

**Causality, modality and contextual argument interpretation:
Lessons from Teochew**

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By

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CAUSALITY, MODALITY AND CONTEXTUAL ARGUMENT INTERPRETATION:
LESSONS FROM TEOCHEW

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ABSTRACT

This dissertation investigates the syntactic, semantic and pragmatic properties of Teochew periphrastic causatives, and specifically the means by which the so-called *causee* interpretation of the intermediate external argument is derived.

I show despite the same embedded predicate, causees in these causatives demonstrate different patterns when diagnosed by many linguistics tests targeting the argument interpretations. Comprehensive syntactic analysis shows that these causatives are very similar in their syntactic argument structures, e.g., recursive VoiceP and *v*P. I argue that the *listing* approach, treating argument interpretations as syntactic primitives and listing them with specific verbs or syntactic layers, cannot account for the different causee interpretations. The alternative *contextual* approach, contextualizing argument interpretations as post-syntactic derivatives through syntactically-oriented event structures, is more favorable.

All the previous contextual studies on external argument interpretations exclusively focus on the eventuality of the syntactic complement of the argument-introducing head. However, causees are traditionally viewed as shared arguments between the embedding causative verbs and the embedded predicates. Based on Teochew data collected in fieldwork research and insights from philosophy, I develop a formal modal semantics analysis of each causative verb to account for the encoded multidimensional causal relations that cannot be captured by the monolithic CAUSE operator.

For complex causer interpretations, I demonstrate a fine-grained implementation of the complement-oriented approach not discussed before. I also develop a novel formalization of the relationship between different modules of the grammar that constrains the possible causee interpretations in a two-step way. More specifically, I show that the causee interpretation depends on the structure of event in which the argument occurs, first the eventuality of the embedded predicate and then that of the embedding causative verb with modal properties. I further explore the nature of many so-called agentive diagnostics widely adopted in recent literature, showing a fine distinction between *intuitive AGENT* and *grammatical AGENT* is required to be drawn. Building on the different properties of each type of AGENT, I showed how the final causee interpretations map to their compatibilities with different linguistics diagnostics, which solves the causee interpretation puzzle.

In its focus on causee, this dissertation sheds light on the linking between syntax and semantics in argument interpretation with a focus on external arguments. It also provides implications for complex causal event structure, research on argument structure (e.g., the introduction of arguments and argument licensing), and the phasehood or domain sensitivity at LF.

INDEX WORDS: causee, argument interpretation, causative, modality,
 argument structure, event structure

DEDICATION

This dissertation is dedicated to the Teochew community I love, including all the consultants contributing data and insight to this study, as well as my grandma and late aunt, who connected me to many Teochew traditions when I was a child.

ACKNOWLEDGMENTS

From my understanding, this part of the dissertation will be a place where I can write my personal and subjective feelings. So it will be heavily dependent on Chinese culture, especially on traditional aspects. There are some translations provided, though definitely not good ones.

I have thought about how to write the dissertation acknowledgments multiple times in my very first Ph.D. year. Partly because at that time, I needed something to look for since the end was so far away. Now, when I am actually at the end of this doctoral journey, I finally understand the actual meaning of this poem: 却顾所来径, 苍苍横翠微 'looking back the mountain path from which I came down: the forest stretches out in a vast expanse of green'¹.

First of all, I cannot thank enough my Teochew consultants for generously sharing their language judgments and insights with me in the past years, not to mention due to the time differences between China and the eastern US, sometimes they need to do the fieldwork research with me in the local evening time. Additionally, I am more than grateful for the unconditional help offered by the local Teochew History and Culture Center: I called them for help on some hard-to-find dictionaries from the US in the summer of 2023, and they replied with thousands of pages of very useful documentaries they help scan. *Sia sia lun, ga? gi nang!*²

Next, my amazing committee members, to whom my enormous gratitude goes: my co-chairs, Paul Portner and Ruth Kramer, as well as Alison Biggs and Bryce

¹It is from a poem written by Bai Li during the Tang dynasty (618 to 907 AD).

²In Teochew, it means 'thank you, my own group of people!'.

Huebner. This dissertation threads together syntax (with insights from Distributed Morphology), semantics, pragmatics and philosophy, and is built on the rich literature of argument structure, event structure, causation and agency in linguistics and/or cognitive science, aiming to shed light on the properties of the nevertheless understudied causees. Without my committee's generous support and help, I could not have finished this undoubtedly tough task on time, and this dissertation would definitely not be in its current shape.

I always remember a sentence from one of the Georgetown alumni's dissertation acknowledgments: *If the world were a village of a hundred Pauls, many of the contemporary issues would completely disappear (at the risk of making the semantics job market extremely competitive...!).* After five years at Georgetown, I wholeheartedly agree! For me, Paul is an embodiment of what is called 三不朽 'the three deeds to immortality' in traditional Chinese philosophy. In 《左传 (Zuo Zhuan) 》³, these three deeds refer to 德 'virtues', 功 'contributions' and 言 'words', and Paul undoubtedly serves as a life model regarding each one of this. He is not only a brilliant linguist who helps me to think critically about every empirical and technical detail (I always remember Paul told me 'quality is more important than quantity' and will continue to keep this in mind in the future), a considerate advisor who cares very much about the well-being of students, but also a person of noble morals which you can feel from various details when you are around him. I feel extremely fortunate to be his advisee. He is definitely the main reason I realize how intriguing the fields of semantics and pragmatics are!

As the instructor of many of my (morpho)syntax courses, Ruth introduced me to the worlds of both minimalist syntax and distributed morphology, on which she

³It is an ancient Chinese narrative history written by Qiuming Zuo during the spring and autumn period (770 to 476 AD).

is undoubtedly a very excellent scholar. My morphosyntax training with her definitely helped me build up a solid foundation for all my interface research including this dissertation (one of the main reasons I chose Georgetown five years ago is that interface studies are highly valued here!), not to mention that she also opened for me a brand-new but very wonderful world of understudied languages (I used to be narrowly focused on Sinitic languages and very timid when it comes to other languages, so I am extremely grateful for the cross-linguistic training with her!). As the supervisor of many of the courses I TA/TS-ed for, Ruth demonstrated to me how to be a well-prepared, enthusiastic and skilled instructor (I always told people around me that I learned many of my teaching skills from Ruth!). As an advisor, Ruth is the kind of person who always lets her advisee feel supported in every dimension, both academically and mentally. For me, she is the perfect embodiment of 三春辉 ‘the sunshine in the three spring months’⁴. Anyone would be extremely lucky to have her as an advisor!

I am deeply in debt to Paul and Ruth for their very detailed page-to-page feedback on my very long (I am sorry!) dissertation after my defense. I am also very grateful to my friend Kathie for her generous help with proofreading! However, all errors and anything incoherent in this final version are, of course, my own.

Alison was the first person I met on the first school day at Georgetown when I was on my way to the linguistics graduate student orientation. I was lost on campus then⁵ and she was the first person in my view that I went to ask for help. That’s how I met the linguist who shares many similar research interests in the following years. Given that Georgetown’s linguistics department is a big one with multiple concentrations and there were many people that day, I always felt this

⁴It is from a poem written by Jiao Meng during the Tang dynasty (618 to 907 AD).

⁵Yes, Georgetown has a small campus but I am super bad at geographic directions.

occasion was a sign of destiny every time when I recalled it. For me, Alison is definitely a 良师益友 ‘both a great teacher and a lovely friend’. I owe her a great amount of gratitude for all her support, from helping me adapt to a new academic environment completely unfamiliar with, to all her help on specific research topics, conference abstract writings and presentations, as well as academic job applications, even after she career plan takes her away to Canada. 桃花潭水深千尺 ‘The water in the Peach Blossom pool is a thousand feet deep’⁶, I look forward to our future research collaboration and in-person reunion!

I first met Bryce at the cognitive science core course and later figured out he has a lot of things I admire: an amazing set of knowledge of basically every discipline in cognitive science, an excellent set of skills to bridge talks among different scholars with different disciplinary backgrounds (trust me, such a kind of interdisciplinary talk is indeed very challenging!), and most importantly, a great mindset to see things from a higher-level cognitive-science way. He is the perfect demonstration of 渊博 ‘width and depth’, and the embodiment of 水 ‘water’ in terms of 大包群生，而无好憎 ‘modestly containing everything but without any strong personal taste’⁷, one of the highest level of mental achievement in the traditional Chinese philosophy. Having Bryce as a consultant on the philosophical discussion on causation and agency definitely makes me more confident to work on the analysis of these two most complicated topics in cognitive science. In fact, I once seriously considered majoring in philosophy many years ago. Having Bryce, who is undoubtedly a brilliant philosopher, on my committee makes this old dream eventually come true!

⁶It is from a Chinese poem called *Zeng Wanglun* written by Bai Li to his best friend during the Tang dynasty (618 to 907 AD).

⁷It is from *Huai Nan Zi* edited by An Liu during the Western Han dynasty (202 BC to 8 AD).

I also would like to express my sincere gratitude to other faculties in the linguistics department and the cognitive science concentration for all their teaching these years. I can definitely feel the linguistics training at Georgetown has deeply influenced the way I look at languages nowadays, and all my exposures to cognitive science have also greatly affected the way how I evaluate those theoretical linguistics analyses. Just like what I told other prospective Ph.D. students when they visited Georgetown: 'I never regret coming here. If time goes back to five years ago, I would still pick Georgetown!'

I thank David Lightfoot for introducing the cognitive science concentration to me and teaching me diachronic syntax as well as language acquisition before he retired, Hector Campos for sharing with me the comprehensive developmental path of generative syntax (especially the complicated history of A-bar syntax!), Elena Herburger for all of her teachings on my introductory semantics course and the negation seminar, Elizabeth Zsiga for her help on my QP1 (a phonology paper, which is something I am extremely proud of as someone who usually does not work on the p-side!), Amir Zeldes for familiarizing me with computational corpus linguistics, and Nathan Schneider for sharing me his computational-linguistics research on argument structure (especially in the prepositional domain!). My great gratitude also goes to Erin Esch Pereira, our linguistics graduate program coordinator, who knows every administrative issue whenever you go to her for help and gets things done in a super-efficient way!

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Unlike many other dissertation acknowledgments, I have decided not to give an exhaustive list of my peers in both the linguistics department and the cognitive science concentration at Georgetown. Mainly because I know I benefit and learn a lot from everyone I met (including those undergraduates I TA/TS-ed for⁸) and I am afraid that I might miss anyone's name here. To those fellow students I encountered between 2019 and 2024 at Georgetown, I want to quote a Chinese poem to express how I value my time with you in the past five years: 恰同学少年, 风华正茂; 书生意气, 挥斥方遒 'It happened classmates were young then. Brash confidence and talent were abundant. All penned down the vivacious spirit we had with unrestrained fervor and vigor.' I hope someday in the future, when we meet, we can 忆往昔峥嵘岁月稠 'recall remarkable days in past were aplenty'!

To scholars in the field working on argument structure/event structure, causation/causative, agency/intention and/or Sinitic linguistics: 看万山红遍, 层林尽染 'Look at the thousands of mountain peaks all turning red; the layers of woods have been dyed with color'. I was already very impressed by how many amazing studies there were in the field when I was working on my dissertation proposal, and I have been meeting and benefiting a lot from idea exchanges with many of you on multiple occasions, such as academic conferences/workshops⁹, during my dissertation writing. Thank you so much all for together making the field a very

⁸In Chinese, there is an old saying: 教学相长 'teaching and learning go both ways'.

⁹Namely, BCGL-15: *Argument structure, theta roles and their realizations*, LSA-95, GLOW-46, MACSIM-9, WCCFL-41, TEAL-13, Workshop on Verbal Domains (Newcastle University), COCOA, IWSC-5, The 2023 Annual Conference of the Professional Committee on Language, Cognition and Intelligence Development (Tsinghua University), The SynNYU Workshop (New York University), CSSP-15: *Moral Language Workshop*, LSA-98 and MACSIM-10.

intriguing one, and I am very much looking forward to future cross-path! I additionally thank Amy Rose Deal, Diti Bhadra, James Essegbey, Milena Šereikaitė, Nick Fleisher, and Robert Henderson for helpful feedback on my analysis at different stages when they visited Georgetown, and Bridget Copley, Elitzur Bar-Asher Siegal, Fabienne Martin, Lelia Glass and Yining Nie for generous idea exchanges on zoom meetings and/or through emails. Also, I would like to highlight the following words from Cilene Rodrigues when she hosted the Abralin panel on *Argument Structure for the 21st Century* in the year 2020, where Artemis Alexiadou, Gillian Ramchand and Heidi Harley are the panel speakers: *As an women, I feel quite honored to here today...women are perfectly capable of conducting linguistics research. Women are to be part of science not only to guarantee gender equality but also because of our potential...we can and we do contribute qualitatively to the development of science.* As one of the online audience who was a junior doctoral student and had not decided which specific research topic to work on at that time, I was deeply moved and greatly encouraged by these words, and now so proud to finally be part of this community!

I first got in touch with linguistics during my master's study, and Professor Fuzhen Si and many senior students there at Beijing Language and Culture University embraced me with a warm welcome. It was there that I received my very first training in formal linguistics and Sinitic linguistics, including Chinese philology. For me, that place has always been one of my linguistics homes. I also thank Xing Kang for continuously emphasizing to me the importance of rooting all formal linguistics training in Chinese philology, alongside all his tremendous mental support over these years. To Xing: 中学为体, 西学为用 'a combination of the east and the west but built on your own culture'. You are definitely right that a good linguist working on a specific language should respect the philology studies on that

language, especially since those works usually have a much longer history than formal linguistics and do an excellent descriptive job. I hope someday I am able to fully achieve the goal you suggest: not only share my analysis with people who come with an English background and can read English-written formal linguistics work, but also exchange my ideas with people with a solid training background in Chinese philology.

To my cat Mimi¹⁰, the major character the readers will see in most of the linguistic examples of this dissertation: thank you for existing in the world, for all the lovely accompanies (especially during the pandemic lockdown period), and for those naughty distractions when I was working! You are always my little baby, in spite of all the noise you made during my sleep. There will be a very long flight for us two in the near future, but I am so excited to take you back to the land where I grew up. And to my family and friends: thank you for loving me not because of all the linguistics work I did but because of the person I am, for supporting the career path I chose¹¹, for all your belief in my capacity along the way especially during those dark days, and for being the place where I can take a break from academic work from time to time.

Doing a Ph.D. with two concentrations in a country with a 12- or 13-hour time difference from home is not an easy task, especially since three semesters of my doctoral study overlap with the the pandemic period. To those who are going through their own doctoral journeys and are reading this part of the dissertation

¹⁰In fact, his official name is Lewis, as documented in his adoption materials, but he never responded to that name. So I gave him this very Chinese-style cat name and it turned out that he likes it!

¹¹In my first name *Zhuosi*, *zhuo* 卓 means 'outstanding' in Chinese and *si* 思 means 'thinking'. It might sound like I have ambitious parents. But in fact, it is always me rather than them that keeps setting up goals for myself these years.

now: if I can do it, you can too! In fact, the view alongside the journey is much more beautiful than that at the end. Just enjoy the process!

Now, allow me to end this already long section with the following lyric from the song *Xiaochou* written by *Buyi Mao*:

一杯敬朝阳; 一杯敬月光。

A toast to the morning sun; a toast to the moonlight.

唤醒我的向往; 温柔了寒窗。

Awakening my longing; warming the cold window.

于是可以不回头地逆风飞翔, 不怕心头有雨, 眼底有霜。

So I can fly against the wind without looking back, not afraid of rain in my heart and frost in my eyes.

一杯敬故乡; 一杯敬远方。

A toast to my hometown; a toast to the distance.

守着我的善良, 催着我成长。

Guarding my kindness; urging me to grow.

所以“东西”¹²的路从此不再漫长, 灵魂不再无处安放。

So the roads east and west are no longer long, and my soul finds a place to rest.

一杯敬明天; 一杯敬过往。

A toast to tomorrow; a toast to the past.

支撑我的身体; 厚重了肩膀。

Supporting my body; weighing down my shoulders.

虽然从不相信所谓山高水长, 人生苦短何必念念不忘。

Although I never believed in the so-called longevity, life is short so why keep dwelling on it?

¹²The original word is 南北 ‘south and west’. I did some adaptations here.

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CHAPTER 1

INTRODUCTION

In the current theoretical framework of Minimalist Program paired with Distributed Morphology (Chomsky, 1995, 2000, 2001; Halle and Marantz, 1993, 1994), Syntax, standardly regarded as *the Single Engine* (Embick and Noyer, 2007), is responsible for the computations of abstract structures. Due to the *Late-Insertion* assumption (Halle and Marantz, 1993), i.e., the idea that morphophonological forms are now absent in the Syntax module, what is left in that module are just abstract items for computations. The next question to ask is what those abstract items are.

The answer to this question targets exactly *syntactic-semantics interface issues* that involve the division of labor and the mapping between Syntax and L(logical) F(orm) as well as Semantics. This study aims to shed light on this issue from the perspective of *argument realization* in the verbal domain, with the focus on *argument interpretation*: where are those thematic roles/relations like AGENT located in the current module of grammar, pre-syntactically as syntactic primitives or post-syntactically as derivatives?

The empirical domain of this dissertation is the syntactic, semantic and pragmatic properties of five periphrastic causative constructions in Teochew (Southern Min, Sinitic), with a focus on the interpretation of the event participants, especially the causee, the intermediate external argument shared by a causative verb and an embedded predicate.

1.1 PUZZLES

The five Teochew periphrastic causatives under exploration in this dissertation are the *mue* ‘make’-causative (1a), the *kə* ‘give’-causative (1b), the *hai* ‘hurt’-causative (1c) and the *bun* ‘separate’-causative ambiguous between a courteous reading (1d) and a permissive reading (1e)¹. As is shown in (1), they all share the same surface order, i.e., *causer + causative verb + causee + embedded predicate*. The translations below are not the most accurate ones to capture their interpretations in Teochew, which will be elaborated more in Sections 4 and 5.

- (1) a. *Nangy mue Mimi tsao.*
Nangy make Mimi run
‘Nangy makes Mimi run.’
(*mue*-causative)
- b. *Nangy kə Mimi tsao.*
Nangy give Mimi run
‘Nangy causes Mimi to run.’
(Lit. ‘Nangy gives the running event to Mimi.’)
(*kə*-causative)
- c. *Nangy hai Mimi tsao.*
Nangy hurt Mimi run
‘Nangy causes Mimi to run (adversative).’
(*hai*-causative)
- d. *Nangy bun Mimi tsao.*
Nangy separate Mimi run
‘Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.’
(courteous *bun*-causative)

¹In this dissertation, I treat them as two separate causatives and leave the syncretism issue for future research. Besides, *Nangy* and *Mimi* are cat names.

- e. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 'Nangy lets Mimi run.'

(permissive *bun*-causative)

However, when the embedded predicates are the same activity verb *tsao* 'run', all of the causees, as the external arguments of the embedded predicates, do not have the same argument interpretation.

More specifically, **first**, the causees in the *kə* 'give'-causative (1b) and two *bun* 'separate'-causative (1d-1e) are incompatible with the agentive modifications that recent works have converged on as good diagnostics for agentivity (e.g., Bruening, 2013; Alexiadou et al., 2015), including (i) instrumental phrases, (ii) agent-oriented adverbs, (iii) agent-oriented comitatives and (iv) rationale clauses (2-4).

(2) The *kə* 'give'-causative:

- a. **Nangy kə Mimi eng guʔbang tsao.*
 Nangy give Mimi use skateboard run

Intended: 'Nangy causes Mimi to use a skateboard to run.' (Lit. 'Nangy gives the using-a-skateboard-to-run event to Mimi.')

