG force Zhangsan send police arrest-PRF
Lit. 'Lisi$_i$'s complice was forced Zhangsan to send the police to arrest by him$_i$.'

Also like Ā-movement and unlike A-movement, the BEI-construction induces weak islands for non-argument extraction.[19] As seen previously, the *wh*-adjunct *weishenme* 'why' contrasts with the *wh*-argument *shei* 'who' in that the former undergoes covert movement to its scope position in the matrix Spec, CP and hence is island-sensitive (Huang 1982; Tsai 1994), while the latter is subject to unselective binding without movement and hence is island-insensitive (Tsai 1994); hence, the ill-formedness of (63a) indicates that extraction of a non-argument out of a BEI-construction is impossible.

(63) BEI-*construction: islands for non-argument extraction*

a. *Wh-adjunct: island-sensitive*

??Wo xiang-zhidao Zhangsan$_i$ bei (jingcha) renwei __$_i$ weishenme mousha Lisi.
1SG want-know Zhangsan BEI police think why murder Lisi
INT: 'I want to know the reason x such that Zhangsan was believed to murder Lisi for x (by the police).'

b. *Wh-argument: island-insensitive*

Wo xiang-zhidao Zhangsan$_i$ bei (jingcha) renwei __$_i$ mousha-le shei.
1SG want-know Zhangsan BEI police think murder-PRF who
'I want to know who is x such that Zhangsan was believed to murder x (by the police).'

[19]Note that it is possible to extract an NP-argument from BEI's complement, as I will show in section 5.3.3.

Also recall that an A-not-A question contrasts with a disjunctive question in that the former involves covert head-movement of an interrogative Infl of the form A-not-A to its scope position in the matrix C, and hence is island-sensitive, while the latter involves conjunct reduction and no movement, hence is island-insensitive (Huang 1991); hence, the ill-formedness of (64a) also indicates that extraction of a non-argument out of a BEI-construction is impossible.

(64) BEI-*construction: islands for non-argument extraction*

a. *A-not-A question: island-sensitive*
*Zhe-fu-hua$_i$ bei (xiaotou) renwei __$_i$ shi-bu-shi jia-de?
this-CL-painting BEI thief think be-not-be fake
INT: 'Is this painting thought to be fake or not fake (by the thief)?'

b. *Disjunctive question: island-insensitive*
Zhe-fu-hua$_i$ bei (xiaotou) renwei __$_i$ shi jia-de haishi bu-shi jia-de?
this-CL-painting BEI thief think be fake or not-be fake
'Is this painting thought to be fake or not fake (by the thief)?'

Hence, the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement.

Under the proposed analysis of the BEI-construction as a passive construction involving composite A/Ā-movement, the mixed A/Ā-properties associated with the BEI-construction emerge as direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the passive head/BEI.

By contrast, the alternative analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement, which is on a par with Chomsky's (1977, 1981) analysis of English *tough*-movement, is bipartite, in the sense that it attempts to derive the A-properties associated with the BEI-construction by base-generating the subject of BEI as an argument of BEI, and derives the Ā-properties associated with the BEI-construction via NOP movement in BEI's complement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). As mentioned previously, Chomsky's (1977, 1981) analysis of English *tough*-movement must be complemented by the assumption that *tough*-movement involves Ā-movement of a non-quantificational NOP, which is not subject to weak crossover and Principle C reconstruction effects (Lasnik & Stowell 1991). Similarly, the alternative of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement must be complemented by the assumption that the Ā-moved NOP in BEI's complement is non-quantificational; hence, the BEI-construction is not subject to weak crossover and Principle C reconstruction effects (see Ting 1998).

2.5.3.3 A flat Ā-feature on BEI

Cross-linguistically, languages differ with respect to whether multiple instances of Ā-movement can nest or cross, which can be accounted for by assuming that Ā-probes may be relativized to specific features (e.g., [*Wh*] for *wh*-movement, [*Top*] for topicalization, [*Foc*] for focalization, [*Rel*] for relativization, etc.), or be *flat*: while a relativized Ā-probe must be satisfied by a goal that has a

specific Ā-feature that matches with the specific feature on the probe, a flat Ā-probe can be satisfied by any Ā-feature on the goal (see Rizzi 1997, 2004; Abels 2012; a.o.).

Concretely, in Italian, multiple instances of Ā-movement can proceed in either a nested or a crossed fashion, as seen in (65); this can be accounted for by assuming that in Italian, Ā-probes are relativized to specific features (see Rizzi 1997, 2004; Abels 2012; a.o.).

(65) *Italian multiple Ā-dependencies*

a. *Nested dependencies*
?Mi domando, [$_{CP}$ a chi$_i$, il premio Nobel$_j$, lo potrebbero dare $\_\__j$ $\_\__i$].
I wonder to whom the prize Nobel it potrebbero could give
'I wonder to whom, the Nobel Prize, they could give it.' (Rizzi 1997: 14b)

b. *Crossed dependencies*
Mi domando, [$_{CP}$ il premio Nobel$_i$, a chi$_j$ lo potrebbero dare $\_\__i$ $\_\__j$].
I wonder the prize Nobel to whom it potrebbero could give
'I wonder, the Nobel Prize, to whom they could give it.' (Rizzi 1997: 14a)

By contrast, in English, multiple instances of Ā-movement (of any kinds) must form nested dependencies, as seen in (66) and (67) (see e.g., Pesetsky 1982). This can be accounted for by assuming that in English, Ā-probes are flat.[20]

(66) *English multiple Ā-dependencies*

a. *Nested dependencies*
This problem$_i$, Mary knows who$_j$ to consult $\_\__j$ about $\_\__i$. (Pesetsky 1982: 269, ex. 36a)

b. *Crossed dependencies*
*This specialist$_i$, Mary knows what problems$_j$ to consult $\_\__i$ about $\_\__j$. (Pesetsky 1982: 269, ex. 36b)

(67) *English multiple Ā-dependencies*

a. *Nested dependencies*
What balalaika$_i$ are these partitas$_j$ easy to play $\_\__j$ on $\_\__i$. (Pesetsky 1982: 269, ex. 38a)

[20]It is worth noting that the exact analysis of English *tough*-movement by Longenbaugh (2017) assumes that the composite probe on the Voice head consists of a ϕ-feature and a *relativized* Ā-feature, [*AT*] (for 'aboutness topic') (see Longenbaugh 2017: 21-22); such an assumption is made in order to prevent generalized composite A/Ā-movement in English (see Longenbaugh 2017: 26-28), but is problematic, because it would allow for crossed dependencies as in (67b). In order to account for the requirement for nested dependencies as in (67a), it must be assumed that the composite probe on the Voice head consists of a ϕ-feature and a flat Ā-feature. Hence, one must restrict composite probing in English by positing that only the Voice head(s) involved in the path of *tough*-movement can host the composite probe [$\phi + \bar{A}$].

b. *Crossed dependencies*
*What partitas$_i$ is this balalaika$_j$ easy to play $\_\__i$ on $\_\__j$. (Pesetsky 1982: 269, ex. 38b)

Mandarin, like Italian and unlike English, allows for multiple instances of Ā-movement to form either nested or crossed dependencies (see e.g., Xu 2000; Kuo 2009; a.o.). Concretely, the examples in (68) involve the indirect object and the direct object of a ditransitive verb undergoing IP-external topicalization, in either a nested or a crossed fashion.

(68) *Mandarin multiple Ā-dependencies*

a. *Nested dependencies*
Zhe-jian shi$_i$, (ta shuo) you-xie ren$_j$, ta mei gaosu $\_\__j$ $\_\__i$.
this-CL matter 3SG say exist-PCL person 3SG not tell
'This matter, (he said that) some people, he didn't tell (them) (about it).' (Adapted from Xu 2000: ex. 18)

b. *Crossed dependencies*
You-xie ren$_i$, (ta shuo) zhe-jian shi$_j$, ta mei gaosu $\_\__i$ $\_\__j$.
exist-PCL person 3SG say this-CL matter 3SG not tell
'Some people, (he said that) this matter, he didn't tell (them) (about it).' (Adapted from Xu 2000: ex. 19)

The examples in (69) involve the matrix object and the embedded object undergoing IP-external topicalization and relativization, in either a nested or a crossed fashion.

(69) *Mandarin multiple Ā-dependencies*

a. *Nested dependencies*
Zhang$_i$ (zhe-ge xiaotou), [NOP$_i$ wo bipo $\_\__j$ shenxun $\_\__i$] de jingcha$_j$ shi Li.
Zhang this-CL thief 1SG force interrogate REL police be Li
'Zhang$_i$ (this thief), the police that [I forced to interrogate (him$_i$)] is Li.'

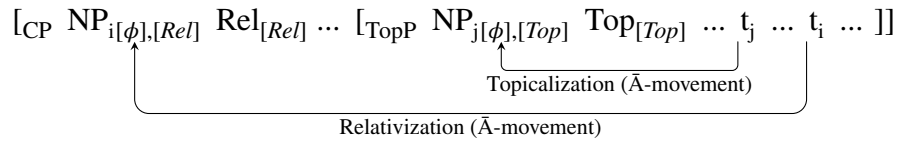
b. *Crossed dependencies*
Zhang$_i$ (zhe-ming jingcha), [NOP$_i$ wo bipo $\_\__i$ shenxun $\_\__j$] de xiaotou$_j$ shi Li.
Zhang this-CL police 1SG force interrogate REL thief be Li
'Zhang$_i$ (this police), the thief that [I forced (him$_i$) to interrogate] is Lisi.'

The possibility of either nested or crossed dependencies with multiple instances of Ā-movement in Mandarin suggests that pure Ā-probes in Mandarin are relativized to specific features. Specifically, nested dependencies are formed when the structurally higher NP has the specific Ā-feature of the structurally lower probe and the structurally lower NP has the specific Ā-feature of the structurally higher probe, as illustrated in (70a), while crossed dependencies are formed when the structurally higher NP has the specific Ā-feature of the structurally higher probe and the structurally lower NP

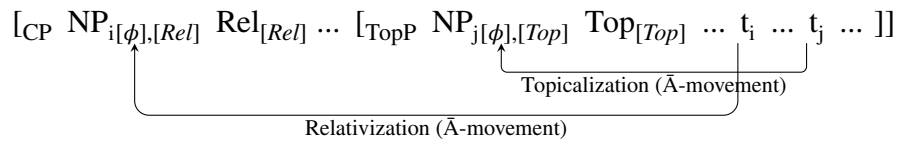
has the specific Ā-feature of the structurally lower probe, as illustrated in (70b).

(70) *Mandarin multiple Ā-movement*

a. *Nested dependencies*



b. *Crossed dependencies*



However, when two NPs with both ϕ- and Ā-features move from BEI's complement, only the NP closer to BEI can be the subject of BEI. This follows if the Ā-feature on BEI is flat. To begin with, the examples in (71) show that either the indirect object or the direct object of a ditransitive verb can be the subject in the BEI-construction.

(71) a. Zhangsan$_i$ bei (wo) gaozhi-le __$_i$ zhe-jian shi (er bu-shi na-jian shi).
Zhangsan BEI 1SG inform-PRF this-CL matter but not-be that-CL matter
'Zhangsan was informed about this matter (but not that matter) (by me).'

b. Zhe-jian shi$_i$ bei (wo) gaozhi-le Zhangsan (er bu-shi Lisi) __$_i$.
this-CL matter BEI 1SG inform-PRF Zhangsan but not-be Lisi
Lit. 'This matter was informed Zhangsan (but not Lisi) about (by me).'

The well-formed example in (72a) is derived from (71a) via topicalization of the direct object (*zhe-jian shi* 'this matter') from BEI's complement. In this case, the subject of BEI (*Zhangsan*) is linked to the indirect object gap, and nested dependencies are formed. By contrast, the ill-formed example in (72b) is derived from (71b) via topicalization of the indirect object (*Zhangsan*) from BEI's complement. In this case, the subject of BEI (*zhe-jian shi* 'this matter') is linked to the direct object gap, and crossed dependencies are formed. Note that (72c), which is derived from (72a) by further topicalizing the subject of BEI (*Zhangsan*), is possible.[21]

[21] Holmberg, Sheehan, & Van der Wal (2019) (see also Newman 2021) observe that in North-West English and a number of other languages (e.g., Norwegian, Zulu, and Lubukusu) where either object in a double-object construction is free to undergo passivization and *wh*-movement, while it is possible to passivize the indirect object and *wh*-move the direct object, as seen in (ia), it is impossible to passivize the direct object and *wh*-move the indirect object, as seen in (ib).

(i) *North-West English*

a. Which book$_i$ was John$_j$ given/sent/handed __$_j$ __$_i$? (Holmberg, Sheehan, & Van der Wal 2019: ex. 9b)

b. *Who$_i$ was the book$_j$ given/sent/handed __$_i$ __$_j$ (by Mary)? (Holmberg, Sheehan, & Van der Wal 2019: ex. 9d)

(72) BEI-*construction: nested dependencies*

a. Zhe-jian shi$_i$ (er bu-shi na-jian shi), Zhangsan$_j$ bei (wo) gaozhi-le ___$_j$ ___$_i$.
this-CL matter but not-be that-CL matter Zhangsan BEI 1SG inform-PRF
'This matter (but not that matter), Zhangsan was informed about (it) (by me).'

b. *Zhangsan$_i$ (er bu-shi Lisi), zhe-jian shi$_j$ bei (wo) gaozhi-le ___$_i$ ___$_j$.
Zhangsan but not-be Lisi this-CL matter BEI 1SG inform-PRF
INT: 'Zhangsan (but not Lisi), this matter was informed (him) about (by me).'

c. Zhangsan$_j$, zhe-jian shi$_i$ (er bu-shi na-jian shi), ___$_j$ bei (wo) gaozhi-le ___$_j$
Zhansgan this-CL matter but not-be that-CL matter BEI 1SG inform-PRF
___$_i$.

'Zhangsan, this matter (but not that matter) (he) was informed about (it) (by me).'

Similar to the examples in (71), the examples in (73) show that either the matrix object or the embedded object can be the subject in the BEI-construction.

(73) a. Li$_i$ bei wo bipo ___$_i$ shenxun Zhang.
Li BEI 1SG force interrogate Zhang
'Li was forced to interrogate Zhang by me.'

b. Zhang$_i$ bei wo bipo Li shenxun ___$_i$.
Zhang BEI 1SG force Li interrogate
Lit. 'Zhang was forced Li to interrogate by me.'

The examples in (74) involve both the matrix object and the embedded object moving from BEI's complement – the matrix and embedded object gaps are linked to the subject of BEI and the head of the relative clause. In all of the examples, *Zhang* or *Zhang-de pengyou* 'Zhang's friend' is forced to be the subject of BEI, by means of binding the subject-oriented anaphor *(ta-)ziji* '3SG-self', as in (74a), or co-reference with the pronominal possessor without incurring weak crossover effects, as in (74b), or co-reference with the pronoun without incurring reconstruction effects for Principle C, as in (74c).[22] Unlike (73), where the subject of BEI can be linked to the either the matrix or embedded object gap, the subject of BEI in the examples in (74) can only be linked to the matrix object gap.

Note that the contrast in (i) can also be viewed in terms of a contrast between (well-formed) nested and (ill-formed) crossed dependencies.

[22]Recall that the subject of BEI but not an Ā-moved NP (i) creates new antecedents for anaphor binding; (ii) is immune to weak crossover; and (iii) does not show reconstruction effects for Principle C.

(74) BEI-*construction: nested dependencies*

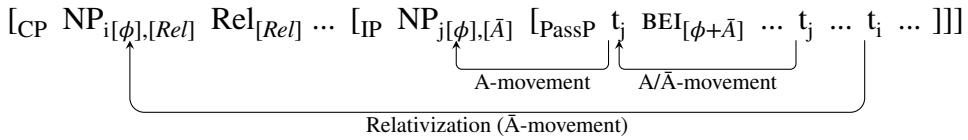
a. [Zhang$_i$ bei (ta-)ziji$_i$-de pengyou bipo $\_\_{}_{i/*j}$ shenxun $\_\_{}_{j/*i}$] de ren$_j$ shi Li.
Zhang BEI 3SG-self's friend force interrogate REL person be Li
'The person that [Zhang$_i$ was forced to interrogate by his$_i$ friend] is Li.'

b. [Zhang$_i$ bei ta$_i$-de pengyou bipo $\_\_{}_{i/*j}$ shenxun $\_\_{}_{j/*i}$] de ren$_j$ shi Li.
Zhang BEI 3SG's friend force interrogate REL person be Li
'The person that [Zhang$_i$ was forced to interrogate by his$_i$ friend] is Li.'

c. [Zhang$_i$-de pengyou$_j$ bei ta$_i$ bipo $\_\_{}_{j/*k}$ shenxun $\_\_{}_{k/*j}$] de ren$_k$ shi Li.
Zhang's friend BEI 3SG force interrogate REL person be Li
'The person that [Zhang$_i$'s friend$_j$ was forced to interrogate by him$_i$] is Li.'

Both (72) and (74) show that when two NPs with both ϕ- and Ā-features move from BEI's complement, only the NP closer to BEI can be the subject of BEI. Under the proposed analysis, this follows if the composite probe on the passive head/BEI consists of a ϕ-feature and a *flat* Ā-feature, hence must attract the closest NP with both ϕ- and Ā-features, as illustrated in (75).

(75) *Mandarin passivization and relativization: nested dependencies*



Importantly, the contrast between (68), (69) and (72), (74) also suggests a difference between active Voice and BEI, which, under the proposed analysis, spells out the passive head. Such a contrast is not accounted for by the alternative analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.), unless with the stipulation that in BEI's complement, a flat Ā-probe is present, which triggers NOP movement, but elsewhere in Mandarin, Ā-probes are relativized to specific features.

2.6 On the restricted long-distance dependencies in the BEI-construction

In this section, I will argue that the two restrictions on long-distance dependencies in the BEI-construction, as shown in section 2 of this chapter, follow from the proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement. In section 6.1, I will argue that the ban on overt NPs intervening between the subject of BEI and the gap in agent-less BEI-constructions follows from the proposed analysis of the BEI-construction as a passive construction and Burzio's generalization (Burzio 1986). In section 6.2, I will account for the contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap, which crucially relies on the proposed analysis of the BEI-construction where the subject in the

BEI-construction is derived via (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement.

Before proceeding, a few words are in order about the finite vs. non-finite distinction in Mandarin. Following Huang (1989: 189) (see also Huang 1982; Li 1990; a.o.), I assume that a distinction between finite and non-finite clauses in Mandarin "may be made on the basis of the potential occurrence of any element of the auxiliary category (such as an aspect marker or a modal)". Specifically, object control verbs like *bi(po)* 'force' (also *jiao* 'order', *qing* 'ask', *(bai)tuo* 'entrust') and subject control verbs like *shefa* 'manage' (also *changshi* 'try', *qitu* 'attempt') take a non-finite clausal complement, because their complement cannot contain a modal verb (*hui* 'will', *neng* 'can (be able)', *yinggai* 'should', *keyi* 'can (be possible)'), as seen in (76).

(76) *Non-finite clause: incompatible with aspect and model*

a. *Object control*

Wo bi(po)/jiao/qing/(bai)tuo Lisi_i [PRO_i (*hui/*neng/*yinggai) lai].
1SG force/order/ask/entrust Lisi will/can/should come
'I forced/ordered/asked/entrusted Lisi to (*will/*can/*should) come.' (Adapted from Huang 1989: 189, ex. 8b)

b. *Subject control*

Lisi_i shefa/changshi/qitu [PRO_i *hui/*neng/*keyi lai].
Lisi manage/try/attempt will/can/can come
'Lisi managed/tried/attempted to (*will/*can/*can) come.' (Adapted from Huang 1989: 189, ex. 9b)

By contrast, verbs like *shuo* 'say' (also *renwei* 'think', *huaiyi* 'suspect', *xiangxin* 'believe') take a finite CP complement, which can contain a modal verb, as seen in (77).

(77) *Finite clause: compatible with aspect and modal*

Lisi_i shuo/renwei/huaiyi/xiangxin [$_{\text{CP}}$ $\text{ta}_{i/j}$ hui/neng/yinggai/keyi lai]
Lisi say/think/suspect/believe 3SG will/can/should/can come
'Lisi_i said/thought/suspected/believed that $\text{he}_{i/j}$ will/can/should/can come.'

2.6.1 Long-distance dependencies in agent-less BEI-constructions

In this section, I will propose that the ban on overt NPs intervening between the subject of BEI and the gap in agent-less BEI-constructions follows from the proposed analysis of the BEI-construction as a passive construction and Burzio's generalization (Burzio 1986), which states that all and only the verbs that can assign a theta-role to the (logical) subject can assign accusative case to an object.

Specifically, under the proposed analysis of the BEI-construction as a passive construction where the passive head/BEI selects a VoiceP with or without an agent/external argument, in overt-agent BEI-constructions, the agent/external argument of the matrix verb is introduced in Spec, VoiceP, but in agent-less BEI-constructions, the agent/external argument of the matrix verb is exis-

tentially bound by the passive head/BEI. Hence, according to Burzio's generalization, in overt-agent BEI-constructions, the Voice head not only assigns an agent theta-role to the external argument of the matrix verb but also assigns (accusative) case; by contrast, in agent-less BEI-constructions, the Voice head does not assign a theta-role, nor does it assign case. Hence, under the proposed analysis and according to Burzio's generalization, in agent-less BEI-constructions, when there is an overt NP that cannot be assigned case by the Voice head, that NP must become the subject of BEI, where it can receive case from Infl; in such cases, it is predicted that long-distance dependencies between the subject of BEI and a deeply embedded gap in BEI's complement is impossible.

In the remainder of this section, I will show that the possibility of long-distance dependencies in agent-less BEI-constructions with object control matrix verbs (**case 1**, in section 6.1.1), subject control matrix verbs (**case 2**, in section 6.1.2), and *exceptional case-marking* (ECM) matrix verbs (**case 3**, in section 6.1.3), all depends on whether there is an overt NP (the thematic object of an object control verb, or an overt controllee in the case of subject control, or an overt NP that is underlying the subject of the infinitival complement to an ECM verb) that cannot be assigned case by the matrix Voice head. Lastly, in section 6.1.4, I will rule out the possibility of analyzing agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries as involving *(voice) restructuring* in BEI's complement, on a par with Wurmbrand's (2001, 2007) analysis of the German long passive.

2.6.1.1 Case 1: object control

First, I consider the possibility of long-distance dependencies in agent-less BEI-constructions with object control matrix verbs. Recall that in the following BEI-constructions in (78), which involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries, the agent/external argument of the matrix verb must be overtly expressed. All of the BEI-constructions in (78) involve an overt NP, the matrix object, between the subject of BEI and the deeply embedded object gap. Under the proposed analysis, the BEI-constructions in (78) cannot be agent-less, because the matrix object needs to be assigned case by the matrix Voice head.

(78) *Long-distance dependency in* BEI*-construction (object control)*

a. Zhangsan$_i$ bei *(Lisi) bipo jingcha$_j$ [PRO$_j$ zhuazou-le $\_\__i$].
Zhangsan BEI Lisi force police arrest-PRF
Lit. 'Zhangsan was forced the police to arrest *(by Lisi).'

b. Na-feng xin$_i$ bei *(wo) jiao Li$_j$ [PRO$_j$ qing Wang$_k$ [PRO$_k$ tuo Zhang$_l$ [PRO$_l$
that-CL letter BEI 1SG order Li ask Wang entrust Zhang
ji-chu-le $\_\__i$]]].
send-out-PRF
Lit. 'That letter was ordered Li to ask Wang to entrust Zhang to send out *(by me).'
(Adapted from Huang, Li & Li 2009: 132: ex. 47b)

c. Wang$_i$ bei *(wo) jiao Lisi qing-qu __$_i$ tuo Zhang ji-chu-le na-feng xin.
Wang BEI 1SG order Li ask-go entrust Zhang send-out-PRF that-CL letter
Lit. 'Wang was ordered Li to ask to entrust Zhang to send out that letter *(by me).'
(Adapted from Pan & Hu 2021: ex. 29b)

d. Zhang$_i$ bei *(wo) jiao Lisi qing Wang baituo __$_i$ ji-chu-le na-feng xin.
Zhang BEI 1SG order Li ask Wang entrust send-out-PRF that-CL letter
Lit. 'Zhang was ordered Li to ask Wang to entrust to send out that letter *(by me).'
(Adapted from Pan & Hu 2021: ex. 29c)

Under the proposed analysis, the following BEI-constructions in (79) are well-formed when agent-less, because the matrix object becomes the subject of BEI, where it can receive case from Infl.

(79) a. Jingcha$_i$ bei (Lisi) bipo __$_i$ [PRO$_i$ zhuazou-le Zhangsan].
police BEI Lisi force arrest-PRF Zhangsan
'The police was forced to arrest Zhangsan (by Lisi).'

b. Li$_i$ bei (wo) jiao-qu __$_i$ qing Wang tuo Zhang ji-chu-le na-feng xin.
Li BEI 1SG order-go ask Wang entrust Zhang send-out-PRF that-CL letter
'Li was ordered to ask Wang to entrust Zhang to send out that letter (by me).' (Adapted from Pan & Hu 2021: ex. 29a)

2.6.1.2 Case 2: subject control

Second, I consider the possibility of long-distance dependencies in agent-less BEI-constructions with subject control matrix verbs. Recall that in the following BEI-constructions in (80), which also involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries, the agent/external argument of the matrix verb can be overtly expressed or non-overt. In contrast to the BEI-constructions in (78), the BEI-constructions in (80) involve no overt NPs between the subject of BEI and the deeply embedded object gap. Under the proposed analysis, the BEI-constructions in (80) can be agent-less, because no NP needs to be assigned case by the matrix Voice head.

(80) *Long-distance dependency in* BEI-*construction (subject control)*

a. Gongsi-de wangluo$_i$ bei (heike$_j$) changshi/qitu [PRO$_j$ ruqin __$_i$].
company's network BEI hacker try/attempt hack
Lit. 'The company's network was tried/attempted to hack (by the hacker).' (Adapted from Her 2009: ex. 21a)

b. Ziliao$_i$ bei (xiaotou$_j$) shefa [PRO$_j$ kaobei-le __$_i$].
document BEI thief manage copy-PRF
Lit. 'The documents were managed to copy (by the thief).' (Adapted from Her 2009: ex. 21b)

In Mandarin, certain subject control verbs, e.g., *jihua* 'plan', *jueding* 'decide', allow for an overt controllee in their complement, as seen in (81) (see e.g., Zhang 2016).

(81) *Subject control construction*

Zhe-ge gongsi$_i$ jihua/jueding [ta-men$_{i/*j}$/PRO$_i$ daliang shengchan zhe-ge chanpin].
this-CL company plan/decide 3-PL massively produce this-CL product
'This company planned/decided that they massively produce this product.'

Note that in (82a), where the controllee is overt, the agent/external argument of the matrix verb must be overtly expressed – in this case, I suggest that the overt controllee needs to be assigned case by the matrix Voice head, hence the BEI-construction cannot be agent-less. By contrast, in (82b), where the embedded subject is a PRO, the agent/external argument of the matrix verb can be overtly expressed or non-overt – in this case, no NP needs to be assigned case by the matrix Voice head, hence the BEI-construction can be agent-less.

(82) *Long-distance dependency in* BEI*-construction (subject control)*

a. Zhe-ge chanpin bei *(zhe-ge gongsi$_i$) jihua/jueding [ta-men$_{i/*j}$ daliang
this-CL product BEI this-CL company plan/decide 3-PL massively
shengchan __.]
produce
Lit. 'This product was planned/decided that (they) massively produce *(by this company).'

b. Zhe-ge chanpin bei (zhe-ge gongsi$_i$) jihua/jueding [PRO$_i$ daliang shengchan
this-CL product BEI this-CL company plan/decide massively produce
__.]

Lit. 'This product was planned/decided to massively produce (by this company).'

2.6.1.3 Case 3: exceptional case-marking

Lastly, I consider the possibility of long-distance dependencies in agent-less BEI-constructions with matrix verbs like *yunxu* 'allow', *jinzhi* 'forbid', *tongyi* 'agree', *fandui* 'object', which I analyze as ECM verbs (contra Li 1990, who denies the existence of ECM verbs in Mandarin). Like object control verbs, these verbs take a non-finite clause complement, which cannot contain a modal verb, as seen in (83).

(83) Wo yunxu/jinzhi/tongyi/fandui Lisi (*hui/*neng/*keyi) lai.
1SG allow/forbid/agree/object Lisi will/can/can come
Lit. 'I allowed/forbade/agreed/objected Lisi to (*will/*can/*can) come.'

But unlike object control verbs, these verbs allow for the apparent matrix object to be identified with the thematic object of the embedded verb by embedding a BEI-construction, as seen in (84a);

this suggests that the apparent matrix object is underlyingly the embedded subject, which is not thematically related to the matrix verb.

(84) a. Fayuan yunxu/jinzhi/tongyi/fandui zhe-ge chanpin$_i$ bei (zhe-ge gongsi) daliang
court allow/forbid/agree/object this-CL product BEI this-CL company massively
shengchan __$_i$.
produce
Lit. 'The court allowed/forbade/agreed/objected this product to be produced massively (by this company).'

b. *Cf. Object control construction*
*Fayuan bi(po)/jiao/qing/(bai)tuo zhe-ge chanpin$_i$ bei (zhe-ge gongsi) daliang
court force/order/ask/entrust this-CL product BEI this-CL company massively
shengchan __$_i$.
produce
INT: 'The court forced/ordered/asked/entrusted this product to be produced massively (by this company).'

Also unlike object control verbs, these verbs allow for the subject of the embedded clause to be an arbitrary PRO, as seen in (85a).

(85) a. Fayuan yunxu/jinzhi/tongyi/fandui zhe-ge gongsi/PRO$_{arb}$ daliang shengchan
court allow/forbid/agree/object this-CL company massively produce
zhe-ge chanpin.
this-CL product
Lit. 'The court allowed/forbade/agreed/objected (this company) to produce this product massively.'

b. *Cf. Object control construction*
Fayuan bi(po)/jiao/qing/(bai)tuo zhe-ge gongsi/*PRO$_{arb}$ daliang shengchan
court force/order/ask/entrust this-CL company massively produce
zhe-ge chanpin.
this-CL product
'The court forced/ordered/asked/entrusted *(this company) to produce this product massively.'

Note that in (86a), where the embedded subject is overt, the agent/external argument of the matrix verb must be overtly expressed – in this case, the overt embedded subject needs to be assigned case by the matrix Voice head, hence the BEI-construction cannot be agent-less. By contrast, in (86b), where the embedded subject is an arbitrary PRO, the agent/external argument of the matrix verb can be overtly expressed or non-overt – in this case, no NP needs to be assigned case by the matrix Voice head, hence the BEI-construction can be agent-less.

(86) *Long-distance dependency in* BEI*-construction (ECM)*

a. Zhe-ge chanpin$_i$ bei *(fayuan) yunxu/jinzhi/tongyi/fandui zhe-ge gongsi
this-CL product BEI court allow/forbid/agree/object this-CL company
daliang shengchan $\_\_{}_i$.
massively produce
Lit. 'This product was allowed this company to produce massively *(by the court).'

b. Zhe-ge chanpin$_i$ bei (fayuan) yunxu/jinzhi/tongyi/fandui PRO$_{arb}$ daliang
this-CL product BEI court allow/forbid/agree/object massively
shengchan $\_\_{}_i$.
produce
Lit. 'This product was allowed to massively produce (by the court).'

The BEI-construction in (87) is well-formed, because the otherwise case-less NP (i.e., the embedded subject) becomes the subject of BEI, where it can receive case from Infl.

(87) Zhe-ge gongsi$_i$ bei (fayuan) yunxu/jinzhi/tongyi/fandui $\_\_{}_i$ daliang shengchan
this-CL company BEI court allow/forbid/agree/object massively produce
zhe-ge chanpin.
this-CL product
'This company was allowed to massively produce this product (by the court).'

2.6.1.4 Not (voice) restructuring

Recall that Huang, Li & Li (2009) and Bruening & Tran (2015) differ in their analysis of agent-less BEI-constructions: Huang, Li & Li (2009) propose that short-passives/agent-less BEI-constructions involve A-movement of a PRO, which is controlled by the subject of BEI; by contrast, Bruening & Tran (2015) maintain that NOP movement is involved in agent-less BEI-constructions. As discussed previously, Huang, Li & Li's (2009) analysis of short-passives/agent-less BEI-constructions fails to account for the well-formedness of certain agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (i.e., case 2, with subject control matrix verbs and a PRO subject in the infinitival complement, and case 3, with ECM matrix verbs and an arbitrary PRO subject in the infinitival complement); in contrast, Bruening & Tran's (2015) analysis of agent-less BEI-constructions fails to account for the ill-formedness of certain agent-less BEI-constructions which involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries (i.e., case 1, with object control matrix verbs, and case 2, with subject control matrix verbs and an overt controllee in the infinitival complement, and case 3, with ECM matrix verbs and an overt subject in the infinitival complement).

For Huang, Li & Li (2009) (see also Ting 1995, 1998; Huang 1999; a.o.), the lack of Ā-dependencies in short-passives/agent-less BEI-constructions is evidenced by the ill-formedness of certain agent-less BEI-constructions which involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries.

In accordance with such a view, one might try to analyze agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries as involving *(voice) restructuring* in BEI's complement, on a par with Wurmbrand's (2001, 2007) analysis of the German long passive. In the remainder of this section, I will rule out this possibility by highlighting the differences between the German long passive and agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries.

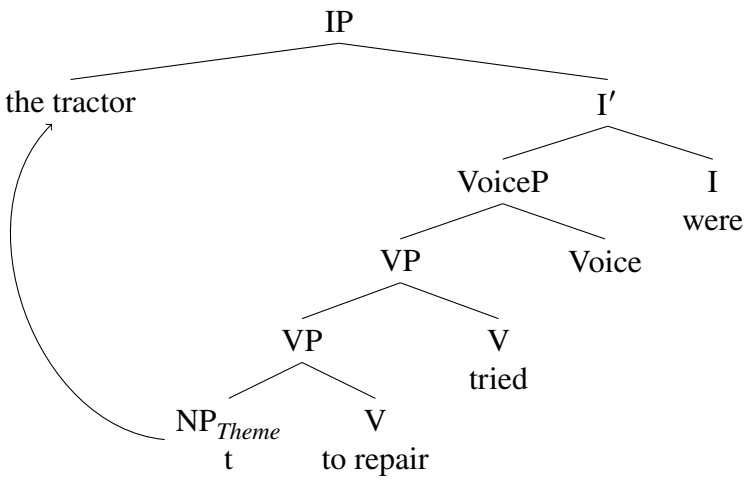
To begin with, Wurmbrand (2001, 2007) argues that the German long passive, as exemplified by (88), involves a restructuring verb (e.g., *versucht* 'to try') taking a VoiceP(-less) infinitival complement.

(88) *German long passive*

dass der Traktor$_i$ [__$_i$ zu reparieren] versucht wurde
that the tractor-NOM to repair tried was
'that the tractor was tried to repair' (Wurmbrand 2001: 19, ex. 6a)

Under the restructuring analysis, apparent long-distance dependencies in the German long passive can be derived via A-movement, as illustrated in (89) (see Wurmbrand (2016) and Wurmbrand & Shimamura (2017) for a more fine-grained analysis of voice restructuring involving a special Voice$_R$ head).

(89) *German long passive as A-movement*



To support the restructuring analysis of the German long passive, Wurmbrand (2001) has shown that future adverbials which introduce independent tense are impossible in the infinitival complement of the restructuring verb in the German long passive, as seen in (90); this suggests that the infinitival complement is structurally smaller than an IP.

(90) *German long passive: no embedded tense*

dass der Wagen (*morgen) über die Grenze zu schmuggeln versucht wurde
that the car-NOM (*tomorrow) across the border to smuggle try was
Lit. 'that the car was tried to smuggle across the border (*tomorrow)' (Adapted from Wurmbrand 2001: 84, ex. 66a)

In addition, embedding a sentential negation within a restructuring infinitival complement is also impossible in the German long passive, as seen in (91) and (92); this is also taken to indicate that the infinitival complement is structurally smaller than an IP.

(91) *German long passive: no embedded negation*

*... weil der Kuchen nicht zu essen versucht wurde
since the cake not to eat try was
INT: '... since the cake was tried not to eat' (Adapted from Wurmbrand 2001: 118, ex. 91b)

In contrast to the German long passive, agent-less BEI-constructions which (apparently) involve a long-distance dependency between the subject of BEI and a deeply embedded object gap in BEI's complement across non-finite clause boundaries cannot be analyzed as involving (voice) restructuring, because, as seen in (92) and (93), both temporal adverbs and sentential negation can occur in the infinitival complement of the subject control or ECM verb, suggesting that it is structurally as large as an IP.[23]

(92) *Long-distance dependency in* BEI-*construction (subject control)*

a. *Embedded tense*

Zhe-feng youjian$_i$ bei (Lisi$_j$) shefa [PRO$_j$ mingtian fa-chu $\_\_{}_i$].
this-CL email BEI Lisi manage tomorrow send-out
Lit. 'This email was managed to send tomorrow (by Lisi).'

b. *Embedded negation*

Zhe-ge xiaoxi$_i$ bei (ta-men$_j$) shefa [PRO$_j$ bu rang Lisi zhidao $\_\_{}_i$].
this-CL news BEI them manage not let Lisi know
Lit. 'This news was managed to not let Lisi know (by them).'

(93) *Long-distance dependency in* BEI-*construction (ECM)*

a. *Embedded tense*

Zhe-ge xiaoxi$_i$ bei (jingcha) yunxu/tongyi [PRO$_{arb}$ mingtian gongbu $\_\_{}_i$].
this-CL news BEI police allow/agree tomorrow publish
Lit. 'This news was allowed/agreed to publish tomorrow.'

[23] Note that the ability for subject control and ECM verbs in Mandarin to take an IP complement does not rule out their ability to take a VoiceP(-less) infinitival complement; the point is, they are not required to be restructuring verbs in order to license long-distance dependencies in the BEI-construction.

b. *Embedded negation*

Zhe-ge xiaoxi$_i$ bei (jingcha) yunxu/tongyi [PRO$_{arb}$ bu gongbu __$_i$].
this-CL news BEI police allow/agree not publish
Lit. 'This news was allowed/agreed to not publish (by the police).'

In addition, in German, restructuring verbs like *versucht* 'to try' contrast with non-restructuring verbs like *geplant* 'to plan' and *beschlossen* 'to decide' in the possibility of embedded tense and negation in their infinitival complements and the ability to license long passives (Wurmbrand 2001).

(94) a. *German restructuring verb: no embedded tense*

Hans hat versucht (*morgen) zu verreisen.
John has try tomorrow to travel
'John tried to travel (*tomorrow).' (Adapted from Wurmbrand 2001: 78, ex. 61b)

b. *German non-restructuring verb: embedded tense*

Hans hat geplant/beschlossen (morgen) zu verreisen.
John has plan/decide tomorrow to travel
'John planned/decided to travel tomorrow.' (Adapted from Wurmbrand 2001: 78, ex. 61a)

(95) *German non-restructuring verb: no long passive*

*dass der Traktor zu reparieren geplant/beschlossen wurde
that the tractor-NOM to repair plan/decide was
INT: 'that the tractor was planned/decided to repair' (Wurmbrand 2001: 267, ex. 214b-c)

By contrast, in Mandarin, both verbs like *shefa* 'manage', *yunxu* 'allow', *tongyi* 'agree' and verbs like *jihua* 'plan', *jueding* 'decide' allow for embedded tense and negation in their infinitival complements and can license long-distance dependencies in the BEI-construction.

(96) *Long-distance dependency in* BEI*-construction (subject control)*

Zhe-ge chanpin$_i$ bei (gongsi$_j$) jihua/jueding [PRO$_j$ (ming-nian) (bu) daliang shengchan
this-CL product BEI company plan/decide next-year not massively produce
__$_i$].

Lit. 'This product was planned/decided to (not) massively produce (next year) (by the company).'

Because a (voice) restructuring analysis of agent-less BEI-constructions involving long-distance dependencies can be ruled out, Huang, Li & Li's (2009) analysis of agent-less BEI-constructions as involving A-movement (of a PRO controlled by the subject of BEI) cannot be on the right track, and the proposed analysis of (both overt-agent and) agent-less BEI-constructions as involving composite

A/Ā-movement can be maintained.

2.6.2 Long-distance dependency across finite clause boundary

In this section, I will account for the contrast when the BEI-construction involves a cross-clausal dependency between the subject of BEI and a subject vs. object gap, which crucially relies on the proposed analysis of the BEI-construction where the subject in the BEI-construction is derived via (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement. In section 6.2.1, I will propose that the subject/object contrast (with respect to the possibility of crossing a finite clause boundary to become the subject in the BEI-construction) follows from the possibility of raising to subject via A-movement to Spec, CP, or *hyper-raising to subject* (see e.g., Fong 2019; Wurmbrand 2019; Lohninger, Kovač & Wurmbrand 2022; a.o.), and the ban on improper Ā-movement to Spec, CP followed by composite A/Ā-movement (see Longenbaugh 2017). In section 6.2.2, I will provide an analysis of cases where there is no apparent subject/object contrast.

2.6.2.1 A subject/object contrast

Recall that, unlike English *tough*-movement, which is degraded for non-subjects across a phasal CP-projection and impossible for subjects across a phasal CP-projection (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006), the BEI-construction does not allow for a long-distance, cross-clausal dependency between the subject of BEI and an object gap, as seen in (97a) (see e.g., Ting 1995, 1998; a.o.), but allows for a cross-clausal dependency between the subject of BEI and a subject gap, as seen in (97b) (see e.g., Her 2009).

(97) a. *Long-distance, cross-clausal dependency in* BEI*-construction (finite clause object gap)*
*Lisi$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan hui mousha $\_\__i$].
Lisi BEI police think/suspect/believe Zhangsan will murder
INT: 'Lisi was thought/suspected/believed that Zhangsan will murder (him) (by the police).' (Adapted from Ting 1998: ex. 28c)

b. *Cross-clausal dependency in* BEI*-construction (finite clause subject gap)*
Zhangsan$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ $\_\__i$ hui mousha Lisi].
Zhangsan BEI police think/suspect/believe will murder Lisi
Lit. 'Zhangsan was thought/suspected/believed that (he) will murder Lisi (by the police).' (Adapted from Her 2009: ex. 25a)

I propose that cross-clausal dependencies between the subject of BEI and a subject gap boundary are possible, as seen in (97b), as the result of raising to subject via A-movement to Spec, CP, or *hyper-raising to subject* (see e.g., Fong 2019; Wurmbrand 2019; Lohninger, Kovač & Wurmbrand 2022; a.o.): the finite clause subject can undergo A-movement to Spec, CP, which is triggered by a pure ϕ-probe on the C head, from where it undergoes further composite A/Ā-movement to Spec, PassP and A-movement to Spec, IP, as illustrated in (98).

(98) *Hyper-raising to subject in* BEI*-construction*

$[_{IP}\ NP_{[\phi],[\bar{A}]}\ Infl_{[\phi]}\ [_{PassP}\ t\ BEI_{[\phi+\bar{A}]}\ ...\ V\ [_{CP}\ t\ C_{[\phi][\bar{A}]}\ [_{IP}\ t\ Infl_{[\phi]}\ ...\ ]]]]$

A-movement A/Ā-movement A-movement

I suggest that the hyper-raising to subject analysis in (98) may be supported by the *general possibility of hyper-raising to subject in Mandarin*. To begin with, Lee & Yip (to appear) has argued that in Cantonese and Vietnamese, some CP-selecting verbs (e.g., *gamgok* 'feel like (Cantonese)', *tengman* 'hear (Cantonese)', *cảm giác* 'feel like (Vietnamese)', *nghe nói* 'hear (Vietnamese)') but not other CP-selecting verbs (e.g., *gokdak/jingwai* 'think (Cantonese)', *cho/nghĩ* 'think (Vietnamese)') can licence hyper-raising to subject, as seen in (99) and (100).

(99) *Hyper-raising to subject in Cantonese*

a. *Licit with gamgok 'feel like', tengman 'hear'*

Coeng jyu$_i$ gamgok/tengman [$_{CP}$ waa ___$_i$ m-wui ting].
CL rain feel like/hear C not-will stop
Lit. 'The rain is felt/heard that (it) will not stop.' (Lee & Yip to appear: ex. 1a)

b. *Illicit with gokdak/jingwai 'think'*

*[*Mongkau* ni loeng go zi]$_i$ gokdak/jingwai [$_{CP}$ ___$_i$ jiging singwai
online shopping this two CL word think/think already become
Hoenggongjan ge jatsoeng sangwut].
Hong Konger MOD daily life
INT: 'The two words *online shopping* are thought that (it) has become the daily life of Hong Kongers.' (Lee & Yip to appear: ex. 7c)

(100) *Hyper-raising to subject in Vietnamese*

a. *Licit with cảm giác 'feel like', nghe nói 'hear'*

Cơn mưa này$_i$ cảm giác/nghe nói [$_{CP}$ rằng/là ___$_i$ sẽ không dừng].
CL rain this feel like/hear C FUT not stop
Lit. 'The rain is felt/heard that (it) will not stop.' (Lee & Yip to appear: ex. 1b)

b. *Illicit with cho/nghĩ 'think'*

*Vậy thì [cả đời này]$_i$ cho/nghĩ [$_{CP}$ rằng ___$_i$ chẳng còn cơ hội nữa]!
then whole life this think/think C not left chance more
INT: 'Then, this whole life there is thought that (it) left no more chance.' (Adapted from Lee & Yip to appear: ex. 8c)

In Mandarin, it is also the case that CP-selecting verbs like *ganjue* 'feel like' and *tingshuo* 'hear' license hyper-raising to subject, as seen in (101a), but CP-selecting verbs like *renwei* think (also *huaiyi* 'suspect', *xiangxin* 'believe') do not license hyper-raising to subject, as seen in (101b) (Ka Fai Yip, p.c.).