(instrument phrase)

- b. **Nangy kə Mimi uyiseʔgai tsao.*
 Nangy give Mimi intentionally run

Intended: 'Nangy causes Mimi to intentionally run.' (Lit. 'Nangy gives the intentionally-running event to Mimi.')

(agent-oriented adverb)

c. * *Nangy kə Mimi do Xingy gai pueban e tsao.*
 Nangy give Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy causes Mimi to run with the help of Xingy.' (Lit.
 'Nangy gives the running-with-the-help-of-Xingy event to Mimi.')

(agent-oriented comitative)

d. * *Nangy kə Mimi tsao kə səng.*
 Nangy give Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing.'
 (Lit. 'Nangy gives the running-for-playing event to Mimi.')

(rationale clause)

(3) The courteous *bun* 'separate'-causative:

a. * *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 Intended: 'Nangy causes Mimi to use a skateboard to run by giving
 precedence to Mimi out of courtesy.'

(instrument phrase)

b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy causes Mimi to intentionally run by giving prece-
 dence to Mimi out of courtesy.'

(agent-oriented adverb)

c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy causes Mimi to run with the help of Xingy by giving
 precedence to Mimi out of courtesy.'

(agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing by giving precedence to Mimi out of courtesy.'
 (rationale clause)

(4) The permissive *bun* 'separate'-causative:

- a. * *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 Intended: 'Nangy lets Mimi use a skateboard to run.'
 (instrument phrase)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy lets Mimi intentionally run.'
 (agent-oriented adverb)

- c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy lets Mimi run with the help of Xingy.'
 (agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy lets Mimi run for the purpose of playing.'
 (rationale clause)

In contrast, the causees in the other two causatives, the *mue* 'make'-causative (5) and the *hai* 'hurt'-causative (6) are compatible with all these agentive modifications.

(5) The *mue* 'make'-causative:

- a. *Nangy mue Mimi eng guʔbang tsao.*
Nangy make Mimi use skateboard run
'Nangy makes Mimi use a skateboard to run.'

(instrument phrase)

- b. *Nangy mue Mimi uyiseʔgai tsao.*
Nangy make Mimi intentionally run
'Nangy makes Mimi intentionally run.'

(agent-oriented adverb)

- c. *Nangy mue Mimi do Xingy gai pueban e tsao.*
Nangy make Mimi at Xingy POSS accompaniment under run
'Nangy makes Mimi run with the help of Xingy.'

(agent-oriented comitative)

- d. *Nangy mue Mimi tsao kə səŋg.*
Nangy make Mimi run to play
'Nangy makes Mimi run for the purpose of playing.'

(rationale clause)

(6) The *hai* 'hurt'-causative:

- a. *Nangy hai Mimi eng guʔbang tsao.*
Nangy hurt Mimi use skateboard run
'Nangy causes Mimi to use a skateboard to run (adversative).'

(instrument phrase)

- b. *Nangy hai Mimi uyiseʔgai tsao.*
Nangy hurt Mimi intentionally run
'Nangy causes Mimi to intentionally run (adversative).'

(agent-oriented adverb)

- c. *Nangy hai Mimi do Xingy gai pueban e tsao.*
 Nangy hurt Mimi at Xingy POSS accompaniment under run
 ‘Nangy causes Mimi to run with the help of Xingy (adversative).’
 (agent-oriented comitative)
- d. *Nangy hai Mimi tsao kə səng.*
 Nangy hurt Mimi run to play
 ‘Nangy causes Mimi to run for the purpose of playing (adversative).’
 (rationale clause)

Second, the causees in the *hai* ‘hurt’-causative (1c) and the courteous *bun* ‘separate’-causative (1d) are additionally interpreted as expressing the speaker’s attitude. More specifically, the causee in the *hai* ‘hurt’-causative (1c) is interpreted as MALEFICIARY, i.e., one suffering from something harmful caused by the causer, the MALEFACTOR. In contrast, the causee in the courteous *bun*-causative (1d) is interpreted as BENEFICIARY receiving a courtesy from the causer, the BENEFACTOR

Last but not least, the causee in the permissive *bun* ‘separate’-causative (1e) is also interpreted as interacting with the causer in a way related to their social hierarchical statuses. To be specific, the causer, as someone with a higher social status, causes the causee, someone with a lower social status, to do something by providing permission.

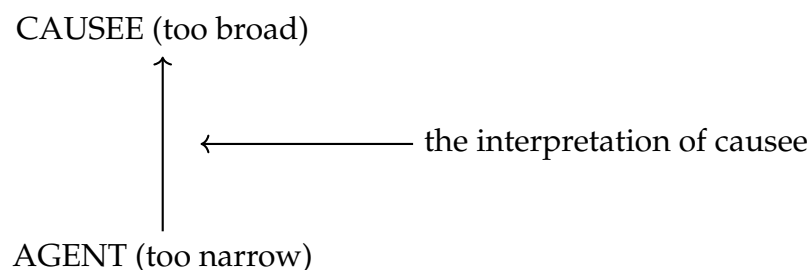
Table 1.1 summarizes the complex causee interpretations in all Teochew periphrastic causative constructions.

Table 1.1: Complex causee interpretations in Teochew periphrastic causatives

| Construction | Compatible with all agentive modifications? | Other |
|--|---|-------------------------------------|
| <i>mue</i> 'make'-causative | ✓ | - |
| <i>kə</i> 'give'-causative | × | - |
| <i>hai</i> 'hurt'-causative | ✓ | MALEFICIARY |
| courteous <i>bun</i> 'separate'-causative | × | BENEFICIARY |
| permissive <i>bun</i> 'separate'-causative | × | lower social status than the causer |

As we can see from the table, thematic roles like AGENT are not suitable labels for these complex argument interpretations, even though the embedded predicates of which these causees are external arguments are all agentive. One way out is to simply label all of these causees a unique thematic role, i.e., CAUSEE (cf. Wali, 1981; Li, 2020; Akkuş, 2022). However, this will give these causees a too-broad argument interpretation, predicting that all the causees in Teochew periphrastic causative constructions will be interpreted as the same, which is in contrast to the distinctive complex interpretations we see in the table. Currently, there is no mechanism to capture the in-between-AGENT-and-CAUSEE interpretation of these causees (7), not to mention that the causee interpretations are also diverse, even though some of the interpretation patterns in the above table are also observed in other languages (see Chapter 2).

(7)



This dissertation will solve this puzzle, aiming to shed light on the mechanism of *argument interpretation* by working on the argument structure and event structure of the five Teochew periphrastic causatives in (1).

1.2 RESEARCH QUESTIONS

Currently, in the field, there are two approaches to deal with these complex causee interpretations, i.e., the *listing* approach and the *contextual* approach.

The former argues that the argument interpretation is *listed* with either individual verbs (e.g., Chomsky, 1981; Stowell, 1981) or specific syntactic positions (e.g., Jackendoff, 1972; Sag, 1985; Larson, 1988; Baker, 1988, 1997). The latter holds that the argument interpretation is *contextualized*, derived from the linguistic (e.g., syntax and semantics) environment surrounding the verb (e.g., Borer, 2005; Ramchand, 2008; Schäfer, 2008, 2012; Alexiadou et al., 2015; Wood, 2015; Wood and Marantz, 2017; Biggs and Embick, 2022; Marantz, 2022). I will argue in Chapter 2 that the causee interpretations of Teochew periphrastic causative constructions, in fact, provide novel empirical grounds to support the latter view.

The theoretical contribution of this dissertation is to add to this *contextual* line of research of argument interpretation by further specifying *the contextualization conditions* of external arguments, through exploring one particular kind of external argument, i.e., the understudied intermediate causee. Against this background, the **General Research Question** of this study is given in (8).

(8) **General Research Question:**

What are the *contextualization conditions* for the interpretations of the external arguments including the understudied causee?

Detailed analysis to be conducted through a case study on the causee interpretation in five Teochew periphrastic causatives (1) will be centered around four supporting analyses answering the specific research questions in (9).

(9) **Specific Research Questions:**

- a. *Syntactic argument structure*: where is the intermediate causee syntactically located in each periphrastic causative construction? (Chapter 3)
- b. *Causal event structure*: what is the event structure of each periphrastic causative construction? (Chapter 4 and 5)
- c. *Pragmatics*: how do pragmatic factors influence the eventuality and argument interpretation? (Chapter 5 and 6)
- d. *Technical issue*: how are AGENT/CAUSEE diagnosed? (Chapter 6)

I will argue that these four, though each a big research topic on its own, intersect with each other when it comes to answering the **General Research Question** in (8).

1.3 THE EMPIRICAL DOMAIN

The empirical data of this dissertation mainly comes from a language called Teochew. All data used in this project is collected from thirty native speakers living in the downtown area of the Shantou/Swatow city in the Teochew region (five seniors and twenty-five non-seniors) and the Teochew History and Culture Center located in the Teochew region, with approval from the Institutional Review Board at Georgetown University. The introspection of the author, whose mother tongues also include Shantou/Swatow Teochew, is also used in this dissertation.

1.3.1 LANGUAGE BACKGROUND

There are hundreds of languages spoken in China, belonging to at least ten families². Teochew, also known as *chaoshanhua* or *chaozhouhua* in Mandarin Chinese, is an understudied variety of Southern Min, Sinitic, the Sino-Tibetan family (Figure 1.1; *Language Atlas of China*, 2012).

²The term *Chinese*, at the broad level, is a cover term referring to languages spoken by Chinese people, and at the narrow level, refers to the Sinitic branch of the Sino-Tibetan language family spoken by Han, one of the 56 ethnic groups in China. In China, most of the non-Sinitic languages are spoken by other ethnic groups than Han.

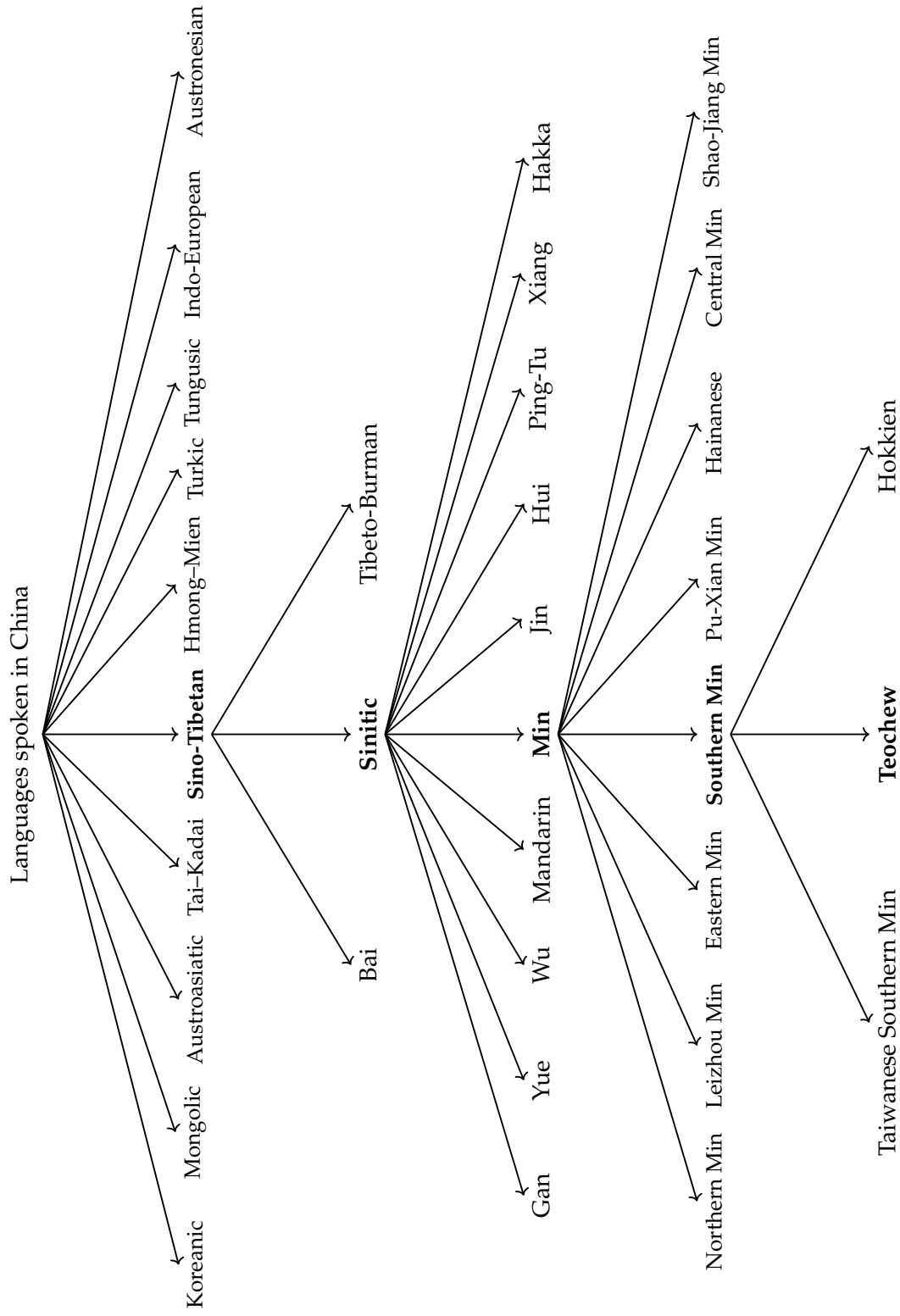


Figure 1.1: Languages spoken in China

Teochew is the mother tongue of Teochew people living in the Teochew region (*Chaoshan* in Mandarin; *Teoswa* in Teochew) located in the eastern part of Guangdong Province, China (Figure 1.2; retrieved from the website of Ministry of Natural Resources, China, Version 2022). Due to migration, mostly to Southeastern Asian countries like Thailand, Vietnam and Singapore, this language is also spoken in many Asian communities around the world.



Figure 1.2: The Teochew region ('Teoswa')

Linguistically, Teochew is one type of Sinitic language, sharing many similarities with the most studied Sinitic language, i.e., Mandarin. Like Mandarin (e.g., Huang, 1982; Li, 1998), it does not have many morphological clues for inflections and derivations, making the categories or parts of speech difficult to identify, and it makes use of aspectual particles to indicate tense. Its basic word order is *Subject-Verb-Object*, and this order is maintained in WH-questions (i.e., it is a WH-in-situ language); however, given that it is a topic-prominent language, the topicalized item is always fronted, which sometimes leads to flexible word order. In the nominal domain, it is a classifier language but lacks true determiners, leading to the occurrence of bare noun phrases. In the verbal domain, like Mandarin, it has VV resultative compounds (10a), *V-gao* resultative constructions ((10b); similar to Mandarin *V-de* resultative constructions), *kə*-passives ((10c); similar to Mandarin *bei*-passives) and *dui*-constructions ((10d); similar to Mandarin *ba*-constructions). All of them will be used for exploring the linguistic properties of Teochew periphrastic causative constructions in later discussions.

- (10) a. *Mimi ts'iŋ-beŋ ts'un o.*
 Mimi wipe-clean table PFV_{Neu/Pos}
 'Mimi has wiped the table clean.'
- b. *Mimi tsao-gao ho heŋ.*
 Mimi run-arrive very tired
 'Mimi run and has become tired.'
- c. *Muegia kə Mimi tsia o.*
 Stuff PASS Mimi eat PFV_{Neu/Pos}
 'Foodstuffs have been eaten by Mimi.'
- d. *Mimi dui muegia tsia o.*
 Mimi towards stuff eat PFV_{Neu/Pos}
 'Mimi has eaten some foodstuffs.'

Despite these similarities, Teochew also obviously differentiates itself from Mandarin and other Sinitic languages in terms of many linguistic properties, including phonetic and phonological characteristics, vocabulary and grammar. Basically, it is unintelligible for other Sinitic language speakers, even for speakers of other Southern Min varieties.

There are three reasons for this. First, being described as ‘the most ancient and distinctive existing dialect in China’ and the ‘living fossil of Old Chinese’ (Karlgren, 1934), Teochew retains many phonetic and phonological features of Old Chinese dating back to the period of the Qin and Han Dynasty (221 BC - 220 AD); for example, like Old Chinese, it has eight citation tones and the tone sandhi patterns are very complex (Zhang, 2016; Luo, 2021). For reading convenience, these will not be shown in the data of this dissertation. Additionally, it also has many Old Chinese words and grammatical properties no longer used in other modern Sinitic languages (Lin, 1997a,c,b). Second, Teochew is the only variety of Southern Min languages not spoken in the area where Min is dominant, i.e., Fujian and Taiwan (Figure 1.2). Instead, the Teochew region is located on the boundary between the Guangdong province, where Cantonese (i.e., Yue) is dominant, and the Fujian province, where Min is dominant. Besides, the spoken area of Hakka also overlaps with the Teochew region, which results in a complex Cantonese-Min-Hakka language contact observed in Teochew (Lin, 1994), not to mention that Cantonese, Min and Hakka are already very different from Mandarin and from each other in terms of many linguistic properties. Third, due to the migration of Teochew people, especially to South Eastern Asian countries during the Ming and Qing Dynasties (1368 - 1912 AD), many linguistic properties of languages spoken in South Eastern Asian countries like Thai, Vietnamese, Malaysia and Indonesian are borrowed to

Teochew, making the language even more unintelligible for other Sinitic language speakers.

Currently, despite some descriptive works, many of which are on phonetics and phonology, Teochew remains quite understudied in the field of formal linguistics, even in the field of Chinese/Southern Min linguistics.³ This dissertation is the very first comprehensive formal linguistic analysis of the Teochew periphrastic causative constructions.

1.3.2 CAUSATIVE STRATEGIES IN TEOCHEW AND SOME CROSS-SINITIC-LANGUAGE COMPARISONS

There are two strategies to express causative meaning in this language, i.e., non-periphrastic causatives and periphrastic causatives. The two non-periphrastic constructions are the VV resultative compound in (10a) and the V-*gao* ‘arrive’ resultative construction in (10b).

When it comes to periphrastic causative constructions in Teochew, seven different causative verbs, i.e., *mue* ‘make’ (1a), *kə* ‘give’ (1b), *hai* ‘hurt’ (1c), courteous *bun* ‘separate’ (1d), permissive *bun* (1e), *ga?* ‘teach’ (11a) and *leng* ‘order’ (11b) are allowed in this structure. The latter two are borrowed from Mandarin and more often used in some formal registers like school teaching.

- (11) a. *Nangy ga? Mimi tsao.*
Nangy teach Mimi run
‘Nangy causes Mimi to run (used in the formal register).’
(*ga?*-causative)

³See Appendix A for a collection of previous linguistics studies on Teochew.

- b. *Nangy leng Mimi tsao.*
Nangy order Mimi run

‘Nangy causes Mimi to run (used in the formal register).’

(*leng*-causative)

This dissertation only focuses on the first five periphrastic causative verbs in Teochew.

Some of the periphrastic causative constructions under exploration in this dissertation are actually similar to those in Mandarin, Cantonese and other Southern Min varieties. For example, a similar ‘give’-causative also exists in Cantonese, i.e., the *bei*-causative, and other Southern Min varieties like Taiwanese Southern Min, i.e., the *hoo*-causative (Cheng et al., 1999). In addition, a similar ‘hurt’-causative exists in Mandarin, Cantonese and other Southern Min varieties. What is more, the ‘separate’ *bun*-causative is somewhat similar to Mandarin *rang*-causative in terms of the courteous and permissive implications, though the Mandarin one is more often used as a neutral causative construction (Luo and Kang, 2023). The ‘make’-causative may be unique to Teochew, though it may also exist in other Southern Min languages, which requires confirmation from more fieldwork research. So far, Teochew, to my knowledge, might have the largest or a relatively large number of causative verbs among Sinitic languages.

Given the limited scope, this dissertation will not make comparative analyses on periphrastic causative constructions between Teochew and other Sinitic languages. However, I hope that a comprehensive case study on the syntax, semantics, and pragmatics of the Teochew periphrastic causative constructions can help lay a foundation and provide insights for future studies on (periphrastic) causatives in other (Sinitic) languages.

1.4 OUTLINE OF THE DISSERTATION

As is shown in Section 1.1, the puzzle posed towards the current argument realization theories by five Teochew periphrastic causative construction is the interpretation of the intermediate causee. More specifically, the causees in five periphrastic causatives are interpreted differently, even though they are all external arguments of the same embedded agentive predicates.

Centering around the supporting analyses answering the **Specific Research Questions** (9), this dissertation will focus on the syntax, semantics and pragmatics of the five Teochew periphrastic causatives in (1), aiming to explain the above different causee interpretations and to answer the **General Research Question** in (8). The rest of this dissertation is organized as follows.

Chapter 2 sets the stage for later discussions, including (i) introducing the theoretical background, (ii) identifying a gap in research on the causee interpretation, and (iii) elaborating on two contrasting approaches to argument interpretations, i.e., *listing* and *contextual*.

Chapter 3 gives a comprehensive syntactic analysis of all Teochew periphrastic causatives in (1). Most importantly, it shows that all the causees, in spite of their distinctive interpretations, are introduced by or adjoined to the same syntactic layer in a recursive VoiceP and *v*P structure. This provides evidence that a listing approach listing argument interpretation with specific interpretations cannot work. In contrast, the contextual approach, arguing that syntactically-oriented event structural interpretations feed argument interpretations, as an alternative, should be favored.

In this spirit, **Chapter 4** and **Chapter 5** concentrate on the causal event structural interpretation of each causative in (1). In Chapter 4, I show the causal rela-

tions encoded across these causatives differ in at least four dimensions, (i) *direct vs. indirect*, (ii) *deterministic vs. probabilistic*, (iii) *expressing the speaker's attitude vs. attitude-neutral*, and (iv) *permissive vs. non-permissive*. For the first dimension, there are three subdimensions, including (i) *time*, (ii) *space* and (iii) *whether an intermediary agent is allowed*. To my knowledge, such a comprehensive taxonomy of multi-dimensional causal relations has not been conducted before. Chapter 5 accordingly provides a modal analysis paired with event semantics to account for all these patterns, proving the widely-adopted monolithic CAUSE operator (Dowty, 1979) is not ideal. I argue that the complex causal relations in Chapter 4 mainly result from their event structures being influenced by different modal flavors of the sublexical modality encoded in each causative verb.

Built on the comprehensive syntactic, semantic and pragmatic analysis in Chapters 3-5, **Chapter 6** aims to solve the causee interpretation puzzle in Section 1.1. I first demonstrate a fine-grained implementation of the widely-adopted *complement-oriented* contextual approach to the causer interpretations that have not been discussed before. Then I argue that, though this approach works for many external arguments, it cannot be applied to the case of causee as an intermediate external argument shared by a causative verb and an embedded predicate. Instead, a *two-step* contextual approach is required. More specifically, when the causee is introduced by or adjoined to the external argument introducing head, it will have an initial argument interpretation. This initial interpretation will be further modified by the lexical semantics of the causative verb by being scoped over during the process of semantic compositions. This final interpretation is targeted by different linguistic diagnostics including those agentive modifications shown in Section 1.1. Before diving into the exact causee interpretation, I first differentiate two notions of AGENT, i.e., *grammatical AGENT* and *intuitive AGENT*, and then

work on the nature of those agentive modifications, showing that not all of them are reliable diagnostics for *grammatical AGENT*. Building on the properties of these two types of AGENT, I show that the final causee interpretations modified by different sublexical modalities correspond to their compatibility patterns diagnosed by different linguistic diagnostics. The puzzle in Section 1.1 is solved.

Chapter 7 concludes with not only a detailed answer to the **General Research Question** in (8), but also discussion of the implications for the introduction of arguments, argument licensing and the explorations of phasehood at the LF.

CHAPTER 2

SETTING THE STAGE

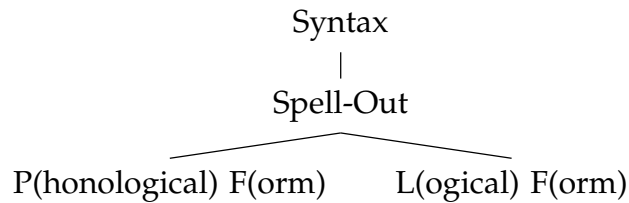
This chapter sets the stage for the analysis of this dissertation. The theoretical background on the current Generative Grammar, including both MP-DM syntax and Formal Semantics, is given in Section 2.1. Section 2.2 shows that the non-agentive causee interpretation is cross-linguistically observed but still a research gap in the field. In Section 2.3, I introduce two approaches to argument interpretation and argue that a *contextual* approach is superior to a *listing* one when it comes to explaining the complex causee interpretations in Teochew periphrastic causatives. Section 2.4 concludes.

2.1 THEORETICAL BACKGROUND: THE GRAMMAR

This dissertation is set against the theoretical linguistic background of Chomskian Generative Grammar. More specifically, the major theoretical frameworks adopted include (i) Minimalist Program (MP) (Chomsky, 1995, 2000, 2001), paired with Distributed Morphology (DM) (Halle and Marantz, 1993, 1994) in terms of syntactic analysis, and (ii) Formal Semantics based on the static system in Heim and Kratzer (1998) and the intensional system in von Stechow and Heim (1997), paired with Event Semantics (Davidson, 1967; Higginbotham, 1985, 2000; Parsons, 1990, 2000) and Modal/Possible World Semantics (Kratzer, 1977, 1978, 1981, 1991; Portner, 2009, 2018).

In the Y-model or the T-model of this Grammar (12), the PF (abbreviation for *Phonological Form*) side deals with sound in spoken languages or sign in sign languages, and the LF (abbreviation for *Logical Form*) side deals with meanings; the two do not interact in the computations. Syntax, standardly regarded as *the Single Engine* (Embick and Noyer, 2007) in the DM approach, is responsible for the computations of abstract structures. Together with the *Late-Insertion* assumption (Halle and Marantz, 1993), i.e., the idea that morphophonological forms are now absent in the Syntax module, an important consequence is that what is left in that module are just abstract items for computations.

(12) Modules of the Grammar:



The next question to ask is what those abstract items are. The answer to this question targets exactly *syntactic-semantics interface issues* that involve the division of labor and the mapping between Syntax and LF or Semantics. The rest of Section 2.1 will go over the basic syntactic and semantic assumptions of this Grammar first.

2.1.1 MINIMALIST PROGRAM-DISTRIBUTED MORPHOLOGY (MP-DM)

In the MP-DM syntax, a single operation *Merge* puts together all the syntactic structures. *Agree* is a relation between two syntactic objects. *Move* equals *Agree* plus *Merge*¹. *Merge* will be the major syntactic operation discussed in this dissertation.

The syntactic skeleton of a clause in Sinitic languages is standardly made up of CP-AspP-the verbal domain. This dissertation mainly focuses on the syntactic structure of periphrastic causative constructions; therefore, I will leave aside the highest CP domain unless it is relevant to the discussion. Considering the tense domain is controversial in Sinitic languages (see Lin, 2006 for a classic discussion), I follow Lin (2003, 2006, 2010, 2012) and Grano (2017) on assuming there is no TP in Sinitic languages. The verbal domain will be the major syntactic domain in this study. Though the current MP-DM syntax removes the notion of the old X-bar theory, I will continue to use the notions of the specifier, complement, and bar labels for the convenience of discussion. The only pure syntactic feature that will be made use of in this study is the [EPP] feature on the head signifying a requirement for a specifier².

¹There are debates regarding the *Agree* operation (see Deal (2023) for a recent discussion of the interaction/satisfaction theory). Interweaving with this research, there are also some discussions of (i) Case/case regarding the structural relationships between heads and nominals as well as between nominal, some properties related to thematic roles, and predicate types among others, and (ii) morphological agreement interweaving with post-syntactic operations. However, considering the language under exploration in this dissertation, i.e., Teochew, like other Sinitic languages including Mandarin, does not have a rich morphology in terms of morphological case and agreement, not to mention that the nominal licensing related to abstract Case in Sinitic languages without morphological cases is controversial (see Sheehan and van der Wal (2018)), I leave the Case/case and the *Agree* discussion, i.e., the *Agree* operation aside for this study. In addition, considering this dissertation will mainly focus on the compositional computation of the verbal domain, there will be few discussions of *Move*; therefore, I also leave the discussion of it aside.

²Though some researchers make use of the [D] feature instead (e.g., Embick, 2004; Schäfer, 2008; Muller, 2010; Wood, 2015; Myler, 2016; Kastner, 2019; Marantz, 2022), I choose to keep the [EPP] version considering in the literature, the DP layer is controversial

The DM approach assumes that the syntactic objects manipulated by the syntax are abstract terminal nodes, and these nodes are combined via Merge to form a chunk of the syntactic structure serving as input to the PF. The output of PF will be sound or sign in a linear order³. What the Late-Insertion assumption will matter for this study is that there is only a list of abstract morphemes (Halle and Marantz, 1993) or feature bundles (Harley, 2014) in the Grammar. The next question is what is in this list?

This study aims to shed light on this question from the perspective of *argument realization* in the verbal domain, an area where (morpho)syntax and semantics intertwine in a well-known complicated way. More specifically, this dissertation focuses on *argument interpretation*: where are those thematic relations like AGENT located, pre-syntactically as syntactic primitives or post-syntactically as derivatives?

2.1.2 LOGICAL FORM (LF) AND FORMAL SEMANTICS

The approach to semantics to be used in this dissertation is Formal Semantics, which is an umbrella term for Truth-Conditional Semantics, Event Semantics (Davidson, 1967; Higginbotham, 1985, 2000; Parsons, 1990, 2000) and Modal Semantics or Possible World semantics (Kratzer, 1977, 1978, 1981, 1991; Portner, 2009, 2018) in this study. I will use formal representations based on the static in Sinitic languages (see Chierchia (1998) for a classic discussion of Mandarin bare nouns and Dayal and Jiang (2022) for a more recent discussion). However, I choose to follow Huang et al. (2009) to use the DP layer for Teochew when it comes to notations and references to noun phrases in this dissertation. This notation choice is out of the consideration of convenience, rather than making a commitment to any theory.

³There are a lot of discussions in the literature on different post-syntactical operations at the PF side regarding the linearity issue (see Bobaljik (2017) for a review) and their sensitivity to syntactic phase/cyclicity (Kramer, 2009; Embick, 2010; Sande et al., 2020; Felice, 2022), complementing the Late-Insertion assumption.

system in Heim and Kratzer (1998) and the intentional system in von Stechow and Heim (1997) to represent the meanings in the verbal domain.

Whether or not the Late-Insertion assumption taken in the DM approach can be extended to the LF side is connected to the debate or the linguistics war in the 1960s-1970s, between *Generative Semantics* and *Interpretative Semantics* on the issue of the autonomy of Syntax. The contrast appeared at the age of Transformational Generative Grammar as different responses to solve the problematic relation between the transformational derivations and semantics (Partee, 2014). Generative Semantics (Ross, 1967; Bach, 1968; Fillmore, 1968; Lakoff, 1968, 1971, 1972; Karttunen, 1969; McCawley, 1968, 1970; Postal, 1970, 1971, 1972, 1974) argues for a semantically-sound level of deep/underlying structure. In contrast, Interpretative Semantics (Chomsky, 1971; Jackendoff, 1972) argues for the autonomy of Syntax and holds that syntactic structure is the input for semantic computations.

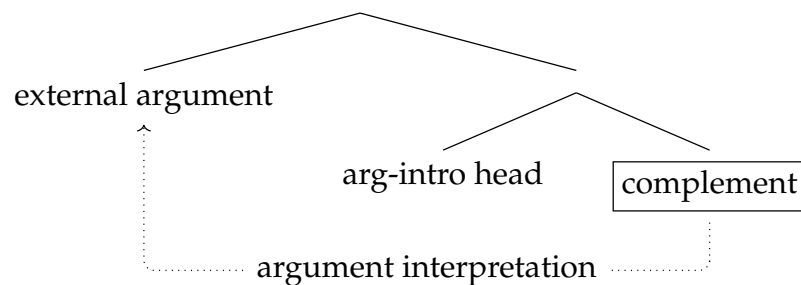
More recently, under the MP-DM framework, there has also been some discussion of whether we should also assume Late-Insertion at the LF side, analogous to the PF, with an aim to implement the Interpretative Semantics approach. Discussions along this line and supporting LF Late-Insertion includes Marantz (1997), Schäfer (2008, 2012), Borer (2013), Alexiadou et al. (2015), Kastner (2016), and the allosemy approach developed in Wood (2015), Myler (2016), Wood and Marantz (2017) and Marantz (2022). This dissertation will contribute to this line of discussion through a case study of argument realization, more specifically, *the (external) argument interpretation* with a focus on the causee interpretation. I will assume roughly the Interpretative Semantics perspective, arguing that the argument interpretation is contextualized by syntactically-oriented event structure as a post-syntactic derivative.

2.2 A RESEARCH GAP: THE CAUSEE INTERPRETATION

Among different types of arguments in the verbal domain, external arguments like AGENT external argument as well as causer⁴, applied, HOLDER, and FIGURE external arguments have been given a severed syntactic and thematic analyses throughout history (e.g., Williams, 1981; Marantz, 1984; Rapport Hovav and Levin, 1988; Grimshaw, 1990; Kratzer, 1996; Pylkkänen, 2008; Alexiadou et al., 2015; Wood, 2015; Wood and Marantz, 2017; Nash, 2022; Biggs and Embick, 2022; Marantz, 2022). Chomsky (2000, 2001) proposes that the functional head introducing the external argument (*v* in Chomsky's system) is regarded as one of the core functional categories that define cyclic domains, i.e., phases.

Empirical evidence supporting this severed status of external arguments comes from the observation that the interpretation of an external argument is *contextualized* by the event structural interpretation of the syntactic complement of the functional heads introducing it (13). In this dissertation, I refer to such a contextualization condition as the *complement-oriented* approach.

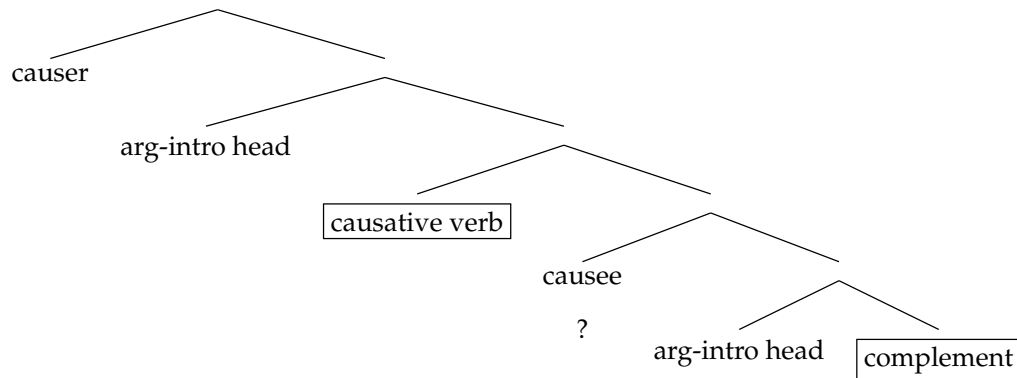
(13)



⁴I use the non-capitalized *causer* as a cover term of the highest syntactic argument commonly seen in a causative construction, which is the animate/inanimate initiator of the causing event. This term is distinct from the capitalized *CAUSER* often used to represent the thematic role of this syntactic argument. The same notions apply to *causee* vs. *CAUSEE*.

While previous research *exclusively* analyzes the interpretation of external arguments like AGENT, HOLDER, applied, FIGURE and causer, there is little discussion of the contextual conditions of causee, the shared argument between the causative verb and the embedded predicate, which is also one type of external arguments (14).

(14)



Recently, there has been a lot of research focusing on the syntactic status of the causee in (periphrastic) causative constructions. Interestingly, much of this research reveals a puzzling pattern of the interpretation of causees cross-linguistically: *the causee is incompatible with some or all the agentive modifications converged on in the literature even though being the external argument of an agentive predicate*. This line of observation will be summarized in Section 2.2.2, showing the non-agentive interpretation of causees in Teochew periphrastic causatives in Section 1.1 is not a special case. Section 2.2.3 will further show that this general puzzle is related to the elusive nature of AGENT and CAUSEE.

2.2.1 CLASSIC AGENTIVE MODIFICATIONS

In linguistics, the concept of AGENT is used as a type of thematic role. A theory of thematic roles is widely used to represent argument interpretation (Gruber, 1965;

Fillmore, 1968). A relatively comprehensive list of the most widely used general thematic relations is given in (15).

(15) Kinds of general thematic relations:

- a. An *AGENT* is a thing viewed as bringing about the event. Traditionally this includes only volitional actors (Gruber, 1965; Jackendoff, 1972), but now this condition is often dropped (Baker, 1997; Van Valin and Wilkins, 1996).
- b. An *EXPERIENCER* is the sentient locus of a mental event.
- c. The term *THEME* was introduced in Gruber (1965) for a participant whose location or movement (whether in a physical or an abstract space) is described by the verb. These days it is often used with a much broader meaning, often interchangeably with *PATIENT*. Commonly, any subject or object that does not name *AGENT* or *EXPERIENCER* is said to name a *THEME*.
- d. An *INSTRUMENT* is a thing viewed as assisting the agent in bringing about the event (Nilsen, 1973; Koenig et al., 2008).
- e. A *LOCATION* is the location of an event.
- f. A *GOAL* is a thing or place towards which a certain participant in the event moves.
- g. A *SOURCE* is a thing or place from which a certain participant in the event moves.
- h. A *PATIENT* is a thing viewed as undergoing an event passively.

(Williams, 2015, Chapter 6)

There are several classic and widely-adopted diagnostics used to pick up patterns compatible only with the *AGENT* role. These diagnostics converged on in

recent works (e.g., Bruening, 2013; Alexiadou et al., 2015) include (i) instrument phrases, (ii) agent-oriented adverbs, (iii) agent-oriented comitatives and (iv) rationale clauses.

As is shown by the Teochew data below, all four agentive modifications can successfully identify the AGENT in a passive construction (16) but do not pick out the THEME subject of an unaccusative (17), the EXPERIENCER subject of a psych verb (18) or the HOLDER subject of a stative verb (19).

(16) Passive:

- a. *Hi goi bang kə (ua) eng t'its'ui tiaku.*
 that CL room PASS 1.SG use hammer demolish
 'That room was demolished (by me) with a hammer.'
 (instrument phrase)
- b. *Hi goi bang kə (ua) uyiseʔgai tiaku.*
 that CL room PASS 1.SG intentionally demolish
 'That room was intentionally demolished (by me).'
- (agent-oriented adverb)
- c. *Hi goi bang kə (ua) do mets'aʔ gai pueban e*
 that CL room PASS 1.SG LOC burglar POSS accompaniment under
tiaku.
 demolish
 'That room was demolished (by me) with the help of a burglar inside.'
- (agent-oriented comitative)
- d. *Hi goi bang kə (ua) tiaku kə ki sin bang.*
 that CL room PASS 1.SG demolish to build new room
 'That room was demolished (by me) to build a new room.'
- (rationale clause)

(17) Unaccusative:

- a. * *Hi goi bang kə yi-gagi eng t'its'ui dolo?ku.*
that CL room by 3.SG-self use hammer fall-over

Intended: 'That room falls over by itself with a hammer.'