(101) *Hyper-raising to subject in Mandarin*

a. *Licit with ganjue 'feel like', tingshuo 'hear'*

Zhangsan$_i$ ganjue/tingshuo [$_{CP}$ —$_i$ xiang mousha Lisi].
Zhangsan feel like/hear want murder Lisi
Lit. 'Zhangsan is felt/heard that (he) wants to murder Lisi.'

b. *Illicit with renwei 'think', huaiyi 'suspect', xiangxin 'believe'*

*Zhangsan$_i$ renwei/huaiyi/xiangxin [$_{CP}$ —$_i$ hui mousha Lisi].
Zhangsan think/suspect/believe will murder Lisi
INT: 'Zhangsan is thought/suspected/believed that (he) will murder Lisi.'

Lee & Yip (to appear) suggest that a CP-selecting verb licenses hyper-raising to subject if it encodes indirect evidence (in the sense that "the source of the speaker's information is of a secondary nature, e.g., reportative and inferential, and the information does not settle the truth of the associating proposition"; e.g., *ganjue* 'feel like', *tingshuo* 'hear') in their lexical semantics. I take this to indicate that verbs encoding indirect evidence *lack a thematic subject*, hence can be (hyper-)raising predicates; by contrast, verbs encoding direct evidence (in the sense that "the source of the speaker's information is of a primary nature and the information settles the truth of the associating proposition"; e.g., *renwei* 'think', *huaiyi* 'suspect', *xiangxin* 'believe') *necessarily have a thematic subject*, hence cannot license (hyper-)raising predicates.

Importantly, Ka Fai Yip (p.c.) also observes that in Mandarin, BEI is incompatible with the hyper-raising predicates *ganjue* 'feel like', *tingshuo* 'hear', as seen in (102a), while BEI is compatible with non-hyper-raising predicate such as *renwei* 'think', *huaiyi* 'suspect', *xiangxin* 'believe', as seen previously in (97b) and repeated in (102b). The contrast between (102a) and (102b) is puzzling under the alternative analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.).

(102) a. BEI *is incompatible with hyper-raising predicate*

*Zhangsan$_i$ bei ganjue/tingshuo [$_{CP}$ —$_i$ xiang mousha Lisi].
Zhangsan BEI feel like/hear want murder Lisi
INT: 'Zhangsan is felt/heard that (he) wants to murder Lisi.'

b. BEI *is compatible with non-hyper-raising predicate*

Zhangsan$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ —$_i$ hui mousha Lisi].
Zhangsan BEI police think/suspect/believe will murder Lisi
Lit. 'Zhangsan was thought/suspected/believed that (he) will murder Lisi (by the police).'

In contrast, under the proposed analysis of the BEI-construction as a passive construction, it is expected that hyper-raising predicates resist passivization (because they lack a thematic subject, cf. **Mary was appeared/seemed to be smart*.). Hence the ill-formedness of (102a). Furthermore, if hyper-raising is generally possible in Mandarin, that is, if the Mandarin C head generally hosts a

pure ϕ-probe which triggers A-movement to Spec, CP, which feeds subsequent raising to subject if the matrix verb lacks a thematic subject, then it is expected that non-hyper-raising predicates, when passivized (with their thematic subject demoted), can license hyper-raising to subject. This is the case of (102b).

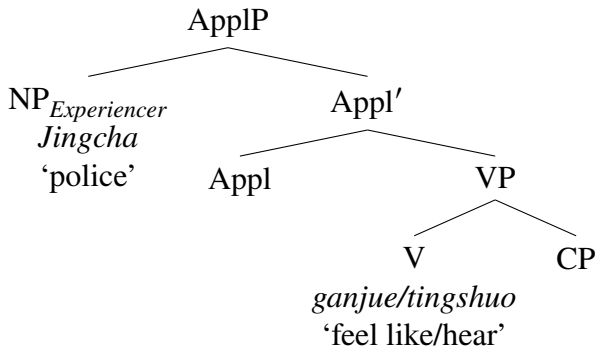
Note that hyper-raising predicates like *ganjue* 'feel like' and *tingshuo* 'hear' also have apparently transitive uses, as seen in (103a), and yet the BEI-construction in (103b) is still ill-formed (Ka Fai Yip, p.c.).

(103) a. Jingcha ganjue/tingshuo [$_{CP}$ Zhangsan xiang mousha Lisi].
police feel like/hear Zhangsan want murder Lisi
'The police felt/heard that Zhangsan wants to murder Lisi.'

b. *Zhangsan$_i$ bei jingcha ganjue/tingshuo [$_{CP}$ ___$_i$ xiang mousha Lisi].
Zhangsan BEI police feel like/hear want murder Lisi
INT: 'Zhangsan is felt/heard that (he) wants to murder Lisi by the police.'

I suggest that the grammatical subject of hyper-raising predicates like *ganjue* 'feel like' and *tingshuo* 'hear' in their transitive use is an experiencer indirect object introduced by an Appl(icative) head (cf. experiencer arguments of raising predicates in English, which are introduced in PPs: *Mary seems/appears [$_{PP}$ to John] to be smart*.), rather than an agent/external argument introduced by the Voice head, as illustrated in (104). Under the proposed analysis of the BEI-construction as a passive construction where the passive head/BEI selects a VoiceP, it is expected that (103a), which lacks an agent/external argument, cannot be passivized with BEI, hence the ill-formedness of (103b).

(104) *Experiencer subject as indirect object/applicative argument*



One piece of evidence for the analysis in (104) is that the grammatical subject of hyper-raising predicates like *ganjue* 'feel like' and *tingshuo* 'hear' in their apparently transitive use cannot be modified by a 'deliberately'-type adverb, as seen in (105a); by contrast, the grammatical subject of non-hyper-raising predicates like *renwei* 'think', *huaiyi* 'suspect', *xiangxin* 'believe' can be modified by a 'deliberately'-type adverb, as seen in (105b) (Ka Fai Yip, p.c.).

(105) a. Jingcha (*guyi) ganjue/tingshuo [$_{CP}$ Zhangsan mousha-le Lisi].
police deliberately feel like/hear Zhangsan murder-PRF Lisi
'The police (*deliberately) felt/heard that Zhangsan wants to murder Lisi.'

b. Jingcha guyi renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan mousha-le Lisi].
police deliberately think/suspect/believe Zhangsan murder-PRF Lisi
'The police deliberately thought/suspected/believed that Zhangsan murdered Lisi.'

To reiterate, the general possibility of hyper-raising to subject in Mandarin indicates that the Mandarin C head generally hosts a pure ϕ-probe which triggers A-movement to Spec, CP, which feeds subsequent raising to subject if the matrix verb lacks a thematic subject. That said, it should be noted that A-movement to Spec, CP must be constrained in order not to result in improper *hyper-hyper-raising to subject* (a terminology suggested by David Pesetsky), e.g., a derivation in which A-movement to Spec, CP feeds successive-cyclic composite A/Ā-movement and a terminating step of A-movement to Spec, IP, as seen in (106a).

(106) a. *Improper hyper-hyper-raising to subject in Mandarin* BEI-*construction*
*Zhangsan$_i$ bei jingcha bipo zhengren$_j$ [PRO$_j$ renwei [$_{CP}$ —$_i$ mousha-le Lisi]].
Zhangsan BEI police force witness think murder-PRF Lisi
INT: 'Zhangsan was forced the witness to think that (he) murdered Lisi (by the police).'

b. *Cf. Hyper-raising to subject in Mandarin* BEI-*construction*
Zhangsan$_i$ bei (jingcha) renwei [$_{CP}$ —$_i$ mousha-le Lisi].
Zhangsan BEI police think murder-PRF Lisi
Lit. 'Zhangsan was thought that (he) murdered Lisi (by the police).' (Adapted from Her 2009: ex. 25a)

Note that an NP can undergo multiple instances of hyper-raising to subject (Ka Fai Yip, p.c.). Crucially, (107) is not an instance of hyper-hyper-raising.

(107) Zhangsan$_i$ tingshuo [$_{CP}$ —$_i$ ganjue [$_{CP}$ —$_i$ xiang mousha Lisi].
Zhangsan hear feel like want murder Lisi
'Zhangsan is heard that (he) is felt that (he) wants to murder Lisi.'

To rule out hyper-hyper-raising, I suggest that in Mandarin, the pure ϕ-probe on the C head of a finite CP (which triggers A-movement to Spec, CP in the case of hyper-raising to subject) must be licensed by a pure ϕ-probe within the adjacent higher clause (e.g., the pure ϕ-probe on Infl, in the case of hyper-raising to subject).

Turning now to the ill-formedness of (97a), which involves a long-distance, cross-clausal dependency between the subject of BEI and an object gap. Here, I assume, following Longenbaugh (2017), that the ban on improper A-after-Ā-movement also implies a ban on composite A/Ā-movement after Ā-movement (see footnote 16). Recall that English *tough*-movement is more

restricted than Dinka movement to Spec, CP in that it is possible across non-finite clause boundaries, which arguably lack a CP projection (Wurmbrand 2014), but is degraded for non-subjects and impossible for subjects across a phasal CP-projection (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006). To account for this restriction, Longenbaugh (2017) proposes that the distribution of composite probes can be different in different languages: In Dinka, both the C head and the Voice head host a composite probe $[\phi+\bar{A}]$; hence, composite A/Ā-movement can cross finite clause boundaries (Van Urk 2015). In English, only the Voice head (involved in the path of *tough*-movement) hosts a composite probe $[\phi+\bar{A}]$ while the C head only hosts a pure Ā-probe; hence, composite A/Ā-movement can proceed successive-cyclically through the specifiers of successive VoicePs, but cannot proceed from Spec, CP, i.e., following a step of Ā-movement to Spec, CP triggered by the pure Ā-probe on the C head, due to the ban on improper composite A/Ā-movement after Ā-movement (Longenbaugh 2017; but see footnote 17).

Following Longenbaugh (2017), I propose that Mandarin is unlike Dinka and like English in that the C head does not host a composite probe $[\phi + \bar{A}]$ and hosts pure Ā-probes (which are relativized to specific features, as discussed previously). Hence, a finite clause object can only Ā-move to Spec, CP (because it crosses over the subject), and cannot undergo further composite A/Ā-movement (and A-movement), due to the ban on composite A/Ā-movement after Ā-movement.

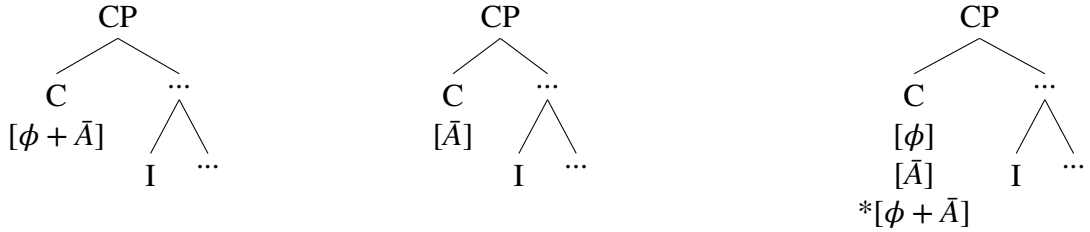
(108) *Improper composite-after-Ā-movement in* BEI*-construction*

$[_{IP}\ NP_{[\phi],[\bar{A}]}\ Infl_{[\phi]}\ [_{PassP}\ t\ BEI_{[\phi+\bar{A}]}\ ...\ V\ [_{CP}\ t\ C_{[\phi][\bar{A}]}\ [_{IP}\ NP\ ...\ [_{VP}\ V\ t\ ]]]]]$

A-movement; A/Ā-movement; Ā-movement

Note that under the proposed analysis of the subject/object contrast (with respect to the possibility of crossing a finite clause boundary to become the subject in the BEI-construction), the Mandarin C head is not only unlike the Dinka C head in that it does not host a composite probe $[\phi + \bar{A}]$ and like the English C head in that it hosts pure Ā-probes, but also unlike the English C head in that it also generally hosts a pure ϕ-probe, which triggers A-movement to Spec, CP in the case of hyper-raising to subject. This suggests a three-way difference in the feature composition of the probe on the C head, as illustrated in (109).[24]

(109) a. *Dinka C* b. *English C* c. *Mandarin C*



[24]Lohninger, Kovač & Wurmbrand (2022) arrive at the same conclusion that ϕ- and Ā-features present on the same head may trigger movement together (which is the case of the Dinka C head) or be satisfied independently (which is the case of the Mandarin C head).

Before proceeding, it is worth reiterating that the subject/object contrast (with respect to the possibility of crossing a finite clause boundary to become the subject in the BEI-construction) does not receive straightforward explanations under the alternative analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). Specifically, if the dependency in the BEI-construction is derived via Ā-movement of a NOP, then cross-clausal dependencies between the subject of BEI and either a finite subject gap or a finite object gap should be possible (or impossible, depending on the assumption about whether or not NOP movement can cross a finite CP boundary).[25]

2.6.2.2 Apparently gap-less BEI-constructions

It is worth noting that the subject/object contrast (with respect to the possibility to cross a finite clause boundary to become the subject in the BEI-construction) is not observed when the gaps in (109) are replaced by overt pronouns, as seen in (110).

(110) a. Lisi$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan hui mousha ta$_i$].
Lisi BEI police think/suspect/believe Zhangsan will murder 3SG
'Lisi was thought/suspected/believed that Zhangsan will murder (him) (by the police).'

b. Zhangsan$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ ta$_i$ hui mousha Lisi].
Zhangsan BEI police think/suspect/believe 3SG will murder Lisi
Lit. 'Zhangsan was thought/suspected/believed that (he) will murder Lisi (by the police).'

Like (110), the following BEI-construction in (111) is also well-formed and apparently gap-less; in this case, the subject of BEI is linked to an overt pronoun within an island for extraction.

(111) Zhang$_i$ bei (jingcha) renwei [__$_j$ xiang mousha ta$_i$] de ren$_j$ shi Li.
Zhang BEI police think want murder him REL person be Li
Lit. 'Zhang was thought that the person who wanted to murder him is Li.'

I propose that the BEI-constructions in (110) and (111) are only apparently gap-less: the subject of BEI is linked to a gap in Spec, CP of the embedded clause, as in (112a), (113a), and (114a). Specifically, I analyze the NP in Spec, CP of the embedded clause in (112b), (113b), and (114b) as a base-generated topic (following Li & Thompson 1981: 92-94; Huang, Li & Li 2009: 202-203; a.o.). Having adopted the featural view of the A/Ā-distinction (Van Urk 2015), I suggest that a base-generated topic can undergo composite A/Ā-movement, as long as it is the closest NP

[25] Also, note that English *tough*-movement shows the *opposite* pattern of the subject/object contrast: it is degraded for non-subjects and impossible for subjects across a phasal CP-projection (Longenbaugh 2017; see also Postal 1971; Bresnan 1972; Chomsky 1973; Lasnik & Fiengo 1974; Browning 1987; Rezac 2006). If the BEI-construction and *tough*-movement both involve the same kind of NOP movement, it is unclear why the two constructions show opposite patterns in terms of the subject/object contrast.

with both ϕ- and Ā-features to the composite probe [$\phi + \bar{A}$].[26]

(112) a. Lisi$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ —$_i$ Zhangsan hui mousha ta$_i$].
Lisi BEI police think/suspect/believe Zhangsan will murder 3SG
'Lisi was thought/suspected/believed that Zhangsan will murder (him) (by the police).'

b. Jingcha renwei/huaiyi/xiangxin [$_{CP}$ Lisi$_i$, Zhangsan hui mousha ta$_i$].
police think/suspect/believe Lisi Zhangsan will murder 3SG
'The police thought/suspected/believed that Lisi, Zhangsan will murder him.'

(113) a. Zhangsan$_i$ bei (jingcha) renwei/huaiyi/xiangxin [$_{CP}$ —$_i$ ta$_i$ hui mousha Lisi].
Zhangsan BEI police think/suspect/believe 3SG will murder Lisi
Lit. 'Zhangsan was thought/suspected/believed that (he) will murder Lisi (by the police).'

b. Jingcha renwei/huaiyi/xiangxin [$_{CP}$ Zhangsan$_i$, ta$_i$ hui mousha Lisi].
police think/suspect/believe Zhangsan 3SG will murder Lisi
'The police thought/suspected/believed that Zhangsan, he will murder Lisi.'

(114) a. Zhang$_i$ bei (jingcha) renwei [$_{CP}$ —$_i$ [—$_j$ xiang mousha ta$_i$] de ren$_j$ shi Li].
Zhang BEI police think want murder him REL person be Li
Lit. 'Zhang was thought that the person who wanted to murder him is Li.'

b. Jingcha renwei [$_{CP}$ Zhang$_i$ [—$_j$ xiang mousha ta$_i$] de ren$_j$ shi Li].
police think Zhang want murder him REL person be Li
'The police thought that the person who wanted to murder Zhang is Li.'

The proposal that the subject of BEI is linked to a base-generated topic in apparently gap-less BEI-constructions is further evidenced by the well-formedness of (115a). Unlike the above apparently gap-less BEI-constructions where the subject of BEI is linked to an overt pronoun in BEI's complement, the subject of BEI in (115a) and the base-generated topic in (115b) are related to the so-called comment clause only in an 'aboutness' sense (see Li & Thompson 1981: 99). Hence, the only possible source of the subject of BEI in (115a) is the base-generated topic in (115b).

[26]Under the positional view of the A/Ā-distinction (see e.g., Chomsky 1981, 1995; Mahajan 1990; Déprez 1989; Miyagawa 2010), it is impossible for an NP to end up in an A-position (Spec, IP) from an Ā-position. Hence, one must assume that Spec, CP is an A-position for a base-generated topic (which is also plausible, given that a base-generated topic is possibly case-licensed by the C head).

(115) a. Na-chang huo$_i$ bei (henduo ren) renwei [$_{CP}$ —$_i$ [xingkui xiaofangdui lai de kuai]].
that-CL fire BEI many person think fortunate firefighters come DEG quickly
Lit. 'That fire was thought that it was fortunate that the firefighters came quickly (by many people).'

b. Henduo ren renwei [$_{CP}$ na-chang huo [xingkui xiaofangdui lai de kuai]].
many person think that-CL fire fortunate firefighters come DEG quickly
'Many people think that (speaking of) that fire, it was fortunate that the firefighters came quickly.' (Adapted from Li & Thompson 1981: 96, ex. 34)

2.7 On the subject of BEI

In this section, I will reconcile two conflicting arguments on the base-generated vs. derived status of the subject of BEI in the literature (in sections 7.1 and 7.2), and extend the proposed analysis of the BEI-construction to cases where the subject of BEI is identified with an indirect object in BEI's complement (a.k.a. indirect passives; see e.g., Huang, Li & Li 2009) (in section 7.3).

2.7.1 On 'deliberately'-type adverbs

In the literature, an assumption has been made that 'deliberately'-type adverbs can only modify a base-generated argument (see e.g., Lakoff 1971; Lasnik & Fiengo 1974; Huang 1999, 2013; Huang, Li & Li 2009; Bruening & Tran 2015; Liu & Huang 2016; a.o.). Under such an assumption, the contrast between the English *be*-passive and the English *get*-passive with respect to whether 'deliberately'-type adverbs can modify the grammatical subject, as seen in (116), suggests that the subject of a *be*-passive is derived, but that the subject of a *get*-passive is base-generated as an argument of *get*.

(116) a. *English be-passive: 'deliberately' cannot modify grammatical subject*
*Gillian was hit by that truck deliberately! (where Gillian is deliberate) (Bruening & Tran 2015: ex. 33a)

b. *English get-passive: 'deliberately' can modify grammatical subject*
Gillian got hit by that truck deliberately! (Bruening & Tran 2015: ex. 33b)

The major argument for a base-generation analysis of the subject of BEI has come from the possibility for 'deliberately'-type adverbs to modify the subject of BEI, as seen in (117) (see e.g., Huang 1999, 2013; Huang, Li & Li 2009; Bruening & Tran 2015; Liu & Huang 2016; a.o.).

(117) Zhangsan$_i$ guyi bei (Lisi) da-le ___$_i$.
Zhangsan deliberately BEI Lisi hit-PRF
'Zhangsan deliberately got hit (by Lisi).' (Huang, Li & Li 2009: 115, ex. 6-7)

Note that *guyi* 'deliberately' can also modify the agent/external argument of the matrix verb, whether it is overtly expressed or is non-overt, as seen in (118).

(118) Zhangsan$_i$ bei (Lisi) guyi da-le ___$_i$.
Zhangsan BEI Lisi deliberately hit-PRF
'Zhangsan was hit (by Lisi) deliberately.'

However, the assumption that 'deliberately'-type adverbs can only modify a base-generated argument is simply incorrect. First, Jackendoff (1972: 83), David Pesetsky (p.c.), and others have reported that 'deliberately'-type adverbs can modify the grammatical subject of a *be*-passive, in examples like (119).

(119) *English be-passive: 'deliberately' can modify grammatical subject*
a. John was carefully examined by the doctor.
b. Fred was carelessly arrested by the police.
c. Mary was intentionally seduced by Joe.

Second, 'deliberately'-type adverbs can modify the derived subject of an unaccusative construction, both in English, as seen in (120), and in Mandarin, as seen in (121).

(120) *English unaccusative construction: 'deliberately' can modify grammatical subject*
a. The Iceman froze solid deliberately. (Bruening & Tran 2015: ex. 44c)
b. The robot broke open deliberately. (Bruening & Tran 2015: ex. 44d)

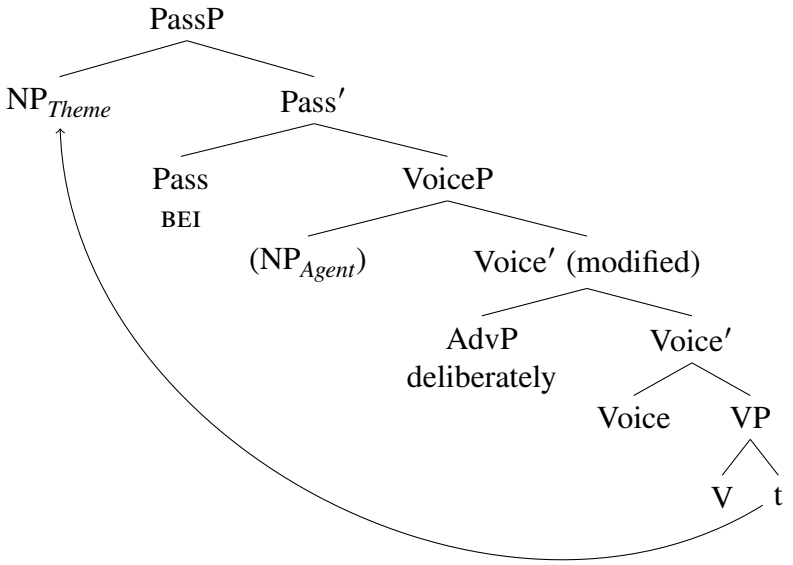
(121) *Mandarin unaccusative construction: 'deliberately' can modify grammatical subject*
Lisi$_i$ guyi bu lai/zou ___$_i$.
Lisi deliberately not come/leave
'Lisi did not come/leave deliberately.'

I propose that an analysis of the distribution and interpretation of *guyi* 'deliberately' compatible with the proposed analysis of the BEI-construction as a passive construction where the subject of BEI is derived (via A-movement after (successive-cyclic) composite A/Ā-movement) is possible. Building on Bruening & Tran's (2015: 14) proposal that "a 'deliberately'-type adverb attaches to a predicate [and] associates with the structurally highest argument of that predicate", I propose that a 'deliberately'-type adverb attaches to a predicate of event and associates with the argument in the specifier of that predicate of event. Concretely, I assume the following denotation of *deliberately* in (122).

(122) *Definition of 'deliberately'*
deliberately: $\lambda x.\ \lambda e.$ deliberately(e, x)

I propose that in the BEI-construction, *guyi* 'deliberately' has two attachment sites. When it attaches to a projection of the Voice head, it associates with the agent/external argument of the matrix verb in Spec, VoiceP, as illustrated in (123).

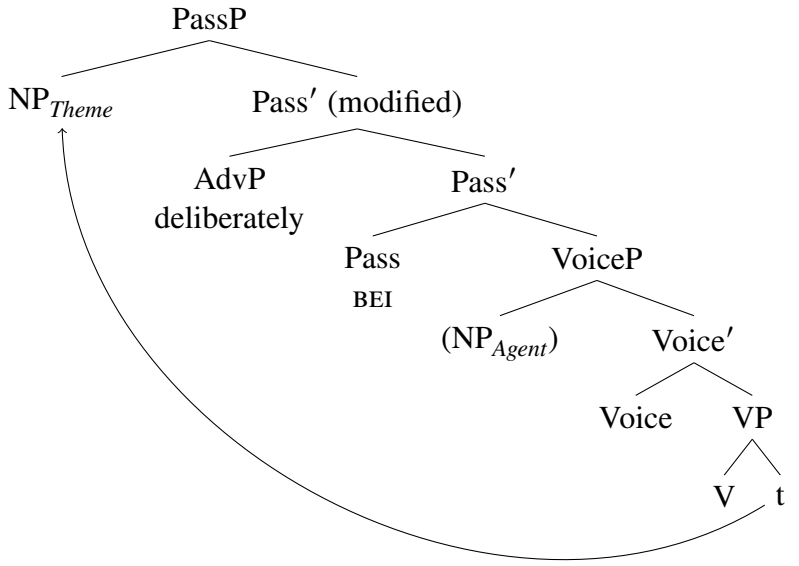
(123) *'Deliberately' modifying agent/external argument of verbal projection*



a. Voice′: $\lambda x.\ \lambda e.$ V(e, NP_{Theme}) & Agent(e, x)
b. Voice′ (modified): $\lambda x.\ \lambda e.$ V(e, NP_{Theme}) & Agent(e, x) & deliberately(e, x)
c. VoiceP: $\lambda e.$ V(e, NP_{Theme}) & Agent(e, NP_{Agent}) & deliberately(e, NP_{Agent})

When *guyi* 'deliberately' attaches to a projection of the passive head/BEI, it associates with the subject of BEI in Spec, PassP, as illustrated in (124).

(124) *'Deliberately' modifying subject of* BEI



a. Pass′: λe. V(e, NP$_{Theme}$) & Agent(e, NP$_{Agent}$)
b. Pass′ (modified): λx. λe. V(e, NP$_{Theme}$) & Agent(e, NP$_{Agent}$) & deliberately(e, x)
c. PassP: λe. V(e, NP$_{Theme}$) & Agent(e, NP$_{Agent}$) & deliberately(e, NP$_{Theme}$)

The speaker variation with respect to whether or not the grammatical subject of the English *be*-passive can be modified by 'deliberately'-type adverbs might suggest that for some speakers, 'deliberately'-type adverbs can only attach to a projection of the Voice head in the English *be*-passive (hence 'deliberately'-type adverbs can only associate with the (overtly expressed or non-overt) agent/external argument of the passivized verb), but for other speakers, 'deliberately'-type adverbs can also attach to a projection of the passive head in the English *be*-passive (hence 'deliberately'-type adverbs can also associate with the grammatical subject of the English *be*-passive).

2.7.2 On idioms

The major argument for a raising analysis of the subject of BEI has come from the possibility for the subject of BEI and a (deeply embedded) verb in BEI's complement to form an idiom and the availability of the idiomatic meaning of the idiom in a BEI-construction. Concretely, in the BEI-constructions in (125), the idiom chunks *niu* 'cow' and *pianyi* 'advantage' are part of the idioms *chui niu* 'bluff' and *zhan pianyi* 'take advantage', respectively, and the idiomatic meanings of the idioms are preserved. Hence, Huang (2013), Liu & Huang (2016), among others, have argued that the subject of BEI must be base-generated in the gap position in BEI's complement, in order for the idiomatic meanings of the idioms to be available.

(125) a. Niu$_i$ dou bei (ta yi-ge-ren) chui-guang-le __$_i$.
cow DOU BEI 3SG one-CL-person blow-empty-PRF
'All the bluffing was done (by him alone).' (Huang 2013: ex. 17)

b. Pianyi$_i$ dou bei (ta yi-ge-ren) zhan-guang-le __$_i$.
advantage DOU BEI 3SG one-CL-person take-empty-PRF
'All the advantage was taken (by him alone).' (Liu & Huang 2016: ex. 11)

For speakers including myself, the idiomatic meaning of *zhan pianyi* 'take advantage' is also available in (126a), where the subject of BEI and a deeply embedded verb in BEI's complement form an idiom, and in (126b), which involves long-distance topicalization (but see Huang 2013; Liu & Huang 2016).

(126) a. Pianyi$_i$ dou bei ta jiao ziji-de jiaren zhan-guang-le __$_i$.
advantage DOU BEI 3SG order self's family take-empty-PRF
Lit. 'All the advantage was ordered his family to take by him.'

b. Pianyi$_i$, ta jiao ziji-de jiaren zhan-guang-le __$_i$.
advantage 3SG order self's family take-empty-PRF
Lit. 'Advantage, his ordered his family to take.'

While the idiom facts are consistent with the proposed analysis of the BEI-construction as a passive construction where the subject of BEI is derived (via A-movement after (successive-cyclic) composite A/Ā-movement), it is worth noting that the above examples involve compositional idioms whose meanings are distributed among their parts. For example, in 'take advantage', "'take' is assigned a meaning roughly paraphrasable as 'derive', and 'advantage' means something like 'benefit'"; hence, "the parts of the idiom [are allowed] be separated syntactically, so long as their interpretations are composed in the permitted manner" (Nunberg, Sag & Wasow 1994: 506).

In English, the idiomatic meaning of a compositional idiom like 'take advantage' is preserved when part of the idiom is quantified and modified (as in 'take no significant advantage') and when part of the idiom is referred to with a pronoun or elided, as seen in (127).

(127) a. They claimed full advantage$_i$ had been taken of the situation, but it$_i$ wasn't ~~taken~~ __$_i$. (Nunberg, Sag & Wasow 1994: ex. 28a)

b. They claimed full advantage$_i$ had been taken of the situation, but none$_i$ was ~~taken~~ __$_i$. (Nunberg, Sag & Wasow 1994: ex. 28b)

In Mandarin, it can be shown the idiom chunks *niu* 'cow' and *pianyi* 'advantage' in the idioms *chui niu* 'bluff' and *zhan pianyi* 'take advantage' have idiomatic meanings on their own. Consider (128), where the idiom chunks *zhe-zhong niu* 'this kind of cow' and *zhe-zhong pianyi* 'this kind of advantage' are base-generated topics linked to gaps inside islands for extraction (via an Ā-moved NOP which is co-indexed with the base-generated topic; see Huang 1984: 570). In these cases,

the idioms *chui zhe-zhong niu* 'this kind of bluffing' and *zhan zhe-zhong pianyi* 'take this kind of advantage' are not constituents (underlyingly), and yet the idiomatic meanings of the idioms are available.

(128) a. Wo jian-guo henduo gan chui niu de ren. Danshi, zhe-zhong niu_i, wo mei
1SG see-EXP many dare blow cow REL person but this-kind cow 1SG not
jian-guo [$_{NP}$ yi-ge [NOP_i gan chui $\_\__i$] de ren].
see-EXP one-CL dare blow REL person
'I have seen many people who dare to bluff. But this kind of bluffing, I haven't seen one single person who dares to make (it).'

b. Wo zhidao henduo ai zhan pianyi de ren. biru, zhe-zhong
1SG know many love take advantage REL person for example this-kind
$pianyi_i$, wo zhidao [$_{NP}$ henduo [NOP_i ai zhan $\_\__i$] de ren].
advantage 1SG know many love take REL person
'I know many people who love to take advantage. For example, this kind of advantage, I know many people who love to take (it).'

It is also worth mentioning that in English, a truly non-compositional idiom like 'kick the bucket' loses its idiomatic meaning under passivization and topicalization, as seen in (129).

(129) a. The $bucket_i$ was kicked $\_\__i$ by Pat. (Nunberg, Sag & Wasow 1994: 508)
b. The $bucket_i$, Pat kicked $\_\__i$.

Similarly, in Mandarin, the idiom *deng tui* 'die', which literally means 'stretch legs/kick', also loses its idiomatic meaning when the parts of the idiom are separated syntactically, as seen in (130).

(130) a. (Ta-de) tui bei (ta) deng-le.
3SG's leg BEI 3SG stretch-PRF
'His legs were stretched (by him).'

b. (Ta-de) tui, ta deng-le.
3SG's leg 3SG stretch-PRF
'His legs, he stretched (them).'

c. Ta deng-le tui.
3SG stretch-PRF leg
'He died.'

2.7.3 Indirect object as the subject of BEI

In this section, I extend the proposed analysis of the BEI-construction to cases where the subject of BEI is identified with an indirect object in BEI's complement (a.k.a. indirect passives; see e.g.,

Huang, Li & Li 2009).

Concretely, in (131b), the subject in the BEI-construction is identified with the recipient indirect object of a *canonical double-object construction*.

(131) a. *Canonical double-object construction*
Wo song(-gei)-le Lisi yi-ben shu.
1SG give-to-PRF Lisi one-CL book
'I gave Lisi a book.'

b. *Indirect object (recipient) as the subject of* BEI
Lisi_i bei (wo) song(*-gei)-le $\_\__i$ yi-ben shu.
Lisi BEI 1SG give-to-PRF one-CL book
'Lisi was given a book (by me).'

In (132b) and (133b), the subject in the BEI-construction is identified with the affectee (which may or may not be a possessor) indirect object of an *affective double-object construction*.

(132) a. *Affective double-object construction*
Xiaotou tou-le Lisi yi-ben shu.
thief steal-PRF Lisi one-CL book
'The thief stole (from) Lisi a book.'

b. *Indirect object (affectee/possessor) as the subject of* BEI
Lisi_i bei (xiaotou) tou-le $\_\__i$ yi-ben shu.
Lisi BEI thief steal-PRF one-CL book
'Lisi was stolen a book (from) (by the thief).' (Adapted from Huang, Li & Li 2009: 139, ex. 64)

(133) a. *Affective double-object construction*
Wo tou-jin-le Lisi yi-ge san-fen-qiu.
1SG throw-in-PRF Lisi one-CL three-point-goal
'I threw in a three-pointer on Lisi.'

b. *Indirect object (affectee) as the subject of* BEI
Lisi_i bei (wo) tou-jin-le $\_\__i$ yi-ge san-fen-qiu.
Lisi BEI 1SG throw-in-PRF one-CL three-point-goal
Lit. 'Lisi was thrown a three-pointer on (by me).' (Adapted from Huang, Li & Li 2009: 140, ex. 66)

Note that there is a contrast between canonical double-object constructions and affective double-object constructions with respect to whether the direct object can be the subject of BEI in a BEI-construction: (134a), where the subject of BEI is identified with the theme direct object of

a canonical double-object construction, is well-formed; by contrast, (134b) and (134c), where the subject of BEI is identified with the theme direct object of an affective double-object construction, are ill-formed.

(134) a. *Direct object (theme) as the subject of* BEI
Shu$_i$ bei (wo) song(-gei)-le Lisi __$_i$.
book BEI 1SG give-to-PRF Lisi
Lit. 'The book was given Lisi (by me).'

b. *Direct object (theme/possessum) as subject of* BEI
*Shu$_i$ bei (xiaotou) tou-le Lisi __$_i$.
book BEI thief steal-PRF Lisi
INT: 'The book was stolen (from) Lisi (by the thief).'

c. *Direct object (theme) as subject of* BEI
*San-fen-qiu$_i$ bei (wo) tou-jin-le Lisi __$_i$.
three-point-goal BEI 1SG throw-in-PRF Lisi
INT: 'The three-pointer was thrown in on Lisi (by me).'

Furthermore, there is also a contrast between canonical double-object constructions and affective double-object constructions with respect to whether either the indirect object or the direct object can be Ā-extracted: Ā-extraction of either the recipient indirect object or the theme direct object of a canonical double-object construction is possible, as seen in (135).

(135) *Canonical double-object construction*
a. *Ā-extraction of indirect object (recipient)*
Lisi$_i$, wo song(*-gei)-le __$_i$ yi-ben shu.
Lisi 1SG give-to-PRF one-CL book
'Lisi, I gave (him) a book.'

b. *Ā-extraction of direct object (theme)*
Shu$_i$, wo song(-gei)-le Lisi __$_i$.
book 1SG give-to-PRF Lisi
'The book, I gave Lisi (it).'

By contrast, Ā-extraction of neither the affectee indirect object nor the theme direct object of an affective double-object construction is possible, as seen in (136) and (137).

(136) *Affective double-object construction*

a. *Ā-extraction of indirect object (affectee/possessor)*
*Lisi$_i$, xiaotou tou-le ___$_i$ yi-ben shu.
Lisi thief steal-PRF one-CL book
INT: 'Lisi, the thief stole (from him) a book.' (Adapted from Huang, Li & Li 2009: 139, ex. 64)

b. *Ā-extraction of direct object (theme/possessum)*
*Shu$_i$, xiaotou tou-le Lisi ___$_i$.
book thief steal-PRF Lisi
INT: 'The book, the thief stole (from) Lisi (it).'

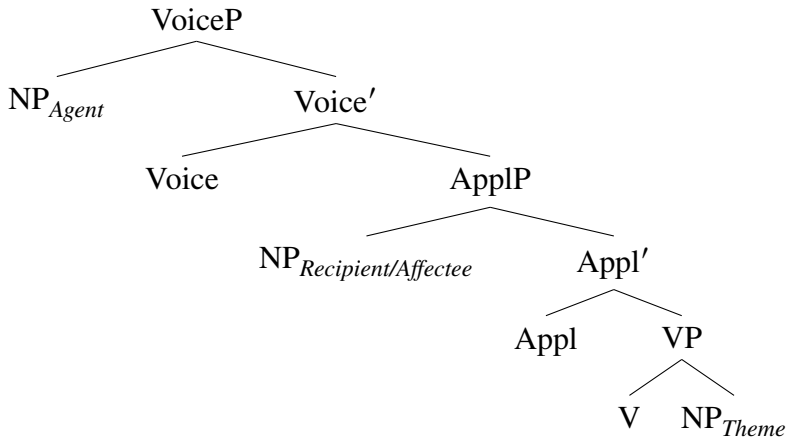
(137) *Affective double-object construction*

a. *Ā-extraction of indirect object (affectee)*
*Lisi$_i$, wo tou-jin-le ___$_i$ yi-ge san-fen-qiu.
Lisi 1SG throw-in-PRF one-CL three-point-goal
INT: 'Lisi, I threw in a three-pointer (on him).' (Adapted from Huang, Li & Li 2009: 140, ex. 66)

b. *Ā-extraction of direct object (theme)*
*San-fen-qiu$_i$, wo tou-jin-le Lisi ___$_i$.
three-point-goal 1SG throw-in-PRF Lisi
INT: 'The three-pointer, I threw (it) in on Lisi.'

Despite the contrasts between canonical and affective double-object constructions (with respect to whether the direct object can be the subject of BEI in a BEI-construction and whether either the indirect object or the direct object can be Ā-extracted), I assume that both canonical and affective double-object constructions in Mandarin have the structure in (138), where the theme direct object is introduced by the verb, and the recipient or affectee indirect object is introduced by an Appl(icative) head which projects above the VP, following Marantz (1993), Bruening (2010), and others, but contra Harley (1995, 2002) and Pylkkänen (2002, 2008) (see also chapter 3 of this dissertation).

(138) *Proposed analysis of double-object construction*



I propose that the contrasts between canonical and affective double-object constructions (with respect to whether the direct object can be the subject of BEI in a BEI-construction and whether either the indirect object or the direct object can be Ā-extracted) can be accounted for under the assumptions that (i) in a canonical double-object construction, the VoiceP but not the ApplP is a phase; (ii) by contrast, in an affective double-object construction, both the VoiceP and the ApplP are phases; (iii) in an affective double-object construction, the ApplP is a phase without a phase-EPP feature, which effectively makes extraction of the theme direct object impossible (both in a BEI-construction and in cases of Ā-extraction) (cf. Tsai 2018).

Recall that either the recipient indirect object or the theme direct object of a canonical double-object construction can be the subject of BEI in a BEI-construction and can be Ā-extracted. Under the proposed analysis of the BEI-construction, either object of a canonical double-object construction can be the subject of BEI in a BEI-construction, because either object can be targeted by the composite probe $[\phi + \bar{A}]$ on the passive head/BEI, if it is the closest NP with both ϕ- and Ā-features.[27] Similarly, either object of a canonical double-object construction can be Ā-extracted, because either object can be targeted by an Ā-probe.

By contrast, recall that the affectee indirect object of an affective double-object construction can be the subject of BEI, but cannot be Ā-extracted – this poses a challenge to the alternative analysis of the BEI-construction involving base-generation of the subject of BEI and NOP movement in BEI's complement (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). Under the assumption that in an affective double-object construction, both the VoiceP and the ApplP are phases, the affectee indirect object must undergo movement from Spec, ApplP to Spec, VoiceP, without crossing a non-phase boundary, to be Ā-extracted. I suggest that such a movement may be banned for anti-locality reasons.[28] Under

[27] I assume, following Holmberg, Sheehan & Van der Wal (2019), that the Appl(icative) head can assign case to either the recipient indirect object or the theme direct object. Hence, either the recipient indirect object or the theme direct object of a canonical double-object construction can be the subject of BEI in an agent-less BEI-construction where the Voice head does not assign case but the Appl(icative) head can assign case to the other object.

[28] Under the assumption that both the VoiceP and the ApplP are phases, an affective double-object construction involves a double-phase (or phase-over-phase) configuration in the sense of Bošković (2015). This leads to a possible alternative analysis: Bošković (2015) shows that extraction from a double-phase configuration is banned cross-

the proposed analysis of the BEI-construction, in the BEI-construction, it is the passive head/BEI, instead of the Voice head, that heads a phase; hence, the affectee indirect object can undergo movement from Spec, ApplP to Spec, PassP, which crosses a non-phase boundary, the VoiceP, without violating the suggested anti-locality constraint.

Lastly, it is worth mentioning that the subject of BEI can be identified with an indirect object introduced by an Appl(icative) head, but cannot be identified with a non-argument introduced by a PP adjunct. Concretely, the well-formedness of (139a) and the ill-formedness of (140a) suggest that in (139b), *Lisi* is a recipient indirect object, which is introduced by an Appl(icative) head in Spec, ApplP, hence it can be targeted by the composite probe on the passive head/BEI, whereas in (140), *Lisi* is a non-argument introduced by the preposition *dui* 'to' in a PP adjunct, hence it cannot be targeted by the composite probe on the passive head/BEI.

(139) a. Lisi$_i$ bei (wo) __$_i$ da zhaohu/shi ai/shu zhong-zhi.
Lisi BEI 1SG do greetings/express love/erect middle-finger
Lit. 'Lisi was done greetings/expressed love/given the middle-finger to (by me).'

b. Wo dui/xiang Lisi da zhaohu/shi ai/shu zhong-zhi.
1SG to/to Lisi do greetings/express love/erect middle-finger
'I did greetings/expressed love/gave the middle-finger to Lisi.'

(140) a. *Lisi$_i$ bei (wo) __$_i$ ku/xiao/han.
Lisi BEI 1SG cry/laugh/shout
INT: 'Lisi was cried/laughed/shouted at (by me).'

b. Wo dui Lisi ku/xiao/han.
1SG to Lisi cry/laugh/shout
'I cried/laughed/shouted at Lisi.'

Similarly, the well-formedness of (141a) and the ill-formedness of (142a) suggest that in (141b), *zhuozi-shang* 'on the table' is a goal indirect object, which is introduced by an Appl(icative) head in Spec, ApplP, hence it can be targeted by the composite probe on the passive head/BEI, whereas in (142), *xuexiao-li* 'in the school' is a non-argument introduced by the preposition *zai* 'at' in a PP adjunct, hence it cannot be targeted by the composite probe on the passive head/BEI.

(141) a. Zhuozi-shang$_i$ bei (wo) fang(*-zai)-le __$_i$ yi-ben shu.
desk-on BEI 1SG put-be.at-PRF one-CL book
Lit. 'On the desk was put a book (by me).'

b. Wo fang(-zai)-le zhuozi-shang yi-ben shu.
1SG put-be.at-PRF desk-on one-CL book
'I put on the desk a book.'

linguistically, and proposes an account of the relevant facts under particular assumptions about the domain and timing of spell-out.

(142) a. *Xuexiao(-li)$_i$ bei (Lisi) __$_i$ xie-le yi-feng xin.
school-in BEI Lisi write-PRF one-CL letter
INT: '(In) the school was written a letter (by Lisi).'