(instrument phrase)

- b. * *Hi goi bang kə yi-gagi uyise?gai dolo?ku.*
that CL room by 3.SG-self intentionally fall-over

Intended: 'That room falls over by itself intentionally.'

(agent-oriented adverb)

- c. * *Hi goi bang kə yi-gagi do mets'a? gai pueban e*
that CL room by 3.SG-self LOC burglar POSS accompaniment under
dolo?ku.
fall-over

Intended: 'That room falls over by itself with the help of a burglar inside.'

(agent-oriented comitative)

- d. * *Hi goi bang kə yi-gagi dolo?ku kə ki sin bang.*
that CL room by 3.SG-self fall-over to build new room

Intended: 'That room falls over by itself to build a new room.'

(rationale clause)

(18) Psych verb:

- a. * *Mimi eng ganggu hihua gao.*
Mimi use tool like dog

Intended: 'Mimi uses tools to like dogs.'

(instrument phrase)

- b. * *Mimi uyise?gai hihua gao.*
Mimi intentionally like dog

Intended: 'Mimi intentionally likes dogs.'

(agent-oriented adverb)

c. * *Mimi do Nangy gai pueban e hihua gao.*
 Mimi at Nangy POSS accompaniment under like dog
 Intended: 'Mimi likes dog with the help of Nangy.'
 (agent-oriented comitative)

d. * *Mimi hihua gao kə ga Xingy tso peng'iu.*
 Mimi like dog to with Xingy make friend
 Intended: 'Mimi likes dogs to make friends with Xingy.'
 (rationale clause)

(19) Stative verb:

a. * *Mimi eng ganggu u uangu.*
 Mimi use tool have toy
 Intended: 'Mimi uses tools to own toys.'
 (instrument phrase)

b. * *Mimi uyise?gai u uangu.*
 Mimi intentionally have toy
 Intended: 'Mimi intentionally owns toys.'
 (agent-oriented adverb)

c. * *Mimi do Nangy gai pueban e u uangu.*
 Mimi at Nangy POSS accompaniment under have toy
 Intended: 'Mimi owns toys with the help of Nangy.'
 (agent-oriented comitative)

d. * *Mimi u uangu kə səng.*
 Mimi have toy to play
 Intended: 'Mimi owns toys to play.'
 (rationale clause)

In other words, these diagnostics together pick up on a set of grammatical behaviors normally demonstrated by the subject of an active-voice sentence with an unergative, transitive or ditransitive verb, or the (implicit) event participant

bringing about the event in a passive-voice sentence. This set of grammatical behaviors is normally used to identify an argument of AGENT.

So far the patterns are clear; however, as is shown by the Teochew periphrastic causative data in Section 1.1 and to be shown by cross-linguistic data in the following Section 2.2.2, the causee tends to behave strangely when it comes to its compatibility with these agentive modifications.

2.2.2 CROSS-LINGUISTIC OBSERVATIONS OF NONAGENTIVE CAUSEE

In some languages, the causee is incompatible with some of the agentive diagnostics discussed in Section 2.2.1, even though the embedded predicate is an activity verb, of which the subject external argument is supposed to be interpreted as AGENT.

For example, in the Bemba causative, agent-oriented adverbs like ‘on purpose’ and ‘willingly’ cannot take a lower scope (Givón, 1976), i.e., cannot target the causee (20).

(20) Bemba:

- a. *Naa-mu-fuund-ishya uku-laanda iciBemba ku-mufulo.*
1.SG-PAST-him-learn-CAUSE to-speak Bemba on-purpose

‘In, on purpose, made him learn to speak Bemba.’

NOT ‘I made him on purpose learn to speak Bemba.’

- b. *Naa-butwiish-ya umuana ukwiitemenwa*⁵.

‘I willingly made the boy run.’ NOT ‘I made the boy run willingly.’

Like the Bemba causative, the Finnish causative also allows an agent-oriented adverb to be the modification of the causer only (Pylkkänen, 2008) (21).

⁵The glossing for this example is not provided in Givón (1976).

(21) Finnish:

Ulla rakenn-utt-i Mati-lla uude-n toimistopöydä-n
Ulla.NOM build-CAUSE-PAST Matti-AADESS new-ACC office.table-ACC
innokkaasti.
enthusiastically

‘Ulla, enthusiastically, had Matti build her a new office desk.’ NOT ‘Ulla had Matti, enthusiastically, build her a new office desk.’

Horvath and Siloni (2011) show that the agent-oriented adverbs ‘readily’ and ‘without hesitation’ can only modify the causer, not the causee, in the Hungarian morphological causative no matter where they are positioned in the surface structure, as is shown in (22).

(22) Hungarian:

a. *Az ügyvéd készség-gel / habozás n’elkül*
the lawyer.NOM readiness-INSTR / hesitation without
alá-ír-at-ta János-sal a szerződést.
under-write-CAUS-PAST.DEF.DO János-INSTR the contract-ACC
The only reading: ‘The Lawyer made [János sign the contract] readily/
without hesitation.’

b. ? *Az alá-ír-at-ta János-sal ügyvéd*
the lawyer.NOM under-write-CAUS-PAST.DEF.DO János-INSTR
készség-gel / habozás n’elkül a szerződést.
readiness-INSTR / hesitation without the contract-ACC
The only reading: ‘The Lawyer made [János sign the contract] readily/
without hesitation.’

In addition, Key (2013) shows that in Turkish productive affixal causatives with *-Dir* (23), only the causer can be modified by the agent-oriented adverb ‘on purpose’.

(23) Turkish:

Tarkan Hasan-a Mehmet-i bil-erek döv-dür-dü.
Tarkan Hasan-DAT Mehmet-ACC know-PART beat-CAUS-PST

✓ ‘Tarkan, on purpose, made Hasan beat Mehmet.’

× ‘Tarkan made Hasan, on purpose, beat Mehmet.’

Legate (2014) also shows that the causee in the Acehnese *bak* mono-clausal causative cannot be modified by the same agent-oriented adverb (24).

(24) Acehnese:

Bang geu-peu-koh ôk gobnyan bak lôn deungon singaja.
elder.brother 3Pol-CAUS-cut hair 3Pol at 1.SG with purpose

‘Brother made me cut his hair on purpose.’

✓ Brother did it on purpose.

× I did it on purpose.

Similarly, Nash (2020) notes in Georgian causatives with a transitive verb, the dative causee cannot control the agent-oriented adverbs ‘with pleasure’ and ‘intentionally’ (303b).

(25) Georgian

Keti-m gogo-s leks-i siamovnebit / ganzrax
Keti-ERG girl-DAT poem-NOM pleasure.with / intentionally
gada=a-targmn-in-a.
PREV=CAUS-translate-CAUS.AROR.3.SG

‘Keti made the girl translate the poem with pleasure/intentionally.’

Keti did this with pleasure/intentionally

NOT the girl did this with pleasure/intentionally

In addition, Myler and Mali (2021) observe that both the unmarked (26a) and instrumental causees (26b) in isiXhosa cannot be modified by the agent-oriented adverb ‘on purpose’.

(26) isiXhosa:

- a. *uDallas_i w-aphul-is-e* *uZoli_j iglasi ngabom_{i/*j}.*
 1Dallas 1SBJ-break.TR-CAUS-PRF 1Zoli 9glass on.purpose
 ✓ ‘Dallas [[made Zoli break the glass] on purpose].’
 × ‘Dallas [made [Zoli break the glass on purpose]].’
- b. *uDallas_i w-aphul-is-e* *ngo-Zoli_j iglasi ngabom_{i/*j}.*
 1Dallas 1SBJ-break.TR-CAUS-PRF INS-Zoli 9glass on.purpose
 ✓ ‘Dallas [[made Zoli break the glass] on purpose].’
 × ‘Dallas [made [Zoli break the glass on purpose]].’

In some languages, the causee is incompatible with some types of agentive modification but compatible with others, making the picture even more complex. For example, Sigurðsson and Wood (2021) explore the agentive interpretation of the implicit causee in the Icelandic ‘let’-causative (27a) in a more comprehensive way. They show that while it is compatible with some of the agentive diagnostics, including agentive *by*-phrases (27b) and instrumental phrases (27c), it is incompatible with agent-oriented adverbs (27d) and rationale clauses (27e). Based on these, they argue that the implicit causee has a *reduced agency* reading, which will be very important for the discussion in Chapter 6.

(27) Icelandic:

- a. *Ég lét byggja hús.*
 I.NOM let.PST build.INF house.ACC
 ‘I made (someone) build a house.’

- b. það á ekki að láta stjórna landinu af
EXPL ought not to let.INF rule.INF country.the.DAT by
fjármálastofnunum.
financial.institutions
'...we ought not let the land be ruled by financial institutions...'
(agentive *by*-phrase)
- c. Jón lét mála húsið með mjög litlum penslum.
Jón let.PST paint.INF house.the.ACC with very small paintbrushes
'Jón had people paint the house with very small paintbrushes.'
(instrumental phrase)
- d. þær létu byggja húsið (*af kappi).
they.NOM let.PST build.INF house.the.ACC (*enthusiastically)
'They made (someone) build the house (*enthusiastically).'
(agent-oriented adverb)
- e. Hun_i lét ϕ_j skoða þetta til þess að PRO_{i/*j} fá meiri
she.NOM let.PST insepct.INF this for it to get.INF more
reynslu.
experience.ACC
'She_i had people_j inspect this in order to PRO_{i/*j} get more experience.'
(rationale clause)

Similarly, Luo and Kang (2023) observe that in the case of the Mandarin *rang*-causative, when there is a permissive reading, the causee is compatible with instrumental phrases and agent-oriented comitatives, but incompatible with agent-oriented adverbs, and barely compatible with rationale clauses (28).

(28) Mandarin:

- a. Xiaoxing rang Xiaonang na gunzi tui-kai men.
Xiaoxing let Xiaonang make.use.of stick push-open door
'Xiaoxing lets Xiaonang make use of a stick to push the door open.'
(instrumental phrase)

* *Xiaoxing rang Xiaonang youyishide tui-kai men.*
Xiaoxing let Xiaonang intentionally push-open door

Intended: 'Xiaoxing lets Xiaonang intentionally push the door open.'

(agent-oriented adverb)

b. *Xiaoxing rang Xiaonang zai Mimi de peiban xia*
Xiaoxing let Xiaonang at Mimi POSS accompaniment under
tui-kai men.
push-open door

'Xiaoxing lets Xiaonang push the door open with the accompaniment of Mimi.'

(agent-oriented comitative)

c. ??*Xiaoxing rang Xiaonang tui-kai men hao jinqu wan.*
Xiaoxing let Xiaonang push-open door good enter play

Intended: 'Xiaoxing lets [Xiaonang push the door open to play inside].'

(rationale clause)

In some other languages, the causee is incompatible with all the agentive modifications. For example, Akkuş (2021a, 2022) shows that in Sason Arabic, the causee in the geminative causative (29) and the 'give' causative (30) does not pass any of the agentive diagnostics including instrumental phrases (29a, 30a), agent-oriented adverbs (29b, 30b) and agentive-oriented comitatives (29c, 30c).

(29) Sason Arabic: the geminate causative

a. *im-mu xassle potad mışa hansen wara furça gbir-e.*
mother-his washed.CAUS.3F clothes to Hasan.M with brush big-F
'His mother made Hasan wash the clothes with a big brush.'

✓ His mother used the brush...

× Hasan used the brush.

(instrumental phrase)

- b. *Oratman ki t1-qarri lala kitab mışa kemal b1*
 teacherPROG.SF 3F-read.CAUS this.M book to Kemal with patience
sabır.

‘The teacher is making Kemal read this book patiently.’

✓ The teacher is patient.

× Kemal is patient.

(agent-oriented adverb)

- c. *Leyla hamm1-e mase mışa kemal wara hasan.*
 Leyla carried.CAUS-3F table to Kemal with Hasan

‘Leyla made Kemal carry the table with Hasan.’

✓ Leyla and Hasan made Kemal carry the table.

× Kemal and Hasan carried the table

(agent-oriented comitative)

(30) Sason Arabic: the ‘give’ causative:

- a. *ım-mu ad-e lalu potad mışa hanson xassil wara furça gbir-e.*
 mother-his gave-3F these clothes to Hasan.M wash with brush big-F

‘His mother made Hasan wash the clothes with a big brush.’

✓ His mother used the brush...

× Hasan used the brush.

(instrumental phrase)

- b. *ım-mu ad-e lalu potad mışa kemal xassil b1 sabır.*
 mother-his gave-3F these clothes to Kemal wash.INF with patience

‘His mother made Kemal wash these clothes patiently.’

✓ His mother was patient...

× Kemal was patient.

(agent-oriented adverb)

- c. *Leyla ad-e mase mışa kemal hamıl wara hasan.*
 Leyla gave-3F table to Kemal carry.INF with Hasan
 ‘Leyla made Kemal carry the table with Hasan.’
 ✓ Leyla and Hasan made Kemal carry the table.
 × Kemal and Hasan carried the table

(agent-oriented comitative)

To my knowledge, there have been no detailed explanations of the cross-linguistically robust yet puzzling nonagentive/reduced agentive causee interpretations shown above. This dissertation will serve to fill in this research gap through a case study on the complex causee interpretations in Teochew periphrastic causatives shown in Table 1.1. This study will cover not only the compatibility issue between causee and agentive modifications in a comprehensive way, but also some other types of complex argument interpretations.

2.2.3 THE ELUSIVE NATURE OF AGENT AND CAUSEE

We have seen the puzzling nonagentive/reduced agentive interpretation of causees cross-linguistically above. This actually corresponds to the elusive properties of AGENT (Thomason, 2019) and of the seldom-discussed role of CAUSEE.

2.2.3.1 AGENT

Historically, there have been many attempts to define AGENT in the field of linguistics, but over the course of this, the elusive nature of AGENT has gradually been acknowledged.

Gruber (1965) defines an agentive verb as one being ‘suitable in all circumstances by the phrase *do something*’ (also see Lyons (1968) and Ross (1972)) and its subject ‘refers to an animate object which is thought of as the willful source or

agent of the activity described in the sentence'. Two diagnostics have been proposed and used in the previous discussion: (i) whether the verb can be modified by manner adverbials, i.e., agent-oriented adverbs like 'carefully' and (ii) whether the verb can be modified by a rationale clause starting with 'in order to'. Following these, *Mimi* in *Mimi breaks the vase* is AGENT but *Mimi* in *Mimi accidentally breaks the vase* is not, considering *Mimi* is not willful and incompatible with 'carefully' and a rationale clause.

In addition, in Davidson (1967), agency is defined based on the notion of intention. For him, the logical form of an activity sentence is shown in (31), where x denotes AGENT, p is a proposition describing an event x participates in, and *intentional* is a two-place predicate relating these two.

(31) It was intentional of x that p

Though Halliday (1968) does not specifically mention agentivity, he categorizes clauses into two classes relevant to the notion of agentivity. For him, *Mimi breaks the vase* is a 'do-clause' while *The vase breaks* is a 'happen-clause'. The diagnostic he makes use of is the WH clefting: it is grammatical to paraphrase the first clause into *What Mimi does is break the vase*, which is more favored than *What happens to Mimi is that he breaks the vase*; however, it is preferred to say *What happens to the vase is that it breaks* over *What the vase does is break*. As we can see, the 'what the subject does' diagnostic is relevant to the *do something* notion in Gruber (1965).

Fillmore (1968) defines the term *agentive* in (32). As we can see, an animacy requirement is emphasized (also in Lyons (1968)), though as he points out in a footnote, inanimate nouns like 'robot' and human institution nouns like 'nation' can be AGENT in some contexts, a fact for which he does not provide an explanation.

(32) *Agentive (A)*:

The case of the typically *animate* perceived instigator of the action identified by the verb

Cruse (1973) points out that the notion of agentivity should be a relational feature holding between a verb and a noun. He examines the 'do-test' in Halliday (1968), arguing that it is based on the assumption that an NP-AGENT VP sentence is hyponymous to NP *do something*; however, it fails to capture the intuition that the object *the prisoners* in a sentence like *John marches the prisoners* fails the test but according to real-world knowledge, does something. Therefore, he improves the 'do-test' into a 'do-entailment test' (see Chafe (1970) for a similar contextual method). Applications of this test can be seen in (33): in (33a), the subject *Mimi* is AGENT while the subject *the vase* is not; however, in (33b), the object *the prisoners* in the first sentence is AGENT while that in the second is not.

- (33) a. i. *Mimi breaks the vase* entails *Mimi does something*
ii. *The vase breaks* does NOT entail *The vase does something*
b. i. *John marches the prisoners* entails *The prisoners do something*
ii. *John shoots the prisoners* does NOT entail *The prisoners do something*

What is more, Cruse carefully points out that this diagnostic only gives answers in the most obvious cases and that it is reliable in the sense that it allows a minimal operation of intuitive judgment. In other words, while there is no independent characterization of agentivity, this diagnostic in some way helps capture our intuitive notion and characterizations of agentivity. For example, connecting to the animacy requirement discussed in the literature, he shows that natural agents like *wind* and inanimate machines like *computers* can pass the test in some contexts,

acquiring a temporary agentivity. Therefore, he argues that *agentive* may be a definable subset of a number of distinct semantic features of a notion called 'doer'. This notion additionally contains at least three other features including *volitive*, *effective* and *initiative* (34).

(34) Four features of 'doer' (Cruse, 1973):

- a. *Agentive*: this feature is present in any sentence referring to an action performed by an object which is regarded as using its own energy in carrying out the action. Included among these objects are living things, certain types of machines, and natural agent. The presence of the feature in a sentence containing an ergative verb used intransitively can be detected by noting the effects of reflexivization: if the feature is present, the semantic effects are minor.
- b. *Volitive*: this feature is present when an act of will is stated or implied. Willing is a kind of doing, whether what is willed is a state, process or action.
- c. *Effective*: this feature is present in a sentence that refers to something which exerts a force (literally or metaphorically), not by virtue of an internal energy source, but because of its position, motion, etc.
- d. *Initiative*: the meaning of the feature can be roughly glossed as 'initiation of an action by giving a command'.

DeLancey (1984), also noticing the problem of defining AGENT as a semantically discrete and unitary concept, argues that it is better to describe it as a 'prototype from which actual exemplars may vary in numerous and sometimes ill-defined ways'. Connecting agentivity with causation, he argues that the prototype of AGENT is a volitional causer. Similarly, Dowty (1991) also recognizes the

inherent problems of approaches using discrete and unanalyzed thematic roles like AGENT to capture argument interpretations. In the same spirit as DeLancey (1984), he proposes a pair-wise definition of thematic relations, grouping the possible specific relations into two prototypes, i.e., proto-AGENT (35) and proto-PATIENT, schematizing the lexical entailment properties of argument interpretation.

(35) Contributing properties for the AGENT Proto-Role in Dowty (1991):

- a. volitional involvement in the event or state
- b. sentience (and/or perception)
- c. causing an event or change of state in another participant
- d. movement (relative to the position of another participant)
- e. (exists independently of the event named by the verb)

Van Valin and Wilkins (1996) also argue that instead of having AGENT as a central and primary notion, what we need is a notion of EFFECTOR denoting a dynamic participant doing something in an event. For them, AGENT is not a property of the semantic structure of the predicate but is *a pragmatic implicature*. This study is one of the earliest research not to attribute agentivity to semantics solely, representing a major conceptual change in terms of the understanding of argument interpretation. According to Van Valin and Wilkins (1996), a pragmatic principle influences whether EFFECTORS and EFFECTOR-THEMES with [+human] are interpreted as AGENT. For them, there are three factors to determine AGENT: (i) lexical semantic properties of the verb, (ii) inherent lexical content of the NP argument (36a) and (iii) grammatical construction in which the verb and NP co-occur (36b).

- (36) a. Inherent lexical content of the NP argument:
- i. *Volition*: non-conscious of will
 - ii. *Intention*: conscious of will + ability to plan
 - iii. *Rationality*: intention + knowledge about what the result is
- b. Grammatical construction:
- i. *Causative*: causee may or may not be interpreted as AGENT
 - ii. *Purposive*: main subject intends for the situation

Recent research on the argument interpretation of the surface subject in English *get*-passives shares the same insight that aspects of the agentive interpretation might come from implicature. Previous studies have argued that the English *get*-passive (37a) is thematically different from the *be*-passive (37b) in that the surface subject of the former is interpreted as AGENT.

- (37) a. *John got arrested by the police.*
- b. *John was arrested by the police.*

However, Biggs and Embick (2022) show this is not the case. They employ *by*-adjuncts and other diagnostics to show that these two passives actually differ in terms of event structural interpretations. They prove that the intuition, i.e., that *John* is interpreted in (37a) as (potentially) bringing about what befalls him, comes from the fact that, in addition to the same THEME/PATIENT argument interpretation as the surface subject in (37b), the surface subject in (37a) is additionally assigned a thematic role via being the external argument of *get* realizing an additional event structure. Accordingly, they argue that the intuitive AGENT interpretation of the subject in the English *get*-passive, which they refer to as a *Responsible*

Party (38), comes from implicature rather than grammatically agentive patterns. This again shows the elusive properties of agentive interpretation.

(38) A *Responsible Party* (RP) is an individual (fact, property) that is explanatorily responsible for bringing about a situation

Recently, Fabienne Martin and her colleagues have conducted a series of experimental works on ‘scaling agents via dimension’ (e.g., Martin et al., 2022; Martin, 2023; Joo et al., 2023)⁶. Based on previous studies, they discuss some issues with the AGENT role. First, some agent-requiring expressions like the unergative verb *whistle* and the transitive manner verb *hit* can be combined with an inanimate and non-instrumental argument. Second, researchers observe a *strong vs. weak* agent contrast: some verbs pattern with unaccusative for some agentive diagnostics and unergative for others; and even within the category of unergative class, some verbs are felt less agentive. Third, as is mentioned in the discussion of Gruber (1965) above, in those cases featuring ‘accident’, we have some issues with ‘borderline agents’. Through comparing participants’ judgments in the case of a high and low agency, their experimental results lead to a notion, *agent preference*, i.e., ‘a basis to preferentially interpret semantic role-ambiguous noun phrases as agents’. In the same spirit as research on the multidimensional analysis of gradable adjectives (Sassoon, 2013; Sassoon and Fadlon, 2017), they argue in favor of treating AGENT as a gradable and multi-dimensional predicate (39).

⁶I thank Fabienne Martin for generously exchanging her ideas with me through emails. Since the project introduced here is not yet at the final developmental stage, I recommend interested readers to follow the research of her team for latest outputs.

- (39) The role AGENT is a mixed multidimensional predicate (Martin, 2023):
- a. On its strict/stronger meaning, it patterns with *conjunctive* multidimensional predicates \rightsquigarrow AGENT with respect to *all* contextually relevant dimensions.
 - b. On its tolerant/weak meaning, it patterns with *disjunctive* multidimensional predicates \rightsquigarrow AGENT with respect to *some* dimensions.

They propose a formal semantics of the AGENT role as a multidimensional concept in (40). To my knowledge, this is the only detailed decompositional formal semantics of AGENT/agency in the field.

- (40) A multidimensional semantics for Voice_{agent} (Martin, 2023) (also see Joo et al. (2023)):
- a. Introduce a predicate dimension in order to make reference to a dimension of AGENT:
 $\lambda R.\mathbf{dimension}(R, \lambda x.\lambda y.\mathbf{agent}(e, x))$
 - b. A principle identifying critical dimensions of AGENT:
 $\forall R.\mathbf{dimension}(R, \lambda x.\lambda y.\mathbf{agent}(e, x)) \leftrightarrow$
 $R=\lambda x.\lambda e.\mathbf{prior\ intention}(e, y) \wedge R=\lambda x.\lambda e.\mathbf{control}(e, y) \wedge R=\lambda x.\lambda e.\mathbf{desire}(e,$
 $y) \wedge R=\lambda x.\lambda e.\mathbf{foreknowledge}(e, y) \wedge R=\lambda x.\lambda e.\mathbf{effectivity}(e, y)$
 - c. Any AGENT is required to e at least an effector:
 $\forall e.\forall x(\mathbf{agent}(e, x) \rightarrow \mathbf{effectivity}(e, x))$

Based on this multidimensional approach, Martin and her colleagues argue that *agency* is a gradable concept and that the gradability comes from the cardinality of the agentic dimensions, where the *control* property (more in Chapter 6) has more weight (41).

(41) Scaling agency (Martin, 2023) (also see Joo et al. (2023)) :

a. To specify the number of dimensions of AGENT present in a given instance, a function **cardinality**, $\lambda R.\mathbf{cardinality}(R)$ is introduced for counting the elements of a set

b. A function **agential** from events and individuals to degrees is introduced:

$$\lambda x.\lambda e.\mathbf{agential}(e, x) \quad (\langle e, \langle s, d \rangle \rangle)$$

c. The value of the function **agential** for an event e and an individual x is identical to the number of dimensions of AGENT for e and x :

$$\forall x.\forall e.\mathbf{agential}(e, x)=d \leftrightarrow \mathbf{cardinality}(\lambda R.\mathbf{dimension}(R, \lambda x'\lambda e'.\mathbf{agent}(e', x')) \wedge R(e, x))=d$$

d. A version of **agential**, **agential**⁺ that is restricted to values of at least 1 for d is defined as follows:

$$\forall e\forall x(\mathbf{agential}^+(e, x)=d \leftrightarrow \mathbf{agential}(e, x)=d \wedge d \geq 1)$$

Given that any AGENT must at least be an effector, any AGENT x in e is **agential**⁺ in e :

$$\forall e\forall x(\mathbf{agential}(e, x) \rightarrow \mathbf{agential}^+(e, x)=d)$$

e. A second predicate **agential**st that restricts **agential**⁺ to degrees that are at least as high as *the standard degree in some context c* , where $s_c(\mathbf{agential}^+)$ denotes the standard degree in context x for **agential**⁺:

$$\forall e\forall x(\mathbf{agential}^{st}(e, x)=d \leftrightarrow \mathbf{agential}^+(e, x)=d \wedge d \geq s_c(\mathbf{agential}^+))$$

f. Since **agential** and **agential**⁺ are gradable, statements of comparison are meaningful, for example, for values of e, x, e' and x' , **agential**⁺(e, Tom) > **agential**⁺(e', Tom) meaning 'Tom is more agential⁺ in e than Tom is in e' '.

- g. Given **control** has more weight in the applicability of AGENT, **agential^{str}** as is defined as a subset of AGENT, i.e., for an AGENT x to be a strong AGENT in e , x must be an AGENT (and thus be effective), have as many agentive dimensions as required by the norm in e , and **exert control** in e :

$$\forall e \forall x (\mathbf{agential}^{str}(e, x) \leftrightarrow \mathbf{agential}(e, x) \wedge \mathbf{agential}^{st}(e, x)=d \wedge \mathbf{control}(e, x))$$

In summary, though several linguistic agentive diagnostics have been adopted in the field (Section 2.2.1), the nature of agentivity is in fact complicated, corresponding to the complex causee interpretations we see in Teochew periphrastic causative constructions (Section 1.1) and in causative constructions of other languages (Section 2.2.2).

2.2.3.2 CAUSEE

The next question to be asked is what is the CAUSEE/causee from a thematic perspective. Interestingly, though CAUSEE/causee is a widely-used concept when it comes to the causality-related grammatical properties born by the embedded subject in a causative construction, there has been very little discussion of its thematic properties compared to those on CAUSE/CAUSER/causer (e.g., Grimshaw, 1990; Pesetsky, 1995; Reinhart, 2002). The discussion in the literature can be roughly divided into two groups.

In one group of studies, a causee is treated as bearing a separate thematic role from AGENT (e.g., Wali, 1981; Li, 2008, 2020; Akkuş, 2022). Examples can be seen in (42). Similarly, Li (1995, 1999) proposes two causality-related roles, i.e., CAUSE and AFFECTEE, and the latter corresponds to CAUSEE.

- (42) a. *Minine Lili-kadun Vinay-lā patra lih-av-le.*
 AGENT CAUSEE IndirectObject DirectObject write-CAUS-TNS
 'Mini caused Lili to write a letter to Vinay.'

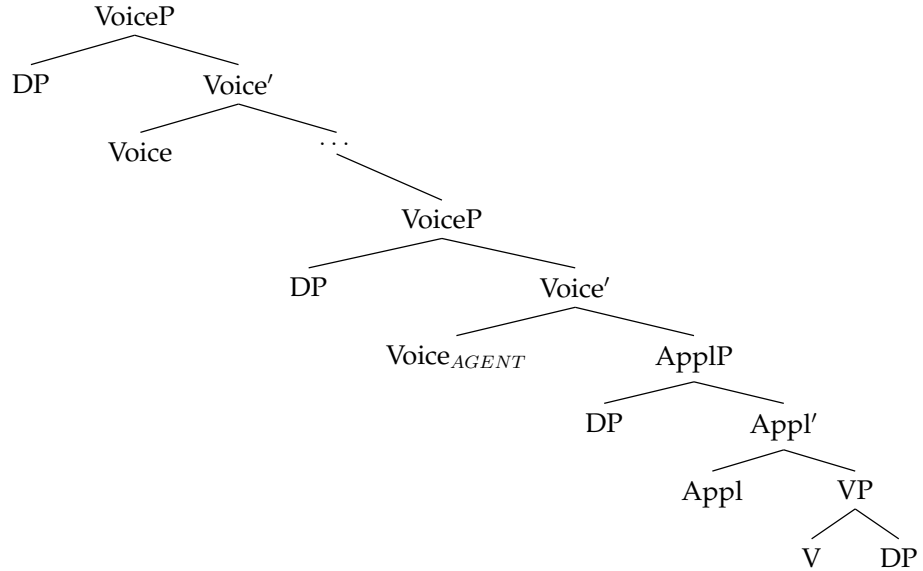
(Marathi; Wali (1981))

- b. Thematic role ranking in Li (2020):

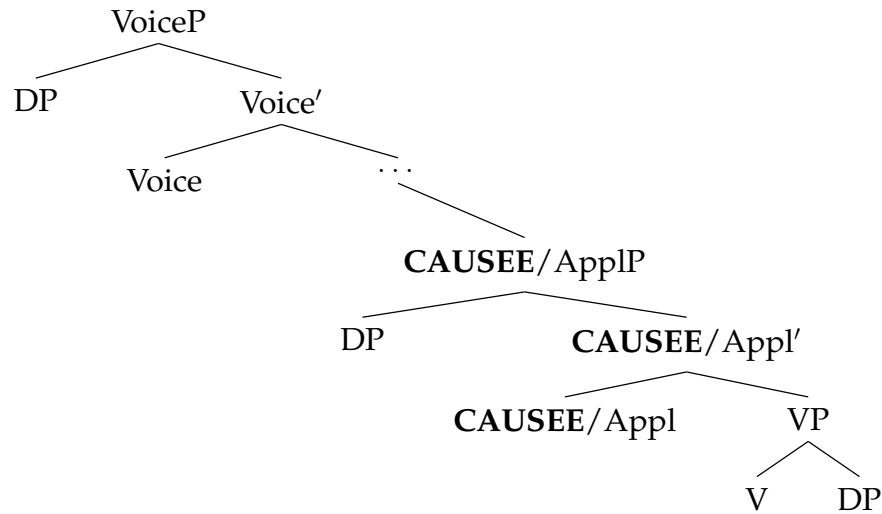
CAUSER < CAUSEE < AGENT < PATIENT

- c. The structure of 'make'-causative and geminate causative in Sason Arabic (Akkuş, 2022) where AGENT is paired with VoiceP (42c-i) and 'non-AGENT' CAUSEE is paired with CAUSEEP (42c-ii):

- i. The 'make'-causative:



ii. The geminate causative:



However, as shown in (7), CAUSEE is too broad a label to capture the causee interpretations in Teochew periphrastic causatives, given these interpretations are distinctive from each other (Table 1.1).

In the other group of studies, there is no separate CAUSEE role proposed and causee can bear different thematic roles hencefore different grammatical roles. For example, Cole (1976a,b,c) connects both the syntactic and thematic roles of causee with its (non)agentiveness. More specifically, if the causee is interpreted as AGENT, it can bear several grammatical roles like (i) Indirect Object, (ii) instrumental AGENT or (iii) demoted passive AGENT. In contrast, if the causee is not interpreted as AGENT, its non-agentivity will be reflected by grammatical roles like (i) PATIENT as Direct Object and (ii) EXPERIENCER as Indirect Object. This tradition, i.e., assigning the causee with distinctive thematic roles, is kept in most of the current theoretical linguistic studies on causative constructions. In many of them, the causee is also called *intermediary agent* or *intermediate agent*⁷, though the causee does not necessarily bear an AGENT role (cf. Hook, 1979; Saksena,

⁷In the later discussion in this dissertation, this term will be used to refer to mediation in a causal event chain rather than causees.

1982; ?; Martin and Schäfer, 2014; Ramchand, 2014). However, as shown in the previous discussion, even the nature of AGENT is far from clear; therefore, this role assigning solution is not ideal.

2.2.4 INTERIM SUMMARY

All of the discussion above show that we need a more sophisticated explanation of the elusive nature of the AGENT and CAUSEE roles, if we wish to explain the cross-linguistically complex causee interpretations in Section 2.2.2 and to solve the Teochew causee interpretation problem in Section 1.1.

The following Section 2.2.3 introduces two approaches to argument interpretation: the *listing* and *contextual* approaches. I argue that the latter is superior to the former when it comes to explaining the complex causee interpretations.

2.3 TWO CONTRASTING APPROACHES TO ARGUMENT INTERPRETATION

Since the work of Jackendoff (1972), Grimshaw (1979, 1981), Pesetsky (1982) and Chomsky (1986), many linguists have held that the argument realization of a predicate connected to the predicate meaning are predictable and can be explained by principles of Universal Grammar. One of the most famous hypotheses regarding the assignment/linking between syntactic and semantic arguments is the *Universal Alignment Hypothesis (UAH)* (Perlmutter, 1983; Perlmutter and Postal, 1984) under the framework of Relational Grammar (43).

(43) Universal Alignment Hypothesis (UAH):

‘There exist principles of U[niversal]G[rammar] which predict the initial [grammatical] relation borne by each nominal in a given clause from the meaning of the clause.’

One related theoretical issue is whether the thematic relation borne by the arguments, i.e., argument interpretation, is *listed* with individual verbs or specific syntactic positions as syntactic primitives, or *contextualized* by the linguistic environment (e.g., syntax and semantics) surrounding the verb as post-syntactic derivatives⁸. In the following, I will go over the listing approach first, arguing that it cannot solve the causee interpretation puzzle in Section 1.1. In contrast, the contextual approach is superior based on the previous discussion of other types of external arguments.

2.3.1 THE LISTING APPROACH

There are two types of *listing* approaches in the field, both of which treat argument interpretations as *syntactic primitives*.

2.3.1.1 LISTING ARGUMENT INTERPRETATIONS WITH INDIVIDUAL VERBS

The first version of the listing approach, often associated with Chomsky's 1970 paper *Remarks on Nominalization*, views the argument interpretation as being listed with individual verbs. Studies along this line usually take a *lexicalist* or *projectionist* position, arguing that individual verbs project their syntactic relations (e.g., the classic X-bar theory before the MP era) and thematic relations from a special kind of lexicon.

For example, in the framework of the Government and Binding Theory (GB) (Chomsky, 1981), the argument list of a predicate is described in terms of two connected lists, i.e., (i) a subcategorization frame and (ii) a θ -grid (Stowell, 1981)

⁸I thank Alison Biggs for discussions of classifying and naming these approaches. See similar distinctions, *lexicalist vs. constructivist* in Marantz (2013), *projectionist vs. separationist* in Williams (2015) and *separation hypothesis vs. (full) contextualism* in Embick (2024).

(44). The members in the latter are called thematic roles, theta roles or θ -roles like AGENT and PATIENT. They mark a syntactic argument as being a semantic argument in the sense that a thematic relation is imposed on this argument by a predicate: a dependent of a predicate, argument in the syntactic sense, will be assigned a θ -role in the derivation according to the pairing order marked by explicit indexation in (44). This assignment process is subject to the *Theta Criterion* (Chomsky, 1981), i.e., ‘each argument bears one and only one θ -role, and each θ -role is assigned to one and only one argument.’

(44) carry: V

[SubcategorizationFrame: $\langle N_1, N_2 \rangle$, ThetaGrid: $\langle \text{AGENT}_1, \text{PATIENT}_2 \rangle$]

This approach, while very helpful to intuitively capture the argument interpretation regularities related to predicate meanings, cannot solve the causee interpretation puzzle revealed by Teochew periphrastic causatives in Section 1.1. This is because in this approach, the interpretation of all the causees in (1) would be either listed as thematic role AGENT in the Theta Grid of the same embedded predicate ‘run’, or simply be treated as a primitive thematic role like CAUSEE in the Theta Grid of the causative verb. The former cannot explain why the causees in the *kə* ‘give’-causative (1b), the courteous *bun* ‘separate’-causative (1d) and the permissive *bun* ‘separate’-causative (1e) are incompatible with all the agentive modifications, and why the causee in the *hai* ‘hurt’-causative (1c) has an additional MALEFICIARY interpretation in addition to AGENT. The latter cannot explain why the causees in Teochew periphrastic causatives are interpreted differently in a complex way, as is shown in Table 1.1.

One might argue that that maybe the distinctive causee interpretations are listed with different causative verbs. However, as to be shown in the latter discus-

sions, while the *mue*-causative and the *hai*-causative allow unaccusatives, statives or psych verbs to be their embedded predicates, the other three causatives disallow all of them. This suggests the causees in the former group can also be interpreted as THEME, HOLDER or EXPERIENCER, in addition to AGENT, the causees in the latter cannot have any of these interpretations. Therefore, the causee interpretation cannot be listed with individual causative verb; otherwise the causees in the *mue*-causative and the *hai*-causative cannot be decided solely by the causative verbs, given that there are multiple options available dependent on the choice of the embedded predicates.

Therefore, this version of the listing approach cannot work.

2.3.1.2 LISTING ARGUMENT INTERPRETATIONS WITH SPECIFIC SYNTACTIC POSITIONS

The second version of the listing approach lists the argument interpretation with specific syntactic relations. There are two representative works.

The first one is the generalized ordering between the *Thematic Hierarchy* and the *Obliqueness Hierarchy*, which is built on the insight of UAH (43) and the linking function of Fillmore (1968). It is proposed as a stronger version of the listing approach by adding an order/hierarchy-preserving requirement. This approach assumes that there are two kinds of listing order: one targets the thematic relations/roles, while the other targets the syntactic relations. The former is called the Thematic Hierarchy ((45a); see Levin and Rappaport Hovav (2005) for more examples) and the latter is called the Obliqueness Hierarchy (e.g., Sag (1985); Larson (1988); one version is given in (45b)). < in (45) represents an asymmetrical C-Command relation.

(45) a. Thematic Hierarchy:

i. AGENT<PATIENT/THEME<GOAL<INSTRUMENT/MANNER/
LOCATION/TIME...