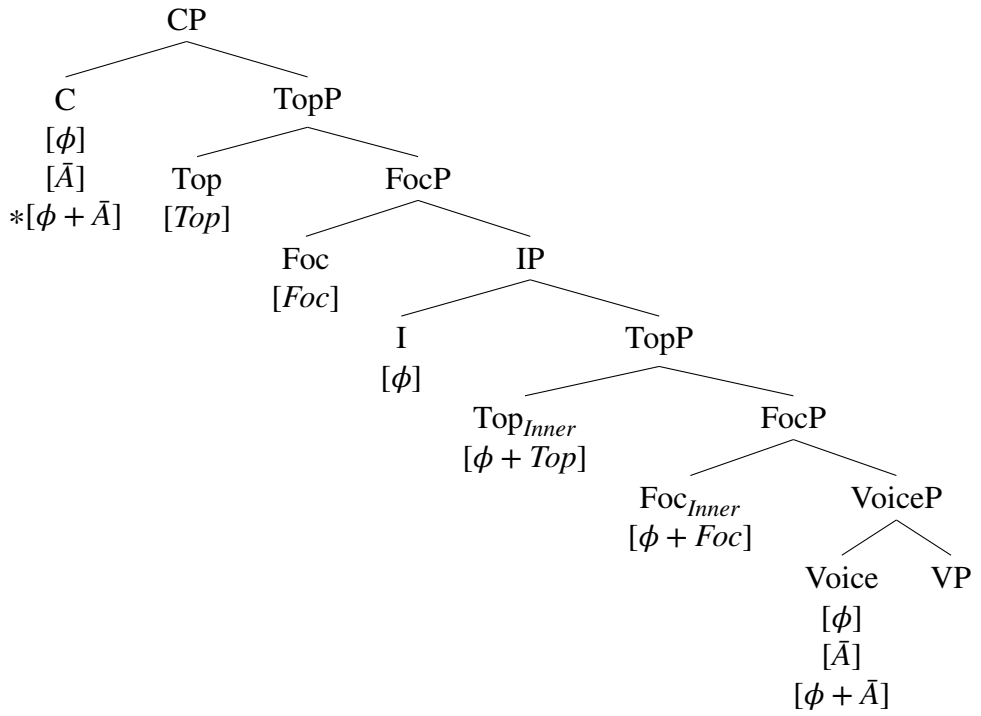
b. Lisi zai xuexiao-li xie-le yi-feng xin.
Lisi at school-in write-PRF one-CL letter
'Lisi wrote a letter in the school.'

2.8 Generalized composite probing in Mandarin

So far, I have assumed, following Longenbaugh (2017), that the distribution of composite probes can be different in different languages: In Dinka, both the C head and the Voice head host a composite probe [$\phi + \bar{A}$]; hence, composite A/Ā-movement can cross finite clause boundaries (Van Urk 2015). In English, only the Voice head (involved in the path of *tough*-movement) hosts a composite probe [$\phi + \bar{A}$] while the C head only hosts a pure Ā-probe; hence, composite A/Ā-movement can proceed successive-cyclically through the specifiers of successive VoicePs, but cannot proceed from Spec, CP, i.e., following a step of Ā-movement to Spec, CP triggered by the pure Ā-probe on the C head, due to the ban on improper composite A/Ā-movement after Ā-movement (Longenbaugh 2017; but see footnote 17). I have argued that in Mandarin, the composite probe [$\phi + \bar{A}$] is present on the passive head/BEI, but is not present on the C head; hence, in Mandarin, a finite clause object can only Ā-move to Spec, CP (because it crosses over the subject), and cannot undergo further composite A/Ā-movement (and A-movement), due to the ban on composite A/Ā-movement after Ā-movement (following Longenbaugh 2017). In this section, I will argue that composite probing is more generally observed in Mandarin, in the sense that (i) composite probes are present on multiple heads that project in the low IP area in Mandarin, and (ii) the Voice head generally hosts a composite probe for purposes of successive-cyclic composite A/Ā-movement in Mandarin.

Specifically, I will argue for the distribution of ϕ-, Ā-, and composite probes in the left periphery and the low IP area in Mandarin in (143).

(143) *Distribution of ϕ-, $\bar{A}$-, and composite probes in Mandarin left periphery and low IP area*



(i) The Mandarin C head hosts both a pure ϕ-probe (which triggers A-movement to Spec, CP in the case of hyper-raising to subject, as discussed previously) and pure $\bar{A}$-probes (which are relativized to specific features, as discussed previously), but does not host a composite probe [$\phi + \bar{A}$].

(ii) I adopt Paul's (2005) proposal that in Mandarin, the projections in the low IP area parallel the projections in the left periphery, as seen in (143). Specifically, I assume that IP-external topicalization and focalization target IP-external Spec, TopP and IP-external Spec, FocP, respectively; similarly, IP-internal topicalization and focalization target IP-internal Spec, TopP and IP-internal Spec, FocP, respectively.

(iii) In section 8.1, I will extend the proposal that mixed A/$\bar{A}$-properties are direct consequences of composite A/$\bar{A}$-movement further by analyzing IP-internal topicalization and focalization, which exhibit mixed A/$\bar{A}$-properties, as involving (successive-cyclic) composite A/$\bar{A}$-movement to IP-internal Spec, TopP and IP-internal Spec, FocP, respectively, triggered by a composite probe consisting of a ϕ-feature and a relativized [*Top*] feature on the IP-internal Top head and a composite probe consisting of a ϕ-feature and a relativized [*Foc*] feature on the IP-internal Foc head, respectively.

(iv) In section 8.2, I will extend the proposal that the Voice head generally hosts a composite probe for purposes of successive-cyclic composite A/$\bar{A}$-movement in Mandarin further by arguing for the possibility for both IP-internal topicalization and focalization, which are instances of composite A/$\bar{A}$-movement, and IP-external topicalization and focalization, which

are instances of Ā-movement, to involve an intermediate step of composite A/Ā-movement to Spec, VoiceP in Mandarin.

2.8.1 IP-internal topicalization and focalization as composite A/Ā-movement

In Mandarin, topicalization and focalization (a.k.a. the *lian ... dou* construction, where *lian* 'even' is a focalizer and *dou* is a predicate quantifier, according to Shyu (1995)) can target either an IP-internal position, below the grammatical subject (in Spec, IP), as seen in (144a) and (145a), or an IP-external position, above the grammatical subject (in Spec, IP), as seen in (144b) and (145b).

(144) a. *IP-internal topicalization (a.k.a. object NP shift (Qu 1994) or object preposing (Ernst & Wang 1995))*

$[_{IP}$ Lisi [zhe-ben shu]$_i$ kan-wan-le $\_\__i$].
Lisi this-CL book read-be.finished-PRF
'Lisi, this book, finished reading (it).'

b. *IP-external topicalization (a.k.a. object NP fronting (Qu 1994))*

[Zhe-ben shu]$_i$ $[_{IP}$ Lisi kan-wan-le $\_\__i$].
this-CL book Lisi read-be.finished-PRF
'This book, Lisi finished reading (it).'

(145) a. *IP-internal focalization*

$[_{IP}$ Zhangsan [lian Lisi]$_i$ dou bu xihuan $\_\__i$].
Zhangsan even Lisi DOU not like
'Zhangsan, even Lisi, does not like (him).'

b. *IP-external focalization*

[Lian Lisi]$_i$ $[_{IP}$ Zhangsan dou bu xihuan $\_\__i$].
even Lisi Zhangsan DOU not like
'Even Lisi, Zhangsan does not like (him).'

In this section, I focus on IP-internal topicalization and focalization. The remainder of this section is organized as follows: In section 8.1.1, I will propose that IP-internal topicalization and focalization involve movement targeting IP-internal Spec, TopP and IP-internal Spec, FocP, respectively. In section 8.1.2, I will show that IP-internal topicalization and focalization can establish long-distance dependencies between the topicalized or focalized phrase and a deeply embedded object gap across non-finite clause boundaries but cannot establish cross-clausal dependencies. In section 8.1.3, I will show that IP-internal topicalization and focalization exhibit properties of A-movement. In section 8.1.4, I will show that in Mandarin, IP-internal topicalization and focalization contrast with IP-external topicalization and focalization in not showing Principle A reconstruction effects, and remark on cross-linguistic variations with respect to whether A-movement reconstructs for Principle A. In section 8.1.5, I will propose that IP-internal topicalization and focalization involve (successive-cyclic) composite A/Ā-movement to IP-internal Spec, TopP and IP-internal Spec,

FocP, respectively, triggered by a composite probe consisting of a ϕ-feature and a relativized [*Top*] feature on the IP-internal Top head and a composite probe consisting of a ϕ-feature and a relativized [*Foc*] feature on the IP-internal Foc head, respectively.

2.8.1.1 Movement into low IP area

To begin with, IP-internal topicalization and focalization involve movement, as evidenced by the fact that they are subject to island constraints, as seen in (146).

(146) *IP-internal topicalization and focalization: island-sensitive*

*Jingcha (lian) Lisi$_i$ {dou} zhuazou-le [$_{NP}$ yi-ge {dou} ma-guo __$_i$ de ren].
police even Lisi DOU arrest-PRF one-CL DOU scold-EXP REL person
INT: 'The police (even) Lisi arrested the person who once scolded (him).'

In addition, the landing sites of IP-internal topicalization and focalization must be in the low IP area and, crucially, not in the extended VP area (see e.g., Qu 1994; Shyu 1995; Ting 1995; Paul 2002, 2005; Kuo 2009), because the topicalized or focalized phrase can precede a temporal adverb (*zuotian* 'yesterday'), an aspectual adverb (*yijing*, 'already'), a modal verb (*hui* 'will', *yinggai* 'should'), and negation (*mei-you* 'not-have') as seen in (147) and (148).[29]

(147) *IP-internal topicalization*

a. Lisi {?zuotian/*yijing} zhe-ben shu$_i$ {zuotian/yijing} kan-wan-le __$_i$.
Lisi yesterday/already this-CL book yesterday/already read-be.finished-PRF
'Lisi, this book, yesterday/already finished reading (it).'

b. Lisi {*hui/?yinggai/*mei-you} zhe-ben shu$_i$ {hui/yinggai/mei-you}
Lisi will/should/not-have this-CL book will/should/not-have
kan-wan __$_i$.
read-be.finished
'Lisi, this book, will/should/have not finished reading (it).'

(148) *IP-internal focalization*

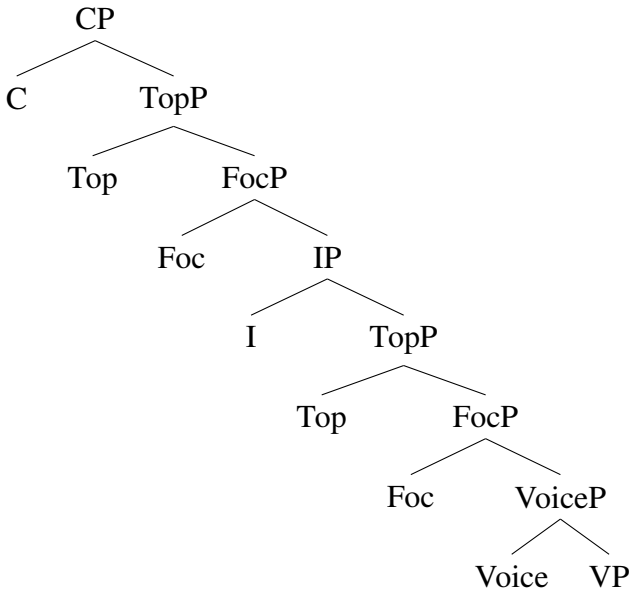
a. Lisi {zuotian/yijing} lian zhe-ben shu$_i$ {zuotian/yijing} dou
Lisi yesterday/already even this-CL book yesterday/already DOU
kan-wan-le __$_i$.
read-be.finished-PRF
'Lisi, even this book, yesterday/already finished reading (it).'

[29] Clearly, the temporal adverbs, aspectual adverbs, modal verbs and negation have different distributions in the case of IP-internal topicalization and in the case of IP-internal focalization. I leave further investigation of this issue to future research.

b. Lisi {hui/yinggai/mei-you} lian zhe-ben shu_i dou {hui/yinggai/mei-you}
Lisi will/should/not-have even this-CL book DOU will/should/not-have
kan-wan $\_\__i$.
read-be.finished
'Lisi, even this book, will/should/have not finished reading (it).'

Hence, I adopt Paul's (2005) proposal that in Mandarin, the projections in the low IP area parallel the projections in the left periphery, as illustrated in (149). Specifically, I assume that IP-external topicalization and focalization target IP-external Spec, TopP and IP-external Spec, FocP, respectively; similarly, IP-internal topicalization and focalization target IP-internal Spec, TopP and IP-internal Spec, FocP, respectively.

(149) *Mandarin left periphery and low area*



2.8.1.2 Restricted long-distance dependencies

Second, IP-internal topicalization and focalization can establish long-distance dependencies between the topicalized or focalized phrase and a deeply embedded object gap across non-finite clause boundaries, as seen in (150) (see e.g., Qu 1994; Ting 1995; Shyu 1995; Kuo 2009).

(150) a. *Long-distance dependency with IP-internal topicalization (object control)*
Li zhe-ben shu_i bi $Zhang_j$ [PRO_j jiao $Wang_k$ [PRO_k kan-guo $\_\__i$]].
Li this-CL book force Zhang order Wang read-EXP
'Li, this book, once forced Zhang to order Wang to read.' (Adapted from Qu 1994: 105, ex. 79)

b. *Long-distance dependency with IP-internal focalization (object control)*
Li lian zhe-ben shu_i dou bi $Zhang_j$ [PRO_j jiao $Wang_k$ [PRO_k kan-guo $\_\__i$]].
Li even this-CL book DOU force Zhang order Wang read-EXP
'Li, even this book, once forced Zhang to order Wang to read.' (Adapted from Shyu 1995: 81, ex. 40b)

However, unlike IP-external topicalization and focalization, IP-internal topicalization and focalization cannot establish cross-clausal dependencies, whether the topicalized or focalized phrase is linked to a finite subject gap or a finite object gap (note the lack of a subject/object contrast here). Concretely, IP-internal topicalization and focalization cannot establish a long-distance, cross-clausal dependency between the topicalized or focalized phrase and a finite object gap, as seen in (151) and (152) (see e.g., Qu 1994; Ting 1995; Shyu 1995; Kuo 2009).

(151) a. *Long-distance, cross-clausal dependency with IP-internal topicalization (finite clause object gap)*
*Lisi zhe-ben shu_i shuo/renwei/zhidao [$_{CP}$ Zhangsan kan-wan-le $\_\__i$].
Lisi this-CL book say/think/know Zhangsan read-be.finished-PRF
INT: 'Lisi, this book, said/thought/knew that Zhangsan finished reading (it).' (Adapted from Qu 1994: 90, ex. 51b)

b. Lisi shuo/renwei/zhidao [$_{CP}$ Zhangsan zhe-ben shu_i kan-wan-le $\_\__i$].
Lisi say/think/know Zhangsan this-CL book read-be.finished-PRF
'Lisi said/thought/knew that Zhangsan, this book, finished reading (it).' (Adapted from Qu 1994: 90, ex. 51a)

c. *Cf. IP-external topicalization across finite clause boundary*
Zhe-ben shu_i Lisi shuo/renwei/zhidao [$_{CP}$ Zhangsan kan-wan-le $\_\__i$].
this-CL book Lisi say/think/know Zhangsan read-be.finished-PRF
'This book, Lisi said/thought/knew that Zhangsan finished reading (it).' (Adapted from Qu 1994: 91, ex. 52)

(152) a. *Long-distance, cross-clausal dependency with IP-internal focalization (finite clause object gap)*
*Li lian $Zhang_i$ {dou} shuo/renwei/zhidao [$_{CP}$ Wang {dou} bu xihuan $\_\__i$].
Li even Zhang DOU say/think/know Wang DOU not like
INT: 'Li, even Zhang, said/thought/knew that Wang does not like (him).' (Adapted from Shyu 1995: 80, ex. 35)

b. Li shuo/renwei/zhidao [$_{CP}$ Wang lian $Zhang_i$ dou bu xihuan $\_\__i$].
Li say/think/know Wang even Zhang DOU not like
'Li said/thought/knew that Wang, even Zhang, does not like (him).' (Adapted from Shyu 1995: 80, ex. 36)

c. *Cf. IP-external focalization across finite clause boundary*
Lian Zhang$_i$, Li {dou} shuo/renwei/zhidao [$_{CP}$ Wang {dou} bu xihuan $\_\__i$].
even Zhang Li DOU say/think/know Wang DOU not like
'Even Zhang, Li said/thought/knew that Wang does not like (him).' (Adapted from Shyu 1995: 80, ex. 37)

IP-internal topicalization and focalization also cannot establish a cross-clausal dependency between the topicalized or focalized phrase and a finite subject gap, as seen in (153).

(153) a. *Cross-clausal dependency with IP-internal topicalization and focalization (finite clause subject gap)*
*Lisi (lian) zhe-ge ren$_i$ {(dou)} shuo/renwei/zhidao [$_{CP}$ $\_\__i$ {(dou)}
Lisi even this-CL person DOU say/think/know DOU
kan-wan-le zhe-ben shu].
read-be.finished-PRF this-CL book
INT: 'Lisi, (even) this person, said/thought/knew that (he) finished reading this book.'

b. *Cf. IP-external topicalization and focalization across finite clause boundary*
(Lian) zhe-ge ren$_i$, Lisi {(dou)} shuo/renwei/zhidao [$_{CP}$ $\_\__i$ {(dou)}
even this-CL person Lisi DOU say/think/know DOU
kan-wan-le zhe-ben shu].
read-be.finished-PRF this-CL book
'(Even) this person, Lisi said/thought/knew that (he) finished reading this book.'

2.8.1.3 A-properties

Third, IP-internal topicalization and focalization exhibit A-movement-like properties. Specifically, IP-internal topicalization and focalization (i) create new antecedents for anaphor binding, as seen in (154a);[30] (ii) are immune to weak crossover, as seen in (154b); and (iii) do not show reconstruction effects for Principle C, as seen in (154c) (see e.g., Qu 1994; Ting 1995; Shyu 1995; Kuo 2009).

[30]Note that the topicalized or focalized phrase is a SUBJECT (that can bind the compound reflexive *ta-ziji* '3SG-self') but not a subject. Hence, in (i), the subject-oriented reflexive *ziji* 'self' can only take the grammatical subject *Zhangsan* and not the topicalized or focalized phrase *Lisi* as its antecedent.

(i) Zhangsan$_i$ (lian) Lisi$_j$ (dou) bi ziji$_{i/*j}$-de pengyou ma-guo $\_\__j$.
Zhangsan even Lisi DOU force 3SG-self's friend scold-EXP
'Zhangsan$_i$, (even) Lisi$_j$, once forced his$_{i/*j}$ friend to scold (him).'

(154) *IP-internal topicalization and focalization: A-properties*

a. *New antecedents for anaphor binding*

Zhangsan$_i$ (lian) Lisi$_j$ (dou) bi ta-ziji$_{i/j}$-de pengyou ma-guo ___$_j$.
Zhangsan even Lisi DOU force 3SG-self's friend scold-EXP
'Zhangsan$_i$, (even) Lisi$_j$, once forced his$_{i/j}$ friend to scold (him).' (Adapted from Ting 1995: ex. 10c)

b. *No weak crossover*

Zhangsan mei-ge xuesheng$_i$ dou bi ta$_i$-de pengyou ma-guo ___$_i$.
Zhangsan every-CL student DOU force 3SG's friend scold-EXP
'Zhangsan, every student$_i$, once forced his$_i$ friend to scold (him).'

c. *No reconstruction for Principle C*

Zhangsan (lian) Lisi$_i$-de pengyou$_j$ (dou) bi ta$_i$ ma-guo ___$_j$.
Zhangsan even Lisi's friend DOU force 3SG scold-EXP
'Zhangsan, (even) Lisi$_i$'s friend, once forced him$_i$ to scold (him).'

2.8.1.4 A note on Principle A reconstruction

It is worth mentioning that in Mandarin, IP-internal topicalization and focalization also contrast with IP-external topicalization and focalization in not showing Principle A reconstruction effects (see e.g., Qu 1994; Ting 1995; Shyu 1995; Kuo 2009).

As mentioned previously, the compound reflexive *ta-ziji* '3SG-self' is subject to Principle A – it is bound in its minimal governing category with an accessible SUBJECT (see e.g., Huang, Li & Li 2009). Hence, in the prepositional-dative construction in (155), *ta-ziji* '3SG-self' can take either the grammatical subject *Lisi* or the direct object *Zhangsan* as its antecedent.

(155) Lisi$_i$ jieshao-le Zhangsan$_j$ gei ta-ziji$_{i/j}$-de pengyou.
Lisi introduce-PRF Zhangsan to 3SG-self's friend
'Lisi$_i$ introduced Zhangsan$_j$ to his$_{i/j}$ friend.'

In (156a), *ta-ziji* '3SG-self' can take the embedded subject *Lisi* but not the matrix subject *Zhangsan* as its antecedent, which also follows from Principle A. Note that in (156b), where a phrase containing *ta-ziji* '3SG-self' undergoes IP-external topicalization or focalization into the embedded clause left periphery, *ta-ziji* '3SG-self' can take either the embedded subject *Lisi* or the matrix subject *Zhangsan* as its antecedent; in this case, *ta-ziji* '3SG-self' is bound by the embedded subject *Lisi* in the pre-movement position, and is bound by the matrix subject *Zhangsan* in the post-movement position.

(156) a. Zhangsan$_i$ shuo [Lisi$_j$ ma-guo ta-ziji$_{*i/j}$-de pengyou].
Zhangsan say Lisi scold-EXP 3SG-self's friend
'Zhangsan$_i$ said that Lisi$_j$ once scold his$_{*i/j}$ friend.' (Adapted from Huang & Tang 1991: ex. 1b, 34a)

b. *IP-external topicalization and focalization*

Zhangsan$_{i}$ shuo [(lian) ta-ziji$_{i/j}$-de pengyou Lisi$_{j}$ (dou) ma-guo __].
Zhangsan say even 3SG-self's friend Lisi DOU scold-EXP
'Zhangsan$_{i}$ said that (even) his$_{i/j}$ friend, Lisi$_{j}$ once scolded (him).' (Adapted from Huang & Tang 1991: 34b)

Similarly, in English, a reflexive can be bound either in a pre-movement position or a post-movement position, as seen in (157b); hence, Pesetsky (2013) (see also Belletti & Rizzi 1988) states that Principle A holds as a "somewhere" condition: when a phrase XP moves and occupies both a pre-movement position and a post-movement position, a reflexive contained within XP is licensed so long as it satisfies Principle A within at least one of these positions.

(157) a. John$_{i}$ said that Bill$_{j}$ likes every picture of himself$_{i/j}$. (Huang & Tang 1991: 33a)
b. John$_{i}$ said that every picture of himself$_{i/j}$ Bill$_{j}$ likes __. (Huang & Tang 1991: 33b)

Interestingly, in Mandarin, IP-internal topicalization and focalization do not show Principle A reconstruction effects. In (158a), the topicalized or focalized phrase containing *ta-ziji* '3SG-self' can be bound by the matrix subject *Zhangsan* in the post-movement position, but cannot be bound by the embedded subject *Lisi* in the pre-movement position.

(158) a. *IP-internal topicalization and focalization: no reconstruction for Principle A*

Zhangsan$_{i}$ (lian) ta-ziji$_{i/*j}$-de pengyou dou bi Lisi$_{j}$ ma-guo __.
Zhangsan even 3SG-self's friend DOU force Lisi scold-EXP
'Zhangsan$_{i}$, (even) his$_{i/*j}$ friend, forced Lisi$_{j}$ to scold (him).' (Adapted from Ting 1995: ex. 11b)

b. *Cf. IP-external topicalization and focalization: reconstruction for Principle A*

(Lian) ta-ziji$_{i/j}$-de pengyou, Zhangsan$_{i}$ (dou) bi Lisi$_{j}$ ma-guo __.
even 3SG-self's friend Zhangsan DOU force Lisi scold-EXP
'(Even) his$_{i/j}$ friend, Zhangsan$_{i}$ forced Lisi$_{j}$ to scold (him).' (Adapted from Ting 1995: ex. 11a)

The BEI-construction, which under the proposed analysis involves (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement, also does not show Principle A reconstruction effects, as seen in (159).

(159) BEI-*construction: no reconstruction for Principle A*

*Ta-ziji$_{*i/j}$-de pengyou bei Zhangsan$_{i}$ bi Lisi$_{j}$ ma-guo __.
3SG-self's friend BEI Zhangsan force Lisi scold-EXP
INT: 'His$_{*i/j}$ friend was once forced Lisi$_{j}$ to scold by Zhangsan$_{i}$.'

Hence, I suggest that in Mandarin, the lack of Principle A reconstruction effects is a property associated with composite A/Ā-movement (and A-movement), but is not a property of Ā-movement.

In this respect, Mandarin is like Dutch and unlike English. In Dutch passivized double-object constructions, raising of the direct object to the grammatical subject position is optional, which gives rise to variation in surface order. In (160a), the direct object stays in-situ, and the reflexive *zichzelf* 'self' contained within the direct object can be bound by the indirect object *Marie* 'Mary' (due to Principle A). In (160b), the direct object raises to the grammatical subject position of the embedded clause, where it must be interpreted as bound by the matrix subject *Jan* 'John'.

(160) *Dutch: A-movement does not reconstruct for Principle A*

a. Jan_i ziet [Marie_j [een foto van $\text{zichzelf}_{i/j}$] getoond worden].
John see Mary a photo of self shown be
'John sees Mary being shown a photo of himself/herself.' (Neeleman & Van De Koot 2010 ex. 17a)

b. Jan_i ziet [[$_{\text{NP}}$ een foto van $\text{zichzelf}_{i/*j}$] Marie_j __ getoond worden].
John sees a photo of self Mary shown be
'John sees a photo of himself being shown to Mary.' (Neeleman & Van De Koot 2010 ex. 17b)

By contrast, in English, Principle A continues to be a "somewhere" condition in the case of A-movement. In (161a) and (161b), the reflexive *herself* can still be bound in the pre-movement position after subject-to-subject raising.

(161) *English: A-movement reconstructs for Principle A (Pesetsky 2013: ex. 27)*

a. [This aspect of herself_i] seemed to Mary_i [__ to be a virtue].
b. [This side of herself_i] struck Mary_i as [__ problematic].
c. *[This aspect of herself_i] seemed to [Mary_i's father] [__ to be a virtue].
d. *[This side of herself_i] struck [Mary_i's father] as [__ problematic].

2.8.1.5 Proposed analysis

Because IP-internal topicalization and focalization cannot establish cross-clausal dependencies and exhibit properties of A-movement, Qu (1994), Ting (1995), Shyu (1995), Kuo (2009), among others, have proposed to analyze IP-internal topicalization and focalization as instances of A-movement targeting A-positions. Such an analysis has several problems.

First, under the featural view of the A/Ā-distinction (Van Urk 2015), A-movement is triggered by a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature); but IP-internal topicalization and focalization can establish long-distance dependencies between the topicalized or focalized phrase and a deeply embedded object gap across non-finite clause boundaries, hence cannot be triggered by pure ϕ-probes.

Second, as seen previously, IP-internal topicalization and focalization cannot establish a cross-clausal dependency between the topicalized or focalized phrase and a finite subject gap (via an intermediate step of A-movement to Spec, CP) – I take this to indicate that the IP-internal Top and

IP-internal Foc heads do not host pure ϕ-probes. Specifically, I have suggested that in Mandarin, the pure ϕ-probe on the C head (which triggers A-movement to Spec, CP in the case of hyper-raising to subject) must be licensed by a pure ϕ-probe within the adjacent higher clause (e.g., the pure ϕ-probe on Infl, in the case of hyper-raising to subject); if the IP-internal Top and IP-internal Foc heads host pure ϕ-probes, then it should be possible for IP-internal topicalization and focalization to involve an intermediate step of A-movement to Spec, CP, contrary to fact.

Lastly, IP-internal topicalization and focalization carry the same information structure properties as their IP-external counterparts (despite their syntactic differences) – if the IP-external Top and IP-internal Foc heads host a [*Top*] feature and a [*Foc*] feature, respectively, it makes most sense if the IP-internal Top and IP-internal Foc heads also host a [*Top*] feature and a [*Foc*] feature, respectively.

That said, IP-internal topicalization and focalization also should not be analyzed as instances of Ā-movement, on a par with IP-external topicalization and IP-internal focalization, because of their syntactic differences.

Hence, I propose to extend the proposal that mixed A/Ā-properties are direct consequences of composite A/Ā-movement further by analyzing IP-internal topicalization and focalization, which exhibit mixed A/Ā-properties, as involving (successive-cyclic) composite A/Ā-movement to IP-internal Spec, TopP and IP-internal Spec, FocP, respectively, triggered by a composite probe consisting of a ϕ-feature and a relativized [*Top*] feature on the IP-internal Top head and a composite probe consisting of a ϕ-feature and a relativized [*Foc*] feature on the IP-internal Foc head, respectively, as illustrated in (162).

(162) a. *IP-internal topicalization as successive-cyclic composite movement*

$[_{IP}\ NP_{i[\phi]}\ Infl_{[\phi]}\ [_{TopP}\ NP_{j[\phi],[Top]}\ Top_{[\phi+Top]}\ \ldots\ [_{VoiceP}\ t_i\ t_j\ Voice_{[\phi+Top]}\ \ldots\ t_j\ (\ldots)\ ]]]$

A/Ā-movement; A/Ā-movement

b. *IP-internal focalization as successive-cyclic composite movement*

$[_{IP}\ NP_{i[\phi]}\ Infl_{[\phi]}\ [_{FocP}\ NP_{j[\phi],[Foc]}\ Foc_{[\phi+Foc]}\ \ldots\ [_{VoiceP}\ t_i\ t_j\ Voice_{[\phi+Foc]}\ \ldots\ t_j\ (\ldots)\ ]]]$

A/Ā-movement; A/Ā-movement

Importantly, the Voice head, which heads a phase (Chomsky 2001), must also host a composite probe consisting of a ϕ-feature and a relativized [*Top*] feature, for purposes of successive-cyclic IP-internal topicalization, and host a composite probe consisting of a ϕ-feature and a relativized [*Foc*] feature, for purposes of successive-cyclic IP-internal focalization. In section 8.2, I will extend this proposal further by arguing that IP-external topicalization and focalization, which are instances of Ā-movement, can also involve an intermediate step of composite A/Ā-movement to Spec, VoiceP. In addition, a technical detail I will justify also in section 8.2 is that IP-internal topicalization and focalization target inner specifiers of the VoiceP, below the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase.

2.8.2 IP-external topicalization and focalization via composite A/Ā-movement

In this section, I focus on IP-external topicalization and focalization. Previously, it has been established that IP-external topicalization is an instance of Ā-movement, because it (i) does not create new antecedents for anaphor binding, as seen in (163a); (ii) is subject to weak crossover, as seen in (163b); and (iii) shows reconstruction effects for Principle C, as seen in (163c). The same conclusion can be extended to IP-external focalization (see e.g., Huang 1993; Qu 1994; Shyu 1995; Kuo 2009; a.o.).

(163) *IP-external topicalization: Ā-properties*

a. *No new antecedents for anaphor binding*
*Lisi$_i$, (ta-)ziji$_i$-de tonghuo bipo Zhangsan pai jingcha zhuazou-le ___$_i$.
Lisi 3SG-self's complice force Zhangsan send police arrest-PRF
INT: 'Lisi$_i$, his$_i$ complice forced Zhangsan to send the police to arrest (him$_i$).'

b. *Weak crossover*
*Mei-ge xiaotou$_i$, ta$_i$-de tonghuo dou bipo Zhangsan pai jingcha zhuazou-le
every-CL thief 3SG's complice DOU force Zhangsan send police arrest-PRF
___$_i$.
INT: 'Every thief$_i$, his$_i$ complice forced Zhangsan to send the police to arrest (him$_i$).'

c. *Reconstruction for Principle C*
?*Lisi$_i$-de tonghuo$_j$, ta$_i$ bipo Zhangsan pai jingcha zhuazou-le ___$_j$.
Lisi's friend 3SG force Zhangsan send police arrest-PRF
INT: 'Lisi$_i$'s complice$_j$, he$_i$ forced Zhangsan to send the police to arrest (him$_j$).'

By contrast, IP-internal topicalization and focalization (i) create new antecedents for anaphor binding, as seen in (164a); (ii) are immune to weak crossover, as seen in (164b); and (iii) do not show reconstruction effects for Principle C, as seen in (164c) (see e.g., Qu 1994; Ting 1995; Shyu 1995; Kuo 2009).

(164) *IP-internal topicalization and focalization: A-properties*

a. *New antecedents for anaphor binding*
Zhangsan$_i$ (lian) Lisi$_j$ (dou) bi ta-ziji$_{i/j}$-de pengyou ma-guo ___$_j$.
Zhangsan even Lisi DOU force 3SG-self's friend scold-EXP
'Zhangsan$_i$, (even) Lisi$_j$, once forced his$_{i/j}$ friend to scold (him).' (Adapted from Ting 1995: ex. 10c)

b. *No weak crossover*
Zhangsan mei-ge xuesheng$_i$ dou bi ta$_i$-de pengyou ma-guo ___$_i$.
Zhangsan every-CL student DOU force 3SG's friend scold-EXP
'Zhangsan, every student$_i$, once forced his$_i$ friend to scold (him).'

c. *No reconstruction for Principle C*

Zhangsan (lian) Lisi_i-de pengyou_j (dou) bi ta_i ma-guo $\_\_{}_j$.
Zhangsan even Lisi's friend DOU force 3SG scold-EXP
'Zhangsan, (even) Lisi_i's friend, once forced him_i to scold (him).'

The following additional examples of IP-external topicalization and focalization in (165) and the previous examples of IP-internal topicalization and focalization in (164) are *minimal pairs*. Interestingly, while it remains to be the case that IP-external topicalization and focalization cannot create new antecedents for anaphor binding, as seen in (165a), the examples of IP-external topicalization and focalization in (165b) and (165c), like their IP-internal counterparts, show no weak crossover or Principle C reconstruction effects.

(165) a. *IP-external topicalization and focalization: no new antecedents for anaphor binding*

(Lian) Lisi_i, Zhangsan_j (dou) bi (ta-)$\text{ziji}_{*i/j}$-de pengyou ma-guo $\_\_{}_i$.
even Lisi Zhangsan DOU force 3SG-self's friend scold-EXP
'(Even) Lisi_i, Zhangsan_j, once forced $\text{his}_{*i/j}$ friend to scold (him).' (Adapted from Ting 1995: ex. 10b)

b. *IP-external topicalization: no weak crossover*

Mei-ge xuesheng_i, Zhangsan dou bi ta_i-de pengyou ma-guo $\_\_{}_i$.
every-CL student Zhangsan DOU force 3SG's friend scold-EXP
'Every student_i, Zhangsan once forced his_i friend to scold (him).'

c. *IP-external topicalization and focalization: no reconstruction for Principle C*

(Lian) Lisi_i-de pengyou_j, Zhangsan (dou) bi ta_i ma-guo $\_\_{}_j$.
even Lisi's friend Zhangsan DOU force 3SG scold-EXP
'(Even) Lisi_i's friend, Zhangsan once forced him_i to scold (him).'

In addition, recall that IP-internal topicalization and focalization do not show Principle A reconstruction effects, as seen in (166a); by contrast, IP-external topicalization and focalization shows Principle A reconstruction effects, as seen in (166b).

(166) a. *IP-internal topicalization and focalization: no reconstruction for Principle A*

Zhangsan_i (lian) ta-$\text{ziji}_{i/*j}$-de pengyou dou bi Lisi_j ma-guo $\_\_$.
Zhangsan even 3SG-self's friend DOU force Lisi scold-EXP
'Zhangsan_i, (even) $\text{his}_{i/*j}$ friend, forced Lisi_j to scold (him).' (Adapted from Ting 1995: ex. 11b)

b. *Cf. IP-external topicalization and focalization: reconstruction for Principle A*
(Lian) ta-ziji$_{i/j}$-de pengyou, Zhangsan$_i$ (dou) bi Lisi$_j$ ma-guo __.
even 3SG-self's friend Zhangsan DOU force Lisi scold-EXP
'(Even) his$_{i/j}$ friend, Zhangsan$_i$ forced Lisi$_j$ to scold (him).' (Adapted from Ting 1995: ex. 11a)

In the remainder of this section, I will answer the following questions: First, why is it the case that IP-external topicalization and focalization sometimes show weak crossover and Principle C reconstruction effects, but sometimes do not? I will answer this question in section 8.2.1. Second, why IP-external topicalization and focalization never create new antecedents for anaphor binding? I will answer this question in section 8.2.2. Lastly, why IP-external topicalization and focalization always show Principle A reconstruction effects? I will answer this question in 8.2.3.

2.8.2.1 Why weak crossover/Principle C reconstruction, why no weak crossover/Principle C reconstruction?

First, it is important to note that the contrasts between (163b) and (165b) and between (163c) and (165c) are not due to inconsistent judgements. Qu (1994) has also reported that IP-external topicalization sometimes shows weak crossover and Principle C reconstruction effects, as seen in (167a) and (168a), but sometimes does not, as seen in (167b) and (168b).

(167) a. *IP-external topicalization: weak crossover*
?*Mei-ge xuesheng$_i$, wo dou gaosu-guo ta$_i$-de jiazhang [$_{CP}$ ni xihuan __$_i$].
every-CL student 1SG DOU tell-EXP 3SG's parents you like
INT: 'Every student$_i$, I once told his$_i$ parents that you like (him).' (Adapted from Qu 1994: 55, 68b)

b. *IP-external topicalization: no weak crossover*
Mei-ge xuesheng$_i$, wo dou xiang ta$_i$-de jiazhang biaoyang-guo __$_i$.
every-CL student 1SG DOU to 3SG's parents praise-EXP
'Every student$_i$, I to his$_i$ parents praised (him).' (Adapted from Qu 1994: 40, ex. 54b)

(168) a. *IP-external topicalization: reconstruction for Principle C*
Lisi$_i$-de shu, ta$_{*i/j}$ ji-gei-le Zhangsan __$_i$.
Lisi's book 3SG send-to-PRF Zhangsan
'Lisi$_i$'s book, 3SG$_{*i/j}$ sent Zhangsan (it).' (Adapted from Qu 1994: 37, ex. 49b)

b. *IP-external topicalization: no reconstruction for Principle C*
Lisi$_i$-de shu$_j$, wo ji-gei-le ta$_i$ __$_j$.
Lisi's book 1SG send-to-PRF 3SG
'Lisi$_i$'s book, I sent him$_i$ (it).' (Adapted from Qu 1994: 41, ex. 55b)

To account for the contrasts in (167) and (168), Qu (1994) proposes that IP-external topicalization can either be an instance of A-movement targeting an A-position (Spec, AgrOP), or an instance of Ā-movement targeting an Ā-position (some CP-adjoined position). Such a proposal has a basic logical flaw: if IP-external topicalization can be an instance of A-movement, then ill-formedness due to weak crossover or Principle C reconstruction should always be avoidable, contrary to fact.

On a closer look, it should not be hard to see that whether or not weak crossover and Principle C reconstruction effects occur is *conditioned on the syntactic position of the pronoun that is co-indexed with and crossed over by the topicalized or focalized phrase*. Specifically, all of (163b), (163c), (167a) and (168a) are cases where the pronoun is contained within a phrase located in Spec, IP/outside the VoiceP phase, or outside the CP phase; in these cases, IP-external topicalization and focalization shows weak cross-over and Principle C reconstruction effects, which are properties of Ā-movement. By contrast, all of (165b), (165c), (167a) and (168a) are cases where the pronoun is contained within a phrase located inside the VoiceP phase; in these cases, IP-external topicalization and focalization do not show weak cross-over and Principle C reconstruction effects, which are properties of (A-movement and) composite A/Ā-movement.[31]

This contrast leads to a straightforward analysis. Previously, I have proposed that the Voice head must host a composite probe consisting of a ϕ-feature and a relativized [*Top*] feature for purposes of successive-cyclic IP-internal topicalization, and host a composite probe consisting of a ϕ-feature and a relativized [*Foc*] feature for purposes of successive-cyclic IP-internal focalization. This very proposal naturally extends to IP-external topilcaization and focalization; that is, IP-external topicalization and focalization, which involve Ā-movement to IP-external Spec, TopP and IP-external Spec, FocP, respectively, triggered by a relativized [*Top*] feature on the IP-external Top head and a relativized [*Foc*] feature on the IP-external Foc head, respectively, can also involve an intermediate step of composite A/Ā-movement to Spec, VoiceP, as illustrated in (169).

(169) a. *IP-external topicalization via composite movement*

$[_{\text{TopP}}\ \text{NP}_{i[\phi],[Top]}\ \text{Top}_{[\phi+Top]}\ [_{\text{IP}}\ \text{NP}_{j[\phi]}\ \text{Infl}_{[\phi]}\ \ldots\ [_{\text{VoiceP}}\ t_i\ t_j\ \text{Voice}_{[\phi+Top]}\ \ldots\ t_i\ (\ldots)\ ]]]$

Ā-movement; A/Ā-movement

b. *IP-external focalization via composite movement*

$[_{\text{FocP}}\ \text{NP}_{i[\phi],[Foc]}\ \text{Foc}_{[\phi+Foc]}\ [_{\text{IP}}\ \text{NP}_{j[\phi]}\ \text{Infl}_{[\phi]}\ \ldots\ [_{\text{VoiceP}}\ t_i\ t_j\ \text{Voice}_{[\phi+Foc]}\ \ldots\ t_i\ (\ldots)\ ]]]$

Ā-movement; A/Ā-movement

A technical detail I will justify in section 8.2.2 is that IP-external topicalization and focalization target outer specifiers of the VoiceP, above the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase.

[31] It is worth mentioning that scrambling in Hindi (see e.g., Mahajan 1990), Russian (see e.g., Bailyn 1995, 2004), Japanese (see e.g., Miyagawa 2001, 2011), etc., also exhibits Ā-properties vs. mixed A/Ā-properties depending on the landing site of the scrambled phrase.

2.8.2.2 Why no new antecedents for anaphor binding?

Given that both IP-internal topicalization and focalization and IP-external topicalization and focalization (can) involve an intermediate step of composite A/Ā-movement to Spec, VoiceP, a question arises as to why IP-internal topicalization and focalization create new antecedents for anaphor binding, but IP-external topicalization and focalization never create new antecedents for anaphor binding – specifically, why the topicalized or focalized phrase cannot bind a reflexive at the edge of the VoiceP phase.

Recall that the compound reflexive *ta-ziji* '3SG-self' is subject to Principle A – it is bound in its minimal governing category with an accessible SUBJECT (see e.g., Huang, Li & Li 2009). I suggest that at the edge of the VoiceP phase, the external argument introduced by Voice delimits the binding domain for reflexives that lack a more locally accessible SUBJECT. Because IP-internal topicalization and focalization target inner specifiers of the VoiceP, below the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase, the topicalized or focalized phrase is within the binding domain for reflexives that lack a more locally accessible SUBJECT. By contrast, because IP-external topicalization and focalization target outer specifiers of the VoiceP, above the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase, the topicalized or focalized phrase is outside of the binding domain for reflexives that are bound by the external argument.[32]

2.8.2.3 Why Principle A reconstruction?

Lastly, as for why IP-external topicalization and focalization, unlike their IP-internal counterparts, show Principle A reconstruction effects, the answer is straightforward: intermediate Ā-movement should always be possible. Accordingly, it must be assumed that the Voice head also hosts pure Ā-probes (which are relativized to specific features, e.g., [*Top*] for IP-external topicalization, and [*Foc*] for IP-external focalization, for purposes of successive-cyclic movement).

2.9 Conclusion

The BEI-construction in Mandarin is a well studied construction known for exhibiting both passive-like properties and *tough*-movement-like properties (see Feng 1995, 2012; Ting 1995, 1998; Huang 1999; Tang 2001; Huang, Li & Li 2009; Bruening & Tran 2015; a.o.). I argued for a novel analysis of the BEI-construction in Mandarin as a passive construction where the passive head/BEI hosts a composite probe [ϕ+$\bar{A}$], which triggers composite A/Ā-movement, in the sense of Van Urk (2015).

[32] Another reason to assume that IP-internal topicalization and focalization target inner specifiers of the VoiceP, below the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase, while IP-external topicalization and focalization target outer specifiers of the VoiceP, above the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase, is in light of cyclic linearization, which requires that the linear orderings of phrases established by phase-by-phase spell-out be consistent throughout a derivation (Davis 2020). Because the final landing sites of IP-internal topicalization and focalization are in the low IP area, below the landing site of the external argument in Spec, IP, the intermediate landing sites of IP-internal topicalization and focalization must also be below the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase. Because the final landing sites of IP-external topicalization and focalization are in the left periphery, above the landing site of the external argument in Spec, IP, the intermediate landing sites of IP-external topicalization and focalization must also be above the thematic position of the external argument in Spec, VoiceP, at the edge of the VoiceP phase.

The subject in the BEI-construction is derived via (successive-cyclic) composite A/Ā-movement, followed by a terminating step of A-movement, similar to Longenbaugh's (2017) analysis of English *tough*-movement. Under the proposed analysis, the mixed A/Ā-properties associated with the BEI-construction are direct consequences of composite A/Ā-movement (following Van Urk 2015; Longenbaugh 2017).

In this section, I conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the BEI-construction.

(i) **What are the universal properties that can be defended on the basis of Mandarin? What does Mandarin contribute to our understanding of the universal properties?**

First, the BEI-construction showcases that passivization embodies Burzio's generalization (which draws a connection between the Voice head's ability of assigning an external theta-role and its ability of assigning accusative case; Burzio 1986), and feature-driven movement. Under the proposed analysis and according to Burzio's generalization, in overt-agent BEI-constructions, the Voice head not only assigns an agent theta-role to the external argument of the matrix verb but also assigns (accusative) case; by contrast, in agent-less BEI-constructions, the Voice head does not assign a theta-role, nor does it assign case. Hence, in agent-less BEI-constructions when there is an overt NP that cannot be assigned case by the matrix Voice head, that NP must become the subject of BEI, where it can receive case from Infl; in such cases, it is predicted that long-distance dependencies between the subject of BEI and a deeply embedded gap in BEI's complement is impossible.