(Larson, 1988)

ii. AGENT<INSTRUMENT<PATIENT/THEME<GOAL/LOCATION

(Baker, 1989)

iii. AGENT<EXPERIENCER<THEME

(Belletti and Rizzi, 1988)

iv. AGENT<BENEFICIARY<RECIPIENT/EXPERIENCER<
INSTRUMENT<THEME/PATIENT<LOCATION

(Bresnan and Kanerva, 1989)

v. AGENT<GOAL<RECIPIENT<BENEFICIARY<INSTRUMENT
<LOCATION<TIME

(Dik, 1978, 1997)

vi. ACTOR<PATIENT/BENEFICIARY<THEME<GOAL/SOURCE/
LOCATION

(Jackendoff, 1990)

vii. CAUSER<EXPERIENCER<TARGET/SUBJECT MATTER

(Pesetsky, 1995)

viii. AGENT<EFFECTOR<EXPERIENCER<LOCATIVE<THEME
<PATIENT

(Van Valin, 1990)

b. Obliqueness Hierarchy in Sag (1985):

Subject<Object<Obliques

This approach requires preserving the order of the input in the output. In this way, two orders can map with each other, so that the thematic relation and the syntactic relation can link with each other, as is exemplified in (46).

- (46) a. *Mo opened the front door with the blue key.*
 b. { AGENT, PATIENT, INSTRUMENT }
 c. \mapsto { < AGENT, Subject >, < PATIENT, Object >, < INSTRUMENT, Oblique > }

(Williams, 2015)

This approach, again, is very helpful when it comes to capturing the regularities of argument interpretation related to syntactic positions. However, in this approach, the causee in the Teochew periphrastic causatives (1) will be either treated as AGENT given it is the subject of the embedded predicate, or as other roles like PATIENT given it is the second-highest noun phrase, considering the causer as the highest noun phrase will be treated as Subject and linked to some thematic role like AGENT. The former one, again, cannot explain why the causees in the *kə* ‘give’-causative (1b), the courteous *bun* ‘separate’-causative (1d) and the permissive *bun* ‘separate’-causative (1e) are incompatible with all the agentive modifications, and why the causee in the *hai* ‘hurt’-causative (1c) has an additional MALEFICIARY interpretation in addition to AGENT. The latter one obviously cannot work given the complex causee interpretation shown in Table 1.1.

One might argue for a bundle of new subtypes of causee roles associated with different verbs as one possible way out. However, there are problems of this approach too. As to be shown in Chapter 3, all the causees are connected to the highest syntactic layer introducing external arguments in the embedded structure; in other words, they have the same syntactic relations. However, at least five

types of Thematic Hierarchy (47) are needed, given all the causees are interpreted differently, to be paired to the same type of Obliqueness Hierarchy.

(47) Hypothetical Thematic Hierarchy (version 1):

a. The Thematic hierarchy needed in the case of the Teochew *mue*-causative:

$\theta_{...}$ for the causer $< (...<) \underline{\theta_1}$ for the causee $< ...$

b. The Thematic hierarchy needed in the case of the Teochew *kə*-causative:

$\theta_{...}$ for the causer $< (...<) \underline{\theta_2}$ for the causee $< ...$

c. The Thematic hierarchy needed in the case of the Teochew *hai*-causative:

$\theta_{...}$ for the causer $< (...<) \underline{\theta_3}$ for the causee $< ...$

d. The Thematic hierarchy needed in the case of the Teochew courteous *bun*-causative:

$\theta_{...}$ for the causer $< (...<) \underline{\theta_4}$ for the causee $< ...$

e. The Thematic hierarchy needed in the case of the Teochew permissive *bun*-causative:

$\theta_{...}$ for the causer $< (...<) \underline{\theta_5}$ for the causee $< ...$

However, as just argued in Section 2.3.1.1, the causee interpretations are not determined by the causative verb or the embedded predicate only, but by both of them (to be elaborated more in Chapter 6). This means that we will need more than five types of Thematic Hierarchy (48), given that in some causatives, the option of their causee interpretations is not limited to one.

(48) Hypothetical Thematic Hierarchy (version 2):

a. The Thematic hierarchy needed in the case of the Teochew *mue*-causative:

i. $\theta_{...}$ for the causer $< (...<) \theta_1$ for the causee $< ...$

ii. $\theta_{...}$ for the causer $< (...<) \theta_2$ for the causee $< ...$

iii. $\theta_{...}$ for the causer $< (...<) \theta_3$ for the causee $< ...$

iv. $\theta_{...}$ for the causer $< (...<) \theta_4$ for the causee $< ...$

b. The Thematic hierarchy needed in the case of the Teochew *kə*-causative:

$\theta_{...}$ for the causer $< (...<) \theta_5$ for the causee $< ...$

c. The Thematic hierarchy needed in the case of the Teochew *hai*-causative:

i. $\theta_{...}$ for the causer $< (...<) \theta_6$ for the causee $< ...$

ii. $\theta_{...}$ for the causer $< (...<) \theta_7$ for the causee $< ...$

iii. $\theta_{...}$ for the causer $< (...<) \theta_8$ for the causee $< ...$

iv. $\theta_{...}$ for the causer $< (...<) \theta_9$ for the causee $< ...$

d. The Thematic hierarchy needed in the case of the Teochew courteous *bun*-causative:

$\theta_{...}$ for the causer $< (...<) \theta_{10}$ for the causee $< ...$

e. The Thematic hierarchy needed in the case of the Teochew permissive *bun*-causative:

$\theta_{...}$ for the causer $< (...<) \theta_{11}$ for the causee $< ...$

Even if we set aside the issues about how many new thematic roles are required to be proposed and justified for the Teochew causatives, it is still very likely that more subtypes of causee roles are required when it comes to causatives in other languages. But it has already been long observed that there exists some inherent

problems of the thematic roles. As observed by Dowty (1991) and many others, the unclear nature of these roles is attributable to (i) no agreed list, (ii) obscure criteria for inclusion and (iii) the tension between generality and truth conditions (see Chapters 4 and 6 in Williams (2015) for a detailed discussion). such a elaborate way to list all possible causee interpretations is clearly not efficient, not to mention that it also misses the generalization observed at least across different Teochew causatives that in the same Obliqueness Hierarchy, the causee interpretations are influenced by both the causative verb and the embedded predicate. Therefore, this approach also cannot solve our causee interpretation puzzle.

The other representative and more restrictive work listing argument interpretation with specific syntactic positions is the *Universal Theta Assignment Hypothesis (UTAH)* (Baker, 1988, 1997) under the GB framework (49).

(49) Universal Theta Assignment Hypothesis (UTAH) (Baker, 1988):

‘Identical thematic relationships between items are represented by identical structural relationships between those items at the level of D-structure.’

This approach treats the thematic role as being listed with specific syntactic positions like Specifier of V or Complement of V, as shown in (50).

- (50) a. {AGENT, Specifier of V/Subject}
b. {PATIENT, Complement of V/Object}

It captures the argument interpretation regularities we observe in natural languages like the other listing approaches. In addition, this approach helps us capture the ‘structural prominence’ of the subject-AGENT (Specifier of V) compared to the object-PATIENT (Complement of V). For example, VP-deletion, VP-pronominalization (51a) and VP-fronting (51b) show that the subject-AGENT as

the Specifier of V is not that close to V compared to the object-PATIENT to V, which is connected to the later discussion of external arguments as severed arguments (e.g., Marantz, 1984; Kratzer, 1996). In addition, the binding relation (51c) shows that only when the binder is at the subject position can it bind the reflexive at the object position.

- (51) a. i. Subject: *John* [_{VP} *hit the table*] and *Bill* *did* [_{VP} (*so*)] *too*.
 ii. Object: * [_{XP} *John hit*] *the table* and [_{XP} (*so*)] *did the chair*.
 b. i. Subject: *John* *said he would hit the table*, and [_{VP} *hit the table*] *I guess he did* _____.
 ii. Object: * *John* *said he would hit the table*, [_{XP} *John hit*] *I guess* _____ *did it*.
 c. i. Subject: *John*_{*i*} *washed himself*_{*i*}.
 ii. Object: * *Heself*_{*i*} *washed John*_{*i*}.

However, this approach will predict that all Teochew causees in (1) will be located at different syntactic positions (i.e., having nonidentical structural relations), given that they do not share identical argument interpretations (cf. (49)). However, in Chapter 3, I will show all the causees are actually connected to the same syntactic layer VoiceP (Kratzer, 1996), which is in contrast to what the UTAH approach will predict. Therefore, this approach, again, cannot solve our causee interpretation puzzle.

2.3.1.3 INTERIM SUMMARY

All of the discussion above shows the listing approach to argument interpretation cannot solve our causee interpretation puzzle. Therefore the other option in the field, i.e., the contextual approach might be more favorable. The following Section

2.3.2 will give a brief introduction to this approach, showing that given that this approach works for the interpretations of other (external) arguments, it should be superior when it comes to explaining the complex causee interpretations.

2.3.2 THE CONTEXTUAL APPROACH

The *contextual* approach argues that the formal aspects of argument interpretation are contextualized by the linguistic (e.g., syntactic and semantic) environment surrounding the verb. Compared to the listing approach, the contextual one has both theoretical and empirical advantages.

Theoretically speaking, the main spirit of the contextual approaches is *the Fregean Principle* of compositionality (52), which plays a central role in Richard Montague's seminal work (Montague, 1970a,b, 1973) and remains prominent in current studies of Formal Semantics influenced by Montague Grammar. Under this principle, the interpretation of a sentence depends on minimal units and the structures they appear in, from which the argument interpretation should also follow.

(52) The principle of compositionality (the Fregean Principle):

The meaning of a complex expression is determined by the meanings of its parts and the way they are syntactically combined.

The empirical advantage of the contextual view comes from the fact that it can capture the linguistic data to be discussed below, which cannot be explained by the listing approach introduced in previous sections.

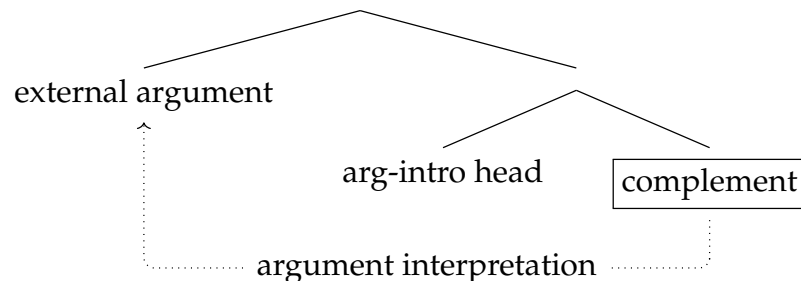
There are two major types of contextual studies. One focuses on the interpretations of the severed external arguments in the tradition of Kratzer (1996). In contrast, the other group of contextual studies does not exclusively focus on external

arguments. In spite of this difference, most of them adopt an event-structural approach in the spirit of Neo-Davidsonian Event Semantics (Higginbotham, 1985, 2000; Parsons, 1990, 2000) featuring predicate decomposition. Given that causee, technically speaking, is one type of external argument like the AGENT, HOLDER, FIGURE, applied and causer arguments, we will start with those contextual studies focusing on the external argument interpretations.

2.3.2.1 STUDIES FOCUSING ON SEVERED EXTERNAL ARGUMENTS

External arguments have been given a severed syntactic and thematic status (e.g., Williams, 1981; Marantz, 1984; Rapport Hovav and Levin, 1988; Grimshaw, 1990; Kratzer, 1996; Chomsky, 2000, 2001; Pylkkänen, 2008; Alexiadou et al., 2015; Wood, 2015; Wood and Marantz, 2017; Nash, 2022; Biggs and Embick, 2022; Marantz, 2022), compared to other arguments in the verbal domain. Empirical evidence supporting this severed status comes from the observation that the interpretation of an external argument is contextualized by the event structural interpretation of the syntactic complement of the functional heads introducing it ((13); copied as (53) below).

(53)



One of the classic evidence comes from English idiom chunks. As we can see in (54), internal arguments of the verb can trigger a particular interpretation of

the verb phrase, even though they are not completely frozen idiom chunks, but external arguments cannot (Marantz, 1984; Kratzer, 1996).

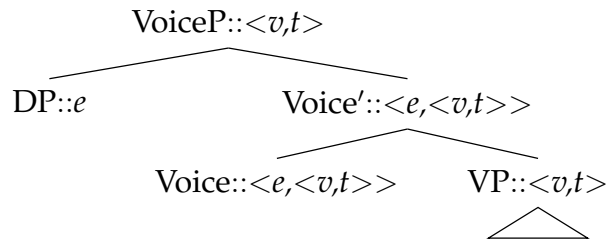
- (54) a. 'throw':
- i. *Throw a baseball*
 - ii. *Throw support behind a candidate*
 - iii. *Throw a boxing match*
 - iv. *Throw a party*
 - v. *Throw a fit*
- b. 'take':
- i. *Take a book from the shelf*
 - ii. *Take a bus to New York*
 - iii. *Take a nap*
 - iv. *Take an aspirin*
 - v. *Take a letter in shorthand*
- c. 'kill':
- i. *Kill a cockroach*
 - ii. *Kill a conversation*
 - iii. *Kill an evening watching TV*
 - iv. *Kill a bottle*
 - v. *Kill an audience*

Based on these observations, Marantz (1984) treats subjects as arguments whose semantic roles are assigned by maximal projections like VP or AP. Kratzer (1996), following the same spirit, incorporates the assumption of Neo-Davidsonian

Event Semantics to propose the *Event Identification* principle (55). This principle makes it possible to capture both the severed syntactic status (introduced separately by a thematic Voice head) and the final (contextual) theta-marking calculation of external arguments as AGENT or HOLDER fed by the event structure of the complement of the VoiceP in a syntax-semantics parallel way. Following this tradition, Pylkkänen (2008) further develops a list of thematic heads introducing external arguments (e.g., High Appl) in the same spirit as the contextual view. Focusing on the Voice head, Legate (2014) explores its different flavors; Alexiadou et al. (2015) also adds one more Voice head, i.e., Voice_{CAUSER} to the original inventory of Voice, i.e., Voice_{AGENT} and Voice_{HOLDER} in Kratzer (1996). However, the basic contextual assumption of external argument interpretation is the same, shared by all these studies.

(55) Event Identification:

- a. If α is a branching node, $\{\beta, \gamma\}$ is the set of α 's daughters, and $\llbracket \beta \rrbracket$ is in the domain of $\langle e, \langle v, t \rangle \rangle$, and $\llbracket \gamma \rrbracket$ is in the domain of $\langle v, t \rangle$, then $\llbracket \alpha \rrbracket \rightsquigarrow \lambda x_e. \lambda e_v. \llbracket \beta \rrbracket(x)(e) \wedge \llbracket \gamma \rrbracket(e)$
- b.



$$\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x_e. \lambda e_v. \text{AGENT/HOLDER}(x, e/s)$$

Empirical evidence from other languages shows the AGENT interpretation can be contextualized by some more complex mechanisms like the ‘bundling’

(Pylkkänen, 2008; Harley, 2017) of functional heads in the complement of the VoiceP. For example, Nash (2022) observes that in Georgian, in the perfective aspect (56a), the AGENT interpretation of external arguments of unergatives is derived via the causation operation: another Voice category is added on top of the unergative VoiceP and assigns the AGENT role to the external argument. What she calls a *Neo-Burzio Dependency (NBD)* (57) is respected in the way that this upper Voice selects a VoiceP with HOLDER.

(56) Georgian:

- a. *Mat i-cek'v-es i-cancar-es*
 they.ERG RMP-dance-AOR.3pl RMP-shake-AOR.3pl
i-giž-es i-bavšv-es i-xulign-es
 RMP-crazy-AOR.3pl RMP-child-AOR.3pl RMP-hooligan-AOR.3pl
i-mğer-es.
 RMP-sing-AOR.3pl
 'They danced, shook around, acted crazy, acted childish, acted as hooligans, sang.'
- b. *Isini cek'v-av-en cancar-eb-en giž-ob-en xulign-ob-en*
 they.NOM dance-TS-3pl shake-TS-3pl crazy-TS-3pl hooligan-TS-3pl
mğeri-an.
 sing-3pl
 'They are dancing, shaking, crazing, hooliganing, singing.'

(57) Neo-Burzio Dependency (NBD)

Voice assigns AGENT role to its argument if it selects an argument-selecting complement.

In the imperfective aspect (56b), the AGENT interpretation of the external argument of the unergatives is derived from the dynamic event semantics of this aspect. Nash argued that syntactically, the viewpoint aspect-shift, which unergatives are subject to, implies the Voice-*Asp_{imperfective}* bundling, which derives the AGENT

interpretation of the external arguments of this fused head in the absence of NBD. Based on these, the solution Nash argues for is that AGENT is not an inherent (listing) role of the predicate in this language but is configurationally defined (contextualized).

The contextual view of argument interpretation is explicitly instantiated by the *allosemy* approach developed in Wood (2015), Wood and Marantz (2017), Marantz (2022) (see Myler (2016) for discussions of interpreting possession in the same spirit). Wood (2015) observes that in Icelandic figure reflexives, the external argument can bear double roles, AGENT related to the Voice head and FIGURE related to the lower *p* head (58). He argues that both of these roles are implied by the semantics of their complements.

(58) [_{VoiceP} *Bjartur* (**AGENT+FIGURE**) Voice [_{vP} *squeeze* [_{pP} **FIGURE** *through the crowd*]]]

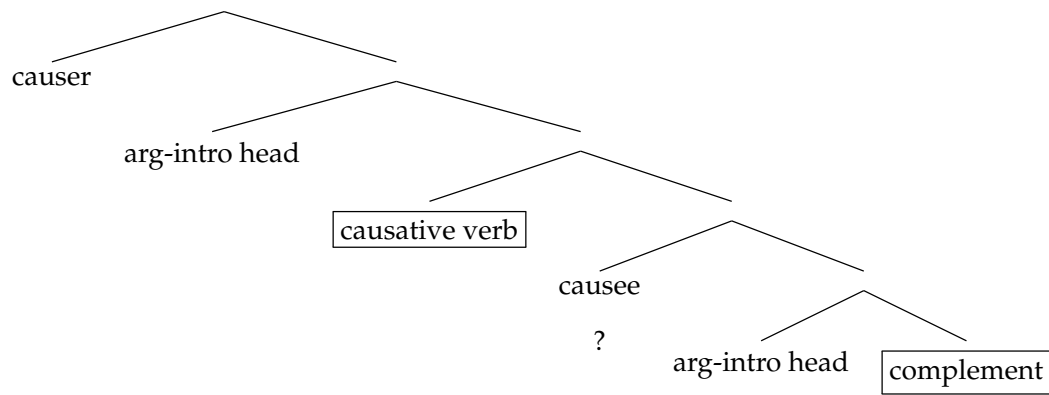
Building on Wood (2015), Wood and Marantz (2017) show that all widely-used thematic heads introducing external arguments, including *p*, *P*, Voice, low Appl and high Appl, are ‘allosemes’ of one single argument introducer *i*^{*}, where *i* indicates its lack of syntactic category⁹. The differences between these heads and the argument interpretation assigned by them come from their sensitivity to the surrounding syntactic context; therefore, the interpretation of the argument introduced by [*i*^{*}] is contextualized post-syntactically.

As we see, a contextual view is superior to a listing one when it comes to external argument interpretation. This gives us reason to believe that causee, as one type of external argument. One natural question to ask is that given that the causee, unlike other external arguments, is located at an intermediate position shared by

⁹In an updated version, i.e., Marantz (2022), * not longer plays the role in closing off the extended projections as is in Wood and Marantz (2017).

the causative verb and the embedded predicate as is shown in (14) (copied as (59) below), will the contextualization condition of its interpretation be the same as that of other well-studied external arguments, i.e., the *complement-oriented* one shown in (53)?

(59)



If not, what will the case of causee tell us about the contextualization conditions of external argument interpretation, i.e., the **General Research Question** (8) of this dissertation?