Under the proposed analysis of the BEI-construction as a passive construction, the difference between the BEI-construction and a canonical passive construction involving A-movement, such as the English *be*-passive, lies solely in the feature composition of the probe on the passive head, which determines the type of movement involved and the resulting properties of the passive construction. In the English *be*-passive, passivization is an instance of A-movement, and hence one might assume that the passive head hosts a pure ϕ-probe, which attracts the closest NP (which has a ϕ-feature) – an object of the passivized verb (but see Collins 2005). In the BEI-construction, the passive head/BEI hosts a composite probe $[\phi + \bar{A}]$, which attracts the closest NP with both ϕ- and Ā-features. As a result, the BEI-construction allows for a long-distance dependency between the subject of BEI and a deeply embedded gap in BEI's complement.

In addition, I extended Longenbaugh's (2017) proposal that the distribution of composite probes can be different in different languages: In Dinka, both the C head and the Voice head host a composite probe $[\phi + \bar{A}]$; hence, composite A/Ā-movement can cross finite clause boundaries (Van Urk 2015). In English, only the Voice head (involved in the path of *tough*-movement) hosts a composite probe $[\phi + \bar{A}]$ while the C head only hosts a pure Ā-probe; hence, composite A/Ā-movement can proceed successive-cyclically through the specifiers of successive VoicePs, but cannot proceed from Spec, CP, i.e., following a step of Ā-movement to Spec, CP triggered by the pure Ā-probe on the C head, due to the ban on improper composite A/Ā-movement after Ā-movement (Longenbaugh 2017; but see footnote 17). In Mandarin, the composite probe $[\phi + \bar{A}]$ is present on the passive head/BEI, but is not present on the C head; hence, in Mandarin, a finite clause object can only Ā-move to Spec, CP (because it crosses over the subject), and cannot undergo further composite A/Ā-movement (and A-

movement), due to the ban on composite A/Ā-movement after Ā-movement (following Longenbaugh 2017). Nevertheless, composite probing is more generally observed in Mandarin, in the sense that (i) composite probes are present on multiple heads that project in the low IP area in Mandarin, and (ii) the Voice head generally hosts a composite probe for purposes of successive-cyclic composite A/Ā-movement in Mandarin.

(ii) **How are these universal properties obscured (by apparently distinctive properties) in the relevant Mandarin constructions?**

The BEI-construction is unique in that it exhibits both passive-like and *tough*-movement-like properties. More precisely, the BEI-construction exhibits the same mix of properties as Dinka movement to Spec, CP and English *tough*-movement. Under the proposed analysis of the BEI-construction as a passive construction involving composite A/Ā-movement, the mixed A/Ā-properties associated with the BEI-construction emerge as direct consequences of (successive-cyclic) composite A/Ā-movement, triggered by a composite probe $[\phi + \bar{A}]$ on the passive head/BEI.

(iii) **What is the evidence for these universal properties in Mandarin, despite the apparently distinctive properties associated with the relevant constructions?**

I argued that two restrictions on long-distance dependencies in the BEI-construction follow from the proposed analysis of the BEI-construction as a passive construction where the subject in the BEI-construction is derived via A-movement after (successive-cyclic) composite A/Ā-movement.

First, I argued that the ban on overt NPs intervening between the subject of BEI and the gap in agent-less BEI-constructions follows from the proposed analysis of the BEI-construction as a passive construction and Burzio's generalization (Burzio 1986), which states that all and only the verbs that can assign a theta-role to the (logical) subject can assign accusative case to an object. Basically, in agent-less BEI-constructions, when there is an overt NP that cannot be assigned case by the matrix Voice head, that NP must become the subject of BEI, where it can receive case from Infl; in such cases, it is predicted that long-distance dependencies between the subject of BEI and a deeply embedded gap in BEI's complement is impossible.

Furthermore, I argued that the subject/object contrast with respect to the possibility of crossing a finite clause boundary to become the subject of BEI follows from the possibility of raising to subject via A-movement to Spec, CP, or hyper-raising to subject (see e.g., Fong 2019; Wurmbrand 2019; Lohninger, Kovač & Wurmbrand 2022; a.o.), and the ban on improper Ā-movement to Spec, CP followed by composite A/Ā-movement (see Longenbaugh 2017).

Chapter 3

Causation and affectedness in the Mandarin BA-construction

3.1 Introduction

Since Pylkkänen (2002, 2008), it has been commonly assumed that a *causative construction*, which involves two causally related eventualities – a causing event and a caused/resulting event (Dowty 1979; Parsons 1990; Levin & Rappaport Hovav 1995; a.o.) – has a bi-clausal syntax and bi-eventive semantics, due to the presence of a causative head (Cause), which selects a predicate of the caused/resulting event, and projects a predicate of the causing event, and that the *causer* external argument of Cause is introduced by the Voice head (see also Cuervo 2003; Alexiadou, Anagnostopoulou & Schäfer 2006, 2015; Harley 2008, 2013; Legate 2014; a.o.).

In this chapter, I consider the following three views of *affectedness* (in causative constructions).

The first view, presented by Alsina (1992), appeals to the notion of affectedness in support of an analysis of causative constructions where Cause has a third argument (in addition to the predicate of the caused/resulting event and a causer). This third argument, which I refer to as the *causee* argument of Cause, is interpreted as being affected in the causing event, in the sense that it is caused to perform an action (when it is identified with the logical subject of the root verb which heads the predicate of the caused/resulting event), or undergo a change of state (when it is identified with the logical object of the root verb).

In contrast to Alsina (1992), Sybesma (1992, 1999) proposes that it is the subject of the resultative phrase in a causative construction (rather than a causee argument of Cause) that is linked to an interpretation of affectedness. Hence, according to Sybesma (1992, 1999), causative constructions involving a resultative phrase inherently involve affectedness.

A third perspective on affectedness, based on Li & Thompson (1981: 466-480) (see also Li 2006, 2017; Huang, Li & Li 2009; a.o.), defines affectedness of an object based on how it is physically or non-physically affected, or "handled, manipulated, dealt with", "disposed of" by the subject. This definition of affectedness is not limited to causative constructions. Huang (1992), Li (2006, 2017), Huang, Li & Li (2009) and others specifically assume that an object with an affectedness interpretation is associated with a distinct *affected theme* or *affectee* theta-role.

I contend that Mandarin provides an ideal testing ground for adjudicating between different perspectives on the nature of affectedness (in causative constructions). This is because the BA-*construction* in Mandarin prominently features an apparently pre-posed noun phrase (the post-BA NP) with an affectedness interpretation. The post-BA NP is identified with the subject of a resul-

tative phrase in a complex-predicate BA-construction, and is identified with the direct object of a simple transitive verb in a simple-transitive BA-construction. I argue for a novel analysis of the Mandarin BA-construction as a causative construction, which involves a causative head that selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008), where Cause has two additional arguments: a causer and a causee. The post-BA NP, as the causee argument of the causative head, also controls a PRO subject in a resultative phrase (following Huang 1992), which is overt in a complex-predicate BA-construction and is phonologically null in a simple-transitive BA-construction (following Sybesma 1992, 1999). The post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

The proposed analysis of the BA-construction as a causative construction where the affectedness of the post-BA NP arises from it being the causee argument of Cause and controlling a PRO subject in the resultative phrase aligns with Alsina's (1992) view of affectedness (in causative constructions) and diverges from two alternative analyses of the BA-construction. In contrast to Sybesma's (1992, 1999) causative analysis of the BA-construction, where the post-BA NP is the underlying subject of the resultative phrase not thematically related to the matrix verb, the proposed analysis identifies the post-BA NP as a causee argument of Cause, which also controls a PRO subject in the resultative phrase (following Huang 1992). In contrast to the more prevalent affective analysis of the BA-construction (see e.g., Li & Thompson 1981; Li 2006, 2017; Huang, Li & Li 2009; a.o.), which accounts for the affectedness of the post-BA NP by appealing to an idiosyncratic affectee theta-role, the proposed analysis assumes the presence of a null resultative phrase in simple-transitive BA-constructions (following Sybesma 1992, 1999) and defines the affectedness of the post-BA NP in terms of it being caused to perform an action or undergo a change of state (following Alsina 1992).

To support the proposed analysis of the BA-construction and Alsina's (1992) view of affectedness (in causative constructions) as being associated with the causee argument of Cause and in terms of it being caused to perform an action or undergo a change of state and argue against Sybesma's (1992, 1999) causative analysis of the BA-construction and view of affectedness (in causative constructions) as being associated with the subject of the resultative phrase in a causative construction, I will compare the BA-construction with another causative construction in Mandarin (the *shi*-construction), which contains the causative verb *shi* 'make'. I will show that an affectedness interpretation is always imposed on the post-BA NP in canonical complex-predicate BA-constructions; by contrast, no affectedness interpretation is imposed on the post-*shi* NP in a *shi*-construction, which is a causative construction containing the causative verb *shi* 'make'. Hence, I will argue that the post-BA NP in the BA-construction is a causee argument of Cause being caused to perform an action or undergo a change of state, in the sense of Alsina (1992); by contrast, the post-*shi* NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause. Moreover, I will challenge the affective analysis of the BA-construction which appeals to an idiosyncratic affectee theta-role when accounting for the affectedness of the post-BA NP by arguing that the variable telicity of simple-transitive BA-constructions and two well-formedness constraints on simple-transitive BA-constructions receive a principled explanation under the proposed analysis of simple-transitive BA-constructions, where a null resultative is present, and the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state.

The rest of this chapter is organized as follows: In section 2, I will provide a primer on the BA-construction, where I provide examples of complex-predicate BA-constructions and their cor-

responding transitive resultative constructions, and show two constraints on the well-formedness of a simple-transitive BA-construction and the possibility for a simple-transitive BA-construction to be either telic or atelic. In section 3, I will provide the details of the proposed analysis of the BA-construction as a causative construction with Cause having two additional arguments: a causer and a causee. In section 4, I will contrast the proposed analysis of the BA-construction with Sybesma's (1992, 1999) causative analysis of the BA-construction and Huang's (1992) and Li's (2006, 2017) implementations of the affective analysis of the BA-construction. In section 5, I will show that an affectedness interpretation is always imposed on the post-BA NP in canonical complex-predicate BA-constructions, while no affectedness interpretation is imposed on the post-*shi* NP in a *shi*-construction, based on which I argue that the post-BA NP in the BA-construction is a causee argument of Cause being caused to perform an action or undergo a change of state, in the sense of Alsina (1992), while the post-*shi* NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause. In section 6, I will account for the variable telicity of simple-transitive BA-constructions and the two constraints on the well-formedness of a simple-transitive BA-construction, which crucially relies on the presence of the presence of a null resultative phrase in simple-transitive BA-constructions. In section 7, I will present evidence that in different BA-constructions, Cause selects resultative phrases of different sizes – a root projection, a full-fledged VP, or an IP (see also Pylkkänen 2002, 2008). In section 8, I will use the (im)possibility of having a corresponding BA-construction to diagnose whether or not a ditransitive construction in Mandarin can have a bi-clausal syntax and bi-eventive semantics. Finally, in section 9, I will conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the BA-construction.

3.2 A primer on the BA-construction

The Mandarin BA-construction, which involves an apparently pre-posed noun phrase (the post-BA NP) with an affectedness interpretation, which can be identified with either the subject of a resultative phrase in a complex predicate or the direct object of a simple transitive verb, has been analyzed as a causative construction, expressing how "the subject of BA/causer brings about a new state of affairs which results from the event specified by the (matrix) verb" (Sybesma 1992, 1999: 178), or an affective construction, in which the post-BA NP is physically or non-physically affected or "handled, manipulated, dealt with", "disposed of" by the subject of BA (Li & Thompson 1981: 466-480; see also Li 2006, 2017; Huang, Li & Li 2009; a.o.). Schematically, a BA-construction has a subject, followed by BA and the post-BA NP (which must immediately follow BA), followed by either a complex predicate consisting of a matrix verb and a resultative phrase (XP) or just a simple transitive verb. In a complex-predicate BA-construction, which has a corresponding transitive resultative construction, the post-BA NP is linked to a gap in the subject position of the resultative phrase, as schematized in (1a). In a simple-transitive BA-construction, which has a corresponding simple transitive construction, the post-BA NP is linked to a gap in the direct object position of the simple transitive verb, as schematized in (1b).

(1) a. *Complex-predicate* BA-*construction*
NP BA NP_i V $\_\__i$ XP

b. *Simple-transitive* BA*-construction*
NP BA NP_i V $\_\__i$

The remainder of this section is organized as follows: in section 2.1, I will provide examples of complex-predicate BA-constructions and their corresponding transitive resultative constructions; in section 2.2, I will show two constraints on the well-formedness of a simple-transitive BA-construction and the possibility for a simple-transitive BA-construction to be either telic or atelic; in section 2.3, I will present evidence that BA is best analyzed as the head of a projection taking an extended verbal projection as its complement, rather than a preposition taking the post-BA NP as its complement.

3.2.1 Complex-predicate BA-constructions and their corresponding transitive resultative constructions

In *canonical* complex-predicate BA-constructions and their corresponding *canonical* transitive resultative constructions, (i) the complex predicate consists of a transitive or unergative matrix verb, which specifies the causing event, and a resultative phrase, which specifies the caused/resulting event; (ii) the matrix subject (of BA) is an agentive causer (i.e., the agent argument of the matrix verb which specifies the causing event); and (iii) the post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the theme argument of the matrix verb when the matrix verb is transitive, but has no thematic relation with the matrix verb when the matrix verb is unergative.

Concretely, in (2), the V-DE XP complex predicate consists of a transitive matrix verb and a resultative phrase headed by DE, which is a bound morpheme suffixed to the matrix verb. The matrix subject (of BA) is an agentive causer (i.e., the agent argument of the matrix verb which specifies the causing event). The post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the theme argument of the transitive matrix verb.

(2) a. *Canonical complex-predicate* BA*-construction (transitive matrix verb)*
Wo ba zhe-pi ma_i qi-de $\_\__i$ lei-le.
1SG BA this-CL horse ride-DE be.tired-PRF
'I rode this horse, as a result (this horse) was tired.'

b. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*
Wo qi-de zhe-pi ma lei-le.
1SG ride-DE this-CL horse be.tired-PRF
'I rode this horse, as a result (this horse) was tired.'

In (3), the complex predicate is a V1-V2 compound, where V1 is a transitive matrix verb and V2 heads a resultative phrase. The matrix subject (of BA) is an agentive causer (i.e., the agent argument of the matrix verb which specifies the causing event). The post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the theme argument of the transitive matrix verb.

(3) a. *Canonical complex-predicate* BA*-construction (transitive matrix verb)*
Wo ba zhe-pi ma$_i$ qi-lei-le ___$_i$.
1SG BA this-CL horse ride-be.tired-PRF
'I rode this horse, as a result (this horse) was tired.'

b. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*
Wo qi-lei-le zhe-pi ma.
1SG ride-be.tired-PRF this-CL horse
'I rode this horse, as a result (this horse) was tired.'

In (4) and (5), the matrix verb is unergative; the matrix subject (of BA) is an agentive causer (i.e., the agent argument of the matrix verb which specifies the causing event); the post-BA or post-verbal NP, which the resultative phrase is predicated of, has no thematic relation with the unergative matrix verb.

(4) a. *Canonical complex-predicate* BA*-construction (unergative matrix verb)*
Wo ba Lisi$_i$ ku-de ___$_i$ fan-le.
1SG BA Lisi cry-DE be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

b. *Canonical transitive resultative/Non-selected NP resultative (unergative matrix verb)*
Wo ku-de Lisi fan-le.
1SG cry-DE Lisi be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

(5) a. *Canonical complex-predicate* BA*-construction (unergative matrix verb)*
Wo ba Lisi$_i$ ku-fan-le ___$_i$.
1SG BA Lisi cry-be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

b. *Canonical transitive resultative/Non-selected NP resultative (unergative matrix verb)*
Wo ku-fan-le Lisi.
1SG cry-be.annoyed-PRF Lisi
'I cried, as a result Lisi was annoyed.'

In *non-canonical* complex-predicate BA-constructions and their corresponding *non-canonical* transitive resultative constructions, (i) the complex predicate consists of an unaccusative, unergative or transitive matrix verb, which specifies the causing event, and a resultative phrase, which specifies the caused/resulting event; (ii) the matrix subject (of BA) is a non-agentive causer, which is also identified with a source of emotion/cognition when the matrix verb is unaccusative or unergative, or the theme argument of a transitive matrix verb; and (iii) the post-BA or post-verbal NP, which

the resultative phrase is predicated of, is also identified with the sole argument of the matrix verb when the matrix verb is unaccusative or unergative, and is identified with the agent argument of the matrix verb when the matrix verb is transitive.

Concretely, in (6) and (7), where the matrix verb is unaccusative, the matrix subject (of BA) is a non-agentive causer, which is also identified with a source of emotion/cognition (e.g., this matter is what Lisi was excited *about*); the post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the sole argument of the unaccusative matrix verb.

(6) a. *Non-canonical complex-predicate* BA*-construction (unaccusative matrix verb)*
Zhe-jian shi ba Lisi$_i$ jidong-de __$_i$ ku-le.
this-CL matter BA Lisi be.excited-DE cry-PRF
'This matter made Lisi excited, as a result (Lisi) cried.'

b. *Non-canonical transitive resultative (unaccusative matrix verb)*
Zhe-jian shi jidong-de Lisi ku-le.
this-CL matter be.excited-DE Lisi cry-PRF
'This matter made Lisi excited, as a result (Lisi) cried.'

(7) a. *Non-canonical complex-predicate* BA*-construction (unaccusative matrix verb)*
Zhe-jian shi ba Lisi$_i$ ji-ku-le __$_i$.
this-CL matter BA Lisi be.worried-cry-PRF
'This matter made Lisi worried, as a result (Lisi) cried.'

b. *Non-canonical transitive resultative (unaccusative matrix verb)*
Zhe-jian shi ji-ku-le Lisi.
this-CL matter be.worried-cry-PRF Lisi
'This matter made Lisi worried, as a result (Lisi) cried.'

Similarly, in (8) and (9), where the matrix verb is unergative, the matrix subject (of BA) is a non-agentive causer, which is also identified with a source of emotion/cognition (e.g., this matter is what Lisi was crying *about*); the post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the sole argument of the unergative matrix verb.

(8) a. *Non-canonical complex-predicate* BA*-construction (unergative matrix verb)*
Zhe-jian shi ba Lisi$_i$ ku-de __$_i$ lei-le.
this-CL matter BA Lisi cry-DE be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (unergative matrix verb)*
Zhe-jian shi ku-de Lisi lei-le.
this-CL matter cry-DE Lisi be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

(9) a. *Non-canonical complex-predicate* BA*-construction (unergative matrix verb)*

Zhe-jian shi ba Lisi$_i$ ku-lei-le __$_i$.
this-CL matter BA Lisi cry-be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (unergative matrix verb)*

Zhe-jian shi ku-lei-le Lisi.
this-CL matter cry-be.tired-PRF Lisi
'This matter made Lisi cry, as a result (Lisi) was tired.'

Lastly, in (10) and (11), where the matrix verb is transitive, the matrix subject (of BA) is a non-agentive causer, which is also identified with the theme argument of the transitive matrix verb; the post-BA or post-verbal NP, which the resultative phrase is predicated of, is also identified with the agent argument of the transitive matrix verb.

(10) a. *Non-canonical complex-predicate* BA*-construction (transitive matrix verb)*

Zhe-pi ma ba Lisi$_i$ qi-de __$_i$ lei-le.
this-CL horse BA Lisi ride-DE be.tired-PRF
Lit. 'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (transitive matrix verb)*

Zhe-pi ma qi-de Lisi lei-le.
this-CL horse ride-DE Lisi be.tired-PRF
Lit. 'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

(11) a. *Non-canonical complex-predicate* BA*-construction (transitive matrix verb)*

Zhe-pi ma ba Lisi$_i$ qi-lei-le __$_i$.
this-CL horse BA Lisi ride-be.tired-PRF
Lit. 'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (transitive matrix verb)*

Zhe-pi ma qi-lei-le Lisi.
this-CL horse ride-be.tired-PRF Lisi
Lit. 'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

I will analyze canonical complex-predicate BA-constructions and their corresponding canonical transitive resultative constructions in section 3 of this chapter, and argue for the proposed analysis of canonical complex-predicate BA-constructions and their corresponding canonical transitive resultative constructions in section 5 of this chapter. I will analyze non-canonical transitive resultative constructions (which have corresponding non-canonical complex-predicate BA-constructions)

and argue for the proposed analysis of non-canonical transitive resultative constructions (which have corresponding non-canonical complex-predicate BA-constructions) in chapter 4 of this dissertation.

3.2.2 Well-formedness constraints on simple-transitive BA-constructions

In contrast to complex-predicate BA-constructions, which involve a complex predicate which consists of a matrix verb which specifies the causing event and a resultative phrase which specifies the caused/resulting event, a simple-transitive BA-construction, as exemplified by (12a), involves just a simple transitive verb (which is marked with the perfective *-le* in (12a)).

(12) a. *Simple-transitive* BA*-construction*
Wo ba Lisi$_i$ ma-le __$_i$.
1SG BA Lisi scold-PRF
'I scolded Lisi.'

b. *Simple transitive construction*
Wo ma-le Lisi.
1SG scold-PRF Lisi
'I scolded Lisi.'

One constraint on the well-formedness of a simple-transitive BA-construction is that the post-BA NP must be affected in the event specified by the (matrix) verb. The affective analysis of the BA-construction defines the affectedness interpretation of the post-BA NP in terms of it being physically or non-physically affected or "handled, manipulated, dealt with", "disposed of" by the subject of BA (Li & Thompson 1981: 466-480; see also Li 2006, 2017; Huang, Li & Li 2009; a.o.). Concretely, under the affective analysis of the BA-construction, the simple-transitive BA-construction in (12a) is well-formed, because the post-BA NP, *Lisi*, is affected by being scolded. In contrast, the simple-transitive BA-construction in (13a) is ill-formed, because the post-BA NP, *Lisi*, is not affected by being seen or heard.

(13) a. *Wo ba Lisi$_i$ kanjian/tingjian-le __$_i$.
1SG BA Lisi see/hear-PRF
INT: 'I saw/heard Lisi.' (Adapted from Li & Thompson 1981: 468: ex. 24; Huang 1992: ex. 42a)

b. Wo kanjian/tingjian-le Lisi.
1SG see/hear-PRF Lisi
'I saw/heard Lisi.'

The BA-constructions in (14) are well-formed and involve verbs of emotion, *ai* 'love' and *xiang* 'miss', where the post-BA NP, *xiao mao* 'small cat', or *ni* 'you', is not physically affected by being loved or missed.

(14) a. Ta ba xiao mao ai-de yao si.
3SG BA small cat love-DE want die.
'He loves the small cat to death/the extent that (he) wants to die.' (Adapted from Li & Thompson 1981: 469, ex. 27)

b. Ta ba ni xiang-de (ta) lian fan dou bu xiang chi-le.
3SG BA you miss-DE meal he even DOU not want eat-PRF
'He misses you so much that (he) does not want to eat even his meal.' (Adapted from Li & Thompson 1981: 469, ex. 28)

To account for the well-formedness of the BA-constructions in (14), Li & Thompson (1981: 466-480) suggest that the notion of affectedness should include both physical and non-physical/imaginary situations – in (14a), the post-verbal degree phrase *yao si* 'to death/the extent that (he) wants to die' "creates an image that such intense love must have some effect on the small cat" (Li & Thompson 1981: 469). Similarly, in (14b), the post-verbal degree phrase *(ta) lian fan dou bu xiang chi-le* '(he) does not want to eat even his meal' "greatly exaggerates the degree of his missing you"; "it is as if one cannot help thinking that you are affected in some way when he misses you to such an extent that he cannot even eat".

Another constraint on the well-formedness of a simple-transitive BA-construction is that BA is incompatible with a VP consisting solely of a simple transitive verb in its bare form and a (specific) object (as the post-BA NP); there needs to be "something else, X, either before or after the verb" (Li 2006, 2017; see also Liu 1997; a.o.). In Mandarin, a VP consisting solely of a bare verb and a (specific) object occurs in infinitival complements, e.g., when embedded under a control verb (e.g., *xiang* 'want') or a modal verb (e.g., *hui* 'will'), as seen in (15a); BA is incompatible with such a VP, as seen in (15b).

(15) a. Wo xiang/hui kan na-feng xin.
1SG want/will read that-CL nook
'I want to/will read that letter.'

b. *Wo xiang/hui ba na-feng xin_i kan $\_\__i$.
1SG want/will BA that-CL letter read
INT: 'I want to/will read that letter.'

Li (2006, 2017) (see also Liu 1997; a.o.) has identified various options for the so-called "X factor" which is necessary in order to make a simple-transitive BA-construction well-formed. I focus on three representative cases here and will discuss other options in section 6 of this chapter. First, marking the simple transitive verb with the perfective *-le* can make a simple-transitive BA-construction well-formed, as seen in (16). In this case, the resulting well-formed simple-transitive BA-construction in (16) is telic, as it is compatible with an *in*-adverbial (the pre-verbal *zai yi-xiaoshi nei* 'within one hour').

(16) Wo (zai yi-xiaoshi nei) ba na-feng xin kan**-le**.
1SG at one-hour in BA that-CL letter read-PRF
'I read that letter (within one hour).'

Second, modifying the VP with a (post-verbal) measure phrase can also make a simple-transitive BA-construction well-formed, as seen in (17). The resulting well-formed simple-transitive BA-constructions in (17) are also telic, as they are compatible with an *in*-adverbial.

(17) a. Wo xiang/hui (zai yi-xiaoshi nei) ba na-feng xin kan **yi-ge zi**.
1SG want/will at one-hour in BA that-CL letter read one-CL word
'I wan to/will read that letter as far as one word (within one hour).'

b. Wo xiang/hui (zai yi-xiaoshi nei) ba na-feng xin (cong tou dao wei) kan
1SG want/will at one-hour in BA that-CL letter from start to finish read
yi-bian.
one-pass
'I wan to/will read that letter (from start to finish) as far as one pass (within one hour).'

Lastly, modifying the VP with a (pre-verbal) degree/manner adverb can also make a simple-transitive BA-construction well-formed, as seen in (18). Note that, unlike the previous cases, the resulting well-formed simple-transitive BA-constructions in (18) are atelic, as they are compatible with a *for*-adverbial (the post-verbal *yi-xiaoshi* 'for one hour').

(18) a. Wo xiang/hui ba na-feng xin **zixi-de/yi-zi-yi-zi-de** kan
1SG want/will BA that-CL letter carefully/one-word-one-word-MOD read
(yi-xiaoshi).
one-hour
'I want to/will read that letter carefully/word for word (for one hour).'

b. Wo xiang/hui ba na-feng xin **fanfu-de/yi-bian-yi-bian-de** kan
1SG want/will BA that-CL letter repeatedly/one-pass-one-pass-MOD read
(yi-xiaoshi).
one-hour
'I want to/will read that letter repeatedly/over and over again (for one hour).'

The variability in telicity exhibited by the BA-construction can be further highlighted by contrasting the following minimal pair (see also Li 2006, 2017; a.o.): In (19), the BA-construction, where the verb *tui* 'push' is followed by the PP *dao fangjian-li* 'into the room', is telic, as it is compatible with an *in*-adverbial and incompatible with a *for*-adverbial.

(19) a. Wo xiang/hui (zai yi-xiaoshi nei) ba xiangzi tui **dao fangjian-li**.
1SG want/will at one-hour in BA box push to room-in
'I want to/will push the box into the room (within one hour).'

b. *Wo xiang/hui ba xiangzi tui **dao fangjian-li** yi-xiaoshi.
1SG want/will BA box push at room-in one-hour
INT: 'I want to/will push the box into the room for one hour.'

By contrast, in (20), the BA-construction, where the same verb *tui* 'push' is preceded by the PP *wang fangjian-li* 'toward the room', is atelic, as it is incompatible with an *in*-adverbial and compatible with a *for*-adverbial.

(20) a. *Wo xiang/hui zai yi-xiaoshi nei ba xiangzi **wang fangjian-li** tui.
1SG want/will at one-hour in BA box toward room-in push
INT: 'I want to/will push the box toward the room within one hour.'

b. Wo xiang/hui ba xiangzi **wang fangjian-li** tui (yi-xiaoshi).
1SG want/will BA box toward room-in push one-hour
'I want to/will push the box toward the room (for one hour).'

As is pointed out by Li (2006, 2017), the possibility for a simple-transitive BA-construction to be atelic poses a challenge to Sybesma's (1992, 1999) causative analysis of the BA-construction, in which the causative head/BA must always select a telic accomplishment (hence, it is predicted that BA should be incompatible with an atelic predicate, contrary to fact; see section 4 of this chapter for more details), and Liu's (1997) proposal that BA only occurs with predicates that denote bounded events (hence, it is also predicted that BA should be incompatible with an atelic predicate, contrary to fact).

According to the affective analysis, "the addition of a post-verbal or pre-verbal element X generally makes the affectedness interpretation [of the post-BA NP] more salient, hence renders a BA-construction more acceptable" (Li 2006, 2017). However, it remains unclear as to why BA is incompatible with a VP consisting solely of a simple transitive verb in its bare form and a (specific) object (as the post-BA NP).

I will analyze simple-transitive BA-constructions in section 3 of this chapter, and account for the variable telicity of simple-transitive BA-constructions and the two well-formedness constraints on simple-transitive BA-constructions in section 6 of this chapter.

3.2.3 Syntactic properties of BA and the BA-construction

In this section, I present evidence that BA is best analyzed as the head of a projection taking an extended verbal projection (which, under the proposed analysis, is an ApplP, with the post-BA NP being introduced in Spec, ApplP) as its complement, as schematized in (21a) (see e.g., Li 2006, 2017; Huang, Li & Li 2009; a.o.). Crucially, BA should not be analyzed as a preposition taking the post-BA NP as its complement and projecting a PP adjunct, as schematized in (21b).

(21) a. *ApplP-complementation analysis of* BA
NP $[_{\text{VoiceP}}$ BA $[_{\text{ApplP}}$ NP_i V $\_\__i$ (XP)]]

b. *NP-complementation analysis of* BA *(*BA *as preposition)*
NP $[_{VP}\ [_{PP}$ BA NP$_i$] V $\_\__i$ (XP)]

One piece of evidence for the constituent structure in (21a) and against the constituent structure in (21b) comes from reflexive binding. In Mandarin, the compound reflexive *ta-ziji* '3SG-self' is subject to Principle A – it is bound in its minimal governing category with an accessible SUBJECT (see e.g., Huang, Li & Li 2009). Hence, in the prepositional-dative construction in (22), *ta-ziji* '3SG-self' can take either the grammatical subject *Lisi* or the direct object *Zhangsan* as its antecedent.

(22) Lisi$_i$ jieshao-le Zhangsan$_j$ gei ta-ziji$_{i/j}$-de pengyou.
Lisi introduce-PRF Zhangsan to 3SG-self's friend
'Lisi$_i$ introduced Zhangsan$_j$ to his$_{i/j}$ friend.'

In the BA-construction, both the subject of BA and the post-BA NP c-command, and hence either the subject of BA or the post-BA NP can bind, the compound reflexive, *ta-ziji* '3SG-self', as seen in (23a) (which is the BA-variant of the prepositional-dative construction in (22)). By contrast, an NP embedded in a PP does not c-command, and hence cannot bind, the compound reflexive *ta-ziji* '3SG-self', as seen in (23b).

(23) a. Lisi$_i$ [ba [Zhangsan$_j$ jieshao-gei-le ta-ziji$_{i/j}$-de pengyou]].
Lisi BA Zhangsan introduce-to-PRF 3SG-self's friend
'Lisi$_i$ introduced Zhangsan$_j$ to his$_{i/j}$ friend.'

b. Lisi$_i$ [$_{PP}$ dui Zhangsan$_j$] shuo-guo ta-ziji$_{i/*j}$-de mimi.
Lisi to Zhangsan say-EXP 3SG-self's secret
'Lisi$_i$, to Zhangsan$_j$, once said his$_{i/*j}$ secret.'

However, BA does also behave like a preposition. In both canonical complex-predicate BA-constructions and simple-transitive BA-constructions, it is possible for BA to move along with the post-BA NP when the post-BA NP is extracted, as seen in (24) (see also Li 2006, 2017; Huang, Li & Li 2009).

(24) a. {?Ba zhe-pi ma$_i$}, wo {ba zhe-pi ma$_i$} qi-de $\_\__i$ lei-le.
BA this-CL horse 1SG BA this-CL horse ride-DE be.tired-PRF
'I rode this horse, as a result (this horse) was tired.'

b. {?Ba Lisi$_i$}, wo {ba Lisi$_i$} ku-de $\_\__i$ fan-le.
BA Lisi 1SG BA Lisi cry-DE be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

c. {?Ba na-feng xin$_i$}, wo {ba na-feng xin$_i$} kan-le $\_\__i$.
BA that-CL letter 1SG BA that-CL letter read-PRF
'I read that letter.'

BA also behaves like a preposition in not permitting stranding, as seen in (25).

(25) a. *Zhe-pi ma_i, wo ba $\_\__i$ qi-de lei-le.
this-CL horse 1SG BA ride-DE be.tired-PRF
INT: 'This horse, I rode, as a result (this horse) was tired.'

b. *$Lisi_i$, wo ba $\_\__i$ ku-de fan-le.
Lisi 1SG BA cry-DE be.annoyed-PRF
INT: 'Lisi, I cried, as a result was annoyed.'

c. *Na-feng xin_i, wo ba $\_\__i$ kan-le.
that-CL letter 1SG BA read-PRF
INT: 'That letter, I read.'

One possibility is that BA can be reanalyzed as a preposition (cf. Huang, Li & Li 2009: 178). I leave this issue for future research.

Third, it is worth contrasting the BA-construction with the *shi*-construction in Mandarin, which contains the causative verb *shi* 'make', as exemplified by (26).

(26) *Shi-construction*

a. Wo shi zhe-pi ma lei-le.
1SG make this-CL horse be.tired-PRF
'I made this horse tired.'

b. Wo shi Lisi fan-le.
1SG make Lisi be.annoyed-PRF
'I made Lisi annoyed.'

BA is not a causative verb. Unlike the causative verb *shi* 'make', which takes a resultative phrase on its own, BA always requires a lexical verb which specifies the causing event; hence, the examples in (27) are ill-formed.

(27) a. *Wo ba zhe-pi ma lei-le.
1SG BA this-CL horse be.tired-PRF
INT: 'I made this horse tired.'

b. *Wo ba Lisi fan-le.
1SG BA Lisi be.annoyed-PRF
INT: 'I made Lisi annoyed.'

There are more substantial differences between the BA-construction and the *shi*-construction, which will be the main focus of section 5 of this chapter.

Fourth, BA's complement must be structurally smaller than an IP/AspP but as large as an extended verbal projection (which I assume to be an ApplP). Hence, temporal adverbs (*zuotian* 'yesterday'), aspectual adverbs (*yijing*, 'already'), modal verbs (*hui* 'will', *yinggai* 'should'), and negation (*mei-you* 'not-have') must precede BA and cannot follow the post-BA NP, as seen in (28a) and (28b), but event-internal adverbs (e.g., manner adverbs) can occur either before BA or after the post-BA NP, as seen in (28c) (see Ernst 2010).

(28) a. Wo {zuotian/yijing} ba beizi {*zuotian/*yijing} na-gei-le ta.
1SG yesterday/already BA cup yesterday/already take-to-PRF 3SG
'I yesterday/already took the cup to him.'

b. Wo {hui/yinggai/mei-you} ba beizi {*hui/*yinggai/*mei-you} na gei ta.
1SG will/should/not-have BA cup will/should/not-have take to 3SG
'I will/should/did not take the cup to him.'

c. Wo {xiaoxin-de} ba beizi {xiaoxin-de} na-gei-le ta.
1SG carefully BA cup carefully take-to-PRF 3SG
'I took the cup to him carefully.'

Lastly, it is worth mentioning that the dependency between the post-BA NP and the gap in BA's complement must be local; hence the ill-formedness of the BA-construction in (29b) and (30b) (see e.g., Kuo 2009).

(29) a. Lisi bipo Zhangsan$_i$ [PRO$_i$ ba na-jian shi$_j$ diaocha-le __$_j$].
Lisi force Zhangsan BA that-CL matter investigate-PRF
'Lisi forced Zhangsan to investigate that matter.' (Adapted from Kuo 2009: 49, ex. 106b)

b. *Lisi ba na-jian shi$_i$ bipo Zhangsan$_j$ [PRO$_j$ diaocha-le __$_i$].
Lisi BA that-CL matter force Zhangsan investigate-PRF
INT: 'Lisi forced Zhangsan to investigate that matter.' (Adapted from Kuo 2009: 49, ex. 106a)

(30) a. Lisi$_i$ hui changshi [PRO$_i$ ba na-feng youjian$_j$ fa-chu __$_j$].
Lisi will try BA that-CL email send-out
'Lisi will try to send out that email.'

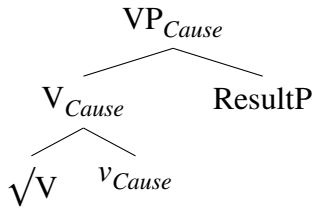
b. *Lisi$_i$ hui ba na-feng youjian$_j$ changshi [PRO$_i$ fa-chu __$_j$].
Lisi will BA that-CL email try send-out
INT: 'Lisi will try to send out that email.'

3.3 Proposed analysis

I propose that the BA-construction in Mandarin is a causative construction, which involves a causative head that selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008), where Cause has two additional arguments: a causer and a causee.

Specifically, I propose that canonical complex-predicate BA-constructions have a bi-clausal syntax and bi-eventive semantics, as illustrated in (31). The causative head (v_{Cause}) is modified by the transitive or unergative matrix verb ($\sqrt{\text{V}}$) which specifies the causing event,[1] in the sense of Marantz (2013: 158). This modified causative head (V_{Cause}) selects a ResultP which specifies the caused/resulting event and projects a CauseP (following Pylkkänen 2002, 2008).

(31) BA-*construction as causative construction*



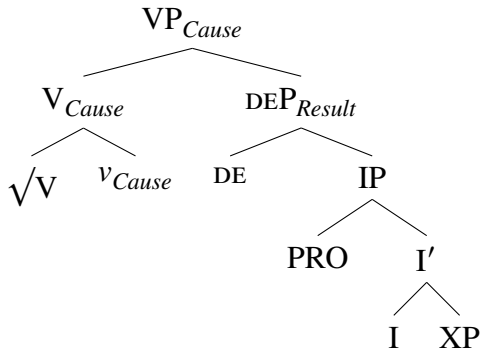
a. $\sqrt{\text{V}}$: ($\lambda x.$) $\lambda e.$ V(e(, x))
b. v_{Cause}: $\lambda P_{<s,t>}.$ $\lambda e.$ $\exists e'$: $P(e')$ & Cause(e, e')
c. V_{Cause}: ($\lambda x.$) $\lambda P_{<s,t>}.$ $\lambda e.$ V(e(, x)) & $\exists e'$: $P(e')$ & Cause(e, e')
d. ResultP: $\lambda e.$ Result(e, ...)
e. VP_{Cause}: ($\lambda x.$) $\lambda e.$ V(e(, x)) & $\exists e'$: Result(e', ...) & Cause(e, e')

In complex-predicate BA-constructions where the (V-DE XP) complex predicate consists of a matrix verb and a resultative phrase headed by DE, which is a bound morpheme suffixed to the matrix verb, the ResultP is as large as an IP, as illustrated in (32).

[1] Following Kratzer (1996), I assume that verbs that have an internal argument (e.g., unaccusative *be excited* and transitive *ride*) are type $< e, < s, t >>$, as exemplified by (ia) and (ib), while verbs that lack an internal argument (e.g., unergative *cry*) are type $< s, t >$, as exemplified by (ic).

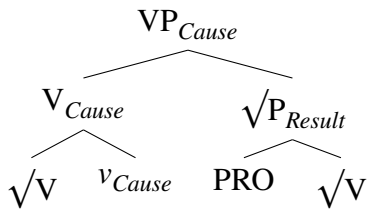
(i) a. be excited: $\lambda x.$ $\lambda e.$ be excited(e, x)
b. ride: $\lambda x.$ $\lambda e.$ ride(e, x)
c. cry: $\lambda e.$ cry(e)

(32) *V-*DE *XP complex predicate*



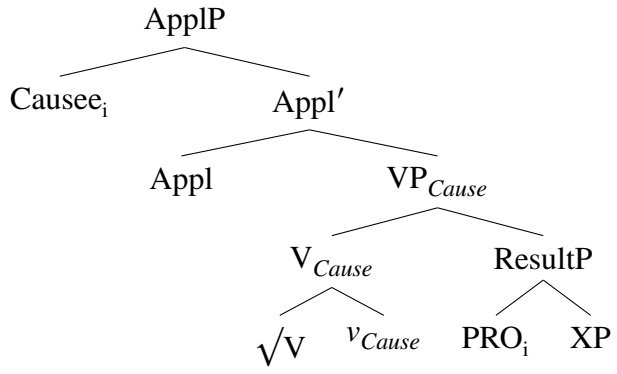
In complex-predicate BA-constructions where the complex predicate is a V1-V2 compound, which consists of a matrix verb V1 and a resultative phrase headed by V2, the ResultP is a root projection, as illustrated in (33).

(33) *V1-V2 compound*



In canonical complex-predicate BA-constructions, Cause's two additional arguments are a causee, which is an indirect object introduced by an Appl(icative) head, and a causer, which is an external argument introduced by the Voice head. Specifically, the post-BA NP is a causee argument of Cause, which is also identified with the theme argument of the matrix verb when the matrix verb is transitive: it is introduced by an Appl(icative) head, which projects above the CauseP, and also controls a PRO subject in the ResultP (following Huang 1992), as illustrated in (34); hence, it is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

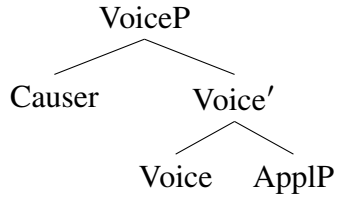
(34) *Post-*BA *NP as causee argument of Cause controlling a PRO subject in ResultP*



a. Appl: $\lambda x.\ \lambda e.$ Causee(e, x)
b. Appl′: $\lambda x.\ \lambda e.$ V$(e(, x))$ & Causee(e, x) & $\exists e'$: Result(e', PRO_i) & Cause(e, e')[2]
c. ApplP: $\lambda e.$ V$(e(, \text{Causee}_i))$ & Causee(e, Causee_i)
& $\exists e'$: Result(e', PRO_i) & Cause(e, e')

The subject of BA is an agentive causer argument of Cause (i.e., the agent of the matrix verb which specifies the causing event), which is introduced by the Voice head, which projects above the ApplP, as illustrated in (35).

(35) *Subject of* BA *as agentive causer argument of Cause*

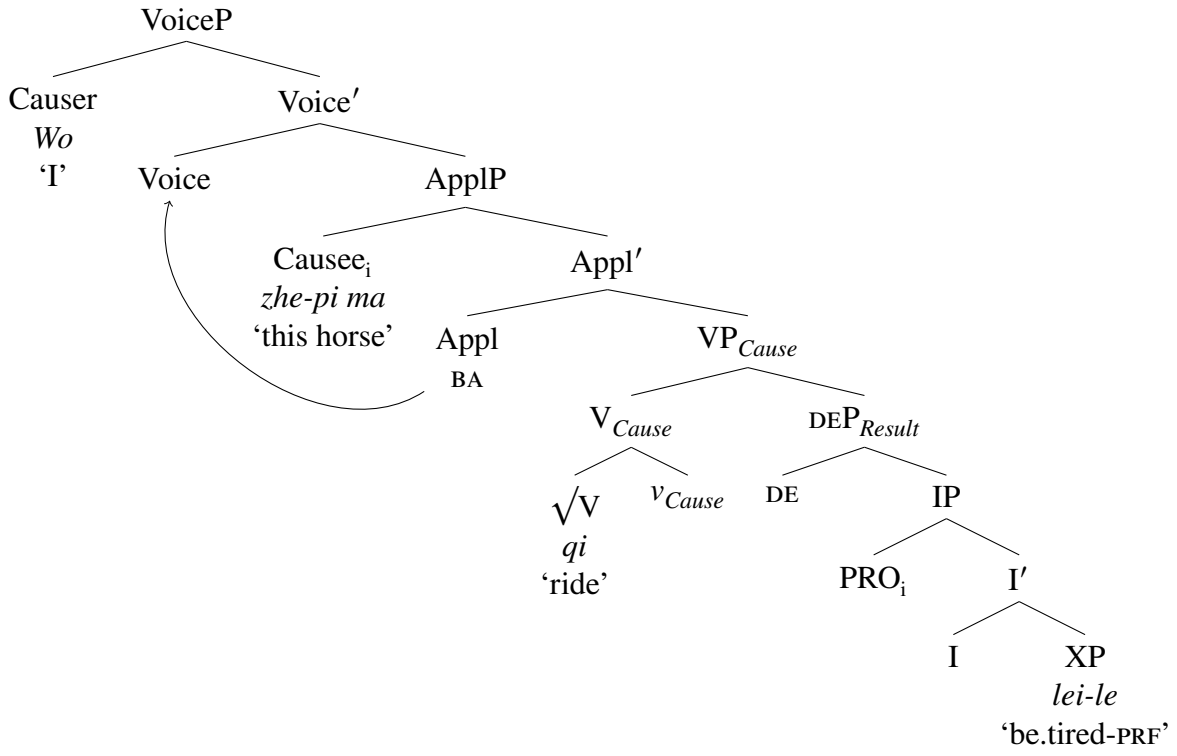


a. Voice: $\lambda x.\ \lambda e.$ Causer(e, x)
b. Voice′: $\lambda x.\ \lambda e.$ V$(e(, \text{Causee}_i))$ & Causee(e, Causee_i) & Causer(e, x)
& $\exists e'$: Result(e', PRO_i) & Cause(e, e')
c. VoiceP: $\lambda e.$ V$(e(, \text{Causee}_i))$ & Causee(e, Causee_i) & Causer(e, Causer)
& $\exists e'$: Result(e', PRO_i) & Cause(e, e')

Putting these pieces together, I propose that canonical complex-predicate BA-constructions (where the resultative phrase is headed by DE) have the structure in (36).

[2]When Cause is modified by a transitive matrix verb, the CauseP is type $< e, < s, t >>$. In this case, the Appl(icative) head and the CauseP can combine via *Predicate Modification*, as a result of which the post-BA NP/causee argument of Cause is also identified with the theme argument of the matrix verb. When Cause is modified by an unergative matrix verb, the CauseP is type $< s, t >$. In this case, the Appl(icative) head and the CauseP can combine via *Event Identification* (Kratzer 1996).

(36) *Proposed analysis of canonical complex-predicate* BA*-construction*

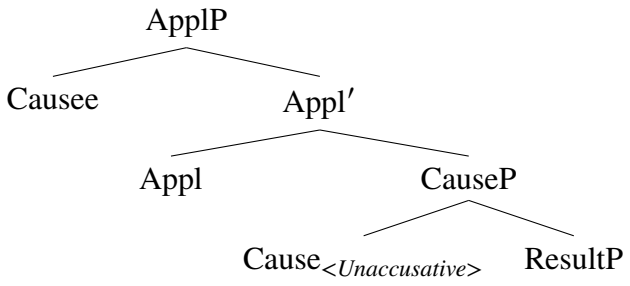


I propose that canonical transitive resultative constructions can have the same structure as their corresponding canonical complex-predicate BA-constructions, in which case the BA-non-BA variation is a matter of what spells out the Voice head: In canonical complex-predicate BA-constructions, BA spells out the Appl(icative) head, which introduces the post-BA NP as a causee argument of Cause (hence, the presence of BA entails that the post-BA NP is a causee argument of Cause), and the Appl(icative) head/BA undergoes head movement to the Voice head. In their corresponding canonical transitive resultative constructions, instead of BA-insertion, the correct word order is derived via V_{Cause} to Appl to Voice head movement.

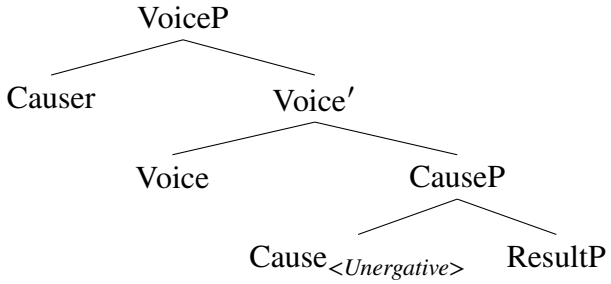
In chapter 4 of this dissertation, I will argue that Mandarin resultative constructions are causative constructions where Cause has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb), as illustrated in (37). In particular, I will propose that non-canonical transitive resultative constructions (which have corresponding non-canonical complex-predicate BA-constructions) are causative constructions where Cause has two additional arguments: when the matrix verb is unaccusative, Cause's two additional arguments are a non-agentive causer, which is an external argument, and a causee, which is an indirect object introduced by an Appl(icative) head, as illustrated in (37c′); when the matrix verb is unergative or transitive, Cause's two additional arguments are a non-agentive causer, which is an internal argument, and a causee, which is an indirect object introduced by an Appl(icative) head, as illustrated in (37d).

(37) *Possible argument structures of Cause in Mandarin*

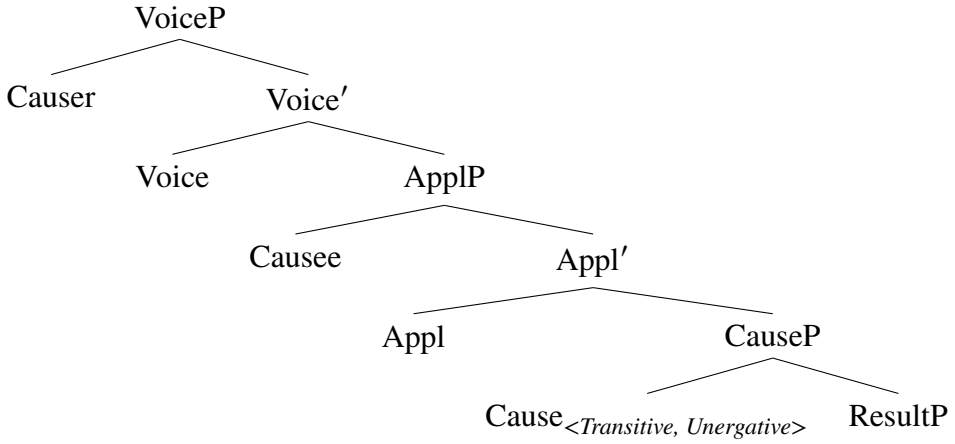
a. *Cause's additional argument: causee (applicative argument)*



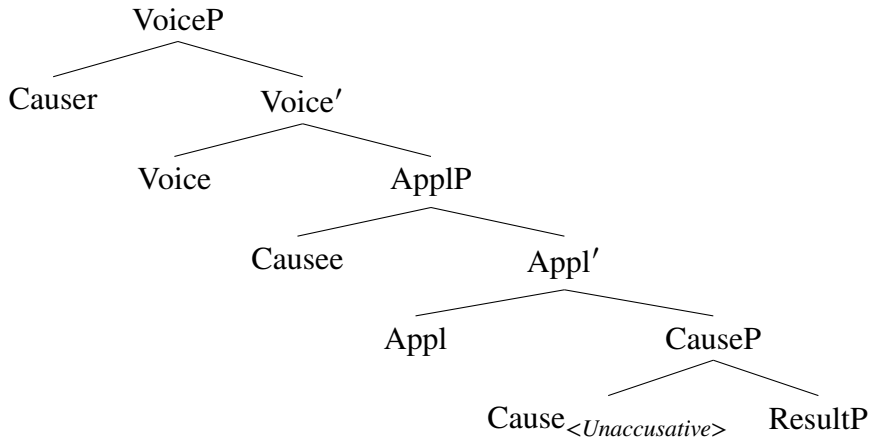
b. *Cause's additional argument: agentive causer (external argument)*



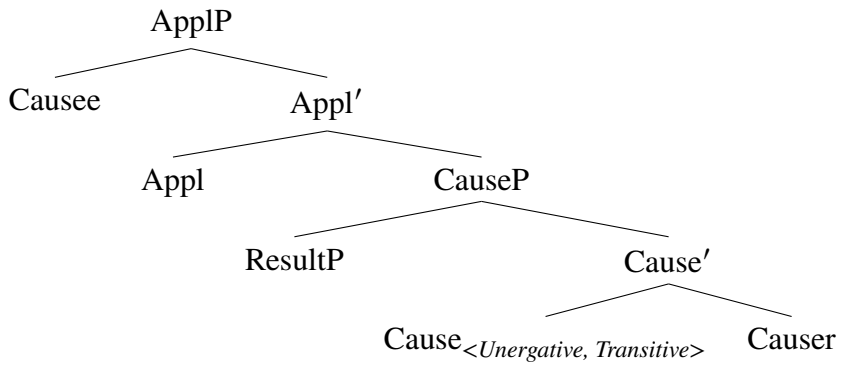
c. *Cause's two additional arguments: agentive causer (external argument), causee (applicative argument)*



c′. *Cause's two additional arguments: non-agentive causer (external argument), causee (applicative argument)*



d. *Cause's two additional arguments: non-agentive causer (internal argument), causee (applicative argument)*



I maintain that Cause has the definition in (38) from Pylkkänen (2002, 2008) in (37a), (37b), (37c) and (37c′), where Cause selects a ResultP, a predicate of the caused/resulting event, and projects a CauseP, a predicate of the causing event.

(38) *Definition of Cause (Pylkkänen 2002, 2008)*
Cause: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e'\ :\ P(e')\ \&\ \text{Cause}(e, e')$

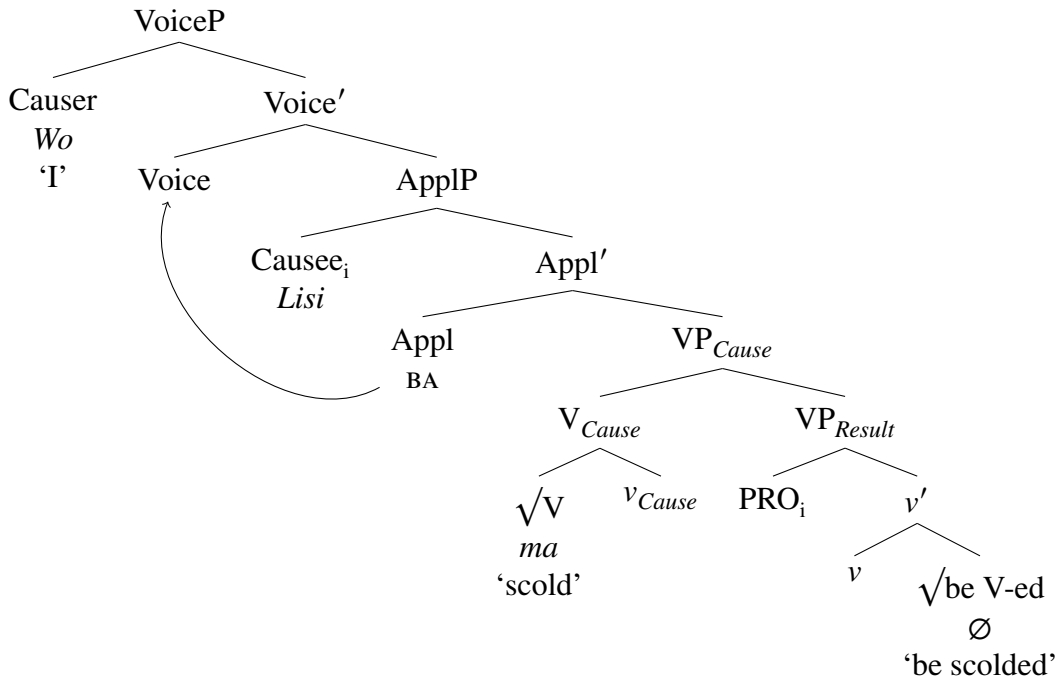
I propose that Cause has the definition in (39) in (37d), where Cause also introduces a non-agentive causer as its internal argument.

(39) *Alternative definition of Cause*
Cause: $\lambda x_{<e>}.\ \lambda P_{<s,t>}.\ \lambda e.\ \exists e'\ :\ P(e')\ \&\ \text{Cause}(e, e')\ \&\ \text{Causer}(e, x)$

Lastly, I propose that simple-transitive BA-constructions are also causative constructions in-

volving two causally related eventualities – a causing event specified by the simple transitive verb, and a caused/resulting event specified by a *phonologically null resultative phrase* (following Sybesma 1992, 1999), which I propose to be a full-fledged VP headed by the *past participle form* of the simple transitive verb (be V-ed) (which cannot be spelled out due to the lack of a corresponding lexical item in Mandarin, as suggested by Lisa Cheng, p.c.) – where the post-BA NP is a causee argument of Cause which also controls a PRO subject in the null resultative phrase, as illustrated in (40). Concretely, I propose that in a simple-transitive BA-construction where the simple transitive verb is marked with the perfective *-le*, the null resultative phrase specifies a caused/resulting event of the PRO subject, controlled by the post-BA NP, *having been* V-ed (e.g., the event of Lisi having been scolded), which is caused by the event specified by the simple transitive verb (e.g., the event of (me) scolding Lisi); hence, the post-BA NP is affected in the causing event, in the sense that it undergoes a caused change of state, from a state of not being V-ed to a state of being V-ed (e.g., my scolding Lisi caused Lisi to undergo a change from a state of not being scolded to a state of being scolded).

(40) *Proposed analysis of simple-transitive* BA*-construction*



3.4 Alternative analyses

As mentioned previously, the proposed analysis of the BA-construction as a causative construction where the affectedness of the post-BA NP arises from it being the causee argument of Cause and controlling a PRO subject in the resultative phrase aligns with Alsina's (1992) view of affectedness (in causative constructions) and diverges from two alternative analyses of the BA-construction: Sybesma's (1992, 1999) causative analysis and the more prevalent affective analysis of the BA-

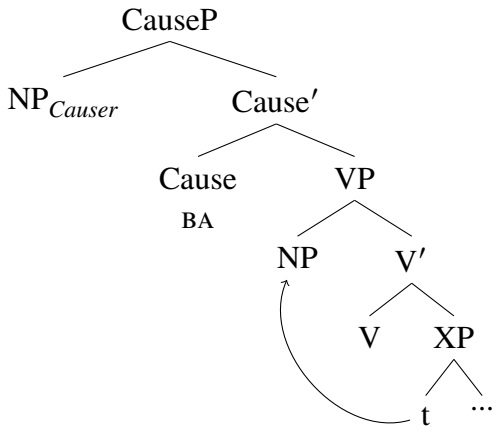
construction (see e.g., Li & Thompson 1981; Li 2006, 2017; Huang, Li & Li 2009; a.o.).

This section is organized as follows: In section 4.1, I will contrast the proposed analysis of the BA-construction with Sybesma's (1992, 1999) causative analysis of the BA-construction. In section 4.2, I will contrast the proposed analysis of the BA-construction with Huang's (1992) and Li's (2006, 2017) implementations of the affective analysis of the BA-construction.

3.4.1 Sybesma (1992, 1999)

Sybesma (1992, 1999) was the first to analyze the BA-construction as a causative construction, expressing how "the subject of BA/causer brings about a new state of affairs which results from the event specified by the (matrix) verb". Specifically, Sybesma (1992, 1999) proposes that the BA-construction has the structure in (41).

(41) *Sybesma's (1992, 1999) causative analysis of* BA*-construction*



Unlike the proposed analysis, in which the post-BA NP is a causee argument of Cause which also controls a PRO subject in the resultative phrase (following Huang 1992), Sybesma (1992, 1999) proposes that the post-BA NP is underlyingly the subject of the resultative phrase (XP), which is not thematically related to the (matrix) verb.[3] Importantly, Sybesma (1992, 1999) proposes that it is the subject of the resultative phrase in a causative construction (rather than a causee argument of Cause) that is linked to an interpretation of affectedness. Hence, according to Sybesma (1992, 1999), causative constructions involving a resultative phrase inherently involve affectedness.

Also unlike the proposed analysis, which adopts a bi-clausal/bi-eventive analysis of causative constructions (Pylkkänen 2002, 2008), and analyzes simple-transitive BA-constructions also as

[3]Sybesma's (1992, 1999) analysis of the BA-construction builds on Hoekstra's (1988) analysis of transitive resultative constructions (in English and Dutch), in which the matrix verb selects a small clause consisting of the post-verbal NP and the resultative phrase, which are in a subject-predicate relation; crucially, the post-verbal NP is not thematically related to the matrix verb.

To account for the interpretation of the post-BA NP as the theme argument of the matrix verb when the matrix verb is transitive, Sybesma (1992, 1999) assumes, following Hoekstra (1988), that such an interpretation is enforced by pragmatics/world knowledge: "if a horse ends up tired as the result of a riding event, the horse will most likely have been ridden on."

By contrast, the proposed analysis derives the interpretation of the post-BA NP as the theme argument of the matrix verb when the matrix verb is transitive via semantic composition (see footnote 2).

causative constructions involving two causally related eventualities – a causing event specified by the simple transitive verb, and a caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed), Sybesma (1992, 1999) identifies causatives with accomplishments (and vice versa), and hence proposes that in the BA-construction, the causative head/BA must always select a telic accomplishment – a complex predicate consisting of a matrix verb, which specifies an atelic activity, and a resultative phrase (XP), which derives a telic accomplishment from an atelic activity. Hence, Sybesma (1992, 1999) proposes that in simple-transitive BA-constructions, a null resultative phrase must be present, in order to derive a telic accomplishment from an atelic activity.

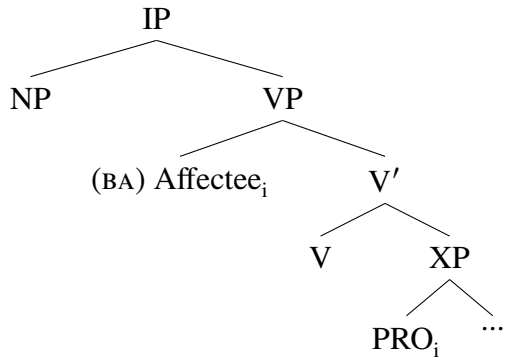
Both aspects of Sybesma's (1992, 1999) analysis are problematic: First, it fails to derive the interpretation of the post-BA NP as being affected in the causing event, as I will argue in section 5 of this chapter. Second, it makes the wrong prediction that BA should be incompatible with an atelic predicate, as mentioned previously. In section 6 of this chapter, I will propose that simple-transitive BA-constructions exhibit variable telicity, due to the variable construal of the caused/resulting event specified by the null resultative phrase.

It is worth mentioning that in Sybesma's (1992, 1999) analysis, the causative head (Cause) is responsible for introducing the causer external argument, but more recently, Sybesma (2021) reanalyzes the causative head, which introduces causative semantics, as being distinct from the Voice head, which introduces the causer external argument (following Pylkkänen 2002, 2008; a.o.). However, Sybesma (2021) maintains that (i) the post-BA NP is not thematically related to the (matrix) verb, and (ii) the causative head must always select a telic accomplishment; hence, it is still predicted that BA should be incompatible with an atelic predicate, contrary to fact.[4]

3.4.2 Huang (1992), Li (2006, 2017)

Huang (1992) was the first to analyze complex-predicate BA-constructions and their corresponding transitive resultative constructions as involving a PRO subject in the resultative phrase, controlled by the post-BA or post-verbal NP; specifically, Huang (1992) proposes that the post-BA or post-verbal NP is assigned an affected theme or affectee theta-role by V′, as illustrated in (42).

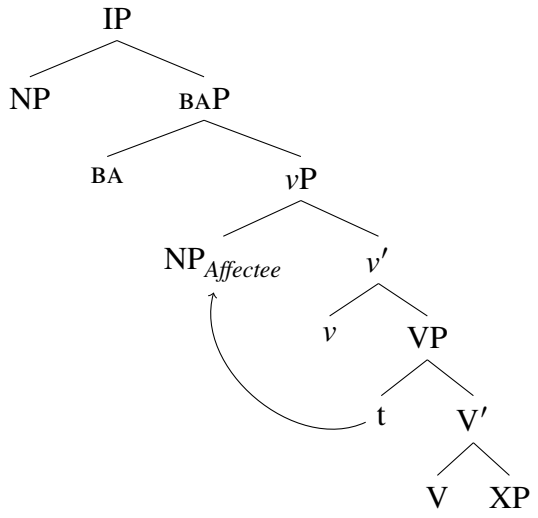
(42) *Huang's (1992) affective analysis of canonical complex-predicate* BA*-construction*



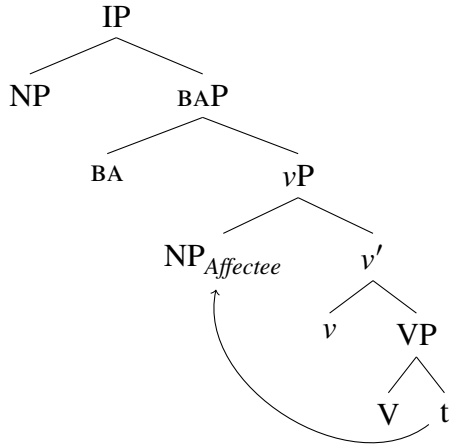
[4]Specifically, in Sybesma's (2021) analysis, the resultative phrase is not analyzed as the (matrix) verb's complement, but as the content of an inner aspect projection ("TelicityP") above the VP, which, as its name suggests, "marks the structure as telic by providing the state that is the result of the action denoted by V". The post-BA NP is base-generated in Spec, TelicityP. The causative head is a *v* which selects a telic verbal projection (with two additional inner aspect projections above TelicityP). The subject of BA/causer is introduced by the Voice head, which is spelled out by BA.

Building on Huang's (1992) analysis, Li (2006, 2017) (see also Huang, Li & Li 2009) proposes that BA is the head of a projection taking an extended verbal projection as its complement; the post-BA NP raises to Spec, *v*P from Spec, VP (where it is assigned an affectee theta-role by V′) in complex-predicate BA-constructions and from V's complement (where it is assigned an affectee theta-role by V) in simple-transitive BA-constructions, as illustrated in (43).

(43) a. *Li's (2006, 2017) affective analysis of complex-predicate* BA*-construction*



b. *Li's (2006, 2017) affective analysis of simple-transitive* BA*-construction*



As mentioned previously, the affective analysis defines the affectedness interpretation of the post-BA NP in terms of it being physically or non-physically affected or "handled, manipulated, dealt with", "disposed of" by the subject of BA (Li & Thompson 1981: 466-480; see also Li 2006, 2017; Huang, Li & Li 2009; a.o.). Huang (1992), Li (2006, 2017), Huang, Li & Li (2009) and others specifically account for the affectedness of the post-BA NP by appealing to an affectee theta-role.

In contrast, under the proposed analysis, in both complex-predicate and simple-transitive BA-constructions, the post-BA NP is a causee argument of Cause which also controls a PRO subject in

the resultative phrase (following Huang 1992); hence, it is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992). In particular, under the proposed analysis of simple-transitive BA-constructions, a null resultative phrase, headed by the past participle form of the simple transitive verb (be V-ed), is present, and the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state (e.g., from a state of not being V-ed to a state of being V-ed, when the simple transitive verb is marked with the perfective *-le*).

In section 6 of this chapter, I will argue that the proposed analysis of simple-transitive BA-constructions provides a principled explanation for the variable telicity of simple-transitive BA-constructions and the two well-formedness constraints on simple-transitive BA-constructions.

3.5 Affectedness in canonical complex-predicate BA-constructions

In this section, I will argue for the proposed analysis of canonical complex-predicate BA-constructions, in which the post-BA NP is a causee argument of Cause which also controls a PRO subject in the resultative phrase (following Huang 1992), and argue against Sybesma's (1992, 1999) analysis in which the post-BA NP is underlyingly the subject of the resultative phrase, which is not thematically related to the (matrix) verb.

Specifically, in section 5.1, I will compare the BA-construction with the *shi*-construction in Mandarin. I will provide evidence that an affectedness interpretation is always imposed on the post-BA NP, whether it is thematically related to the matrix verb or not; by contrast, no selectional restriction/affectedness interpretation is imposed on the post-*shi* NP. Hence, I will argue that the post-BA NP in the BA-construction is a causee argument of Cause being caused to perform an action or undergo a change of state, in the sense of Alsina (1992); by contrast, the post-shi NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause. Then, in section 5.2, I will show that a similar contrast can be found between selected and non-selected NP resultative constructions, based on which I will argue that non-selected NP resultative constructions can also be analyzed as not having a causee argument of Cause. Lastly, in section 5.3, I will present additional evidence that canonical complex-predicate BA-constructions and their corresponding canonical transitive resultative constructions involve a PRO subject in the resultative phrase, controlled by the post-BA or post-verbal NP. I will also argue that the major argument for a raising analysis of the post-BA NP based on the availability of the idiomatic meanings of compositional idioms is inconclusive.

3.5.1 BA- vs. Shi-construction

This section features a comparison between canonical complex-predicate BA-constructions, as exemplified by (44), and the *shi*-construction in Mandarin, as exemplified by (45). In canonical complex-predicate BA-constructions, the matrix verb specifies the causing event. Similarly, the *shi*-construction contains the causative verb *shi* 'make' – in this case, the causing event is unspecified. In canonical complex-predicate BA-constructions, the post-BA NP and the following resultative phrase, which specifies the caused/resulting event, are in a subject-predicate relation. Similarly, in the *shi*-construction, the post-*shi* NP and the following resultative phrase, which specifies the caused/resulting event, are in a subject-predicate relation. In canonical complex-predicate BA-

constructions, the subject of BA is an agentive causer (i.e., the agent argument of the matrix verb which specifies the causing event). Similarly, in the *shi*-construction, the subject of *shi* 'make' is a causer external argument of the causative verb *shi* 'make'. Because both canonical complex-predicate BA-constructions and the *shi*-construction apparently involve two causally related eventualities and a causer external argument, both constructions are readily analyzed as causative constructions involving a causative head and a causer external argument (introduced by the Voice head). However, their similarities end there.

(44) a. *Canonical complex-predicate* BA*-construction (transitive matrix verb)*
Wo ba zhe-pi ma$_i$ qi-de __$_i$ lei-le.
1SG BA this-CL horse ride-DE be.tired-PRF
'I rode this horse, as a result (this horse) was tired.'

b. *Canonical complex-predicate* BA*-construction (unergative matrix verb)*
Wo ba Lisi$_i$ ku-de __$_i$ fan-le.
1SG BA Lisi cry-DE be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

(45) *Shi-construction*

a. Wo shi zhe-pi ma lei-le.
1SG make this-CL horse be.tired-PRF
'I made this horse tired.'

b. Wo shi Lisi fan-le.
1SG make Lisi be.annoyed-PRF
'I made Lisi annoyed.'

In complex-predicate BA-constructions, an affectedness interpretation is always imposed on the post-BA NP, whether it is thematically related to the matrix verb or not. Consider the contrast in (46) (where the ill-formed BA-construction in (46a) and the well-formed BA-construction in (46b) involve the same causing and caused/resulting events) and (47) (where the ill-formed BA-construction in (47a) and the well-formed BA-construction in (47b) involve the same causing and caused/resulting events). I propose that the BA-constructions in (46a) and (47a) are ill-formed, because the post-BA NP, *zheli* 'here', is not (thematically related to the matrix verb when the matrix verb is transitive or) affected in the causing event specified by the transitive or unergative matrix verb.

(46) *Canonical complex-predicate* BA*-construction (transitive matrix verb)*

a. *Wo ba zheli qi-de si-le yi-pi ma.
1SG BA here ride-DE be.dead-PRF one-CL horse
INT: 'I rode a horse, as a result here died a horse.'

b. Wo ba zhe-pi ma qi-de si-zai-le zheli.
1SG BA this-CL horse ride-DE be.dead-be.at-PRF here
'I rode this horse, as a result this horse died here.'

(47) *Canonical complex-predicate* BA*-construction (unergative matrix verb)*

a. *Wo ba zheli ku-de lai-le henduo jingcha.
1SG BA here cry-DE come-PRF many police
INT: 'I cried, as a result here came many police.'

b. Wo ba henduo jingcha ku-de lai-le zheli.
1SG BA many police cry-DE come-PRF here
'I cried, as a result many police came here.'

Also consider the contrast in (48) (where the ill-formed BA-construction in (48a) and the well-formed BA-construction in (48b) involve the same causing and caused/resulting events) and (49) (where the ill-formed BA-construction in (49a) and the well-formed BA-construction in (49b) involve the same causing and caused/resulting events).[5] I propose that the BA-constructions in (48a) and (49a) are ill-formed, because the post-BA NP, *shandian* 'lightning', is not (thematically related to the matrix verb when the matrix verb is transitive or) affected in the causing event specified by the transitive or unergative matrix verb.

(48) *Complex-predicate* BA*-construction (transitive matrix verb)*

a. *Wo ba shandian$_i$ zhui-de __$_i$ jizhong-le Lisi.
1SG BA lightning chase-DE hit-PRF Lisi
INT: 'I chased Lisi, as a result the lightning hit Lisi.'

b. Wo ba Lisi$_i$ zhui-de __$_i$ bei shandian jizhong-le.
1SG BA Lisi chase-DE BEI lightning hit-PRF
'I chased Lisi, as a result Lisi was hit by the lightning.'

[5]Note that the post-BA NP cannot be linked to an object gap in the resultative phrase, as seen in (i). This is because the dependency between the post-BA NP and the gap in BA's complement must be local.

(i) a. *Wo ba Lisi$_i$ zhui-de shandian jizhong-le __$_i$.
I BA Lisi chase-DE lightning hit-PRF
INT: 'I chased Lisi, as a result the lightning hit Lisi.'

b. *Wo ba Lisi$_i$ ku-de shandian jizhong-le __$_i$.
I BA Lisi cry-DE lightning hit-PRF
INT: 'I cried, as a result the lightning hit Lisi.'

Either control or raising (A-movement) establishes a local dependency. Hence, the ill-formedness of (i) can be accounted for under the proposed analysis of the BA-construction, in which the post-BA NP controls a PRO subject in the resultative phrase (following Huang 1992), or under a raising analysis of the post-BA NP (e.g., Sybesma 1992, 1999).

(49) *Complex-predicate* BA*-construction (unergative matrix verb)*

a. *Wo ba shandian$_i$ ku-de __$_i$ jizhong-le Lisi.
1SG BA lightning cry-DE hit-PRF Lisi
INT: 'I cried, as a result the lightning hit Lisi.'

b. Wo ba Lisi$_i$ ku-de __$_i$ bei shandian jizhong-le.
1SG BA Lisi cry-DE BEI lightning hit-PRF
'I cried, as a result Lisi was hit by the lightning.'

By contrast, in the *shi*-construction, no selectional restruction/affectedness interpretation is imposed on the post-*shi* NP. Hence, there is no contrast in (50) and (51).

(50) *Shi-construction*

a. Wo shi zheli si-le yi-pi ma.
1SG make here be.dead-PRF one-CL horse
Lit. 'I made here die a horse.'

b. Wo shi zhe-pi ma si-zai-le zheli.
1SG make this-CL horse be.dead-be.at-PRF here
'I made this horse die here.'

(51) *Shi-construction*

a. Wo shi zheli lai-le henduo jingcha.
1SG make here come-PRF many police
'I made here come many police.'

b. Wo shi henduo jingcha lai-le zheli.
1SG make many police come-PRF here
'I made many police come here.'

Similarly, as seen in (52), the post-*shi* NP can be identified with either argument of the transitive verb in the resultative phrase.

(52) *Shi-construction*

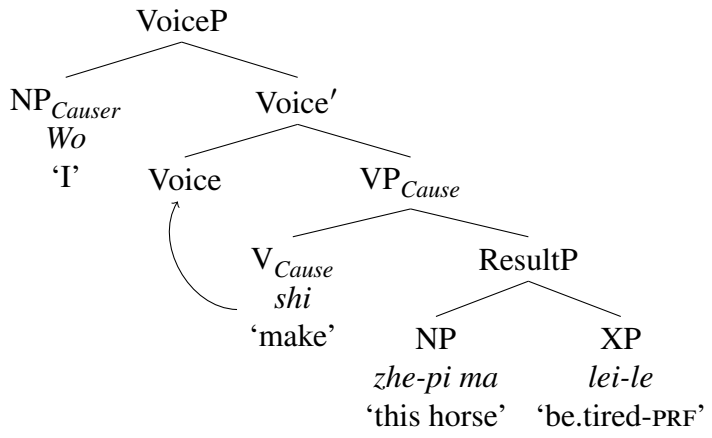
a. Wo shi shandian jizhong-le Lisi.
1SG make lightning hit-PRF Lisi
'I made the lightning hit Lisi.'

b. Wo shi Lisi bei shandian jizhong-le.
1SG make Lisi BEI lightning hit-PRF
'I made Lisi be hit by the lightning.'

Hence, canonical complex-predicate BA-constructions involve both causation and affected-

ness, while the *shi*-construction only involves causation. To account for this contrast, I argue that the post-BA NP is a causee argument of the causative head (which is also identified with the theme argument of the matrix verb when the matrix verb is transitive), which also controls a PRO subject in the resultative phrase (following Huang 1992); hence, the post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992). By contrast, the post-*shi* NP is underlyingly the subject of the resultative phrase, which is not thematically related to the causative verb *shi* 'make'; hence, no selectional restriction/affectedness interpretation is imposed on the post-*shi* NP (cf. Sybesma's (1992, 1999) analysis of the BA-construction).

(53) *Proposed analysis of shi-construction*



3.5.2 Selected vs. Non-selected NP resultative construction

There is a similar contrast between selected and non-selected NP resultative constructions. In selected NP resultative constructions, where the matrix verb is transitive, the post-verbal NP, which the resultative phrase is predicated of, must also be identified with the theme argument of the transitive matrix verb; hence, (54a) is ill-formed.

(54) *Selected NP resultative (transitive matrix verb)*

a. *Wo qi-de zheli si-le yi-pi ma.
1SG ride-DE here be.dead-PRF one-CL horse
INT: 'I rode a horse, as a result here died a horse.'

b. Wo qi-de zhe-pi ma si-zai-le zheli.
1SG ride-DE this-CL horse be.dead-be.at-PRF here
'I rode this horse, as a result this horse died here.'

Similarly, as seen in (55), the post-verbal NP can only be identified with one of the arguments of the transitive verb in the resultative phrase – the argument which can be identified with the theme argument of the transitive matrix verb.

(55) *Selected NP resultative (transitive matrix verb)*

a. *Wo zhui-de shandian jizhong-le Lisi.
1SG chase-DE lightning hit-PRF Lisi
INT: 'I chased Lisi, as a result the lightning hit Lisi.'

b. Wo zhui-de Lisi_i bei shandian jizhong-le $\_\__i$.
1SG chase-DE Lisi BEI lightning hit-PRF
'I chased Lisi, as a result Lisi was hit by the lightning.'

By contrast, in non-selected NP resultative constructions, where the matrix verb is unergative, no selectional restriction/affectedness interpretation is imposed on the post-verbal NP. Hence, there is no contrast in (56) and (57).

(56) *Non-selected NP resultative (unergative matrix verb)*

a. Wo ku-de zheli lai-le henduo jingcha.
1SG cry-DE here come-PRF many police
'I cried, as a result there came many police.'

b. Wo ku-de henduo jingcha lai-le zheli.
1SG cry-DE many police come-PRF here
'I cried, as a result many police came here.'

(57) *Non-selected NP resultative (unergative matrix verb)*

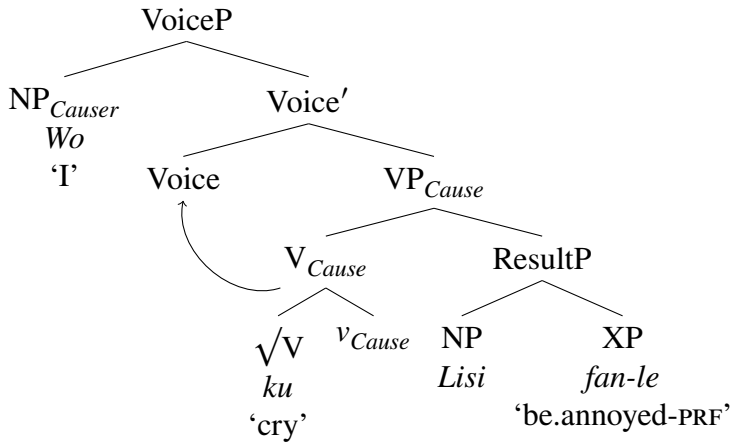
a. Wo ku-de shandian jizhong-le Lisi.
1SG cry-DE lightning hit-PRF Lisi
'I cried, as a result the lightning hit Lisi.'

b. Wo ku-de Lisi_i bei shandian jizhong-le $\_\__i$.
1SG cry-DE Lisi BEI lightning hit-PRF
'I cried, as a result Lisi was hit by the lightning.'

Under the proposed analysis, canonical transitive resultative constructions (i.e., both selected and non-selected NP resultative constructions) can have the same structure as their corresponding canonical complex-predicate BA-constructions. In particular, in selected NP resultative constructions, the post-verbal NP is a causee argument of Cause, which is also identified with the theme argument of the transitive matrix verb, via semantic composition (see footnote 2).

Based on the well-formedness in (56a) and (57a), I propose that non-selected NP resultative constructions can also be analyzed as having the structure in (58), where the post-verbal NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause; hence, no selectional restruction/affectedness interpretation is imposed on the post-verbal NP (cf. Sybesma's (1992, 1999) analysis of the BA-construction).

(58) *Alternative analysis of non-selected NP resultative (unergative matrix verb)*



3.5.3 Control, not raising

In this section, I present additional evidence that canonical complex-predicate BA-constructions and their corresponding canonical transitive resultative constructions involve a PRO subject in the resultative phrase, controlled by the post-BA or post-verbal NP. I also argue that the major argument for a raising analysis of the post-BA NP based on the availability of the idiomatic meanings of compositional idioms is inconclusive.

A direct argument in favor of control comes from the possibility of split antecedents in both complex-predicate BA-constructions and their corresponding transitive resultative constructions. In Mandarin, a collective predicate such as *jianmian* 'meet' requires a plural subject, as seen in (59a). In certain object control constructions, the PRO subject in the infinitival complement can be bound by both the matrix subject and the matrix object, hence the plural subject requirement can be satisfied, as seen in (59b) (see Landau 2000).

(59) a. Zhangsan *(he Lisi) zai gongyuan jianmian-le.
Zhangsan and Lisi at park meet-PRF
'Zhangsan *(and Lisi) met at the park.'

b. Zhangsan$_i$ bi Lisi$_j$ [PRO$_{i+j}$ zai gongyuan jianmian].
Zhangsan force Lisi at park meet
'Zhangsan forced Lisi to meet at the park.'

I argue that canonical complex-predicate BA-constructions and their corresponding canonical transitive resultative constructions involve a PRO subject in the resultative phrase, controlled by the post-BA or post-verbal NP; hence, in (60), the plural subject requirement can be satisfied by the PRO subject bound by both the matrix subject (of BA) and the post-BA or post-verbal NP.

(60) a. *Canonical complex-predicate* BA*-construction (transitive matrix verb)*
Zhangsan$_i$ ba Lisi$_j$ bi-de [PRO$_{i+j}$ zai gongyuan jianmian-le].
Zhangsan BA Lisi force-DE at park meet-PRF
'Zhangsan forced Lisi, as a result (Zhangsan and Lisi) met at the park.'

b. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*
Zhangsan$_i$ bi-de Lisi [PRO$_{i+j}$ zai gongyuan jianmian-le].
Zhangsan force-DE Lisi at park meet-PRF
'Zhangsan forced Lisi, as a result (Zhangsan and Lisi) met at the park.'

By contrast, in the *shi*-construction, the post-*shi* NP is underlyingly the subject of the resultative phrase, hence, in (61), the plural subject requirement cannot be satisfied.

(61) ?*Zhangsan shi Lisi zai gongyuan jianmian-le.
Zhangsan make Lisi at park meet-PRF
INT: 'Zhangsan made (Zhangsan and) Lisi meet at the park.'

In addition, Huang (1992) has discussed other properties of complex-predicate BA-constructions and their corresponding resultative constructions in Mandarin which are consistent with a control analysis. First, in complex-predicate BA-constructions and their corresponding transitive resultative constructions, the resultative phrase must be predicated of the closest c-commanding NP; according to Huang (1992), this is due to the so-called *generalized theory of control*, which provides that an empty pronoun (PRO or pro) must be controlled by the closest c-commanding NP. Specifically, subject-predication is impossible with the complex-predicate BA-construction in (62a), because the post-BA NP, rather than the subject of BA, is the closest c-commanding NP to the PRO subject in the resultative phrase; by contrast, subject-predication is possible with the transitive resultative construction in (62b), where the first copy of the verb and the post-verbal NP form a VP adjunct (see also Cheng 2007), because the post-verbal NP does not c-command the PRO subject in the resultative phrase.

(62) a. *Ta$_i$ ba fan chi-de [PRO$_i$ hen bao].
3SG BA rice eat-DE very full
INT: 'He ate the rice, as a result (he) was full.' (Adapted from Huang 1992: ex. 12b)

b. Ta$_i$ [$_{VP}$ [$_{VP}$ chi fan] chi-de [PRO$_i$ hen bao]].
3SG eat rice eat-DE very full
'He ate the rice, as a result (he) was full.' (Adapted from Huang 1992: ex. 15)

Second, in Mandarin, object-predicated transitive resultative constructions allow passivization with BEI, as seen in (63); by contrast, subject-predicated transitive resultative constructions such as (62b) resist passivization with BEI, as seen in (64).[6] This contrast conforms to *Visser's Generalization*

[6]This argument must build on the assumption that the Mandarin BEI-construction is a passive construction, which

(Jenkins 1972; Bresnan 1982), which states that only object control constructions but not subject control constructions can passivize.

(63) a. Zhe-pi ma_i bei (wo) qi-de [PRO_i lei-le].
this-CL horse BEI 1SG ride-DE be.tired-PRF
'This horse was ridden (by me), as a result (this horse) was tired.' (Adapted from Huang 1992: ex. 21)

b. $Lisi_i$ bei (wo) ku-de [PRO_i fan-le].
Lisi BEI 1SG cry-DE be.annoyed-PRF
Lit. 'Lisi was cried (by me), as a result (Lisi) was annoyed.' (Adapted from Huang 1992: ex. 22)

(64) *Fan bei (ta_i) chi-de [PRO_i hen bao].
rice BEI 3SG eat-DE very full
INT: 'Rice was eaten (by him), as a result (he) was full.' (Adapted from Huang 1992: ex. 23)

Lastly, Mandarin resultative constructions also exhibit properties that fall under Bach's Generalization (Bach 1979), according to which only subject control predicates but not object control predicates may omit their objects, as seen in (65).

(65) a. $Zhangsan_i$ (qi ma) qi-de [PRO_i hen lei].
Zhangsan ride horse ride-DE very be.tired
'Zhangsan rode the horse, as a result (he) was very tired.' (Adapted from Huang 1992: ex. 26)

b. Zhangsan qi-de *(ma_i) [PRO_i hen lei].
Zhangsan ride-DE horse very be.tired
'Zhangsan rode *(the horse), as a result (the horse) was very tired.'

The major argument for a raising analysis of the post-BA NP has come from the possibility for the post-BA NP and the resultative phrase or the matrix verb to form an idiom and the availability of the idiomatic meaning of the idiom in a BA-construction. Concretely, in the BA-construction in (66a), the idiom chunk *tie-shu* 'iron tree' is part of the idiom *tie-shu kai hua* 'iron tree blossomed (something unusual happened)', and the idiomatic meaning of the idiom is preserved. Hence, Goodall (1989) and Sybesma (1992, 1999) argue that the post-BA NP is underlyingly the subject of the resultative phrase and undergoes raising into the matrix clause. However, as is pointed out by Huang (1992), in (66a), *tie-shu* 'iron tree' must be referential, and hence must have an idiomatic meaning on its own (e.g., it may refer to an iron-hearted person); hence, the argument for a raising analysis of the post-BA NP based on the availability of the idiomatic meaning of the idiom in (66a) is inconclusive.

is right. See chapter 2 of this dissertation.

(66) a. Wo ba tie-shu$_i$ ku-de __$_i$ kaihua-le.
1SG BA iron-tree cry-DE blossom-PRF
'I cried, as a result an iron tree blossomed (something unusual happened).' (Adapted from Huang 1992: ex. 67)

b. Wo ku-de tie-shu kaihua-le.
1SG cry-DE iron-tree blossom-PRF
'I cried, as a result an iron tree blossomed (something unusual happened).' (Adapted from Huang 1992: ex. 66)

Similarly, in the BA-constructions in (67a) and (68a), the idiom chunks *niu* 'cow' and *pianyi* 'advantage' are part of the idioms *chui niu* 'bluff' and *zhan pianyi* 'take advantage', and the idiomatic meanings of the idioms are preserved. Hence, Li (2006, 2017) argues that the post-BA NP is base-generated in the post-verbal object position of the V1-V2 compounds, as in (67b) and (68b).[7] However, as I have shown in chapter 2 of this dissertation, the idiom chunks *niu* 'cow' and *pianyi* 'advantage' in the idioms *chui niu* 'bluff' and *zhan pianyi* 'take advantage' have idiomatic meanings on their own; hence, the argument for a raising analysis of the post-BA NP based on the availability of the idiomatic meanings of the idioms in (67a) and (68a) is inconclusive.

(67) a. Lisi ba suoyou-de niu$_i$ dou chui-guang-le __$_i$.
Lisi BA all cow Dist blow-be.empty-PRF
'Lisi did all the bluffing.'

b. Lisi chui-guang-le suoyou-de niu.
Lisi blow-be.empty-PRF all cow
'Lisi did all the bluffing.'

(68) a. Lisi ba suoyou-de pianyi$_i$ dou zhan-guang-le __$_i$.
Lisi BA all advantage Dist take-be.empty-PRF
'Lisi took all the advantage.'

b. Lisi zhan-guang-le suoyou-de pianyi.
Lisi take-be.empty-PRF all advantage
'Lisi took all the advantage.'

As I have also shown in chapter 2 of this dissertation, a truly non-compositional idiom loses its idiomatic reading when the parts of the idiom are separated syntactically (Nunberg, Sag & Wasow

[7] Li (2006, 2017) assumes that the BA-constructions in (67a) and (68a) are derived from (67b) and (68b) via movement of the NP (from V's complement to the post-BA position). However, it is also possible that the post-BA NP in (67a) and (68a) and the post-verbal NP in (67b) and (68b) are base-generated in the same position, and that the BA-non-BA variation in (67) and (68) is a matter of what spells out the Voice head (see section 3).

Note that in (67) and (68), the post-BA or post-verbal NP forms an idiom with V1 in the V1-V2 compounds; one might take this to indicate that the post-BA or post-verbal NP is not an argument of V2, which heads the resultative phrase, but an argument of Cause, which is modified by V1.

1994). As expected, the idiom *deng tui* 'die', which literally means 'stretch legs/kick', loses its idiomatic meaning when the parts of the idiom are separated in a BA-construction, as seen in (69a).

(69) a. Ta ba (ta-de) tui deng-le.
3SG BA 3SG's leg stretch-PRF
'He stretches his legs.'

b. Ta deng-le tui.
3SG stretch-PRF leg
'He died.'