2.3.2.2 STUDIES NOT FOCUSING ON SEVERED EXTERNAL ARGUMENTS

The other line of research holding a contextual view of the argument interpretation looks at other arguments than the external ones. Though this line of research is not directly relevant to the discussion of causee interpretations, it suggests that contextualized interpretation is not a pattern unique to external arguments, but applies to more types of arguments, making a listing view of argument interpretation even less convincing.

One classic data set in this line of research is the locative alternation of the verb *load* (60) (e.g., Fillmore, 1968; Anderson, 1971).

- (60) a. *Mimi loaded the hay onto the wagon.*
b. *Mimi loaded the wagon with the hay.*

As shown in (61), whichever argument is the direct object must be completely loaded. If the argument interpretation is listed with individual verbs, this difference cannot be explained, given that the same verb is used in these examples, *wagon* will always be interpreted as the LOCATION simpliciter and *hay* as the PATIENT/THEME simpliciter.

- (61) a. i. *Mimi loaded the hay onto the wagon, but left some space for the grain.*
ii. *Mimi loaded the hay onto the wagon, filling the wagon all up.*
iii. # *Mimi loaded the wagon with the hay, but left some space for the grain.*
b. i. *Mimi loaded the wagon with the hay, but left some hay to fill the truck.*
ii. *Mimi loaded the wagon with the hay, moving every last straw.*
iii. # *Mimi loaded the hay onto the wagon, but left some hay to fill the truck.*

(examples adapted from Beavers (2006a))

Based on these observations and other evidence, Dowty (1991) argues that a thematic role, rather than atomic (being listed), is 'a set of entailments of a group of predicates with respect to one of the arguments of each'. The mechanism he proposes is a pair-wise definition of thematic relations schematized by two prototypes, i.e., proto-AGENT and proto-PATIENT, contextualizing the argument interpretation. Another approach addressing data with similar patterns is proposed in Beavers (2006a,b), summarized as the *Morphosyntactic Alignment Principle (MAP)*, which leaves room for other factors contextualizing the argument interpretation,

like animacy, discourse function, definiteness and grammatical weight of certain types of semantics like the primacy of causation.

At roughly the same time, a group of *lexical aspectual approaches* has emerged. The main data set these approaches draw on is that for some verbs indicating a change of state, their dependent noun phrases, usually the direct objects, influence the telicity of the sentence. In English this can be tested by its compatibility with *in X time* (cf. Garey, 1957) and contrast can be seen in (62) and (63).

- (62) a. Greg drew a circle (in 10 seconds).
b. Lefrak built condos out of 3,000 tons of concrete (in three months).
c. AI pounded the cutlet flat (in 10 seconds).
- (63) a. Greg drew circles (*in 10 seconds).
b. Lefrak built condos out of concrete (*in three months).
c. AI pounded the cutlet (*in 10 seconds).

(Schein, 2002; Williams, 2015)

Based on these observations, Krifka (1989, 1992, 1998) argues that this effect is mediated by a certain kind of *gradual* thematic relation that maps a part-whole structure of the noun phrase onto the event. Similarly, Tenny (1987, 1992, 1994) proposes the *Aspectual Interface Hypothesis (AIH)* in which the thematic relation of the argument is governed (contextualized) by aspectual properties. Folli and Harley (2005) shows that the lexical aspectual approach can help explain the contrast shown in the verbs of consumption (64), regarding the existence of a reflexive clitic and the change of auxiliary selection, which together reflects a resultative structure. This shows that the verbs themselves do not restrict the interpretation of their arguments lexically; instead, the event structure is composed based on the

combination of the verb and different functional projections on top of it, triggering a resultative context, which in turn licenses the interpretation of the external argument as an inanimate causer.

(64) a. Italian:

* *Il mare ha mangiato la spiaggia.*
the sea has eaten the beach

Intended: 'The sea has eaten the beach.'

b. *Il mare si é mangiato la spiaggia.*
the sea REFL is eaten the beach

'The sea has eaten away the beach.'

Starting from Borer (2005), this tradition is connected with contextualized argument interpretation even more explicitly. She observes an interesting case of contextualized argument interpretations in terms of the unergative vs. unaccusative distinction in Dutch (65) (Borer, 1994, 2003, 2005). Before Borer, many linguists assumed that the unergative vs. unaccusative contrast comes from the individual verb itself; in this way, the respective subject interpretation difference, i.e., AGENT vs. THEME, is listed with individual verbs. However, in Dutch, the telicity of the sentence influences the form of the perfective marker, *hebben* 'have' or *zijn* 'be'. Considering that the 'have' one is said to be an indicator of unergative, while the 'be' one is for unaccusative, the interpretations of the external argument, i.e., *Jan*, therefore are different: it is AGENT in (65a) but is THEME in (65b), even though the verb itself is the same.

(65) Dutch:

a. *Jan heeft gesprongen.*

Jan has jumped

'Jan jumped.'

(atelic)

- b. *Jan is in de sloot gesprongen.*
 Jan has in the ditch jumped
 'Jan jumped into the ditch.'

(telic)

To account for data like these, Borer (2005) develops an *exo-skeletal* approach in terms of the thematic interpretation of the syntactic structures, arguing for the view featuring *syntactic structure first, derived meaning assignment last* in (66a) and against the contrasting *endo-skeletal* view in (66b).

- (66) a. Structure → predicate-argument structure/event structure; ([syntactic] category) → event interpretation → meaning assignment to structure
 b. (Lexical-semantics of a verb) → predicate-argument structure; ([syntactic] category) → structure

Based on these previous works, Ramchand (2008) develops a *First-Phase Syntax* theory, arguing that the subject and the object have their interpretations contextualized by the lexical aspectual properties of individual verbs. According to her, the contextualized interpretation of the subject is INITIATOR, i.e., the holder of a property leading to the change, and the contextualized interpretation of the object is UNDERGOER (the holder of a changing property) and/or RESULTEE (the holder of the result).

To summarize, this contextual line of the interpretations of other arguments than the external ones further supports the idea that a listing approach cannot account for complex argument interpretations.

2.3.3 INTERIM SUMMARY

So far, we have seen some major works featuring a listing view or a contextual view of argument interpretation in the literature. In the case of the complex causee inter-

pretations, I argued that the former, no matter whether there is a listing of the argument interpretation with individual verbs or specific syntactic positions, cannot explain the complex causee interpretations in Teochew periphrastic causative constructions. Then I gave a brief introduction of the opposite contextual view of argument interpretations, distinguishing studies along this view in terms of whether the severed external arguments are focused on. I showed that both lines, theoretically and empirically, are superior to the listing approach in terms of capturing the complex patterns of argument interpretation.

Given that the causee interpretation puzzle of Teochew periphrastic causative constructions cannot be explained by a listing approach, and causee, like the subject-AGENT, HOLDER, applied, FIGURE and causer, is one type of external argument, it follows that its interpretation should also be contextualized rather than being listed. The question is what the contextualization conditions of the causees in all Teochew periphrastic causatives are. This dissertation will work on this issue to further make the picture of contextual argument interpretations more comprehensive, by contributing another case study on causee, an understudied type of external argument.

2.4 SUMMARY

Against the theoretical background of generative linguistics with a focus on the division of labor between Syntax and Semantics (Section 2.1), I first showed those classic agentive modifications widely adopted in studies on argument structure (Section 2.2). I also illustrated that the complex causee interpretation in Teochew periphrastic causatives, which is reflected by its compatibility or incompatibility with those agentive modifications, is not unique to Teochew but

cross-linguistically general and left unexplained mainly due to the elusive properties of AGENT and CAUSEE; therefore it is a research gap in the field (Section 2.2). Then I argued that a listing approach cannot solve this puzzle, while a contextual is promising (Section 2.3). Now the stage is set and we are suitably prepared to move on to the analysis.

CHAPTER 3

SYNTACTIC ARGUMENT STRUCTURES: ARGUMENT INTERPRETATIONS CANNOT BE LISTED WITH SPECIFIC SYNTACTIC POSITIONS

This chapter explores the first research question in (9), i.e., ‘where is the intermediate causee syntactically introduced in each periphrastic causative construction?’. Against the theoretical linguistic background of Minimalist Program (MP) (Chomsky, 1995, 2000, 2001) and Distributed Morphology (DM) (Halle and Marantz, 1993, 1994), I will provide a comprehensive analysis of the syntactic argument structures of all Teochew periphrastic causatives in (1) copied as (67) below.

- (67) a. *Nangy mue Mimi tsao.*
Nangy make Mimi run
‘Nangy makes Mimi run.’
(*mue*-causative)
- b. *Nangy kə Mimi tsao.*
Nangy give Mimi run
‘Nangy causes Mimi to run.’
(Lit. ‘Nangy gives the running event to Mimi.’)
(*kə*-causative)
- c. *Nangy hai Mimi tsao.*
Nangy hurt Mimi run
‘Nangy causes Mimi to run (adversative).’
(*hai*-causative)

- d. *Nangy bun Mimi tsao.*
Nangy separate Mimi run
'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

- e. *Nangy bun Mimi tsao.*
Nangy separate Mimi run
'Nangy lets Mimi run.'

(permissive *bun*-causative)

Section 3.1 will explore the basic structure of each periphrastic causative. The syntactic nature of the causer and the causee will be discussed in Section 3.2 and Section 3.3. Section 3.4 will conclude this chapter with the syntactic argument structure of each causative construction and connects the analysis with the previous discussion of causative structures. Together I will show that syntax alone, i.e., listing argument interpretations with specific syntactic positions, cannot explain the complex causee interpretations in Teochew periphrastic causatives shown in Section 1.1, given that all of them are introduced by or adjoined to the same syntactic layer VoiceP.

3.1 BASIC STRUCTURES

3.1.1 *v*P RECURSION

I first establish that all Teochew periphrastic causatives in (67) are bi-eventive. Independent manner adverbs *meme* 'quickly' and *manman* 'slowly', each modifying a different event (Horvath and Siloni, 2010; Rákosi, 2011), are grammatical in all these five constructions (68).

- (68) a. *Nangy meme mue Mimi manman tsao.*
 Nangy quickly make Mimi slowly run
 ‘Nangy quickly makes Mimi slowly run.’
(*mue*-causative)
- b. *Nangy meme kə Mimi manman tsao.*
 Nangy quickly give Mimi slowly run
 ‘Nangy quickly causes Mimi to slowly run.’
 (Lit. ‘Nangy quickly gives the slow running event to Mimi.’)
(*kə*-causative)
- c. *Nangy meme hai Mimi manman tsao.*
 Nangy quickly hurt Mimi slowly run
 ‘Nangy causes Mimi to slowly run (adversative).’
(*hai*-causative)
- d. *Nangy meme bun Mimi manman tsao.*
 Nangy quickly separate Mimi slowly run
 ‘Nangy quickly causes Mimi to slowly run by giving precedence to
 Mimi out of courtesy.’
(courteous *bun*-causative)
- e. *Nangy meme bun Mimi manman tsao.*
 Nangy quickly separate Mimi slowly run
 ‘Nangy quickly lets Mimi slowly run.’
(permissive *bun*-causative)

In line with many previous studies (e.g., Harley, 1995; Pesetsky, 1995; Marantz, 1997; Harley, 2008, 2013; Wood, 2015; Myler, 2016), I assume that *v* introduces an eventuality variable. Therefore, all Teochew periphrastic causatives have a recursive *v*P structure.

3.1.2 SIZE OF EMBEDDED STRUCTURES

Following Harley (2008, 2013) among others, I assume if the complement of *v* denotes an eventuality, stative or dynamic, *v* itself will then denote a causal relation. In this spirit, all Teochew causative verbs, i.e., *mue* ‘make’, *kə* ‘give’, *hai* ‘hurt’, courteous *bun* ‘separate’ and permissive *bun* ‘separate’ are realizations of the embedding *v*. The next question is how big a structure is embedded by each causative *v*.

The embedded structure of a causative construction has been long discussed in the literature. For example, when it comes to the classic *faire-infinitif* (FI) vs. *faire-par* (FP) distinction in Romance languages (e.g., Kayne, 1975; Zubizarreta, 1985; Burzio, 1986; Guasti, 1996; Ippolito, 2000; Folli and Harley, 2007), it has been noted that FP and FI embed different structures (see Nash (2020) for a detailed review). Pylkkänen (2008) also proposes that a *Cause* head (*v* head in this dissertation) can select a category-free root (e.g., Japanese lexical causative, English zero-causative), a verb (e.g., Bemba *-eshya* causative, Finnish *-tta* causative) or a phase (a constituent where an external argument has been added; e.g., Venda *-is* causative, Lunganda *-sa* causative). Recently, Nie (2020) argues that causatives may be built in two ways cross-linguistically, either as monocausal causative involving VoiceP but not *v*P recursion, or as bicausal causative with both VoiceP and *v*P recursion.

I will show in the following that Teochew periphrastic causatives contribute to the discussion of the typology of the embedded structure of causative constructions in an interesting way (more in Section 3.4)¹. More specifically, all the

¹I thank one of the abstract reviewers of the 15th Brussels Conference on Generative Linguistics (BCGL15) for bringing this to my attention, and Alison Biggs for bring the discussion on ‘restructuring’ to my attention.

periphrastic causatives except for the *mue* ‘make’ can embed an AspP layer and even a NegP layer, even though an embedded CP is never allowed.

3.1.2.1 NO EMBEDDED CP

There is no embedded CP in each Teochew periphrastic causatives. There are two tests supporting this conclusion.

First, Object Left Dislocation (OLD) can be used to detect whether there is an available full CP, either in the matrix clause (69) or the embedded clause (70) in Sinitic languages (Huang et al., 2009; Tsai, 2015).

- (69) a. *Zhuotong hihua hue.*
Zhuotong like flower
‘Zhuotong likes flowers.’
- b. *Hue, Zhuotong hihua.*
flower Zhuotong like
‘Flowers, Zhuotong likes.’
- (70) a. *Xing tia da Zhuotong hihua hue.*
Xing hear COMP Zhuotong like flower
‘Xing hears that Zhuotong likes flowers.’
- b. *Xing tia da hue, Zhuotong hihua.*
Xing hear that flower Zhuotong like
‘Xing hears that flowers, Zhuotong likes.’

In contrast, in a control construction where the embedded structure is standardly assumed to be smaller than a CP, OLD-ing the embedded object is ungrammatical (71).

- (71) a. *Nangy gio Mimi toi tsiao.*
Nangy ask Mimi watch bird
‘Nangy asks Mimi to watch birds.’

- b. * *Nangy gio tsiao Mimi toi.*
 Nangy ask bird Mimi watch
 Intended: 'Nangy asks birds, Mimi to watch.'

As is shown in (72-76), when the embedded predicate is transitive, the embedded object cannot be OLD-ed to the right of the causative verb.

- (72) a. *Nangy mue Mimi tsia muegia.*
 Nangy make Mimi eat stuff
 'Nangy makes Mimi eat foodstuffs.'

- b. * *Nangy mue muegia, Mimi tsia.*
 Nangy make stuff Mimi eat
 Intended: 'Nangy makes that foodstuffs, Mimi eats.'

(*mue*-causative)

- (73) a. *Nangy kə Mimi tsia muegia.*
 Nangy give Mimi eat stuff
 'Nangy causes Mimi to eat foodstuffs.'

(Lit. 'Nangy gives the eating-foodstuffs event to Mimi.')

- b. * *Nangy kə muegia, Mimi tsia.*
 Nangy give stuff Mimi eat
 Intended: 'Nangy causes that foodstuffs, Mimi eats.'

(*kə*-causative)

- (74) a. *Nangy hai Mimi tsia muegia.*
 Nangy hurt Mimi eat stuff
 'Nangy causes Mimi to eat foodstuffs (adversative).'

- b. * *Nangy hai muegia, Mimi tsia.*
 Nangy hurt stuff Mimi eat
 Intended: 'Nangy causes that foodstuffs, Mimi eats (adversative).'

(*hai*-causative)

- (75) a. *Nangy bun Mimi tsia muegia.*
 Nangy separate Mimi eat stuff
 ‘Nangy causes Mimi to eat foodstuffs by giving precedence to Mimi out of courtesy.’
- b. * *Nangy bun muegia, Mimi tsia.*
 Nangy separate stuff Mimi eat
 Intended: ‘Nangy causes that foodstuffs, Mimi eats by giving precedence to Mimi out of courtesy.’
- (courteous *bun*-causative)

- (76) a. *Nangy bun Mimi tsia muegia.*
 Nangy separate Mimi eat stuff
 ‘Nangy lets Mimi eat foodstuffs.’
- b. * *Nangy bun muegia, Mimi tsia.*
 Nangy separate stuff Mimi eat
 Intended: ‘Nangy lets that foodstuffs, Mimi eats.’
- (permissive *bun*-causative)

Second, Teochew has an overt embedded complementizer *da* (lit. ‘say’) (77). Like English complementizer *that*, it is optional in Teochew; however, senior Teochew speakers report that it is preferable for them to use *da* in the position of complementizer.

- (77) a. *Zhuotong dzinui da ngəngangha? ho hosəng.*
 Zhuotong think COMP linguistics very fun
 ‘Zhuotong thinks linguistics is fun.’
- b. *Zhuotong haoki da migai ho hosəng?*
 Zhuotong wonder COMP what very fun
 ‘What does Zhuotong wonder is fun?’

As is shown in (78), such a complementizer is not allowed in the embedded structures of all Teochew periphrastic causatives.

- (78) a. * *Nangy mue da Mimi tsao.*
 Nangy make COMP Mimi run
 Intended: 'Nangy makes that Mimi runs.'
(*mue*-causative)
- b. * *Nangy kə da Mimi tsao.*
 Nangy give COMP Mimi run
 Intended: 'Nangy causes that Mimi runs.'
(*kə*-causative)
- c. * *Nangy hai da Mimi tsao.*
 Nangy hurt COMP Mimi run
 Intended: 'Nangy causes that Mimi runs (adversative).'
- (*hai*-causative)
- d. * *Nangy bun da Mimi tsao.*
 Nangy separate COMP Mimi run
 Intended: 'Nangy causes that Mimi runs by giving precedence to Mimi
 out of courtesy.'
(courteous *bun*-causative)
- e. * *Nangy bun da Mimi tsao.*
 Nangy separate COMP Mimi run
 Intended: 'Nangy lets that Mimi run.'
(permissive *bun*-causative)

The ungrammaticality of both OLD-ing the embedded object and the overt embedded complementizer *da* show that these Teochew periphrastic causatives do not embed a CP layer.

3.1.2.2 (NO) EMBEDDED TP AND ASPP

Following Lin (2003, 2006, 2010, 2012) and Grano (2017), I assume that Teochew as a Sinitic language, like Mandarin, does not have TP but AspP for both simple

sentences and embedded clauses (complement and relative clauses), given that there is no tense morphology in this language. Instead, like Mandarin, Teochew makes use of the following devices to determine the temporal interpretation (Lin, 2006): aspectual particles, temporal adverbs like ‘yesterday’, modal verbs like ‘will’, aktionsart of verbs and the viewpoint aspect determined by it, type compatibility or incompatibility between ‘will’ and (im)perfective aspect, scope of DP containing a relative clause, definiteness/informational status of DP containing a relative clause and a number of pragmatic principles.

I argue that all the Teochew periphrastic causatives except for the *mue* ‘make’-causative embed an AspP layer, based on the evidence below.

Teochew has a preverbal progressive aspectual marker *lo* (79). It is required to occur in a sentence with a progressive interpretation.

- (79) *Mimi *(lo) yi / tsia tsa-bun / sang kedzing loimue.*
 Mimi PROG sleep / eat morning-rice / send guest gift
 ‘Mimi is sleeping/eating breakfast/sending guests gifts.’

It can occur after the causee in all the Teochew periphrastic causatives except for the *mue* ‘make’-causative (80).