3.6 Null resultative phrase in simple-transitive BA-constructions

In this section, I will challenge the affective analysis of the BA-construction which accounts for the affectedness of the post-BA NP by appealing to an idiosyncratic affectee theta-role, by providing a principled explanation for the variable telicity of simple-transitive BA-constructions and the two well-formedness constraints on simple-transitive BA-constructions, under the proposed analysis of simple-transitive BA-constructions, where a null resultative phrase, headed by the past participle form of the simple transitive verb (be V-ed), is present, and the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state.

The remainder of this section is organized as follows: In section 6.1, I will account for the variable telicity of simple-transitive BA-constructions, which crucially relies on the presence and variable construal of the null resultative phrase. In section 6.2, I will propose that BA is incompatible with a VP consisting solely of a bare verb and a (specific) object (as the post-BA NP), because such a VP lacks a bi-eventive construal – the intended causing event specified by the simple transitive verb and the intended caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed) are the same event; hence, there needs to be "something else, X, either before or after the verb", which effectively makes the causing and caused/resulting events distinct. In section 6.3, I will argue that the affectedness interpretation of the post-BA NP in simple-transitive BA-constructions is better defined in terms of it being caused to undergo a change of state (following Alsina 1992); hence, BA is incompatible with predicates that lack a change-of-state construal.

Before proceeding, it is worth noting that the analysis presented in this section may be further developed along the lines of Beavers' (2011) semantic analysis of affectedness. I leave this task for future work.

3.6.1 Variable telicity

It has long been noted that the addition of a resultative phrase can derive a telic accomplishment from an atelic activity (Dowty 1979; Parsons 1990; a.o.). For example, *She wiped the table* is an atelic activity, while *She wiped the table clean* is a telic accomplishment; similarly, *The dog barked* is an atelic activity, while *The dog barked me awake* is a telic accomplishment. This has led Dowty (1979, chapter 2), Sybesma (1992, 1999), among others, to identify causatives with accomplishments (and vice versa). But such a view has received empirical challenges: In English, a class of change-of-state verbs known as *degree achievements*, including *cool*, *lengthen*, and *widen*, exhibit

variability in telicity in both anti-causative and causative constructions, as they are compatible with both an *in*-adverbial and a *for*-adverbial, as seen in (70) and (71) (Dowty 1979; Abusch 1986; Hay, Kennedy & Levin 1999; Kennedy & Levin 2008; a.o.).

(70) *Variable telicity of degree achievement (anti-causative construction)*

a. The soup cooled in an hour.
b. The soup cooled for an hour.

(71) *Variable telicity of degree achievement (causative construction)*

a. The cook cooled the soup in an hour.
b. The cook cooled the soup for an hour.

Contra Dowty (1979, chapter 2) and Sybesma (1992, 1999), Levin & Rappaport Hovav (1999, 2004), Rappaport Hovav & Levin (2001, 2002), among others, have proposed that causatives are best defined as 'complex events' (consisting of a causing event and a caused/resulting event), rather than 'telic events', or 'accomplishments'. Telicity, which is an aspectual property of a predicate, may be defined in terms of the so-called *subinterval property* (Dowty 1979; see also Krifka 1989, 1992, 1998; a.o.): a telic predicate (e.g., accomplishment) is indivisible, or quantized, in the sense that it describes an event which has no subintervals describable by the same predicate, while an atelic predicate (e.g., activity) describes an event divisible into subintervals describable by the same predicate.

To account for the variable telicity of degree achievements, Kennedy & Levin (2008) propose that "the adjectival core of a degree achievement is a special kind of difference function: one that measures the amount that an object changes along a scalar dimension as a result of participating in an event." Specifically, Kennedy & Levin (2008) define a degree achievement based on a measure of change function **m**, which "takes an object **x** and an event **e** and returns the degree that represents the amount that **x** changes in the property measured by **m** as a result of participating in **e**. It does this by mapping its individual argument **x** onto a derived scale whose minimal element is the degree to which **x** measures **m** at the initiation of **e**. The output is a degree that represents the positive difference between the degree to which **x** measures **m** at the beginning of **e** and the degree to which it measures **m** at the end of **e**; if there is no positive difference, it returns zero." "A degree achievement based on a measure of change function **m** is true of an object **x** and an event **e** just in the degree to which **x** changes as a result of participating in **e** exceeds the standard of comparison for **m**." Essentially, a degree achievement is telic just in case the value returned by applying the measure of change function to the object and the event equals *the maximal degree of the gradable property measured by the adjectival root*, as in (72a) and (73a); a degree achievement is atelic as long as *the measure of change function returns a non-zero degree when applied to the object and the event*, as in (72b) and (73b).

(72) a. The soup became cooler by the maximum degree of coolness (defined in the context of utterance) in an hour. (Based on Kennedy & Levin 2008)

b. The soup became cooler by a non-zero degree of coolness for an hour. (Based on Kennedy & Levin 2008)

(73) a. The cook caused the soup to become cooler by the maximum degree of coolness (defined in the context of utterance) in an hour. (Based on Kennedy & Levin 2008)

b. The cook caused the soup to become cooler by a non-zero degree of coolness for an hour. (Based on Kennedy & Levin 2008)

In particular, the causative construction in (73a) is telic, because the event of (the cook) cooling the soup which caused the event of the soup becoming cooler by the maximum degree of coolness has no subintervals of (the cook) cooling the soup which caused the event of the soup becoming cooler by the maximum degree of coolness. By contrast, the causative construction in (73b) is atelic, because the event of (the cook) cooling the soup which caused the event of the soup becoming cooler by a non-zero degree is divisible into subintervals of (the cook) cooling the soup which caused the event of the soup becoming cooler by a non-zero degree of coolness.

Under the proposed analysis, simple-transitive BA-constructions are also causative constructions involving two causally related eventualities – a causing event specified by the simple transitive verb, and a caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed). I propose that simple-transitive BA-constructions exhibit variability in telicity, due to the variable construal of the caused/resulting event specified by the null resultative phrase: in particular, a simple-transitive BA-construction is telic when the null resultative phrase specifies a result that contains the maximum degree/amount of change (i.e., a result of the PRO subject, controlled by the post-BA NP, being V-ed, by the maximum degree/amount); a simple-transitive BA-construction is atelic when the null resultative phrase specifies a result that contains a non-zero degree/amount of change (i.e., a result of the PRO subject, controlled by the post-BA NP, being V-ed, by a non-zero degree/amount) (cf. Kennedy & Levin 2008).

Concretely, I propose that in simple-transitive BA-constructions where the VP is modified by a (post-verbal) measure phrase, the (post-verbal) measure phrase specifies the maximum degree/amount of change (e.g., *yi-ge zi* '(as far as) one word', *yi-bian* '(as far as) one pass'), hence the null resultative phrase specifies a caused/resulting event of the PRO subject, controlled by the post-BA NP, being V-ed, by the maximum degree/amount of change (e.g., the event of that letter being read as far as one word/pass), which would be caused by the event specified by the simple transitive verb (e.g., the event of (me) reading that letter). The simple-transitive BA-constructions in (74) are telic and compatible with an *in*-adverbial, because the event of (me) reading that letter which would cause the event of that letter being read as far as one word/pass has no subintervals of (me) reading that letter which would cause the event of that letter being read as far as one word/pass.

(74) a. Wo xiang/hui (zai yi-xiaoshi nei) ba na-feng xin kan **yi-ge zi**.
1SG want/will at one-hour in BA that-CL letter read one-CL word
'I wan to/will read that letter as far as one word (within one hour).'

b. Wo xiang/hui zai yi-xiaoshi nei ba na-feng xin (cong tou dao wei) kan
1SG want/will at one-hour in BA that-CL letter from start to finish read
yi-bian.
one-pass
'I wan to/will read that letter (from start to finish) as far as one pass (within one hour).'

By contrast, I propose that in simple-transitive BA-constructions where the VP is modified by a (pre-verbal) degree/manner adverb, the (pre-verbal) degree/manner adverb introduces a measure of change without a maximum value (e.g., an unbounded degree of carefulness, an unbounded number of words/repeats/passes), hence the null resultative phrase specifies a caused/resulting event of the subject being V-ed, by a non-zero degree/amount of change (e.g., the event of that letter being read to a non-zero degree of carefulness/as far as one word/repeat/pass), which would be caused by the event specified by the simple transitive verb (e.g., the event of (me) reading that letter). The simple-transitive BA-constructions in (75) are atelic and compatible with a *for*-adverbial, because the event of (me) reading that letter (to an unbounded degree of carefulness/as far as an unbounded number of words/repeats/passes) which would cause the event of that letter being read to a non-zero degree of carefulness/as far as one word/repeat/pass is divisible into subintervals of (me) reading that letter (to an unbounded degree of carefulness/as far as an unbounded number of words/repeats/passes) which would cause the event of that letter being read to a non-zero degree of carefulness/as far as one word/repeat/pass.

(75) a. Wo xiang/hui ba na-feng xin **zixi-de/yi-zi-yi-zi-de** kan (yi-xiaoshi).
1SG want/will BA that-CL letter carefully/one-word-one-word read one-hour
'I want to/will read that letter carefully/word for word (for one hour).'

b. Wo xiang/hui ba na-feng xin **fanfu-de/yi-bian-yi-bian-de** kan (yi-xiaoshi).
1SG want/will BA that-CL letter repeatedly/one-pass-one-pass read one-hour
'I want to/will read that letter repeatedly/over and over again (for one hour).'

Similarly, the BA-construction in (76a), where the verb *tui* 'push' is followed by the PP *dao fangjian-li* 'into the room', is telic and compatible with an *in*-adverbial, because the event of (me) pushing the box which would cause the event of the box being in the room has no subintervals of (me) pushing the box which would cause the event of the box being in the room. By contrast, the BA-construction in (76b), where the same verb *tui* 'push' is preceded by the PP *wang fangjian-li* 'toward the room', is atelic and compatible with a *for*-adverbial, because the event of (me) pushing the box (toward the room) which would cause the event of the box being pushed toward the room by a non-zero amount of distance is divisible into subintervals of (me) pushing the box (toward the room) which would cause the event of the box being pushed toward the room by a non-zero amount of distance.

(76) a. Wo xiang/hui (zai yi-xiaoshi nei) ba xiangzi tui **dao fangjian-li**.
1SG want/will at one-hour in BA box push at room-in
'I want to/will push the box into the room (within one hour).'

b. Wo xiang/hui ba xiangzi **wang fangjian-li** tui (yi-xiaoshi).
1SG want/will BA box toward room-in push one-hour
'I want to/will push the box toward the room (for one hour).'

3.6.2 The X factor

To reiterate, under the proposed analysis, simple-transitive BA-constructions are also causative constructions involving two causally related eventualities – a causing event specified by the simple transitive verb, and a caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed). I propose that BA is incompatible with a VP consisting solely of a simple transitive verb in its bare form and a (specific) object (as the post-BA NP), as seen in (77a), because such a VP lacks a bi-eventive construal – the intended causing event specified by the simple transitive verb and the intended caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed) are the same event. Concretely, the simple-transitive BA-construction in (77a) is ill-formed, because the event of (me) reading that letter and the event of that letter being read are the same event.

(77) a. *Wo xiang/hui ba na-feng xin_i kan $\_\_{}_i$.
1SG want/will BA that-CL letter read
INT: 'I want to/will read that letter.'

b. Wo xiang/hui kan na-feng xin.
1SG xiang/will read that-CL letter
'I want to/will read that letter.'

Contra Li (2006, 2017), who suggests that "the addition of a post-verbal or pre-verbal element X generally makes the affectedness interpretation [of the post-BA NP] more salient, hence renders a BA-construction more acceptable", I suggest that the X factor, e.g., perfective marking on the simple transitive verb, or modifying the VP with a (post-verbal) measure phrase or a (pre-verbal) degree/manner adverb (as discussed previously), effectively makes the causing and caused/resulting events distinct, hence makes a bi-eventive construal of the VP possible.

Recall that marking the simple transitive verb with the perfective *-le* can make a simple-transitive BA-construction well-formed, as seen in (78). In this case, the null resultative phrase specifies a caused/resulting event of the PRO subject, controlled by the post-BA NP, *having been* V-ed (e.g., the event of that letter having been read), which is distinct from the causing event specified by the simple transitive verb (e.g., the event of (me) reading that letter). The simple-transitive BA-construction in (78) is telic and compatible with an *in*-adverbial, because the event of (me) reading that letter which caused that letter to undergo a change from a state of not being read to a state of being read has no subintervals of (me) reading that letter which caused that letter to undergo a change from a state of not being read to a state of being read.

(78) Wo (zai yi-xiaoshi nei) ba na-feng xin kan**-le**.
1SG at one-hour in BA that-CL letter read-PRF
'I read that letter (within one hour).'

There are other options for the X factor: First, the presence of an overt resultative phrase in a complex-predicate BA-construction makes the complex-predicate BA-construction well-formed. This is because the caused/resulting event specified by the resultative phrase and the causing event specified by the matrix verb are distinct.

Second, as seen in (79), the verb of the form V-*yi*-V 'V-one-V (V as far as one V)' can make a simple-transitive BA-construction well-formed.

(79) Wo xiang/hui (zai yi-xiaoshi nei) ba na-feng xin (jiandan-de/kuaisu-de) **kan-yi-kan**.
1SG want/will at one-hour in BA that-CL letter briefly/quickly read-one-read
'I want to/will read that letter as far as one read(-ing of that letter) (briefly/quickly) (within one hour).' (Adapted from Li 2017: ex. 36)

I propose that the verb of the form V-*yi*-V 'V-one-V (V as far as one V)' specifies the maximum degree/amount of change, '(as far as) one V', hence the null resultative phrase specifies a caused/resulting event of the PRO subject, controlled by the post-BA NP, being V-ed as far as one V (e.g., the event of that letter being read as far as one read(-ing of that letter)), which is distinct from the causing event specified by the simple transitive verb (e.g., the event of (me) reading that letter). The simple-transitive BA-construction in (79) is telic and compatible with an *in*-adverbial, because the event of (me) reading that letter which would cause the event of that letter being read as far as one read(-ing of that letter) has no subintervals of (me) reading that letter which would cause the event of that letter being read as far as one read(-ing of that letter).

Lastly, as seen in (80), the durative marker -*zhe* can make a simple-transitive BA-construction well-formed.

(80) Wo xiang/hui ba hua (yizhi) bao/na/fang/gua-**zhe**.
1SG want/will BA painting continuously hold/hold/put/hang-DUR
'I want to/will (continuously) hold (with arms)/hold (in hand)/put (aside)/hang the painting.' (Adapted from Li 2017: ex. 39)

As is pointed out by Li (2006, 2017), verbs compatible with the durative marker -*zhe* (e.g., *bao* 'hold (with arms)', *na* 'hold (in hand)', *fang* 'put (aside)', *gua* 'hang') "contain the notion of transition or path of motion, resulting in an end state ... that continues".[8] Hence, I propose that when the simple transitive verb is marked with the durative -*zhe*, the null resultative phrase specifies a caused/resulting event of the PRO subject, controlled by the post-BA NP, continuously being V-ed (e.g., the event of the painting continuously being held (with arms)/held (in hand)/put (aside)/hung), which is distinct from the causing event specified by the simple transitive verb (e.g., the event of (me) performing the necessary action in order to hold (with arms)/hold (in hand)/put (aside)/hang the painting).

[8]The durative marker -*zhe* also co-occurs with the progressive aspect, which is irrelevant to the discussion here.

3.6.3 Affectedness as caused change of state

Lastly, recall that, contra the affective analysis, which defines the affectedness interpretation of the post-BA NP in terms of it being physically or non-physically affected or "handled, manipulated, dealt with", "disposed of" by the subject of BA (Li & Thompson 1981: 466-480; see also Li 2006, 2017; Huang, Li & Li 2009; a.o.), the proposed analysis defines the affectedness interpretation of the post-BA NP in terms of it being caused to perform an action or undergo a change of state (following Alsina 1992). In particular, under the proposed analysis of simple-transitive BA-constructions, the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state (e.g., from a state of not being V-ed to a state of being V-ed, when the simple transitive verb is marked with the perfective *-le*).

Concretely, the well-formed simple-transitive BA-construction in (81a) expresses how my scolding of Lisi caused Lisi to undergo a change from a state of not being scolded to a state of being scolded; the well-formed simple-transitive BA-construction in (81a) expresses how my reading of that letter caused that letter to undergo a change from a state of not being read to a state of being read.

(81) a. Wo ba Lisi ma-le.
1SG BA Lisi scold-PRF
'I scolded Lisi.'

b. Wo ba na-feng xin kan-le.
1SG BA that-CL letter read-PRF
'I read that letter.'

The ill-formed simple-transitive BA-construction in (82a) is intended to express how my seeing/hearing of Lisi caused Lisi to undergo a change from a state of not being seen/heard to a state of being seen/heard; similarly, the ill-formedness of (82a) is intended to express how my getting to know of this matter caused this matter to undergo a change from a state of not being known to a state of being known.

(82) a. *Wo ba Lisi kanjian/tingjian-le.
1SG BA Lisi see/hear-PRF
INT: 'I saw/heard Lisi.' (Adapted from Li & Thompson 1981: 468: ex. 24; Huang 1992: ex. 42a)

b. *Wo ba zhe-jian shi zhidao-le.
1SG BA this-CL matter know-PRF
INT: 'I got to know this matter.'

While perfective marking on the simple transitive verb does not make the simple-transitive BA-constructions in (82) well-formed, note that modifying the VP with a degree/manner phrase does render the simple-transitive BA-constructions more acceptable, as seen in (83). Specifically, (83a) expresses how my seeing/hearing of Lisi (clearly) would cause Lisi to undergo a change from a state of not being seen/heard clearly to a state of being seen/heard clearly; (83b) expresses how my

getting to know of this matter (from start to finish) would cause this matter to undergo a change from a state of not being known from start to finish to a state of being known from start to finish.

(83) a. ?Wo xiang/hui ba Lisi kan/ting qingchu.
1SG want/will BA Lisi see/hear clearly
'I want to/will see/hear Lisi clearly.'

b. ?Wo xiang/hui ba zhe-jian shi cong tou dao wei zhidao.
1SG want/will BA this-CL matter from start to finish know
'I want to/will know this matter from start to finish.'

Similarly, under the proposed analysis, the well-formed BA-construction in (84a) expresses how his loving of the small cat causes the small cat to undergo a change from a state of not being loved to the extent that he wants to die to a state of being loved to the extent that he wants to die; the well-formed BA-construction in (84b) expresses how his missing you causes you to undergo a change from a state of not being missed to the extent that he does not want to eat even his meal to a state of being missed to the extent that he does not want to eat even his meal.

(84) a. Ta ba xiao mao ai-de yao si.
3SG BA small cat love-DE want die.
'He loves the small cat to death/the extent that (he) wants to die.' (Adapted from Li & Thompson 1981: 469, ex. 27)

b. Ta ba ni xiang-de (ta) lian fan dou bu xiang chi-le.
3SG BA you miss-DE meal he even DOU not want eat-PRF
'He misses you so much that (he) does not want to eat even his meal.' (Adapted from Li & Thompson 1981: 469, ex. 28)

Hence, the relevant contrast seems to be that for simple transitive verbs like *ma* 'scold', *kan* 'read', their past participle form (be V-ed) can define an a priori state of their logical object – (81a) is well-formed, because the state of Lisi not being scolded prior to the causing event of (me) scolding Lisi is well-defined; similarly, (81b) is well-formed, because the state of that letter not being read prior to the causing event of (me) reading that letter is well-defined. By contrast, for simple transitive verbs like *kanjian/tingjian* 'see/hear', *zhidao* '(get to) know', their past participle form (be V-ed) does not define an a priori state of their logical object – (82a) is ill-formed, because the state of Lisi not being seen/heard prior to the causing event of (me) hearing/seeing Lisi is ill-defined; similarly, (82b) is ill-formed, because the state of this matter not being known prior to the causing event of (me) getting to know this matter is ill-defined. The simple-transitive BA-constructions in (83) and (84) are well-formed, because the state of Lisi not being seen/heard clearly, the state of that matter not being known from start to finish, the state of the kitten not being loved to the extent that he wants to die, and the state of you not being missed to the extent that he does not want to eat even his meal, are well-defined.

3.7 On the size of the resultative phrase

According to Pylkkänen (2002, 2008), causative constructions in different languages exhibit variations in the size of the resultative phrases selected by the causative head, which can be a root projection, a full-fledged VP, or a phase projected by an external-argument introducing head. The basis for this argument lies in the adverbs that can modify the resultative phrase. Pylkkänen (2002, 2008) uses the possibility of modification by manner adverbs as a diagnostic for the presence of a VP in the resultative phrase, and uses the possibility of modification by subject-oriented adverbs as a diagnostic for the presence of a phase projected by an external-argument introducing head in the resultative phrase.

In this section, I will present evidence that in different BA-constructions, Cause selects resultative phrases of different sizes – a root projection, a full-fledged VP, or an IP. Specifically, in section 7.1, I will use the impossibility of modification by post-verbal durative/frequentive adverbs as a diagnostic for the lack of a full-fledged VP in a resultative phrase headed by V2 in a V1-V2 compound; in section 7.2, I will use the possibility of modification by post-verbal durative/frequentive adverbs as a diagnostic for the presence of a full-fledged VP in the null resultative phrase headed by the past participle form of the simple transitive verb (be V-ed) in simple-transitive BA-constructions; in section 7.3, I will use the possibility of embedded tense and modal verbs as a diagnostic for the presence of an IP in a resultative phrase headed by DE in a V-DE XP complex predicate.

3.7.1 Root-selecting Cause

Pylkkänen (2002, 2008) argues that in the English lexical causative, the causative head selects a resultative phrase that is root projection; hence, a manner adverb, which attaches to a full-fledged VP, cannot modify the caused/resulting event specified by the resultative phrase, as seen in (85).

(85) *English lexical causative*
John awoke Bill grumpily.
'John grumpily made Bill awake.' (NOT: 'John made Bill awake grumpily.') (Pylkkänen 2008: 110, ex. 65)

In Mandarin, durative/frequentive adverbs must occur post-verbally, as seen in (86). I assume, following Soh (1998) and others, that durative/frequentive adverbs attach to a full-fledged VP.

(86) a. Wo ma-le Lisi yi-xiaoshi/liang-ci.
1SG scold-PRF Lisi one-hour/two-time
'I scolded Lisi for one hour/twice.'

b. Lisi ku-le yi-xiaoshi/liang-ci.
Lisi cry-PRF one-hour/two-time
'Lisi cried for one hour/twice.'

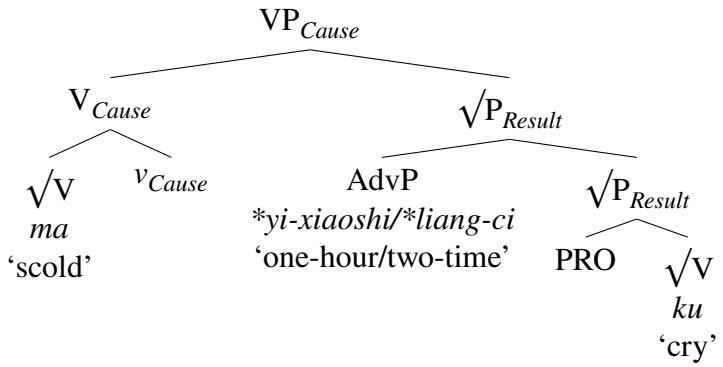
I argue that in complex-predicate BA-constructions where the causative head (v_{Cause}) is modi-

fied by V1 in a V1-V2 compound and the modified causative head (V_{Cause}) selects a resultative phrase headed by V2 in a V1-V2 compound, the resultative phrase is a root projection; hence, durative/frequentive adverbs cannot modify the caused/resulting event specified by the resultative phrase, as seen in (87).[9]

(87) a. *Wo ba Lisi ma-ku-le yi-xiaoshi.
1SG BA Lisi scold-cry-PRF one-hour
INT: 'I scolded Lisi, as a result Lisi cried for one hour.'

b. Wo ba Lisi ma-ku-le liang-ci.
I BA Lisi scold-cry-PRF two-time
'For two times, I scolded Lisi, as a result Lisi cried.' (NOT: 'I scolded Lisi, as a result Lisi cried twice.')

(88) *Root-selecting Cause in Mandarin* BA*-construction*



3.7.2 VP-selecting Cause

Pylkkänen (2002, 2008) argues that in the Finish *-tta* causative, the causative head selects a resultative phrase that is a full-fledged VP; hence, a manner adverb, which attaches to a full-fledged VP, but not a subject-oriented adverb, which attaches to a projection of an external-argument introducing head, can modify the caused/resulting event specified by the resultative phrase, as seen in (89).

(89) *Finnish -tta causative*

a. Opettaja laula-tt-i kuoro-a kauniisti.
teacher.NOM sing-CAUSE-PST choir-PART beautifully
'The teacher made the choir sing beautifully.' (The teacher's action does not need to be beautiful.) (Pylkkänen 2008: 116, ex. 83)

[9] In (87a), the durative phrase cannot attach to VP_{Cause} because VP_{Cause} is telic.

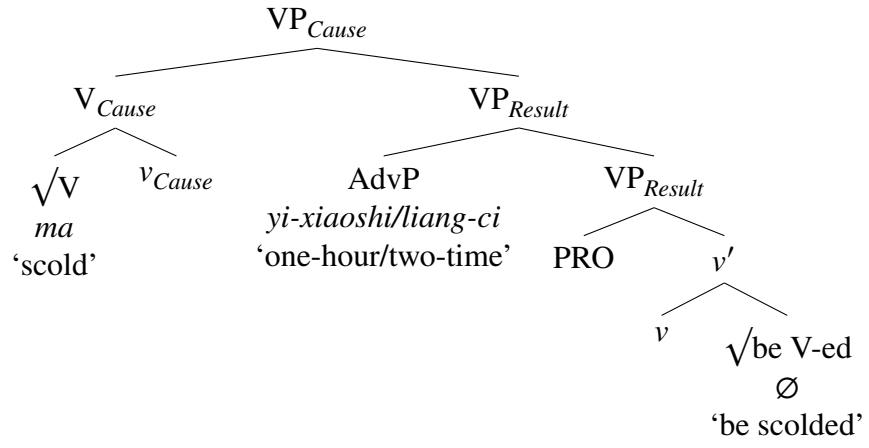
b. Ulla rakenn-utt-i Mati-lla uude-n toimistopöydä-n innokkaasti.
Ulla.NOM build-CAUSE-PST Matti-ADESS new-ACC office table-ACC enthusiastically
'Ulla, enthusiastically, made Matti build her a new office desk.' (NOT: 'Ulla made Matti, enthusiastically, build her a new office desk.') (Pylkkänen 2008: 116, ex. 84)

I argue that in simple-transitive BA-constructions where the causative head (v_{Cause}) is modified by the simple transitive verb and the modified causative head (V_{Cause}) selects a null resultative phrase headed by the past participle form of the simple transitive verb (be V-ed), the resultative phrase is a full-fledged VP; hence, durative/frequentive adverbs, which attach to a full-fledged VP, but not 'deliberately'-type adverbs, which attach to a projection of Voice (see chapter 2 of this dissertation), can modify the caused/resulting event specified by the resultative phrase, as seen in (90).

(90) a. Wo ba Lisi ma-le yi-xiaoshi/liang-ci.
1SG BA Lisi scold-PRF one-hour/two-time
'I scolded Lisi for one hour/twice.'

b. Wo {guyi} ba Lisi {*guyi} da-le.
1SG deliberately BA Lisi deliberately hit-PRF
'I deliberately hit Lisi.' (NOT: 'I made Lisi deliberately get hit.')

(91) *VP-selecting Cause in Mandarin* BA*-construction*



3.7.3 IP-selecting Cause

Lastly, Pylkkänen (2002, 2008) argues that in the Venda *-is-* causative construction and the Luganda *-sa-* causative construction, the causative head selects a phase projected by an external-argument introducing head; hence, a subject-oriented adverb, which attaches to a projection of an external-argument introducing head, can modify the caused/resulting event specified by the resultative phrase, as seen in (92).

(92) a. *Venda -is- causative*

Muuhambadzi o-reng-is-a Katonga modoro nga dzangalelo.
salesman 3SG.PST-buy-CAUSE-FV Katonga car with enthusiasm
'The salesman made Katonga buy the car eagerly.' (Pylkkänen 2008: 119, ex. 92)

b. *Luganda -sa- causative*

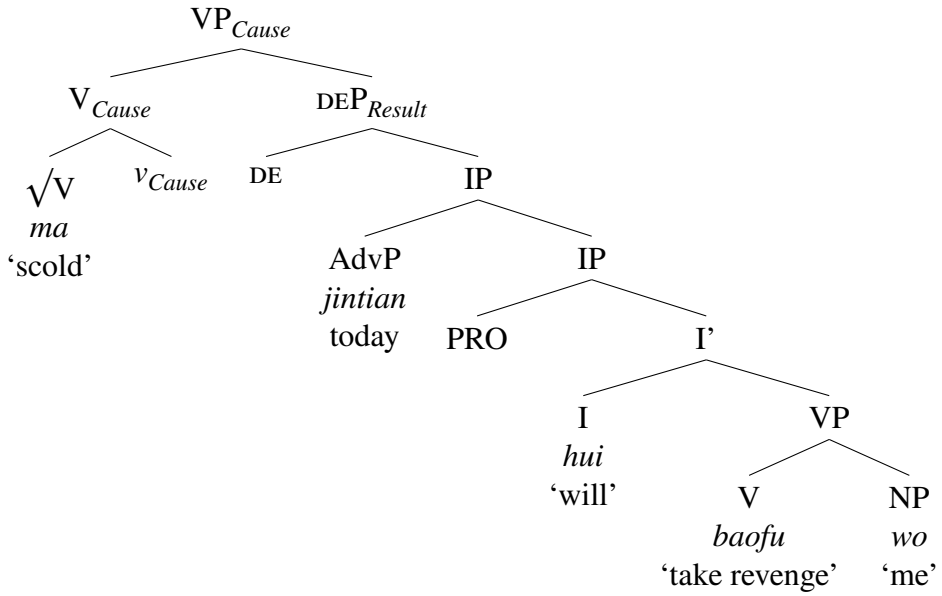
Omusomesa ya-wandi-s-a Katonga ne obu nyikivu.
teacher 3SG.PST-write-CAUSE-FV Katonga with the dedication
'The teacher made Katonga write with dedication.' (Pylkkänen 2008: 119, ex. 93)

I argue that in complex-predicate BA-constructions where the causative head (v_{Cause}) is modified by the matrix verb and the modified causative head (V_{Cause}) selects a resultative phrase headed by DE, the resultative phrase is as large as an IP; hence, not only durative/frequentive adverbs, manner adverbs, and 'deliberately'-type adverbs, but also temporal adverbs and modal verbs, can modify the caused/resulting event specified by the resultative phrase, as seen in (93).

(93) a. Wo ba Lisi ma-de guyi dasheng-de ku-le yi-ge xiaoshi/liang-ci.
1SG BA Lisi scold-DE deliberately loudly cry-PRF one-CL hour/two-time
'I scolded Lisi, as a result Lisi deliberately loudly cried for one hour/twice.'

b. Zuotian, wo ba Lisi ma-de jintian hui baofu wo.
yesterday 1SG BA Lisi scold-DE today will take revenge 1SG
'Yesterday, I scolded Lisi, as a result today, Lisi will take revenge on me.'

(94) *IP-selecting Cause in Mandarin* BA*-construction*



3.8 Implications for ditransitive syntax-semantics

In this section, I will use the (im)possibility of having a corresponding BA-construction to diagnose whether or not a ditransitive construction in Mandarin can have a bi-clausal syntax and bi-eventive semantics. Specifically, in section 8.1, I will propose a causative (i.e., bi-clausal/bi-eventive) analysis of prepositional-dative constructions in Mandarin which have well-formed BA-variants (following Harley 1995, 2002). Then, in section 8.2, I will argue against a 'cause-to-have' analysis of canonical double-object constructions in Mandarin (contra Harley 1995, 2002) and a 'cause-to-lose' analysis of affective double-object constructions in Mandarin (contra Pylkkänen 2002, 2008), because the two types of double-object constructions lack BA-variants. Lastly, in section 8.3, I will identify other ditransitive BA-constructions in Mandarin that are subject to a causative (i.e., bi-clausal/bi-eventive) analysis.

3.8.1 Prepositional-dative constructions

In prepositional-dative constructions in Mandarin, as exemplified by (95), the verb is followed by the theme direct object, followed by a PP headed by *gei* 'to', which introduces a recipient indirect object, or *zai* 'be at', which introduces a goal indirect object.

(95) *Prepositional-dative construction*

a. Wo song-le yi-ben shu gei Lisi.
1SG give-PRF one-CL book to Lisi
'I gave a book to Lisi.'

b. Wo fang-le yi-ben shu zai zhuozi-shang.
1SG put-PRF one-CL book be.at desk-on
'I put a book on the desk.'

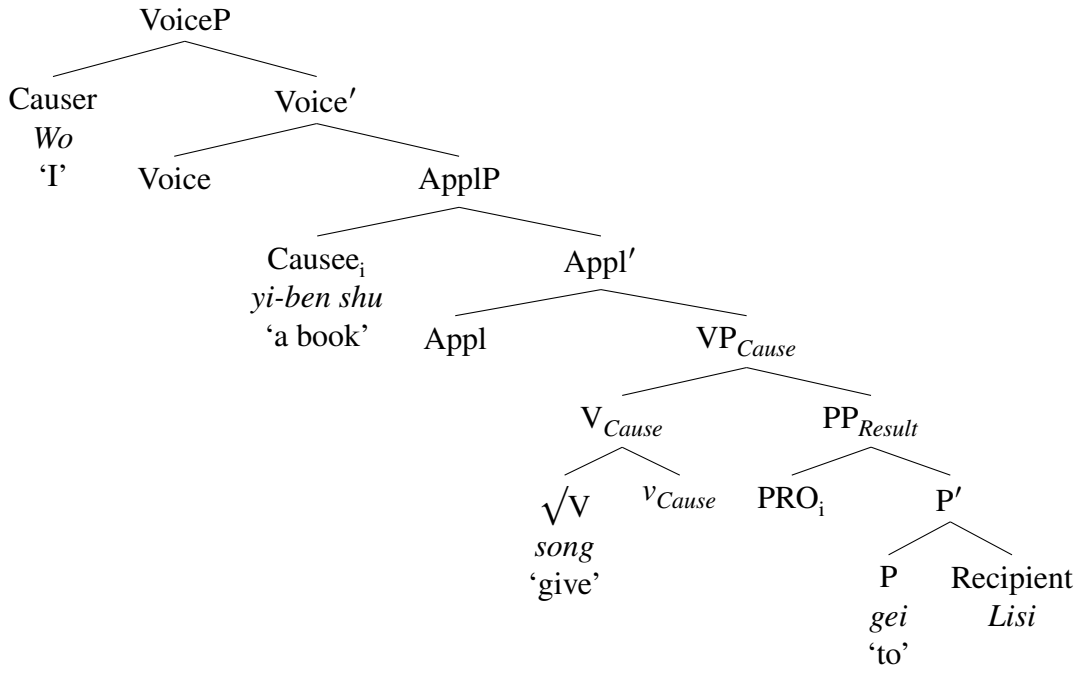
Prepositional-dative constructions in Mandarin have well-formed BA-variants, as seen in (96).

(96) a. Wo ba yi-ben shu song-gei-le Lisi.
1SG BA one-CL book give-to-PRF Lisi
'I gave a book to Lisi.'

b. Wo ba yi-ben shu fang-zai-le zhuozi-shang.
1SG BA one-CL book put-be.at-PRF desk-on
'I put a book on the desk.'

Hence, I propose that prepositional-dative constructions in Mandarin have a bi-clausal syntax and bi-eventive semantics, as illustrated in (97) (following Harley 1995, 2002). The BA-non-BA variation is a matter of what spells out the Voice head: In the BA-variants, BA spells out the Appl(icative) head, and the Appl(icative) head/BA undergoes head movement to the Voice head. In the non-BA variants, the correct word order is derived via V_{Cause} to Appl to Voice head movement.

(97) *Proposed analysis of prepositional-dative construction*



3.8.2 Double-object constructions

In Mandarin, there are two types of double-object constructions: in *canonical double-object constructions*, as exemplified by (98), the verb is followed by the recipient indirect object, followed by the theme direct object; in *affective double-object constructions*, as exemplified by (99), the verb is followed by the affectee indirect object, followed by the theme direct object.

(98) *Canonical double-object construction*

a. Wo song(-gei)-le Lisi yi-ben shu.
1SG give-to-PRF Lisi one-CL book
'I gave Lisi a book.'

b. Wo gaosu-le Lisi yi-jian shi.
1SG tell-PRF Lisi one-CL matter
'I told Lisi a matter.'

(99) *Affective double-object construction*

a. Xiaotou tou-le Lisi yi-ben shu.
thief steal-PRF Lisi one-CL book
'The thief stole (from) Lisi a book.'

b. Wo he-le Lisi yi-ping jiu.
1SG drink-PRF Lisi one-bottle wine
'I drank (from) Lisi a bottle of wine.'

c. Wo tou-jin-le Lisi yi-ge san-fen-qiu.
1SG throw-in-PRF Lisi one-CL three-point-goal
'I threw in a three-pointer on Lisi.'

Both types of double-object constructions lack BA-variants, as seen in (100) and (101).

(100) a. *Wo ba Lisi song(-gei)-le yi-ben shu.
1SG BA Lisi give-to-PRF one-CL book
INT: 'I gave Lisi a book.'

b. *Wo ba Lisi gaosu-le yi-jian shi.
1SG BA Lisi tell-PRF one-CL matter
INT: 'I told Lisi a matter.'

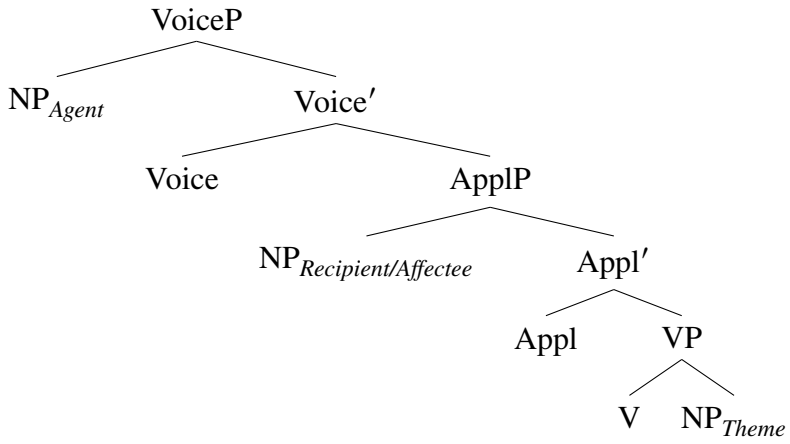
(101) a. *Xiaotou ba Lisi tou-le yi-ben shu.
thief BA Lisi steal-PRF one-CL book
INT: 'The thief stole (from) Lisi a book.'

b. *Wo ba Lisi he-le yi-ping jiu.
1SG BA Lisi drink-PRF one-bottle wine
INT: 'I drank (from) Lisi a bottle of wine.'

c. *Wo ba Lisi tou-jin-le yi-ge san-fen-qiu.
1SG BA Lisi throw-in-PRF one-CL three-point-goal
INT: 'I threw in a three-pointer on Lisi.'

The ill-formedness of (100) and (101) is inconsistent with a 'cause-to-have' analysis of canonical double-object constructions in Mandarin (see e.g., Harley 1995, 2002) and a 'cause-to-lose' analysis of affective double-object constructions in Mandarin (see e.g., Pylkkänen 2002, 2008), and is consistent with a mono-clausal/mono-eventive analysis of the two types of double-object constructions where the theme direct object is introduced by the verb, and the recipient or affectee indirect object is introduced by an Appl(icative) head which projects above the VP, as illustrated in (102) (see e.g., Marantz 1993; Bruening 2010).

(102) *Proposed analysis of double-object construction*



3.8.3 Other ditransitive BA-constructions

Lastly, I suggest that a causative (i.e., bi-clausal/bi-eventive) analysis can be extended to other ditransitive BA-constructions in Mandarin, as exemplified by (103), which involve a complex predicate, and (104), which involve just a simple (di-)transitive verb. In these cases, the resultative phrase is arguably headed by a two-place predicate, which is overt in (103) and is arguably the past participle form of the simple (di-)transitive verb (be V-ed) in (104). The so-called 'retained object' is arguably introduced by the head of the resultative phrase as its internal argument. In many cases, the retained object seems to have incorporated into the predicate. I leave more detailed analysis of these ditransitive BA-constructions for future work.

(103) a. Wo ba kache zhuang-man-le daocao.
1SG BA truck load-be.full-PRF hay
'I loaded the truck (with hay), as a result the truck was full of hay.'

b. Wo ba daocao zhuang-man-le kache.
1SG BA hay load-be.full-PRF truck
'I loaded hay (onto the truck), as a result hay was full on the truck.'

c. Wo ba zhe-jian shi xie-sheng-le baogao.
1SG BA this-CL matter write-become-PRF report
'I wrote about this matter (as a report), as a result this matter became a report.'

d. Tufei ba Lisi sha-si-le baba.
bandit BA Lisi kill-be.dead-PRF father
Lit. 'The bandit father-killed Lisi, as a result Lisi was dead of father.'

(104) a. Wo ba Lisi sheng/jiang-le zhi.
1SG BA Lisi raise/lower-PRF position
Lit. 'I (position-)raised/lowered Lisi, as a result Lisi was position-raised/lowered.'

b. Wo ba Lisi xi-le nao.
1SG BA Lisi wash-PRF brain
Lit. 'I brain-washed Lisi, as a result Lisi was brain-washed.'

c. Wo ba ta bang-le liang-zhi jiao.
1SG BA 3SG tie-PRF two-CL foot
Lit. 'I (feet-)tied him, as a result he was feet-tied.' (Li & Thompson 1981: 470, ex. 33)

d. Wo ba juzi bo-le pi.
1SG BA orange peel-PRF skin
Lit. 'I (skin-)peeled the orange, as a result the orange was peeled off of skin.' (Li & Thompson 1981: 471, ex. 34)

e. Wo ba ta huan-le mingzi.
1SG BA 3SG change-PRF name
Lit. 'I name-changed him, as a result he was name-changed.' (Li & Thompson 1981: 471, ex. 35)

f. Wo ba zhuozi da-le la.
1SG BA table do-PRF wax
Lit. 'I wax-done the table, as a result the table was wax-done.' (Li & Thompson 1981: 471, ex. 36)

g. Wo ba bilu sheng-le huo.
1SG BA fireplace set-PRF fire
Lit. 'I fire-set the fireplace, as a result the fireplace was fire-set.' (Li & Thompson 1981: 471, ex. 37)

h. Wo ba che jia-le you.
1SG BA car add-PRF gasoline
Lit. 'I gasoline-added to the car, as a result the car was gasoline-added.' (Adapted from Li & Thompson 1981: 471, ex. 38)

i. Wo ba men shang-le suo.
1SG BA door put on-PRF lock
Lit. 'I lock-put-on the door, as a result the door was put on a lock.' (Li & Thompson 1981: 471, ex. 39)

3.9 Conclusion

The Mandarin BA-construction involves an apparently pre-posed noun phrase (the post-BA NP) with an affectedness interpretation, which can be identified with either the subject of a resultative phrase in a complex predicate or the direct object of a simple transitive verb. I argued for a novel analysis of the Mandarin BA-construction as a causative construction, where the causative head, which selects a predicate of the caused/resulting event and projects a predicate of the causing event (following Pylkkänen 2002, 2008), has two additional arguments: a causer and a causee. The post-BA NP, as the causee argument of the causative head, also controls a PRO subject in a resultative phrase (following Huang 1992), which is overt in a complex-predicate BA-construction and is phonologically null in a simple-transitive BA-construction (following Sybesma 1992, 1999). The post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

In this section, I conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the BA-construction.

(i) **What are the universal properties that can be defended on the basis of Mandarin? What does Mandarin contribute to our understanding of the universal properties?**

First, the proposed analysis of the BA-construction as a causative construction involving two causally related eventualities, in particular, the proposal that simple-transitive BA-constructions involve a causing event specified by the simple transitive verb and a caused/resulting event specified by the past participle form of the simple transitive verb (be V-ed), provides support to Pylkkänen's (2002, 2008) analysis of causative constructions as having a bi-clausal syntax and bi-eventive semantics.

In addition, I argued on the basis of the BA-construction that the affectedness of the post-BA NP arises from it being the causee argument of Cause and controlling a PRO subject in the resultative phrase, which aligns with Alsina's (1992) view of affectedness (in causative constructions).

(ii) **How are these universal properties obscured (by apparently distinctive properties) in the relevant Mandarin constructions?**

The BA-construction is unique in that it involves both causation – two causally related eventualities, which is apparent in the case of complex-predicate BA-constructions, but is not apparent in the case of simple-transitive BA-constructions – and affectedness – the interpretation of the post-BA NP as being affected in the causing event specified by the (matrix) verb. Under the proposed analysis, simple-transitive BA-constructions are also causative constructions where a phonologically null resultative phrase is present (following Sybesma 1992, 1999), and that the post-BA NP is interpreted as being affected in the causing event, in the sense that it is caused to perform an action or undergo a change of state (following Alsina 1992).

(iii) **What is the evidence for these universal properties in Mandarin, despite the apparently distinctive properties associated with the relevant constructions?**

Evidence for the proposed analysis of the BA-construction and Alsina's (1992) view of affectedness (in causative constructions) as being associated with the causee argument of Cause

and in terms of it being caused to perform an action or undergo a change of state and against Sybesma's (1992, 1999) causative analysis of the BA-construction and view of affectedness (in causative constructions) as being associated with the subject of the resultative phrase in a causative construction was based on a comparison between the BA-construction and another causative construction in Mandarin (the *shi*-construction), which contains the causative verb *shi* 'make'. I showed that an affectedness interpretation is always imposed on the post-BA NP in canonical complex-predicate BA-constructions; by contrast, no affectedness interpretation is imposed on the post-*shi* NP in a *shi*-construction, which is a causative construction containing the causative verb *shi* 'make'. Hence, I argued that the post-BA NP in the BA-construction is a causee argument of Cause being caused to perform an action or undergo a change of state, in the sense of Alsina (1992); by contrast, the post-*shi* NP is underlyingly the subject of the resultative phrase, which is not an argument of Cause.

Moreover, I challenged the affective analysis of the BA-construction which accounts for the affectedness of the post-BA NP by appealing to an idiosyncratic affectee theta-role by providing a principled explanation for the variable telicity of simple-transitive BA-constructions and two well-formedness constraints on simple-transitive BA-constructions under the proposed analysis of simple-transitive BA-constructions, where a null resultative is present, and the post-BA NP is affected in the causing event, in the sense that it is caused to undergo a change of state.

Chapter 4

The unaccusative-unergative distinction in Mandarin resultative constructions

4.1 Introduction

The *Unaccusativity Hypothesis* (Perlmutter 1978; Burzio 1986) posits that unaccusative verbs and unergative verbs are associated with distinct argument structures. The sole argument of an unaccusative verb is underlyingly an object/internal argument, which is introduced by the unaccusative verbal root. The sole argument of an unergative verb is a subject/external argument, which is introduced by a functional head (*v*, which categorizes the unergative verbal root as a VP, see e.g., Massam 2009; Tollan 2018; a.o.).

The Unaccusativity Hypothesis has been supported by empirical evidence from various linguistic phenomena that differentiate between unaccusative and unergative constructions. It also finds support in Mandarin, where the sole argument of an unaccusative verb can surface post-verbally (in the thematic object position) when it is indefinite; by contrast, the sole argument of an unergative verb can only surface pre-verbally (see e.g., Huang 1989).

In this chapter, I investigate the Mandarin resultative constructions, which lack an apparent unaccusative-unergative distinction. Unlike resultative constructions in languages like English, which exhibit unaccusative-unergative distinctions that follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986), the apparent lack of an unaccusative-unergative distinction in resultative constructions in Mandarin seems to pose challenges to the Unaccusativity Hypothesis.

Contrary to appearances, I argue that Mandarin does have an unaccusative-unergative distinction in resultative constructions. Specifically, I argue that Mandarin resultative constructions are causative constructions, where the causative head has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb). Importantly, under the proposed analysis, despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb, I argue that the sole argument of an unaccusative matrix verb is always a causee argument, whether or not an additional causer external argument is present; in contrast, the sole argument of an unergative matrix verb, which is a causer external argument otherwise, may also be a causee argument when the causer argument is an internal argument.

Unlike the proposed analysis, previous studies by Huang (1988, 2006), Sybesma (1992, 1999) and others have taken the absence of an unaccusative-unergative distinction in Mandarin resultative constructions at face value, without conducting further investigations. Hence, they propose uniform analyses for resultative constructions regardless of whether the matrix verb is unaccusative or unergative. Huang (2006) specifically proposes an analysis in which Mandarin differs from English in allowing both unaccusative and unergative verbs to modify a Become head within a resultative construction. Such an analysis implies that in Mandarin, the theta-role(s) needed by a verb may not be (fully) specified as part of the lexical properties of the verb, as is the case in English. Furthermore, it implies that there is no basis for Mandarin to conform to the Uniformity of Theta-Assignment Hypothesis (which posits that identical thematic relationships between items are represented by identical structural relationships between these items at the level of D-structure; Baker 1988).

To support the proposed analysis of resultative constructions in Mandarin as causative constructions with four possible argument structures for Cause, I will draw on the main claims established in chapters 2 and 3 of this dissertation. In chapter 2 of the dissertation, I have established that the Mandarin BEI-construction is a passive construction (involving composite A/Ā-movement). This allows us to use a resultative construction's impossibility of passivization with BEI as an indication that Cause lacks an external argument. In chapter 3 of the dissertation, I have established that the Mandarin BA-construction is a causative construction where Cause has two additional arguments: the subject of BA is an agentive or non-agentive causer, and the post-BA NP is a causee. This allows us to use the possibility of a resultative construction exhibiting a BA-non-BA variation as an indication that Cause has two additional arguments: a causer and a causee. I will support the proposed non-uniform analysis of resultative constructions in Mandarin by showing that resultative constructions with unaccusative, unergative and transitive matrix verbs in Mandarin differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction.

The rest of this chapter is organized as follows: In section 2, I will compare resultative constructions in English and Mandarin, showing three distinctions between resultative constructions with unaccusative and unergative matrix verbs in English and an apparent lack of an unaccusative-unergative distinction in resultative constructions in Mandarin. In section 3, I will provide the details of the proposed analysis of resultative constructions in Mandarin as causative constructions where Cause has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, and the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb), and highlight the predictions that the resultative constructions with unaccusative, unergative and transitive matrix verbs in Mandarin differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction. In section 4, I will contrast the proposed analysis of resultative constructions in Mandarin with Huang's (1988, 2006) uniform analysis of resultative constructions with unaccusative and unergative matrix verbs in Mandarin and discuss its (undesirable) implications for the Uniformity of Theta-Assignment Hypothesis. In section 5, I will argue for the proposal that intransitive resultative constructions and non-selected NP resultative constructions in Mandarin are causative constructions where Cause has one additional argument and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative, based on the resultative constructions' (im)possibility of passivization with BEI and exhibiting a BA-non-BA variation. In section 6, I will argue for the proposal that non-canonical transitive resultative constructions in Mandarin are causative constructions where Cause has two additional arguments and have different

argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive, again based on the resultative constructions' (im)possibility of passivization with BEI and exhibiting a BA-non-BA variation. In section 7, I will revisit the English-Mandarin contrasts in resultative constructions, which I argue lie in the mechanism which derives (violations of) the Direct Object Restriction, the possibility of the Appl(icative) head as a case-assigner, and the possibility of Cause introducing a non-agentive causer as its internal argument. Finally, in section 8, I will conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the resultative constructions in Mandarin.

4.2 The (lack of) unaccusative-unergative distinctions in resultative constructions

In this section, I will compare resultative constructions in English and Mandarin. In section 2.1, I will show three distinctions between resultative constructions with unaccusative matrix verbs and resultative constructions with unergative matrix verbs in English, which follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986). In section 2.2, I will show that there is no apparent unaccusative-unergative distinction in Mandarin resultative constructions, which seems to pose challenges to the Unaccusativity Hypothesis.

4.2.1 English

To begin with, English transitive resultative constructions obey the so-called *Direct Object Restriction* (Simpson 1983; Levin & Rappaport Hovav 1995). When the matrix verb is transitive, the resultative phrase can be predicated of the object/internal argument of the transitive matrix verb, but not the subject/external argument of the transitive matrix verb, as seen in (1).

(1) *English transitive resultative/selected NP resultative (transitive matrix verb)*
   a. She wiped the table clean.
   b. *She wiped the table tired. (INT: 'She wiped the table, as a result she was tired.')

Resultative constructions in English exhibit three unaccusative-unergative distinctions, which follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986).

First, in intransitive resultative constructions, where the resultative phrase is predicated of the matrix subject, which is also identified with the sole argument of the matrix verb, the matrix verb can be unaccusative, as seen in (2), but not unergative, as seen in (3). Levin & Rappaport Hovav (1995) propose that this unaccusative-unergative distinction follows from the Unaccusativity Hypothesis and the Direct Object Restriction. Specifically, in (2), the resultative phrase is predicated of the sole argument of the unaccusative verb, which is underlyingly an object/internal argument; hence, the Direct Object Restriction is obeyed. By contrast, in (3), the resultative phrase is predi-

cated of the sole argument of the unergative verb, which is a subject/external argument; hence, the Direct Object Restriction is violated.

(2) *English intransitive resultative (unaccusative matrix verb)*
   a. The river froze solid. (Levin & Rappaport Hovav 1995: 39, ex. 19a)
   b. The window broke open.

(3) a. *Dora shouted hoarse. (Levin & Rappaport Hovav 1995: 36, ex. 2)
   b. *She cried silly.

The second and third distinctions between resultative constructions with unaccusative and unergative matrix verbs have to do with patterns of transitivity alternation – as Huang (2006) puts it, "an unaccusative transitivizes by adding a (causer) external argument", but not an internal argument, while "an unergative may only transitivize by adding an internal argument", but not a (causer) external argument.

Specifically, in contrast to an unergative matrix verb, which can take a resultative phrase predicated of a post-verbal NP that is not thematically related to the unergative matrix verb or a so-called *fake reflexive*, as seen in (4), an unaccusative matrix verb cannot, as seen in (5). Levin & Rappaport Hovav (1995) propose that this unaccusative-unergative distinction follows from the Unaccusativity Hypothesis and *Burzio's Generalization* (Burzio 1986), which states that all and only the verbs that can assign a theta-role to the (logical) subject can assign accusative case to an object. Specifically, in (4), the matrix subject, which is identified with the sole argument of the unergative verb, is a subject/external argument, hence, the post-verbal NP or the fake reflexive can be assigned accusative case. By contrast, in (5), the matrix subject, which is identified with the sole argument of an unaccusative verb, is underlyingly an object/internal argument, hence, the post-verbal NP or the fake reflexive cannot be assigned accusative case.

(4) *English transitive resultative/non-selected NP resultative (unegrative matrix verb)*
   a. The dog barked me awake.
   b. Dora shouted herself hoarse. (Levin & Rappaport Hovav 1995: 36, ex. 3)

(5) a. *The snow melted the road slushy. (Levin & Rappaport Hovav 1995: 39, ex. 20c)
   b. *The iceman froze itself cold.

Lastly, in English, an unaccusative verbal root can be causativized with the addition of a causer subject/external argument, as seen in (6); by contrast, an unergative verbal root cannot be causativized with the addition of a causer subject/external argument, as seen in (7). This unaccusative-unergative distinction follows from the Unaccusativity Hypothesis and the assumption that in English lexical causatives, the causative head selects a root projection and, crucially, not a full-fledged VP (see e.g., Pylkkänen 2002, 2008). Specifically, in (6), the sole argument of the unaccusative verb can surface post-verbally (in the thematic object position), because it is underlyingly an object/internal argument, which is introduced by the unaccusative verbal root; by contrast, in (7), the sole argument of the unergative verb cannot surface post-verbally (in the thematic object posi-

tion), because it is a subject/external argument, which is introduced by a functional head (*v*, which categorizes the unergative verbal root as a VP, see e.g., Massam 2009; Tollan 2018; a.o.).

(6) a. The cold weather froze the river. The cold weather froze the river solid.
b. The heat broke the window. The heat broke the window wide-open.

(7) a. *The bad news cried me. (INT: The bad news made me cry.)
b. *The bad news cried me awake. (INT: The bad news made me cry myself awake.)

4.2.2 Mandarin

Similar to English, Mandarin canonical transitive resultative constructions also obey the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995). When the matrix verb is transitive, the resultative phrase can be predicated of the object/internal argument of the transitive matrix verb, but not the subject/external argument of the transitive matrix verb, as seen in (8).

(8) *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*

a. Wo qi-de zhe-pi ma lei-le.
1SG ride-DE this-CL horse be.tired-PRF
'I rode this horse, as a result (this horse) was tired.' (Not: 'I rode this horse, as a result (I) was tired.')

b. *Wo chi-de fan bao-le.
1SG eat-DE rice be.full-PRF
INT: 'I ate the rice, as a result (I) was full.'

It is worth mentioning that in Mandarin, certain canonical transitive resultative constructions do seem to allow for subject-predication in violation of the Direct Object Restriction, as seen in (9). Note that the resultative constructions in (8) and the ones in (9) differ in that the examples in (8) involve V-DE XP complex predicates while those in (9) involve V1-V2 compounds.

(9) a. Wo qi-lei-le zhe-pi ma.
1SG ride-be.tired-PRF this-CL horse
Object-predicated result: 'I rode this horse, as a result (this horse) was tired.'
Subject-predicated result: 'I rode this horse, as a result (I) was tired.'

b. Wo chi-bao-le fan.
1SG eat-be.full-PRF rice
(Subject-predicated result:) 'I ate the rice, as a result (I) was full.'

Nevertheless, it should be noted that subject-predication in canonical transitive resultative constructions is not a productive pattern and appears to be limited to a selected number of V1-V2 compounds with selected V2 such as *lei* 'be tired', *bao* 'be full' (see Shibata, Sudo & Yashima

2009 for a proposal that subject-oriented V1-V2 compounds are not resultatives in the sense that V2 is not a result). Note that subject-predication is impossible in (10) and (11a).

(10) Wo ma-ku-le Lisi.
1SG scold-cry-PRF Lisi
'I scolded Lisi, as a result (Lisi) cried.' (Not: 'I scolded Lisi, as a result (I) cried.')

(11) a. *Ta chi-si-le fan.
3SG eat-be.dead-PRF rice
INT: 'He ate the rice, as a result he died.'

b. Ta chi fan chi-si-le.
3SG eat rice eat-be.dead-PRF
'He ate the rice, as a result he died.'

Subject-predication in canonical transitive resultative constructions is subject to other restrictions (see e.g., Huang 2006; Shibata, Sudo & Yashima 2009). I leave further investigation of this topic for future research.

The focus of this section is the lack of an apparent unaccusative-unergative distinction in resultative constructions in Mandarin, which seems to pose challenges to the Unaccusativity Hypothesis.

First, there is no apparent unaccusative-unergative distinction in intransitive resultative constructions, as exemplified by (12) and (13), where (i) the complex predicate consists of an unaccusative or unergative matrix verb, which specifies the causing event, and a resultative phrase, which specifies the caused/resulting event, and (ii) the matrix subject, which the resultative phrase is predicated of, is also identified with the sole argument of the unaccusative or unergative matrix verb. In particular, intransitive resultative constructions with unergative matrix verbs, as exemplified in (13), violate the Direct Object Restriction.

(12) *Intransitive resultative (unaccusative matrix verb)*

a. Lisi jidong-de ku-le.
Lisi be.excited-DE cry-PRF
'Lisi was excited, as a result (Lisi) cried.'

b. Lisi ji-ku-le.
Lisi be.worried-cry-PRF
Lisi was worried, as a result (Lisi) cried.'

(13) *Intransitive resultative (unergative matrix verb)*

a. Lisi ku-de lei-le.
Lisi cry-DE be.tired PRF
'Lisi cried, as a result (Lisi) was tired.'

b. Lisi ku-lei-le.
Lisi cry-be.tired PRF
'Lisi cried, as a result (Lisi) was tired.'

Second, there is also no apparent unaccusative-unergative distinction in non-selected NP resultative constructions, as exemplified by (14) and (15), where (i) the complex predicate consists of an unaccusative or unergative matrix verb, which specifies the causing event, and a resultative phrase, which specifies the caused/resulting event, and (ii) the matrix subject is identified with the sole argument of the unaccusative or unergative matrix verb which specifies the causing event, and (iii) the post-verbal NP, which the resultative phrase is predicated of, is not thematically related to the matrix verb. In particular, the well-formedness of non-selected NP resultative constructions with unaccusative matrix verbs in Mandarin, as exemplified by (14), does not follow from the assumption that the post-verbal NP cannot be assigned case.

(14) *Non-selected NP resultative (unaccusative matrix verb)*

a. Wo jidong-de Lisi fan-le.
1SG be.excited-DE Lisi be.annoyed-PRF
'I was excited, as a result Lisi was annoyed.'

b. Wo jidong-de (wo-de) yanjing hong-le.
1SG be.excited-DE 1SG's eye be.red-PRF
'I was excited, as a result (my) eyes were red.'

c. Wo chou-bai-le (wo-de) toufa.
1SG be.worried-be.white-PRF 1SG's hair
'I was worried, as a result my hair was white.'

d. Wo lei-huai-le (wo-de) shenti.
1SG be.tired-be.ill-PRF 1SG's body
'I was tired, as a result my body was ill.'

(15) *Non-selected NP resultative (unergative matrix verb)*

a. Wo ku-de Lisi fan-le.
1SG cry-DE Lisi be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

b. Wo ku-de (wo-de) yanjing hong-le.
1SG cry-DE 1SG's eye be.red-PRF
'I cried, as a result (my) eyes were red.'

c. Wo ku-fan-le Lisi.
1SG cry-be.annoyed-PRF Lisi
'I cried, as a result Lisi was annoyed.'

d. Wo ku-hong-le (wo-de) yanjing.
1SG cry-be.red-PRF 1SG's eye
'I cried, as a result (my) eyes were red.'

Lastly, there is also no apparent unaccusative-unergative distinction in non-canonical transitive resultative constructions, as exemplified by (16), (17), and (18), where (i) the complex predicate consists of an unaccusative, unergative or transitive matrix verb, which specifies the causing event, and a resultative phrase, which specifies the caused/resulting event, (ii) the matrix subject is a non-agentive causer, which is also identified with a source of emotion/cognition when the matrix verb is unaccusative or unergative (e.g., this matter is what Lisi was excited or crying *about*), or the theme argument of a transitive matrix verb, and (iii) the post-verbal NP, which the resultative phrase is predicated of, is also identified with the sole argument of the matrix verb when the matrix verb is unaccusative or unergative, and is identified with the agent argument of the matrix verb when the matrix verb is transitive. In particular, (17) shows the apparent possibility for an unergative verb to be causativized with the addition of a causer subject, and (18) shows the apparent possibility for the agent argument and the theme argument of a transitive verb to be 'inverted', so that the theme argument surfaces as the matrix subject and the agent argument surfaces as the post-verbal NP (see e.g., Li 1995).

(16) *Non-canonical transitive resultative (unaccusative matrix verb)*

a. Zhe-jian shi jidong-de Lisi ku-le.
this-CL matter be.excited-DE Lisi cry-PRF
'This matter made Lisi excited, as a result (Lisi) cried.'

b. Zhe-jian shi ji-ku-le Lisi.
this-CL matter be.worried-cry-PRF Lisi
'This matter made Lisi worried, as a result (Lisi) cried.'

(17) *Non-canonical transitive resultative (unergative matrix verb)*

a. Zhe-jian shi ku-de Lisi lei-le.
this-CL matter cry-DE Lisi be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

b. Zhe-jian shi ku-lei-le Lisi.
this-CL matter cry-be.tired-PRF Lisi
'This matter made Lisi cry, as a result (Lisi) was tired.'

(18) *Non-canonical transitive resultative (transitive matrix verb)*

a. Zhe-pi ma qi-de Lisi lei-le.
this-CL horse ride-DE Lisi be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

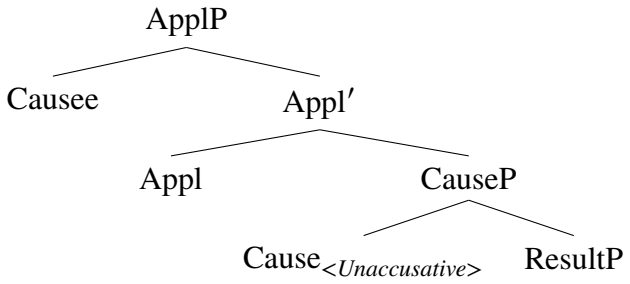
b. Zhe-pi ma qi-lei-le Lisi.
this-CL horse ride-be.tired-PRF Lisi
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

4.3 Proposed analysis

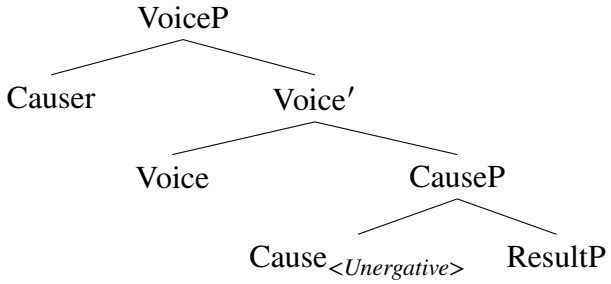
I propose that Mandarin resultative constructions are causative constructions having a bi-clausal syntax and bi-eventive semantics, due to the presence of a causative head (Cause) (following Pylkkänen 2002, 2008), where Cause has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb), as illustrated in (19). Specifically, when Cause has one additional argument, its additional argument can be a causee, which is an indirect object introduced by an Appl(icative) head, as illustrated in (19a), or its additional argument can be an agentive causer, which is an external argument introduced by the Voice head, as illustrated in (19b); when Cause has two additional arguments, its two additional arguments can be an agentive or non-agentive causer, which is an external argument, and a causee, which is an indirect object, as illustrated in (19c) and (19c′), or its two additional arguments can be a non-agentive causer, which is an internal argument, and a causee, which is an indirect object, as illustrated in (19d).

(19) *Possible argument structures of Cause in Mandarin*

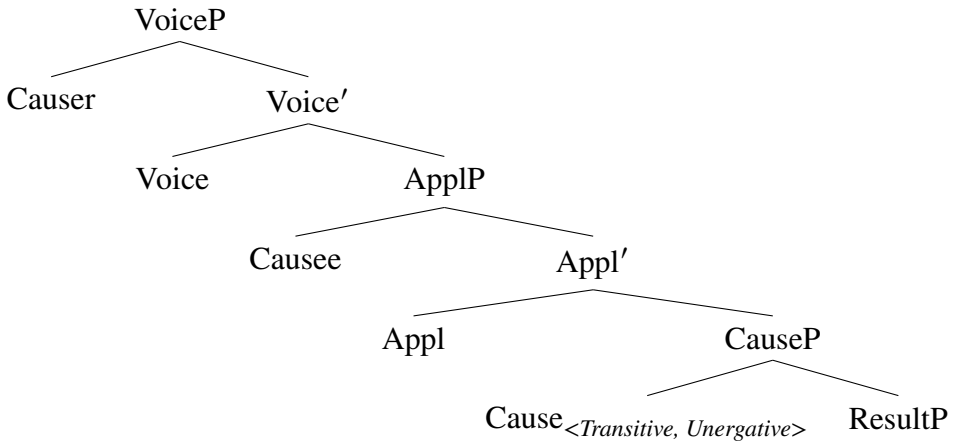
a. *Cause's additional argument: causee (applicative argument)*



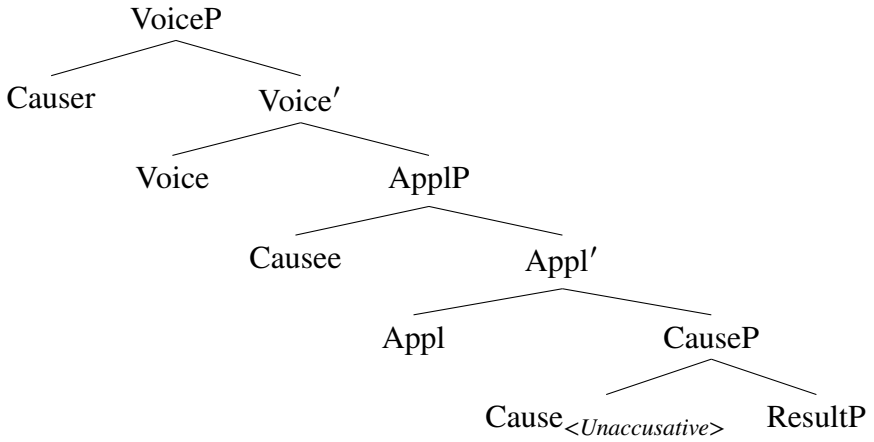
b. *Cause's additional argument: agentive causer (external argument)*



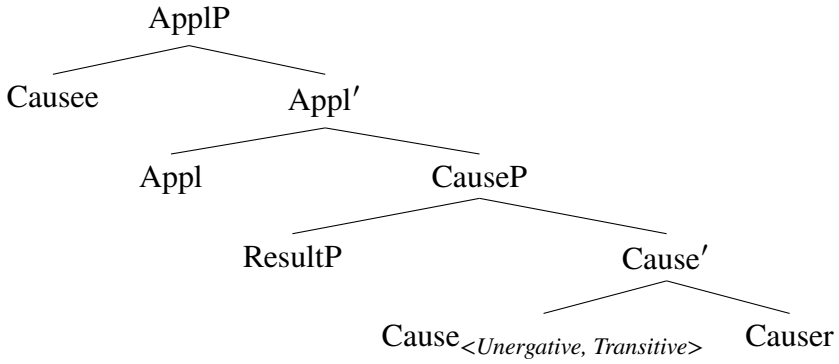
c. *Cause's two additional arguments: agentive causer (external argument), causee (applicative argument)*



c′. *Cause's two additional arguments: non-agentive causer (external argument), causee (applicative argument)*



d. *Cause's two additional arguments: non-agentive causer (internal argument), causee (applicative argument)*



I maintain that Cause has the definition in (20) from Pylkkänen (2002, 2008) in (19a), (19b), (19c) and (19c′), where Cause selects a ResultP, a predicate of the caused/resulting event, and projects a CauseP, a predicate of the causing event.

(20) *Definition of Cause (Pylkkänen 2002, 2008)*
Cause: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e' : P(e')$ & Cause(e, e')

I propose that Cause has the definition in (21) in (19d), where Cause also introduces a non-agentive causer as its internal argument.

(21) *Alternative definition of Cause*
Cause: $\lambda x_{<e>}.\ \lambda P_{<s,t>}.\ \lambda e.\ \exists e' : P(e')$ & Cause(e, e') & Causer(e, x)

Importantly, under the proposed analysis, there is an unaccusative-unergative distinction in Mandarin resultative constructions, despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb: the sole argument of an unaccusative matrix verb is always a causee argument, whether or not Cause has an additional causer external argument, as in (19a) and (19c′); in contrast, the sole argument of an unergative matrix verb, which is a causer external argument otherwise, as in (19b) and (19c), may also be a causee argument when Cause has an additional causer internal argument, as in (19d).

Furthermore, the proposed analysis predicts that resultative constructions with unaccusative, unergative and transitive matrix verbs in Mandarin differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction. As mentioned previously, In chapter 2 of the dissertation, I have established that the Mandarin BEI-construction is a passive construction (involving composite A/Ā-movement). Hence, I will use a resultative construction's impossibility of passivization with BEI to indicate that Cause lacks an external argument. In chapter 3, I have established that the Mandarin BA-construction is a causative construction where Cause has two additional arguments: the subject of BA is an agentive or non-agentive causer, and the post-BA NP is a causee. Hence, I will use the possibility of a resultative construction exhibiting a BA-non-BA variation to indicate that Cause has two additional arguments: a causer and a causee. The predictions are summarized in (22).

(22) *Mandarin resultative constructions' possibility of passivization with* BEI *and having corresponding* BA*-construction*

Cause's additional argument(s)	BEI-constrn	BA-constrn
(19a): causee (applicative argument)	*	*
(19b): causer (external argument)	√	*
(19c), (19c′): causer (external argument), causee (applicative argument)	√	√
(19d): causer (internal argument), causee (applicative argument)	*	√

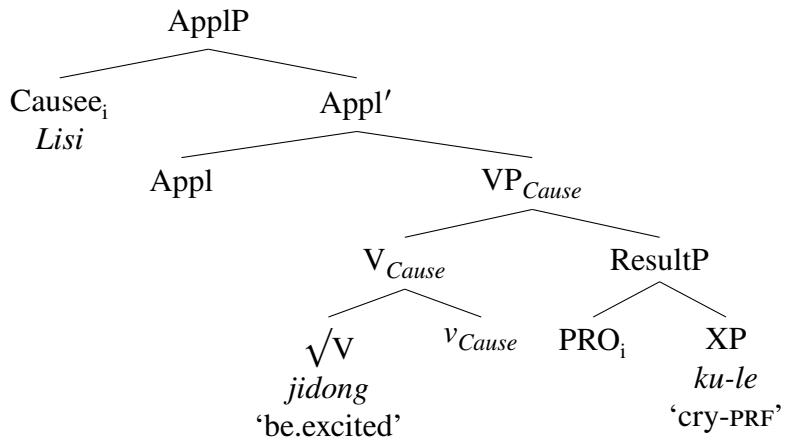
In the remainder of this section, I will provide the details of the proposed analysis of in-

transitive resultative constructions with unaccusative and unergative matrix verbs (in section 3.1), non-selected NP resultative constructions with unaccusative and unergative matrix verbs (in section 3.2), and non-canonical transitive resultative constructions with unaccusative, unergative, and transitive matrix verbs (in section 3.3).

4.3.1 Intransitive resultative constructions

I propose that intransitive resultative constructions in Mandarin are causative constructions where Cause has one additional argument and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive. Specifically, when the causative head (v_{Cause}) is modified by an unaccusative matrix verb ($\sqrt{\text{V}}$) which specifies the causing event (in the sense of Marantz 2013: 158), the matrix subject is a causee indirect object of Cause, which is also identified with the sole argument of the unaccusative matrix verb: it is introduced by an Appl(icative) head, which projects above the CauseP, and also controls a PRO subject in the ResultP (cf. Huang 1992), as illustrated in (23).

(23) *Proposed analysis of intransitive resultative (unaccusative matrix verb)*

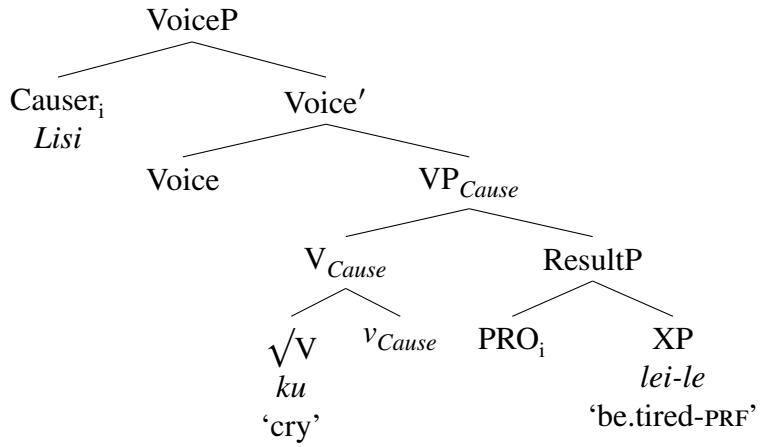


a. $\sqrt{\text{V}}$: $\lambda x.\ \lambda e.\ \text{V}(e, x)$
b. v_{Cause}: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e' : P(e')$ & $\text{Cause}(e, e')$
c. V_{Cause}: $\lambda x.\ \lambda P_{<s,t>}.\ \lambda e.\ \text{V}(e, x)$ & $\exists e' : P(e')$ & $\text{Cause}(e, e')$
d. ResultP: $\lambda e.\ \text{Result}(e, \text{PRO}_i)$
e. VP_{Cause}: $\lambda x.\ \lambda e.\ \text{V}(e, x)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
f. Appl: $\lambda x.\ \lambda e.\ \text{Causee}(e, x)$
g. Appl′: $\lambda x.\ \lambda e.\ \text{V}(e, x)$ & $\text{Causee}(e, x)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
h. ApplP: $\lambda e.\ \text{V}(e, \text{Causee}_i)$ & $\text{Causee}(e, \text{Causee}_i)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$

In contrast, when the matrix verb is unergative, the matrix subject is a causer external argument of Cause, which is also identified with the sole argument of the unergative matrix verb: it is introduced by the Voice head, which projects above the CauseP, and also controls a PRO subject in the ResultP

(cf. Huang 1992), as illustrated in (24).

(24) *Proposed analysis of intransitive resultative (unergative matrix verb)*

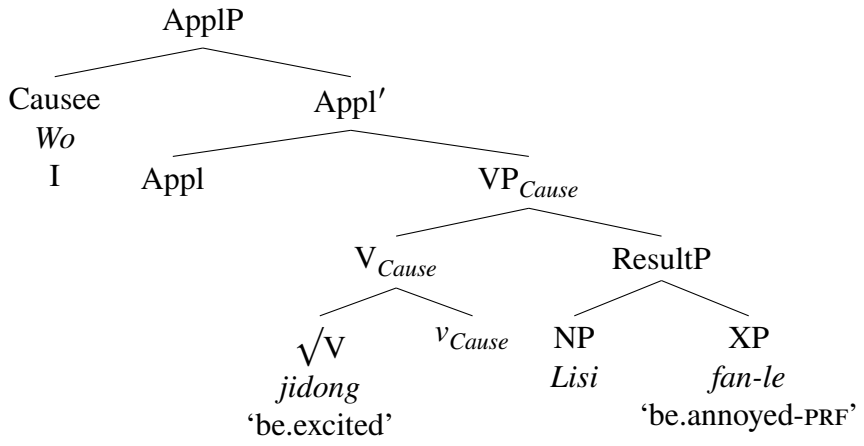


a. $\sqrt{\text{V}}$: $\lambda e.\ \text{V}(e)$
b. v_{Cause}: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e' : P(e')$ & $\text{Cause}(e, e')$
c. V_{Cause}: $\lambda P_{<s,t>}.\ \lambda e.\ \text{V}(e)$ & $\exists e' : P(e')$ & $\text{Cause}(e, e')$
d. ResultP: $\lambda e.\ \text{Result}(e, \text{PRO}_i)$
e. VP_{Cause}: $\lambda e.\ \text{V}(e)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
f. Voice: $\lambda x.\ \lambda e.\ \text{Causer}(e, x)$
g. Voice′: $\lambda x.\ \lambda e.\ \text{V}(e)$ & $\text{Causer}(e, x)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
h. VoiceP: $\lambda e.\ \text{V}(e)$ & $\text{Causer}(e, \text{Causer}_i)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$

4.3.2 Non-selected NP resultative constructions

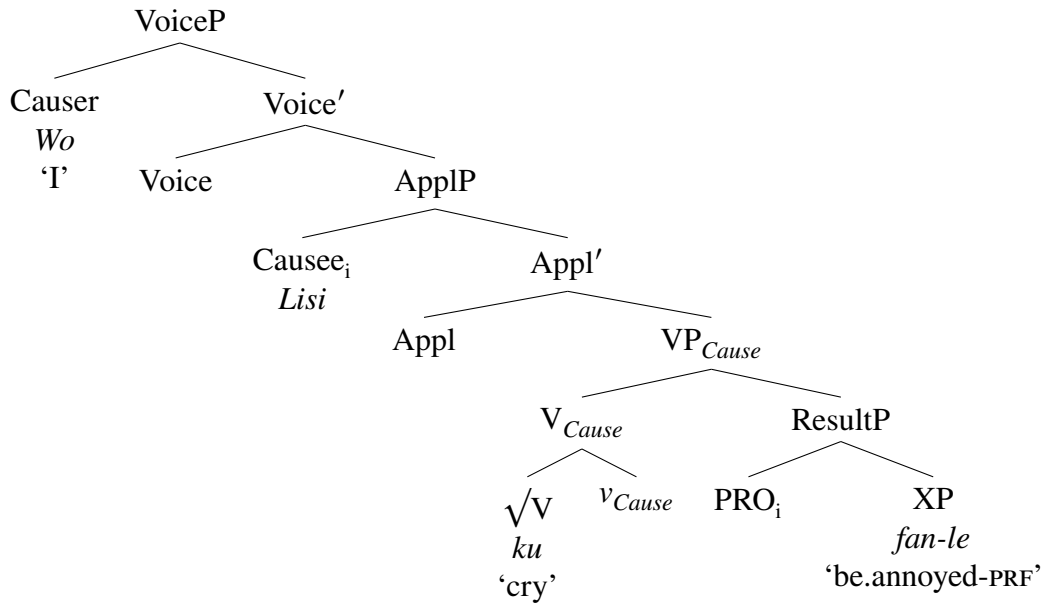
Similarly, I propose that non-selected NP resultative constructions in Mandarin are also causative constructions where Cause has one argument and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive. Specifically, I propose that non-selected NP resultative constructions with unaccusative matrix verbs have the structure in (25). The matrix subject is a causee indirect object of Cause, which is also identified with the sole argument of the unaccusative matrix verb: it is introduced by an Appl(icative) head, which projects above the CauseP. The post-verbal NP is underlyingly the subject of the resultative phrase, which is not thematically related to the unaccusative matrix verb. Importantly, I assume that in this case, the post-verbal NP/subject of the resultative phrase can be assigned case by the Appl(icative) head.

(25) *Proposed analysis of non-selected NP resultative (unaccusative matrix verb)*



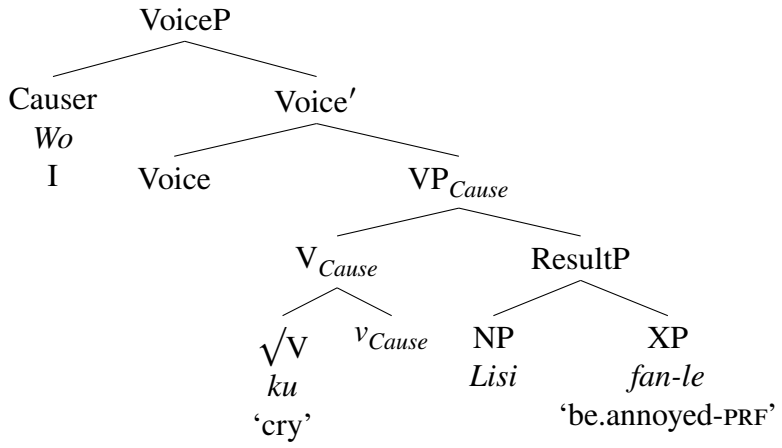
By contrast, in chapter 3 of this dissertation, I have proposed that non-selected NP resultative constructions with unergative matrix verbs can have either the structure in (26) or the structure in (27). In (26), Cause has two additional arguments: the matrix subject is an agentive causer, which is an external argument, and the post-verbal NP is a causee, which is an indirect object.

(26) *Proposed analysis of canonical transitive resultative construction*



In (27), the matrix subject is a causer external argument of Cause, which is also identified with the sole argument of the unergative matrix verb: it is introduced by the Voice head, which projects above the CauseP. The post-verbal NP is underlyingly the subject of the resultative phrase, which is not thematically related to the unergative matrix verb.

(27) *Alternative analysis of non-selected NP resultative (unergative matrix verb)*

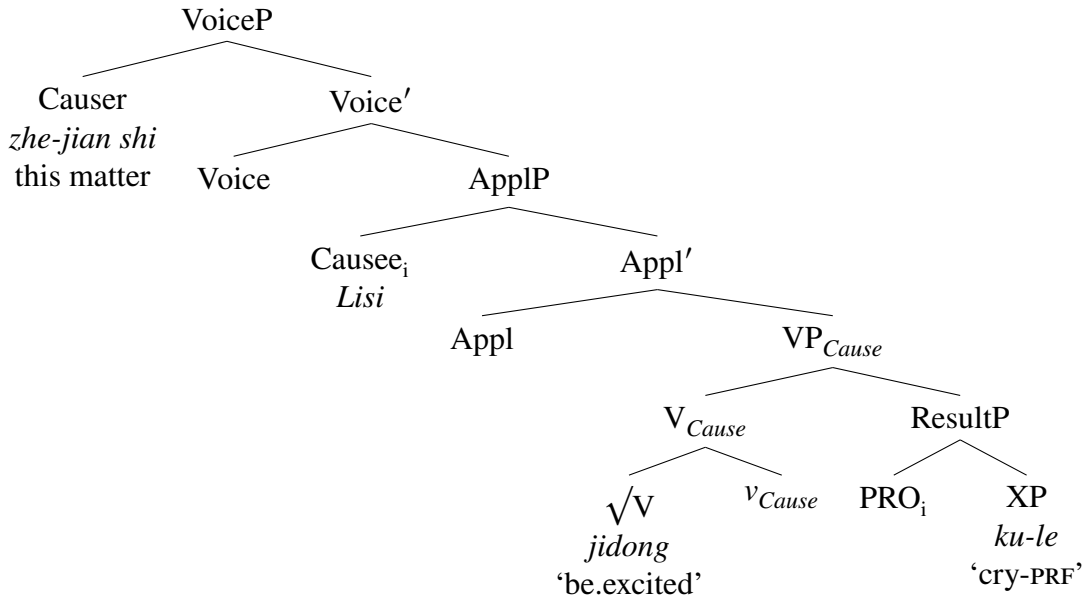


4.3.3 Non-canonical transitive resultative constructions

Lastly, I propose that non-canonical transitive resultative constructions are causative constructions where Cause has two additional arguments and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive.[1] Specifically, I propose that non-canonical transitive resultative constructions with unaccusative matrix verbs have the structure in (28) (cf. Cheng & Sybesma 2015). The post-verbal NP is a causee indirect object of Cause, which is also identified with the sole argument of the unaccusative matrix verb: it is introduced by an Appl(icative) head, which projects above the CauseP, and also controls a PRO subject in the ResultP (cf. Huang 1992). The matrix subject is a non-agentive causer external argument of Cause, which is also identified with a source of emotion/cognition (e.g., this matter is what Lisi was excited *about*): it is introduced by the Voice head, which projects above the ApplP.

[1]The proposed non-uniform analysis of non-canonical transitive resultative constructions in Mandarin aligns with a similar approach to analyzing experiencer-object psych-verb constructions as having different argument structures (Pesetsky 1995; see chapter 1 of this dissertation for a review).

(28) *Non-canonical transitive resultative (unaccusative matrix verb)*

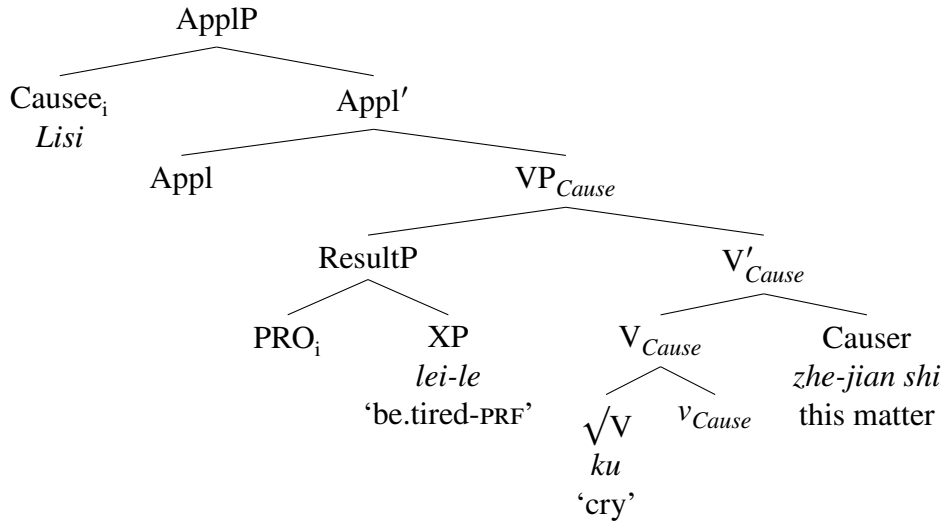


a. $\sqrt{\text{V}}$: $\lambda x.\ \lambda e.\ \text{V}(e, x)$
b. v_{Cause}: $\lambda P_{<s,t>}.\ \lambda e.\ \exists e' : P(e')$ & $\text{Cause}(e, e')$
c. V_{Cause}: $\lambda x.\ \lambda P_{<s,t>}.\ \lambda e.\ \text{V}(e, x)$ & $\exists e' : P(e')$ & $\text{Cause}(e, e')$
d. ResultP: $\lambda e.\ \text{Result}(e, \text{PRO}_i)$
e. VP_{Cause}: $\lambda x.\ \lambda e.\ \text{V}(e, x)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
f. Appl: $\lambda x.\ \lambda e.\ \text{Causee}(e, x)$
g. Appl′: $\lambda x.\ \lambda e.\ \text{V}(e, x)$ & $\text{Causee}(e, x)$ & $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
h. ApplP: $\lambda e.\ \text{V}(e, \text{Causee}_i)$ & $\text{Causee}(e, \text{Causee}_i)$
& $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
i. Voice: $\lambda x.\ \lambda e.\ \text{Causer}(e, x)$
j. Voice′: $\lambda x.\ \lambda e.\ \text{V}(e, \text{Causee}_i)$ & $\text{Causee}(e, \text{Causee}_i)$ & $\text{Causer}(e, x)$
& $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$
k. VoiceP: $\lambda e.\ \text{V}(e, \text{Causee}_i)$ & $\text{Causee}(e, \text{Causee}_i)$ & $\text{Causer}(e, \text{Causer})$
& $\exists e' : \text{Result}(e', \text{PRO}_i)$ & $\text{Cause}(e, e')$

By contrast, I propose that non-canonical transitive resultative constructions where the matrix verb is unergative or transitive have the structure in (29). The matrix subject is introduced by the causative head (V_{Cause}) as its internal argument, which is also identified with a source of emotion/cognition when the matrix verb is unergative (e.g., this matter is what Lisi was crying *about*), or the theme argument of the matrix verb when the matrix verb is transitive. The post-verbal NP is a causee indirect object of Cause, which is also identified with the sole argument of the matrix verb when the matrix verb is unergative or the agent argument of the matrix verb when the matrix verb is transitive: it is introduced by an Appl(icative) head, which projects above the CauseP, and also controls a PRO subject in the ResultP (cf. Huang 1992). Importantly, I assume that the post-verbal NP/causee argument of Cause is assigned case by the Appl(icative) head; hence, it is the causer

argument of Cause that raises to the grammatical subject position, from where it gets nominative case.

(29) *Non-canonical transitive resultative (unergative or transitive matrix verb)*



a. $\sqrt{}$V: ($\lambda x.$) $\lambda e.$ V(e(, x))
b. v_{Cause}: $\lambda x.$ $\lambda P_{<s,t>}.$ $\lambda e.$ Causer(e, x) & $\exists e'$: $P(e')$ & Cause(e, e')
c. V$_{Cause}$: $\lambda x.$ $\lambda P_{<s,t>}.$ $\lambda e.$ V(e(, x)) & Causer(e, x) & $\exists e'$: $P(e')$ & Cause(e, e')
d. V′$_{Cause}$: $\lambda P_{<s,t>}.$ $\lambda e.$ V(e(, Causer)) & Causer(e, Causer) & $\exists e'$: $P(e')$ & Cause(e, e')
e. ResultP: $\lambda e.$ Result(e, PRO$_i$)
f. VP$_{Cause}$: $\lambda e.$ V(e(, Causer)) & Causer(e, Causer)
& $\exists e'$: Result(e', PRO$_i$) & Cause(e, e')
g. Appl: $\lambda x.$ $\lambda e.$ Causee(e, x)
h. Appl′: $\lambda x.$ $\lambda e.$ V(e(, Causer)) & Causer(e, Causer) & Causee(e, x)
& $\exists e'$: Result(e', PRO$_i$) & Cause(e, e')
i. ApplP: $\lambda e.$ V(e(, Causer)) & Causer(e, Causer) & Causee(e, Causee$_i$)
& $\exists e'$: Result(e', PRO$_i$) & Cause(e, e')

4.4 Alternative analysis

In contrast to the proposed analysis, previous studies by Huang (1988, 2006), Sybesma (1992, 1999) and others have accepted the absence of an unaccusative-unergative distinction in Mandarin resultative constructions without further investigation. As a result, they propose uniform analyses for resultative constructions with unaccusative and unergative matrix verbs. In particular, Huang (2006) proposes that (i) resultative constructions in Mandarin are either non-causative/inchoative constructions involving a Become head, which selects a state predicate and introduces a change-of-state event, as schematized in (30a), or causative constructions involving both a Cause head, which introduces a causing event, and a Become head, which introduces a (caused) change-of-

state event, as schematized in (30b), and (ii) Mandarin differs from English in its ability to have either an unaccusative verb or an unergative verb modifying the Become head within a resultative construction.

(30) a. *Non-causative/inchoative construction*
[Become [*x* <*State*>]]

b. *Causative construction*
[*x* Cause [Become [*y* <*State*>]]]

Specifically, unlike the proposed analysis of intransitive resultative constructions in Mandarin as causative constructions having different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative, Huang (2006) analyzes intransitive resultative constructions in Mandarin as non-causative/inchoative constructions where (i) the unaccusative or unergative matrix verb modifies the Become head, and (ii) the matrix subject is underlyingly the subject of the resultative phrase, which is not thematically related to the unaccusative or unergative matrix verb, as schematized in (31).[2]

(31) *Huang's (2006) analysis of intransitive resultative*

a. [Become$_{<Unaccusative>}$ [*x* <*State*>]]
(e.g., Lisi cried from being excited.)

b. [Become$_{<Unergative>}$ [*x* <*State*>]]
(e.g., Lisi became tired from crying.)

In section 5 of this chapter, I will argue that intransitive resultative constructions are causative constructions where the unaccusative or unergative matrix verb modifies a Cause head, rather than non-causative/inchoative constructions where the unaccusative or unergative matrix verb modifies a Become head, by showing that intransitive resultative constructions allow modification of the causing event, which is specified by the matrix verb, and the caused/resulting event, which is specified by the resultative phrase, by different temporal adverbs.

Also unlike the proposed analysis of non-canonical transitive resultative constructions in Mandarin as causative constructions having different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive, Huang (1988, 2006) analyzes non-canonical transitive resultative constructions in Mandarin as 'pure' causative construc-

[2]Similarly, in Sybesma's (1999) analysis of intransitive resultative constructions in Mandarin, which builds on Hoekstra & Mulder's (1990) analysis of intransitive resultative constructions (in English and Dutch), (i) the unaccusative or unergative matrix verb selects a small clause consisting of an NP and the resultative phrase, which are in a subject-predicate relation, and (ii) the matrix subject is underlyingly the subject of the resultative phrase, which is not thematically related to the unaccusative or unergative matrix verb.

To account for the interpretation of the matrix subject as the sole argument of the unaccusative or unergative matrix verb, Huang (2006) might assume that the Become head (is not modified by an unaccusative or unergative verbal root, but) is modified by a small clause consisting of a PRO subject, which is controlled by the matrix subject, and an unaccusative or unergative predicate. Sybesma (1999) might assume, following Hoekstra (1988), that such an interpretation is enforced by pragmatics/world knowledge.

tions where (i) the unaccusative or unergative (or transitive) matrix verb modifies the Become head (rather than the Cause head), (ii) the post-verbal NP is underlyingly the subject of the resultative phrase, which is not thematically related to the unaccusative or unergative (or transitive) matrix verb, and (iii) the matrix subject is a causer external argument of the Cause head, which is also not thematically related to the unaccusative or unergative (or transitive) matrix verb, as schematized in (32).[3]

(32) *Huang's (1988, 2006) analysis of non-canonical transitive resultative*

a. [*x* Cause [Become$_{<Unaccusative>}$ [*y* <*State*>]]]
(e.g., This matter made Lisi cry from being excited.)

b. [*x* Cause [Become$_{<Unergative/Transitive>}$ [*y* <*State*>]]]
(e.g., This matter made Lisi become tired from crying. This horse made Lisi become tired from riding (this horse).)

It is worth mentioning that under Huang's (1988, 2016) analysis, the sole difference between non-canonical transitive resultative constructions and their corresponding *shi*-constructions, as exemplified by (33), is that in non-canonical transitive resultative constructions, the Cause head is phonologically null (as a result, the Become head, which is modified by the matrix verb, undergoes head movement to the Cause head), while in their corresponding *shi*-constructions, the Cause head is spelled out by the causative verb *shi* 'make'.

(33) *Shi-construction*

a. Zhe-jian shi shi Lisi jidong-de ku-le.
this-CL matter make Lisi be.excited-DE cry-PRF
'This matter made Lisi excited, as a result (Lisi) cried.'

b. Zhe-jian shi shi Lisi ku-de lei-le.
this-CL matter make Lisi cry-DE be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

c. Zhe-pi ma shi Lisi qi-de lei-le.
this-CL horse make Lisi ride-DE be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

In section 6 of this chapter, I will argue that non-canonical transitive resultative constructions are causative constructions where the unaccusative, unergative or transitive matrix verb modifies a Cause head, rather than a Become head, by showing a contrast between non-canonical transitive resultative constructions and their corresponding *shi*-constructions: in non-canonical transitive re-

[3] Similarly, in Sybesma's (1999) analysis of non-canonical resultative constructions, (i) the unaccusative, unergative or transitive matrix verb selects a small clause consisting of the post-verbal NP and the resultative phrase, which are in a subject-predicate relation, (ii) the post-verbal NP is not thematically related to the matrix verb, and (iii) the matrix subject is a causer external argument of a Cause head (which projects above the VP), which is also not thematically related to the unaccusative, unergative or transitive matrix verb.

sultative constructions, a selectional restriction is always imposed on the matrix subject; by contrast, in the *shi*-construction, no selectional restriction is imposed on the matrix subject.

Under Huang's (2006) analysis, Mandarin differs from English in allowing both unaccusative and unergative matrix verbs to modify a Become head within a resultative construction. Specifically, as Huang (2006) puts it, in English, an unergative verb comes from the lexicon with a full specification of its argument structure, which crucially has a [+Agent] feature. The need to check off the [+Agent] feature requires an unergative verb to enter into a Spec-Head relation with an argument suitable for the agent theta-role. In forming a resultative construction, if the unergative verb is merged with Cause, then the [+Agent] feature can be checked off just in case the subject of Cause is an agentive causer. This gives rise to transitive resultatives like *The dog barked me awake*, etc. However, if the unergative verb is merged with the Become head, its [+Agent] feature cannot be checked off by the subject of Become, which is a theme or experiencer object, but crucially not an agent, hence the ungrammaticality of **Dora shouted hoarse*, **She cried silly*, etc. On the other hand, unaccusative/inchoative verbs come from the lexicon with argument structures like {0, Theme} or {0, Experiencer}, so they may successfully merge with the Become head, giving rise to *The river froze solid*, *The window broke open*. Furthermore, these inchoatives may be causativized, resulting in 'pure causatives' such as *The cold weather froze the river solid*, *The heat broke the window wide-open*, etc. By contrast, in Mandarin, "verbs enter into syntactic computation with only their meanings (or conceptual structures) but without pre-specified argument structures (and no theta-roles to discharge)", hence "no checking requirement will force them to occur in checking positions, unlike the cases in English".

Huang's (2006) proposal that in Mandarin the theta-role(s) needed by a verb may not be (fully) specified as part of the lexical properties of the verb further implies that there is no basis for Mandarin to conform to the Uniformity of Theta-Assignment Hypothesis (which posits that identical thematic relationships between items are represented by identical structural relationships between these items at the level of D-structure; Baker 1988). Huang, Li & Li (2009) (see also Lin 2001) have indeed identified a few cases where a verb's two arguments can freely occur in the subject and object positions in Mandarin, as exemplified by (34) and (35).

(34) a. *Subj = Instrument, Obj = Theme*
Xiao-bei he lü-cha.
small-cup drink green-tea
'Use the small cup to drink the green tea.' (Adapted from Huang, Li & Li 2009: 69, ex. 58a)

b. *Subj = Theme, Obj = Instrument*
??Lü-cha he xiao-bei.
green-tea drink small-cup
Lit. 'The green tea drinks with the small cup.' (Adapted from Huang, Li & Li 2009: 69, ex. 58b; my judgement)

(35) a. *Subj = Experiencer, Obj = Location*

Keren shui na-zhang chuang.
guest sleep that-CL bed
'The guest sleeps on that bed.' (Adapted from Huang, Li & Li 2009: 69, ex. 59a)

b. *Subj = Location, Obj = Experiencer*

Na-zhang chuang shui keren.
that-CL bed sleep guest
Lit. '(On) that bed sleeps the guest.' (Adapted from Huang, Li & Li 2009: 69, ex. 59b)

However, (35b) may be analyzed as an instance of locative inversion. What is important for present purposes is the fact that such an inversion is not productively found in other contexts. For example, in a simple transitive construction like (36), the subject is always an agent, and the object is always a theme; this follows directly from the Uniformity of Theta-Assignment Hypothesis.

(36) Lisi qi-le zhe-pi ma.
Lisi ride-PRF this-CL horse
'Lisi rode this horse.'

That said, it is indeed generally observed that in resultative constructions, the agent and theme arguments of a transitive matrix verb can be freely associated with the causer in the matrix subject position and the causee in the post-verbal position, as seen in (37) (see e.g., Li 1995).

(37) a. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*

Lisi qi-de zhe-pi ma lei-le.
Lisi ride-DE this-CL horse be.tired-PRF
'Lisi rode this horse, as a result (this horse) was tired.'

b. *Non-canonical transitive (transitive matrix verb)*

Zhe-pi ma qi-de Lisi lei-le.
this-CL horse ride-DE Lisi be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

Under the proposed analysis, Mandarin respects the Uniformity of Theta-Assignment Hypothesis except that it allows for a causer argument of Cause to be introduced as either an external argument or an internal argument: in (37a), the agent and theme arguments of the transitive matrix verb correspond to the causer external argument and causee indirect object of Cause, respectively, while in (37b), the agent and theme arguments of the transitive matrix verb correspond to the causee indirect object and causer internal argument of Cause, respectively. Note that in both cases, the agent argument of the transitive matrix verb is associated with the structurally higher argument of Cause, while the theme argument of the transitive matrix verb is associated with the structurally

lower argument of Cause.

4.5 Intransitive resultative constructions and non-selected NP resultative constructions

In this section, I will argue for the proposal that intransitive resultative constructions and non-selected NP resultative constructions in Mandarin are causative constructions where Cause has one additional argument and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative.

This section is organized as follows: In section 5.1, I will present evidence that intransitive resultative constructions are causative constructions where the unaccusative or unergative matrix verb modifies a Cause head, rather than non-causative/inchoative constructions where the unaccusative or unergative matrix verb modifies a Become head. In section 5.2, I will show that non-selected NP resultative constructions with unaccusative matrix verbs both resist passivization with BEI and lack corresponding BA-constructions – under the proposed analysis, this is because non-selected NP resultative constructions with unaccusative matrix verbs are causative constructions where Cause has one additional argument, a causee, which is an indirect object; by contrast, non-selected NP resultative constructions with unergative matrix verbs both allow passivization with BEI and have corresponding BA-constructions – under the proposed analysis, this is because non-selected NP resultative constructions with unergative matrix verbs can be analyzed as having an argument structure where Cause has two additional arguments: an agentive causer, which is an external argument, and a causee, which is an indirect object.

4.5.1 Causatives, not non-causatives/inchoatives

The proposed analysis of both intransitive resultative constructions and non-selected NP resultative constructions in Mandarin as causaive constructions involving two causally related eventualities – a causing event specified by the matrix verb, and a caused/resulting event specified by the resultative phrase – predicts that both intransitive resultative constructions and non-selected NP resultative constructions in Mandarin should allow modification of the causing event and the caused/resulting event by different temporal adverbs. In contrast, Huang's (2006) analysis of intransitive resultative constructions in Mandarin as non-causative/inchoative constructions involving a Become head which selects a state predicate and introduces a change-of-state event predicts that the change-of-state event and the (changed-to) state must be co-temporal, hence cannot be modified by different temporal adverbs.

Hence, the proposed analysis but not Huang's (2006) analysis correctly predicts the well-formedness of the intransitive resultative constructions in (38), where the temporal adverb *zuotian* 'yesterday' modifies the causing event specified by the unaccusative or unergative matrix verb, and the temporal adverb *jintian* 'today' modifies the caused/resulting event specified by the resultative phrase.

(38) a. *Intransitive resultative (unaccusative matrix verb)*

Zuotian, Lisi jidong-de jintian bing-le.
yesterday Lisi be.excited-DE today be.sick-PRF
Causative analysis: 'Yesterday, Lisi was excited, as a result (Lisi) is sick today.'
Non-causative/inchoative analysis: *'Yesterday, Lisi became sick today from being excited.'

b. *Intransitive resultative (unergative matrix verb)*

Zuotian, Lisi ku-de jintian bing-le.
yesterday Lisi cry-DE today be.sick-PRF
Causative analysis: 'Yesterday, Lisi cried, as a result (Lisi) is sick today.'
Non-causative/inchoative analysis: *'Yesterday, Lisi became sick today from crying.'

The proposed analysis also correctly predicts the well-formedness of the non-selected NP resultative constructions in (39), where the temporal adverb *zuotian* 'yesterday' modifies the causing event specified by the unaccusative or unergative matrix verb, and the temporal adverb *jintian* 'today' modifies the caused/resulting event specified by the resultative phrase.

(39) a. *Non-selected NP resultative (unaccusative matrix verb)*

Zuotian, wo jidong-de jintian (wo-de) yanjing hong-le.
yesterday 1SG be.excited-DE today 1SG's eye be.red-PRF
Causative analysis: 'Yesterday, I was excited, as a result my eyes are red today.'

b. *Non-selected NP resultative (unergative matrix verb)*

Zuotian, wo jidong-de jintian (wo-de) yanjing hong-le.
yesterday 1SG cry-DE today 1SG's eye be.red-PRF
Causative analysis: 'Yesterday, I cried, as a result my eyes are red today.'

4.5.2 An unaccusative-unergative distinction

Furthermore, the proposed analysis of non-selected NP resultative constructions in Mandarin as causative constructions having different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative correctly predicts an unaccusative-unergative distinction with respect to the possibility for a non-selected NP resultative construction to be passivized with BEI and have a corresponding BA-construction.

To reiterate, in chapter 2 of the dissertation, I have established that the Mandarin BEI-construction is a passive construction (involving composite A/Ā-movement). This allows us to use a resultative construction's impossibility of passivization with BEI as an indication that Cause lacks an external argument. In chapter 3 of the dissertation, I have established that the Mandarin BA-construction is a causative construction where Cause has two additional arguments: the subject of BA is an agentive or non-agentive causer, and the post-BA NP is a causee. This allows us to use the possibility of a resultative construction exhibiting a BA-non-BA variation as an indication that Cause has two

additional arguments: a causer and a causee.

Non-selected NP resultative constructions with unaccusative matrix verbs (where the resultative phrase is headed by DE) resist passivization with BEI, as seen in (40).

(40) *Non-selected NP resultative (unaccusative matrix verb) resists passivization with* BEI

a. *Lisi$_i$ bei wo jidong-de __$_i$ fan-le.
Lisi BEI 1SG be.excited-DE be.annoyed-PRF
Lit. 'Lisi was excited by me, as a result (Lisi) was annoyed.'

b. *Wo-de yanjing$_i$ bei wo jidong-de __$_i$ hong-le.
1SG's eye BEI 1SG be.excited-DE be.red-PRF
Lit. 'My eyes were excited by me, as a result (my eyes) were red.'

Non-selected NP resultative constructions with unaccusative matrix verbs (where the resultative phrase is headed by DE) also lack corresponding BA-constructions, as seen in (41).

(41) *Non-selected NP resultative (unaccusative matrix verb) lacks corresponding* BA*-construction*

a. *Wo ba Lisi$_i$ jidong-de __$_i$ fan-le.
I BA Lisi be.excited-DE be.annoyed-PRF
'I was excited, as a result Lisi was annoyed.'

b. *Wo ba (wo-de) yanjing$_i$ jidong-de __$_i$ hong-le.
I BA my eye be.excited-DE be.red-PRF
'I was excited, as a result my eyes were red.'

Under the proposed analysis, the ill-formedness of (40) and (41) is because non-selected NP resultative constructions with unaccusative matrix verbs are causative constructions where Cause has one additional argument, a causee, which is an indirect object.

By contrast, non-selected NP resultative constructions with unergative matrix verbs allow passivization with BEI, as seen in (42).

(42) *Non-selected NP resultative (unergative matrix verb) allows passivization with* BEI

a. Lisi$_i$ bei wo ku-de __$_i$ fan-le.
Lisi BEI 1SG cry-DE be.annoyed-PRF
Lit. 'Lisi was cried by me, as a result (Lisi) was annoyed.'

b. Wo-de yanjing$_i$ bei wo ku-de __$_i$ hong-le.
1SG eye BEI 1SG cry-DE be.red-PRF
Lit. 'My eyes were cried by me, as a result (my eyes) were red.'

Non-selected NP resultative constructions with unaccusative matrix verbs also have corresponding BA-constructions, as seen in (43).

(43) *Non-selected NP resultative (unergative matrix verb) has corresponding* BA*-construction*

a. Wo ba Lisi$_i$ ku-de $\_\_{}_i$ fan-le.
1SG BA Lisi cry-DE be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

b. Wo ba (wo-de) yanjing$_i$ ku-de $\_\_{}_i$ hong-le.
1SG BA 1SG's eye cry-DE be.red-PRF
'I cried, as a result my eyes were red.'

Under the proposed analysis, the well-formedness of (42) and (43) is because non-selected NP resultative constructions with unergative matrix verbs can be analyzed as having an argument structure where Cause has two additional arguments: an agentive causer, which is an external argument, and a causee, which is an indirect object.

It is worth mentioning that there are certain non-selected NP resultative constructions with unaccusative matrix verbs that both allow passivization with BEI, as seen in (44b) and (45b), and have corresponding BA-constructions, as seen in (44c) and (45c).

(44) a. Wo chou-bai-le (wo-de) toufa.
1SG be.worried-be.white-PRF 1SG's hair
'I was worried, as a result my hair was white.'

b. Wo-de toufa bei wo chou-bai-le.
1SG's hair BEI 1SG be.worried-be.white-PRF
Lit. 'My hair was worried by me, as a result (my hair) was white.'

c. Wo ba (wo-de) toufa chou-bai-le.
1SG BA 1SG's hair be.worried-be.white-PRF
'I was worried, as a result my hair was white.'

(45) a. Wo lei-huai-le (wo-de) shenti.
1SG be.tired-be.ill-PRF 1SG's body
'I was tired, as a result my body was ill.'

b. Wo-de shenti bei wo lei-huai-le.
1SG's body BEI 1SG be.tired-be.ill-PRF
Lit. 'My body was tired by me, as a result (my body) was ill.'

c. Wo ba (wo-de) shenti lei-huai-le.
1SG BA 1SG's body be.tired-be.ill-PRF
'I was tired, as a result my body was ill.'

Both non-selected NP resultative constructions in (44a) and (45a) involve a V1-V2 compound where V1 is an unaccusative matrix verb (which specifies the causing event) and V2 heads a resultative phrase (which specifies the caused/resulting event). The well-formedness of (44b), (45b) and

(44c), (45c) suggests that the subject and object of the V1-V2 compound in (44a) and (45a) are two arguments of Cause (despite the fact that V1 is unaccusative): the subject is a causer, which is an external argument, and the object is a causee, which is an indirect object. I leave the investigation of whether there is a systematic distinction between non-selected NP resultative constructions involving a V-DE XP complex predicate where the matrix verb is unaccusative and non-selected NP resultative constructions involving a V1-V2 compound where V1 is an unaccusative matrix verb as a topic for future research.

4.6 Non-canonical transitive resultative constructions

In this section, I will argue for the proposal that non-canonical transitive resultative constructions in Mandarin are causative constructions where Cause has two additional arguments and have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive.

This section is organized as follows: In section 6.1, I will present evidence that non-canonical transitive resultative constructions are causative constructions where the unaccusative, unergative or transitive matrix verb modifies a Cause head, rather than a Become head. In section 6.2, I will show that non-canonical transitive resultative constructions with unaccusative matrix verbs both allow passivization with BEI and have corresponding BA-constructions, which, under the proposed analysis, is because Cause's two additional arguments are a non-agentive causer, which is an external argument, and a causee, which is an indirect object; by contrast, non-canonical transitive resultative constructions where the matrix verb is unergative or transitive resist passivization with BEI but have corresponding BA-constructions, which, under the proposed analysis, is because Cause's two additional arguments are a non-agentive causer, which is an internal argument, and a causee, which is an indirect object.

4.6.1 Not 'pure' causatives

As mentioned previously, under Huang's (1988, 2016) analysis, the sole difference between non-canonical transitive resultative constructions and their corresponding *shi*-constructions is that in non-canonical transitive resultative constructions, the Cause head is phonologically null (as a result, the Become head, which is modified by the matrix verb, undergoes head movement to the Cause head), while in their corresponding *shi*-constructions, the Cause head is spelled out by the causative verb *shi* 'make'.

Huang's (1988, 2016) analysis fails to account for a contrast between non-canonical transitive resultative constructions and their corresponding *shi*-constructions: in non-canonical transitive resultative constructions, a selectional restriction is always imposed on the matrix subject; by contrast, in the *shi*-construction, no selectional restriction is imposed on the matrix subject.

Specifically, in non-canonical transitive resultative constructions, the matrix subject is a non-agentive causer, which is also identified with a source of emotion/cognition when the matrix verb is unaccusative or unergative (e.g., this matter is what Lisi was excited or crying *about*), or the theme argument of a transitive matrix verb. Hence, the non-canonical transitive resultative construction in (46a), where the matrix subject, *xingfenji* 'stimulant', is a non-agentive causer (i.e., what caused Lisi to be excited), but crucially not a source of emotion/cognition (i.e., what Lisi was excited *about*),

is ill-formed; similarly, the non-canonical transitive resultative construction in (46b), where the matrix subject, *cuileidan* 'tear gas', is a non-agentive causer (i.e., what caused Lisi to cry), but crucially not a source of emotion/cognition (i.e., what Lisi was crying *about*), is ill-formed; lastly, the non-canonical transitive resultative construction in (46c), where the matrix subject, *Yumen-de xinqing* 'depressed mood', is a non-agentive causer (i.e., what caused Lisi to drink), but crucially not the theme argument of the transitive matrix verb, is ill-formed (cf. Li 1995).

(46) a. *Non-canonical transitive resultative (unaccusative matrix verb)*
*Xingfenji jidong-de Lisi ku-le.
stimulant be.excited-DE Lisi cry-PRF
INT: 'The stimulant made Lisi excited, as a result (Lisi) cried.'

b. *Non-canonical transitive resultative (unergative matrix verb)*
*Cuileidan ku-de Lisi lei-le.
tear gas cry-DE Lisi be.tired-PRF
INT: 'The tear gas made Lisi cry, as a result (Lisi) was tired.'

c. *Non-canonical transitive resultative (transitive matrix verb)*
*Yumen-de xinqing he-de Lisi zui-le.
depress mood drink-DE Lisi be.drunk-PRF
INT: 'Depressed mood made it such that Lisi drank (wine), as a result (Lisi) was drunk.'

By contrast, in their corresponding *shi*-constructions, no selectional restriction is imposed on the matrix subject; hence, the *shi*-constructions in (47) are well-formed (see also Li 1995).

(47) *Shi-construction*

a. Xingfenji shi Lisi jidong-de ku-le.
stimulant make Lisi be.excited-DE cry-PRF
'The stimulant made Lisi excited, as a result (Lisi) cried.'

b. Cuileidan shi Lisi ku-de lei-le.
tear gas make Lisi cry-DE be.tired-PRF
'The tear gas made Lisi cry, as a result (Lisi) was tired.'

c. Yumen-de xinqing shi Lisi (he jiu) he-de zui-le.
depress mood make Lisi drink wine drink-DE be.drunk-PRF
'Depressed mood made it such that Lisi drank (wine), as a result (Lisi) was drunk.'
(Adapted from Huang, Li & Li 2009: 170, ex. 40)

What is important for present purposes is that the semantic restrictions on the matrix subject of non-canonical transitive resultative constructions in Mandarin are imposed by the matrix verb, which specifies the causing event; hence, it is more appropriate to analyze non-canonical transitive resultative constructions in Mandarin as causative constructions where the unaccusative, unergative

or transitive matrix verb modifies the Cause head, rather than the Become head (see also Li 1995).

It is worth noting that a similar contrast to the one observed in Mandarin between non-canonical transitive resultative constructions and their corresponding *shi*-constructions can also be observed in English between semantically causative psych-verb constructions (Pesetsky 1995) and their corresponding periphrastic causative constructions.

Specifically, Pesetsky (1995) has made the case that English psych-verb constructions with *anger*, *frighten*, *amuse*, etc., are semantically causative, involving a causer subject which brings about a resulting psychological state which is true of the experiencer object. Additionally, Anne Vainikka (p.c. to David Pesetsky) has noted that the causer subject of these verbs must *produce the resulting psychological state cognitively*; in (48), cognitive interaction with *the event*, *noise*, and *jokes* is crucial to producing the effect denoted by the psych-verb.

(48) a. That event angered me.
b. A sudden noise frightened Bill.
c. Those jokes amused Mary.

Crucially, even if one imagines a drug that stimulates the right brain centers to produce the psychological state indicated by the verb, it cannot be the subject of that verb with that meaning, as seen in (49).

(49) a. This drug causes the body to produce large quantities of adrenalin, which makes one feel anger. #When I took it yesterday, it angered me for no reason. (David Pesetsky, p.c.)

b. This other drug stimulates the fear centers of the brain, #and can sometimes frighten you in less than 10 minutes. (David Pesetsky, p.c.)

By contrast, periphrastic causatives do not have this effect, at least nowhere near as strongly, as seen in (50).

(50) a. This drug causes the body to produce large quantities of adrenalin. When I took it yesterday, it made me angry for no reason. (David Pesetsky, p.c.)

b. This other drug stimulates the fear centers of the brain, and can sometimes make you fearful in less than 10 minutes. (David Pesetsky, p.c.)

4.6.2 An unaccusative-unergative distinction

Furthermore, the proposed analysis of non-canonical transitive resultative constructions in Mandarin as causative constructions having different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive correctly predicts that non-canonical resultative constructions differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction.

To reiterate, in chapter 2 of the dissertation, I have established that the Mandarin BEI-construction is a passive construction (involving composite A/Ā-movement). This allows us to use a resultative construction's impossibility of passivization with BEI as an indication that Cause lacks an external argument. In chapter 3 of the dissertation, I have established that the Mandarin BA-construction is a causative construction where Cause has two additional arguments: the subject of BA is an agentive or non-agentive causer, and the post-BA NP is a causee. This allows us to use the possibility of a resultative construction exhibiting a BA-non-BA variation as an indication that Cause has two additional arguments: a causer and a causee.

Specifically, non-canonical transitive resultative constructions with unaccusative matrix verbs both allow passivization with BEI, as seen in (51a), and have corresponding BA-constructions, as seen in (51b). Under the proposed analysis, this is because non-canonical transitive resultative constructions with unaccusative matrix verbs are causative constructions where Cause's two additional arguments are a non-agentive causer, which is an external argument, and a causee, which is an indirect object.

(51) a. *Non-canonical transitive resultative (unaccusative matrix verb) allows passivization with* BEI

Lisi bei zhe-jian shi jidong-de ku-le.
Lisi BEI this-CL matter be.excited-DE cry-PRF
'Lisi was excited by this matter, as a result (Lisi) cried.'

b. *Non-canonical transitive resultative (unaccusative matrix verb) has corresponding* BA-*construction*

Zhe-jian shi ba Lisi jidong-de ku-le.
this-CL matter BA Lisi be.excited-DE cry-PRF
'This matter made Lisi excited, as a result (Lisi) cried.'

By contrast, non-canonical transitive resultative constructions where the matrix verb is unergative or transitive resist passivization with BEI, as seen in (52a) and (53a),[4] but have corresponding BA-constructions, as seen in (52b) and (53b). Under the proposed analysis, this is because non-canonical transitive resultative constructions where the matrix verb is unergative or transitive are causative constructions where Cause's two additional arguments are a non-agentive causer, which

[4]Note that non-canonical transitive resultative constructions where the matrix verb is *xiao*, which is unergative with the meaning of 'laugh', allow passivization with BEI, as seen in (i). Based on the well-formedness of in (i), I suggest that *xiao* also has an unaccusative use with the meaning of 'be amused' when it is the matrix verb in a non-canonical transitive resultative construction.

(i) a. Wo bei zhe-jian shi xiao-de dao-zai-le di-shang.
1SG BEI this-CL matter laugh-DE fall-be.at-PRF ground-on
Lit. 'I was made to laugh/amused by this matter, as a result I fell on the ground.'

b. Wo bei zhe-jian shi xiao-si-le.
1SG BEI this-CL matter laugh-be.dead-PRF
Lit. 'I was made to laugh/amused to death by this matter.'

is an internal argument, and a causee, which is an indirect object.

(52) a. *Non-canonical transitive resultative (unergative matrix verb) resists passivization with* BEI
*Lisi bei zhe-jian shi ku-de lei-le.
Lisi BEI this-CL matter cry-DE be.tired-PRF
INT: 'Lisi was made to cry by this matter, as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (unergative matrix verb) has corresponding* BA-*construction*
Zhe-jian shi ba Lisi ku-de lei-le.
this-CL matter BA Lisi cry-DE be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

(53) a. *Non-canonical transitive resultative (transitive matrix verb) resists passivization with* BEI
*Lisi bei zhe-pi ma qi-de lei-le.
Lisi BEI this-CL horse ride-DE be.tired-PRF
INT: 'Lisi was made to ride (this horse) by this horse, as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (transitive matrix verb) has corresponding* BA-*construction*
Zhe-pi ma ba Lisi qi-de lei-le.
this-CL horse BA Lisi ride-DE be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

4.7 On the English-Mandarin contrasts in resultative constructions

In this section, I will propose a parametric view of the English-Mandarin contrasts in resultative constructions. Specifically, I propose that English and Mandarin differ in three respects: (i) the mechanism which derives (violations of) the Direct Object Restriction, which I will discuss in section 7.1; (ii) the possibility of the Appl(icative) head as a case-assigner, which I will discuss in section 7.2; and (iii) the possibility of Cause introducing a non-agentive causer as its internal argument, which I will discuss in section 7.3.

4.7.1 Direct Object Restriction as a result of object control

Recall that both transitive resultative constructions in English and canonical transitive resultative constructions in Mandarin obey the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995), as seen in (54) and (55).

(54) a. *English transitive resultative/selected NP resultative (transitive matrix verb)*
She wiped the table clean.

b. *English transitive resultative/non-selected NP resultative (unegrative matrix verb)*
The dog barked me awake.

(55) a. *Canonical transitive resultative/Selected NP resultative (transitive matrix verb)*
Wo qi-de zhe-pi ma lei-le.
1SG ride-DE this-CL horse be.tired-PRF
'I rode this horse, as a result (this horse) was tired.' (Not: 'I rode this horse, as a result (I) was tired.')

b. *Canonical transitive resultative/Non-selected NP resultative (unegrative matrix verb)*
Wo ku-de Lisi fan-le.
1SG cry-DE Lisi be.annoyed-PRF
'I cried, as a result Lisi was annoyed.'

Also recall that the first English-Mandarin contrast in resultative constructions lies in the possibility of intransitive resultative constructions with unaccusative matrix verbs. In English intransitive resultative constructions, the matrix verb can be unaccusative, as seen in (56), but not unergative, as seen in (57).

(56) *English intransitive resultative (unaccusative matrix verb)*
a. The river froze solid. (Levin & Rappaport Hovav 1995: 39, ex. 19a)
b. The window broke open.

(57) a. *Dora shouted hoarse. (Levin & Rappaport Hovav 1995: 36, ex. 2)
b. *She cried silly.

By contrast, in Mandarin intransitive resultative constructions, the matrix verb can be unaccusative, as exemplified by (58a), or unergative, as exemplified by (58b).

(58) a. *Intransitive resultative (unaccusative matrix verb)*
Lisi jidong-de ku-le.
Lisi be.excited-DE cry-PRF
'Lisi was excited, as a result (Lisi) cried.'

b. *Intransitive resultative (unergative matrix verb)*
Lisi ku-de lei-le.
Lisi cry-DE be.tired PRF
'Lisi cried, as a result (Lisi) was tired.'

Under the proposed analysis, both canonical transitive resultative constructions (regardless of whether the matrix verb is transitive or unergative) and intransitive resultative constructions (with either unaccusative or unergative matrix verbs) involve a PRO subject in the resultative phrase. The mechanism which derives (violations of) the Direct Object Restriction in resultative constructions in Mandarin is the so-called *generalized theory of control* (Huang 1992), which provides that an empty pronoun (PRO or pro) must be controlled by the *closest c-commanding NP*. Specifically, in canonical transitive resultative constructions (both when the matrix verb is transitive and when the matrix verb is unergative), this closest c-commanding NP is the post-verbal NP/causee indirect object of Cause – an instance of object control. In intransitive resultative constructions with unaccusative matrix verbs, this closest c-commanding NP is the matrix subject/causee indirect object of Cause – another instance of object control. In intransitive resultative constructions with unergative matrix verbs, this closest c-commanding NP is the matrix subject/causer external argument of Cause – an instance of subject control. In the first two cases, the Direct Object Restriction is obeyed, but in the last case, the Direct Object Restriction is violated.

Turning now to English. According to the widely held view, transitive resultative constructions in English involve raising of the post-verbal NP, which is underlyingly the subject of the resultative phrase, into the matrix clause (see e.g., Hoekstra 1988; Kratzer 2004). Similarly, in intransitive resultative constructions, the matrix subject is assumed to raise from its underlying position as the subject of the resultative phrase into the matrix clause (see e.g., Hoekstra & Mulder 1990). Under such a raising analysis, the Direct Object Restriction is satisfied when the object/internal argument of the matrix verb is base-generated as the subject of the resultative phrase. The impossibility of intransitive resultative constructions with unergative matrix verbs follows from the inability of a subject/external argument of the matrix verb to be base-generated as the subject of the resultative phrase.

The proposed analysis of canonical transitive resultative constructions and intransitive resultative constructions in Mandarin, which involves a PRO subject controlled by the closest c-commanding NP, opens up the possibility of analyzing transitive and intransitive resultative constructions in English in a similar manner, by invoking control. Under a control analysis, the Direct Object Restriction is satisfied when it is the causee indirect object of Cause that controls the PRO subject in the resultative phrase, and the (im)possibility of intransitive resultative constructions with unergative matrix verbs follows from the (im)possibility of the causer/external argument controlling the PRO subject in the resultative phrase, which underlies the English-Mandarin contrast.

4.7.2 Applicative head as a case-assigner

The second English-Mandarin contrast in resultative constructions is that in English, an unaccusative verb cannot take a resultative phrase predicated of a post-verbal NP that is not thematically related to the unaccusative matrix verb or a fake reflexive, as seen in (59).

(59) a. *The snow melted the road slushy. (Levin & Rappaport Hovav 1995: 39, ex. 20c)
b. *The iceman froze itself cold.

By contrast, in Mandarin non-selected NP resultatives, the matrix verb can be unaccusative, as seen in (60).

(60) *Non-selected NP resultative (unaccusative matrix verb)*

a. Wo jidong-de Lisi fan-le.
1SG be.excited-DE Lisi be.annoyed-PRF
'I was excited, as a result Lisi was annoyed.'

b. Wo jidong-de (wo-de) yanjing hong-le.
1SG be.excited-DE 1SG's eye be.red-PRF
'I was excited, as a result (my) eyes were red.'

Under the proposed analysis, in non-selected NP intransitive resultative constructions with unaccusative matrix verbs in Mandarin, the matrix subject is a causee indirect object of Cause, which is also identified with the sole argument of the unaccusative matrix verb; the post-verbal NP is underlyingly the subject of the resultative phrase, which is not thematically related to the unaccusative matrix verb. Importantly, it is assumed that the post-verbal NP/subject of the resultative phrase can be assigned case by the Appl(icative) head. Should the English examples in (59) be analyzed as having the same argument structure as the Mandarin examples in (60), the English-Mandarin contrast would indicate that the Appl(icative) head is a case assigner in Mandarin but not in English.

If the Appl(icative) head is *always* a case assigner in resultative constructions in Mandarin, then it is predicted that in both canonical and non-canonical transitive resultative constructions, where Cause has two additional arguments, allow for the subject of the resultative phrase to be an overt NP that receives case from the Appl(icative) head, rather than a PRO controlled by the causee indirect object of Cause. On the face of it, such a prediction is consistent with the well-formedness of the canonical transitive resultative constructions in (61) and the canonical transitive resultative constructions in (62), where the post-verbal NP/causee argument of Cause and subject of the resultative phrase are in a possessor-possessum relation.

(61) *Canonical transitive resultative*

a. Wo qi-de zhe-pi ma tui duan-le.
1SG ride-DE this-CL horse leg be.broken-PRF
'I rode this horse, as a result (this horse's) legs were broken.'

b. Wo ku-de Lisi yanjing hong-le.
1SG cry-DE Lisi eye be.red-PRF
'I cried, as a result Lisi's eyes were red.'

(62) *Non-canonical transitive resultative*

a. Zhe-jian shi jidong-de wo yanjing hong-le.
this-CL matter be.excited-DE 1SG eye be.red-PRF
'This matter made me excited, as a result (my) eyes were red.'

b. Zhe-jian shi ku-de wo yanjing hong-le.
this-CL matter cry-DE 1SG eye be.red-PRF
'This matter made me cry, as a result (my) eyes were red.'

c. Zhe-pi ma qi-de wo tui duan-le.
this-CL horse ride-DE 1SG leg be.broken-PRF
'This horse made it such that I rode (this horse), as a result (my) legs were broken.'

However, the prediction is inconsistent with the ill-formedness of the canonical transitive resultative constructions in (63) and the non-canonical transitive resultative constructions in (64), which represent the more general pattern.

(63) *Canonical transitive resultative*

a. *Wo qi-de zhe-pi ma Lisi fan-le.
1SG ride-DE this-CL horse Lisi be.annoyed-PRF
INT: 'I rode this horse, as a result Lisi was annoyed.'

b. *Wo ku-de Lisi ta fan-le.
1SG cry-DE Lisi 3SG be.annoyed-PRF
INT: 'I cried, as a result Lisi was annoyed.'

(64) *Non-canonical transitive resultative*

a. *Zhe-jian shi jidong-de wo Lisi fan-le.
this-CL matter be.excited-DE 1SG Lisi be.annoyed-PRF
INT: 'This matter made me excited, as a result Lisi was annoyed.'

b. *Zhe-jian shi ku-de wo Lisi fan-le.
this-CL matter cry-DE 1SG Lisi be.annoyed-PRF
INT: 'This matter made me cry, as a result Lisi was annoyed.'

c. *Zhe-pi ma qi-de wo Lisi fan-le.
this-CL horse ride-DE 1SG Lisi be.annoyed-PRF
INT: 'This horse made it such that I rode (this horse), as a result Lisi was annoyed.'

I take the ill-formedness of (63) and (64) to indicate that in Mandarin, the Appl(icative) head does not assign case in (canonical and non-canonical) transitive resultative constructions if the Voice head assigns case to the post-verbal NP/causee argument of Cause. I suggest that in the well-formed examples in (61) and (62) where the post-verbal NP/causee argument of Cause and subject of the resultative phrase are in a possessor-possessum relation, the subject of the resultative phrase might get inherent case. I leave further investigation of this issue for future research.

4.7.3 Causer as an internal argument of Cause

The third and last English-Mandarin contrast in resultative constructions is that in English, an unergative verbal root cannot be causativized with the addition of a causer subject/external argument, as seen in (65).

(65) a. *The bad news cried me. (INT: The bad news made me cry.)
b. *The bad news cried me awake. (INT: The bad news made me cry myself awake.)

By contrast, in Mandarin, it is apparently possible for an unergative verb to be causativized with the addition of a causer subject, as seen in (66a); it is also apparently possible for the agent argument and the theme argument of a transitive verb to be 'inverted', so that the theme argument surfaces as the matrix subject and the agent argument surfaces as the post-verbal NP, as seen in (66b) (see e.g., Li 1995).

(66) a. *Non-canonical transitive resultative (unergative matrix verb)*
Zhe-jian shi ku-de Lisi lei-le.
this-CL matter cry-DE Lisi be.tired-PRF
'This matter made Lisi cry, as a result (Lisi) was tired.'

b. *Non-canonical transitive resultative (transitive matrix verb)*
Zhe-pi ma qi-de Lisi lei-le.
this-CL horse ride-DE Lisi be.tired-PRF
'This horse made it such that Lisi rode (this horse), as a result (Lisi) was tired.'

Under the proposed analysis, non-canonical transitive resultative constructions where the matrix verb is unergative or transitive in Mandarin are causative constructions where Cause's two additional arguments are a non-agentive causer/internal argument, which is also identified with a source of emotion/cognition when the matrix verb is unergative (e.g., this matter is what Lisi was crying *about*), or the theme argument of the matrix verb when the matrix verb is transitive, and a causee indirect object, which is also identified with the sole argument of the matrix verb when the matrix verb is unergative or the agent argument of the matrix verb when the matrix verb is transitive. Hence, the English-Mandarin contrast follows from the possibility for Cause to introduce a non-agentive causer as its internal argument in Mandarin but not in English.

4.8 Conclusion

In Mandarin, there is no apparent unaccusative-unergative distinction in resultative constructions, unlike languages like English, where distinctions between resultative constructions with unaccusative and unergative matrix verbs follow from the Unaccusativity Hypothesis (Perlmutter 1978; Burzio 1986) and general principles such as the Direct Object Restriction (Simpson 1983; Levin & Rappaport Hovav 1995) and Burzio's generalization (Burzio 1986). I argued that resultative constructions in Mandarin are causative constructions, where the causative head has four possible argument structures, depending on whether the matrix verb is unaccusative, unergative, or transitive, as well as the semantic relation between the matrix subject and the matrix verb (and between the post-verbal NP and the matrix verb). Despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb, I argued that in Mandarin resultative constructions, the sole argument of an unaccusative matrix verb is always a causee argument, whether or not an additional causer external argument is present, while the sole argument of an unergative

matrix verb, which is a causer external argument otherwise, is a causee argument when the causer is an internal argument.

In this section, I conclude by answering the questions asked at the beginning of chapter 1 from the perspective of the Mandarin resultative constructions.

(i) **What are the universal properties that can be defended on the basis of Mandarin? What does Mandarin contribute to our understanding of the universal properties?**

First, under the proposed analysis, there is an unaccusative-unergative distinction in Mandarin resultative constructions, despite the fact that the argument structure of the causative head obscures the argument structure of the matrix verb: the sole argument of an unaccusative matrix verb is always a causee argument, whether or not an additional causer external argument is present, while the sole argument of an unergative matrix verb, which is a causer external argument otherwise, is a causee argument when the causer is an internal argument.

Moreover, in contrast to Huang's (2006) analysis of the Mandarin resultative constructions, which has the (undesirable) implication that there is no basis for Mandarin to conform to the Uniformity of Theta-Assignment Hypothesis, the proposed analysis maintains that Mandarin respects the Uniformity of Theta-Assignment Hypothesis, except that it allows for a causer argument of Cause to be introduced as either an external argument or an internal argument.

(ii) **How are these universal properties obscured (by apparently distinctive properties) in the relevant Mandarin constructions?**

I proposed that the English-Mandarin contrasts in resultative constructions follow from (i) the possibility of the causer/external argument controlling the PRO subject in the resultative phrase in Mandarin but not in English, (ii) the possibility of the Appl(icative) head as a case assigner in Mandarin but not in English, and (iii) the possibility of Cause introducing a non-agentive causer as its internal argument in Mandarin but not in English.

(iii) **What is the evidence for these universal properties in Mandarin, despite the apparently distinctive properties associated with the relevant constructions?**

I showed that resultative constructions with unaccusative, unergative and transitive matrix verbs in Mandarin differ in the possibility of passivization with BEI and the possibility of having a corresponding BA-construction, based on which I argued that non-selected NP resultative constructions in Mandarin have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative, and that non-canonical transitive resultative constructions in Mandarin have different argument structures when the matrix verb is unaccusative and when the matrix verb is unergative or transitive.

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