- (80) a. **Nangy mue Mimi lo tsao.*
 Nangy make Mimi PROG run
 Intended: ‘Nangy makes Mimi be running now.’
(*mue*-causative)
- b. *Nangy kə Mimi lo tsao.*
 Nangy give Mimi PROG run
 ‘Nangy causes Mimi to be running now.’
 (Lit. ‘Nangy gives the now-running event to Mimi.’)
(*kə*-causative)

- c. *Nangy hai Mimi lo tsao.*
 Nangy hurt Mimi PROG run
 ‘Nangy causes Mimi to be running now (adversative).’
(*hai*-causative)
- d. *Nangy bun Mimi lo tsao.*
 Nangy separate Mimi PROG run
 ‘Nangy causes Mimi to be running now by giving precedence to Mimi
 out of courtesy.’
(courteous *bun*-causative)
- e. *Nangy bun Mimi lo tsao.*
 Nangy separate Mimi PROG run
 ‘Nangy lets Mimi be running now.’
(permissive *bun*-causative)

These provide evidence for the existence of an embedding AspP layer in these Teochew periphrastic causatives except the *mue* one.

3.1.2.3 (NO) EMBEDDED NEG P

Last but not least, evidence from the (un)grammaticality of a pre-verbal neutral negative marker *bo* and a pre-verbal contrastive negative marker *mi* in the embedded structures of all Teochew periphrastic causatives shows that all except for the *hai* ‘hurt’-causative do not embed a NegP².

Teochew has three negative makers, i.e., *bo*, *boi* and *mi*. *bo* is used for the neutral verbal negation (81), while *boi* is used for the neutral adjectival negation (82), and *mi* is used for the nominal negation and contrastive negation compatible with the nominal (with stress), adjectival, and verbal cases (83).

²I thank Amy Rose Deal for bringing the NegP layer to my attention here.

- (81) *Mimi bo tsao / tsia muegia / sang Nangy muegia.*
 Mimi NEG run / eat stuff / send Nangy stuff
 ‘Mimi does not run/eat foodstuffs/send Nangy some stuff.’
- (82) *Mimi boi t'iaue.*
 Mimi NEG well-behaved
 ‘Mimi is not well-behaved.’
- (83) *Mimi mi gia, yi tsao.*
 Mimi NEG walk 3sg run
 ‘Mimi does not walk; instead he runs.’

However, as is shown in (84-85), neither *bo* nor *mi* can show up in the embedded structure of the Teochew periphrastic causatives except for that in the *hai* ‘hurt’-causative.

- (84) The neutral negative *bo*:
- a. **Nangy mue Mimi bo tsao.*
 Nangy make Mimi NEG run
 Intended: ‘Nangy makes Mimi not run.’
(*mue*-causative)
- b. **Nangy kə Mimi bo tsao.*
 Nangy give Mimi NEG run
 Intended: ‘Nangy causes Mimi not to run.’
 (Lit. ‘Nangy gives the not-running event to Mimi.’)
(*kə*-causative)
- c. *Nangy hai Mimi bo tsao.*
 Nangy hurt Mimi NEG run
 ‘Nangy causes Mimi not to run (adversative).’
(*hai*-causative)

d. * *Nangy bun Mimi bo tsao.*
 Nangy separate Mimi NEG run
 Intended: 'Nangy causes Mimi not to run by giving precedence to Mimi out of courtesy.'
 (courteous *bun*-causative)

e. * *Nangy bun Mimi bo tsao.*
 Nangy separate Mimi NEG run
 Intended: 'Nangy lets Mimi not run.'
 (permissive *bun*-causative)

(85) The contrastive negative *mi*:

a. * *Nangy mue Mimi mi tsao.*
 Nangy make Mimi NEG run
 Intended: 'Nangy makes Mimi not run; instead, he makes Mimi do something else.'
 (*mue*-causative)

b. * *Nangy kə Mimi mi tsao.*
 Nangy give Mimi NEG run
 Intended: 'Nangy causes Mimi not to run; instead, he causes Mimi to do something else.'
 (*kə*-causative)

c. *Nangy hai Mimi mi tsao.*
 Nangy hurt Mimi NEG run
 'Nangy causes Mimi not to run; instead, he causes Mimi to do something else (adversative).'

(*hai*-causative)

- d. * *Nangy bun Mimi mi tsao.*
 Nangy separate Mimi NEG run
 Intended: 'Nangy causes Mimi not to run by giving precedence to Mimi out of courtesy; instead, he causes Mimi to do something else.'
 (courteous *bun*-causative)

- e. * *Nangy bun Mimi bo tsao.*
 Nangy separate Mimi NEG run
 Intended: 'Nangy lets Mimi not run; instead, he causes Mimi to do something else.'
 (permissive *bun*-causative)

Therefore, I conclude that the *hai* 'hurt'-causative is the only construction embedding a NegP layer, which I assume is due to selectional differences across different causative verbs.

3.1.3 INTERIM SUMMARY

Table 3.1 summarizes the differences in the syntactic argument structures between all Teochew periphrastic causatives under explorations so far. While all of the causatives have a recursive *vP*, only four of them embed an *AspP* (i.e., the *kə*-causative, the *hai*-causative and two *bun*-causatives). Only the *hai*-causative can embed a NegP. More discussions on the size of the embedded structure will be provided in Section 3.4.

Table 3.1: Syntactic structure differences between Teochew causatives (version 1)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'court.' <i>bun</i> -caus. | 'perm.' <i>bun</i> -caus. |
|-----------------------|-------------------|------------------|-------------------|----------------------------|---------------------------|
| <i>v</i> P recursion? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Embedded CP? | × | × | × | × | × |
| Embedded TP? | × | × | × | × | × |
| Embedded AspP? | × | ✓ | ✓ | ✓ | ✓ |
| Embedded NegP? | × | × | ✓ | × | × |

The next question is how two event participants, i.e., the causer and the causee, are introduced. Section 3.2 and Section 3.3 will show that all of them in these Teochew causatives are introduced by or adjoined to VoiceP.

3.2 INTRODUCING THE CAUSER

3.2.1 CAUSERS INTRODUCED AS ARGUMENTS

First, I show that all the causers are introduced as arguments rather than as adjuncts³.

Teochew has a ...*gai dai*... cleft construction, and only an argument (86b-86c), not an adjunct, no matter if it is a DP (86d) or a PP (86e), can be cleft by this construction.

- (86) a. *Mimi gimdzi? do tengkao toi tsiao.*
 Mimi today at window watch bird
 'Mimi watches birds at the window today.'

³I thank Waltraud Paul for her comments in one of my manuscripts out of this project on the (pseudo-)cleft construction that inspire me to bring DP adjunct to the discussion here.

- b. *Gimdzi? do tengkao toi tsiao gai dai Mimi.*
 today at window watch bird PTCP COP Mimi
 'It is Mimi that watches birds at the window today.'
 (argument)
- c. *Mimi gimdzi? do tengkao toi gai dai tsiao.*
 Mimi today at window watch PTCP COP bird
 'It is birds that Mimi watches at the window today.'
 (argument)
- d. **Mimi do tengkao toi tsiao gai dai gimdzi?.*
 Mimi at window watch bird PTCP COP today
 Intended: 'It is today that that Mimi watches birds at the window.'
 (DP adjunct)
- e. **Mimi gimdzi? toi tsiao gai dai do tengkao.*
 Mimi today watch bird PTCP COP at window
 Intended: 'It is at the window that Mimi watches birds.'
 (PP adjunct)

The causers in all Teochew periphrastic causatives can be clefted by this construction (87), suggesting that they are introduced as arguments.

- (87) a. *Mue Mimi tsao gai dai Nangy.*
 make Mimi run PTCP COP Nangy
 'It is Nangy that makes Mimi run.'
 (*mue*-causative)
- b. *Kə Mimi tsao gai dai Nangy.*
 give Mimi run PTCP COP Nangy
 'It is Nangy that causes Mimi to run.'
 (Lit. 'It is Nangy that gives the running event to Mimi.')
- (*kə*-causative)

- c. *Hai Mimi tsao gai dai Nangy.*
hurt Mimi run PTCP COP Nangy
‘It is Nangy that causes Mimi to run (adversative).’
(*hai*-causative)
- d. *Bun Mimi tsao gai dai Nangy.*
separate Mimi run PTCP COP Nangy
‘It is Nangy that causes Mimi to run by giving precedence to Mimi out
of courtesy.’
(courteous *bun*-causative)
- e. *Bun Mimi tsao gai dai Nangy.*
separate Mimi run PTCP COP Nangy
‘It is Nangy that lets Mimi run.’
(permissive *bun*-causative)

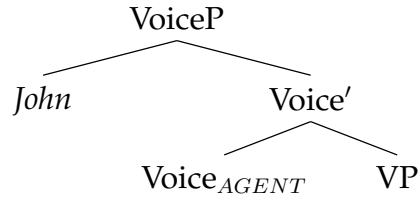
The next question is which syntactic layer introduces them?

3.2.2 SOME PREVIOUS DISCUSSION OF CAUSER INTRODUCTION

In the tradition of Kratzer (1996), it has been widely accepted in many studies that an animate causer as an external argument is introduced by VoiceP. Alexiadou et al. (2015) further argues that an inanimate causer is also introduced by VoiceP, as a realization of an event structure rather than a thematic relation (88b).

- (88) a. Animate causer:
- i. *John killed Bill.*
 - ii. Voice_{AGENT}: the external arguments carries the AGENT role

iii.



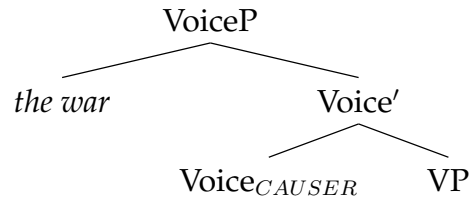
$[[\text{Voice}_{AGENT}]] \rightsquigarrow \lambda x.\lambda e.\text{AGENT}(x, e)$

b. Inanimate causer:

i. *The war killed Bill.*

ii. Voice_{CAUSER} : the external arguments names a causing event

iii.



$[[\text{Voice}_{CAUSER}]] \rightsquigarrow \lambda x.\lambda e.x=e$

In contrast, Schäfer (2012), focusing on three morphosyntactically different causer-DPs in German (89) (and many other languages including Italian, Greek, English and some Caucasian languages like Tsez and Agul), argues that they are introduced by three different syntactic means/projections: (i) nominative causer as the specifier of VoiceP on top of *v*P, (ii) oblique causer as the specifier of ApplP on top of *v*P and (iii) PP causer as complement of PP adjoined to *v*P (90).

(89) German:

a. *Der Sturm zerriß das Segel.*
 the.NOM storm tore the.ACC sail
 'The storm tore the sail.'

(nominative causer)

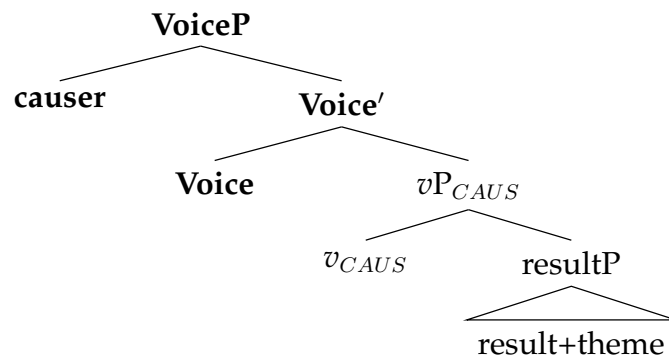
- b. *Dem Peter zerriß das Segel.*
 the.DAT Peter tore the.ACC sail
 'Peter unvolitionally tore the sail.'

(oblique causer)

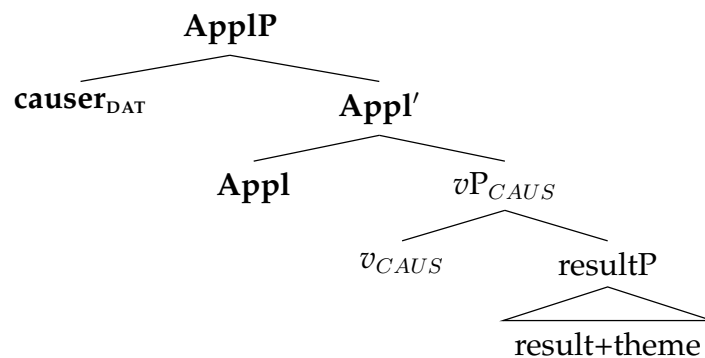
- c. *Das Segel zerriß durch den Sturm.*
 the.NOM sail tore through the.ACC storm
 'The sail tore from the storm.'

(PP causer)

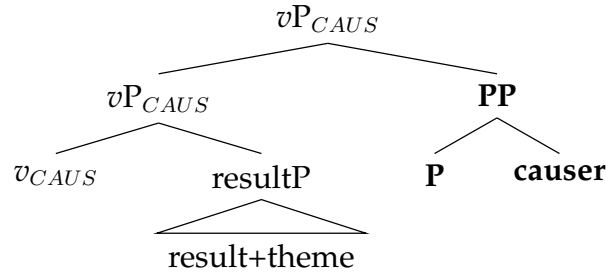
- (90) a. Nominative causer:



- b. Oblique causer:



c. PP causer:



However, in the following, I will argue that all the causers in Teochew periphrastic causatives are introduced by VoiceP as the canonical (‘nominative’ in Schäfer (2012)) causer.

3.2.3 CAUSERS INTRODUCED BY VOICEP

First, it is obvious that none of them is introduced by a preposition; therefore, the PP causer option is ruled out.

Second, when it comes to the ApplP option for oblique/dative causer, like other Sinitic languages, Teochew does not bear morphological cases, not to mention that the nominal licensing related to abstract Case in Sinitic languages without morphological cases is controversial (Sheehan and van der Wal, 2018). In addition, like other Southern Min languages including Taiwanese (91a), in Teochew, a high applicative argument is introduced by a functional item *gaʔ* and it is obligatory (91b). However, in all the examples so far, the causers in all causatives are not introduced by *gaʔ*.

(91) a. Taiwanese Southern Min (Lee, 2012):

Abu ka goa se sann.
 mother BEN 1sg wash clothes
 ‘Mother washes the clothes for me.’

b. Teochew:

*Nangy *(gaʔ) Mimi soi sakou.*
Nangy BEN Mimi wash clothes
'Nangy washes clothes for Mimi.'

The causers in all causatives can even co-occur with an applied argument located on the left of the causative verbs (92).

- (92) a. *Nangy gaʔ nang mue Mimi tsao.*
Nangy BEN people make Mimi run
'Nangy makes Mimi run and Nangy does this for others.'
(*mue*-causative)
- b. *Nangy gaʔ nang kə Mimi tsao.*
Nangy BEN people give Mimi run
'Nangy causes Mimi to run and Nangy does this for others.'
(*kə*-causative)
- c. *Nangy gaʔ nang hai Mimi tsao.*
Nangy BEN people hurt Mimi run
'Nangy causes Mimi to run and Nangy does this for others (adversative).'
- (*hai*-causative)
- d. *Nangy gaʔ nang bun Mimi tsao.*
Nangy BEN people separate Mimi run
'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy and Nangy does this for others.'
(courteous *bun*-causative)
- e. *Nangy gaʔ nang bun Mimi tsao.*
Nangy BEN people separate Mimi run
'Nangy lets Mimi run and Nangy does this for others.'
(permissive *bun*-causative)

Besides, as is observed in Schäfer (2012), an oblique causer introduced by ApplP, in addition to case morphology, also differs from nominative/canonical causer in that it has a non-intentionality property and a [+human] restriction. However, as to be shown below, the causers in some Teochew periphrastic causative constructions can be [-human] like *niao-tsiao* ‘catfood’. What is more, the non-intentionality property does not exist in the case of animate causers in Teochew periphrastic causatives, as evidenced by the compatibility between these causers and agentive modifications.

First, (93-97) show that all the Teochew periphrastic causative except for the *bun* ‘separate’-causative allow both animate and inanimate causers; in contrast, the *bun* ‘separate’-causative only permits an animate causer (summarized in Table 3.2).

(93) The *mue* ‘make’-causative:

- a. *Nangy mue Mimi tsao.*
 Nangy make Mimi run
 ‘Nangy makes Mimi run.’

(animate causer)

- b. *Niao-tsia mue Mimi tsao.*
 cat-food make Mimi run
 ‘Catfood makes Mimi run.’

(inanimate causer)

(94) The *kə* ‘give’-causative:

- a. *Nangy kə Mimi tsao.*
 Nangy give Mimi run
 ‘Nangy causes Mimi to run.’

(Lit. ‘Nangy gives the running event to Mimi.’)

(animate causer)

- b. *Niao-tsia kə Mimi tsao.*
 cat-food give Mimi run
 'Catfood causes Mimi to run.'
 (Lit. 'Catfood gives the running event to Mimi.')

(inanimate causer)

(95) The *hai* 'hurt'-causative:

- a. *Nangy hai Mimi tsao.*
 Nangy hurt Mimi run
 'Nangy causes Mimi to run (adversative).'

(animate causer)

- b. *Niao-tsia hai Mimi tsao.*
 cat-food hurt Mimi run
 'Catfood causes Mimi to run (adversative).'

(inanimate causer)

(96) The courteous *bun* 'separate'-causative:

- a. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(animate causer)

- b. * *Niao-tsia bun Mimi tsao.*
 cat-food separate Mimi run
 Intended: 'Catfood causes Mimi to run by giving precedence to Mimi out of courtesy.'

(inanimate causer)

(97) The permissive *bun* 'separate'-causative:

- a. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 'Nangy lets Mimi run.'

(animate causer)

- b. **Niao-tsia bun Mimi tsao.*
 cat-food separate Mimi run
 Intended: 'Catfood lets Mimi run.'

(inanimate causer)

Table 3.2: Causer animacy in all Teochew periphrastic causatives

| Causer | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'court.' <i>bun</i> -caus. | 'perm.' <i>bun</i> -caus. |
|------------|-------------------|------------------|-------------------|----------------------------|---------------------------|
| [+animate] | ✓ | ✓ | ✓ | ✓ | ✓ |
| [-animate] | ✓ | ✓ | ✓ | × | × |

Second, for all these causative constructions, when the causer is animate, it is compatible with all the agentive modifications including (i) instrumental phrases, (ii) agent-oriented adverbs, (iii) agent-oriented comitatives and (iv) rationale clauses (98-102), suggesting that these causers are intentional, a classic property of agentive event participants.

(98) The *mue* 'make'-causative:

- a. *Nangy eng ganggu mue Mimi tsao.*
 Nangy use tool make Mimi run
 'Nangy uses tools to make Mimi run.'

(instrumental phrase)

- b. *Nangy uyiseʔgai mue Mimi tsao.*
 Nangy intentionally make Mimi run
 'Nangy intentionally makes Mimi run.'

(agent-oriented adverb)

c. *Nangy do Xingy gai pueban e mue Mimi tsao.*
 Nangy at Xingy POSS accompaniment under make Mimi run
 'with the help of Xingy, Nangy makes Mimi run.'
 (agent-oriented comitative)

d. *Ui səng, Nangy mue Mimi tsao.*
 for play Nangy make Mimi run
 'For playing, Nangy makes Mimi run.'
 (rationale clause)

(99) The *kə* 'give'-causative:

a. *Nangy eng ganggu kə Mimi tsao.*
 Nangy use tool give Mimi run
 'Nangy uses tools to cause Mimi to run.'
 (instrumental phrase)

b. *Nangy uyise?gai kə Mimi tsao.*
 Nangy intentionally give Mimi run
 'Nangy intentionally causes Mimi to run.'
 (agent-oriented adverb)

c. *Nangy do Xingy gai pueban e kə Mimi tsao.*
 Nangy at Xingy POSS accompaniment under give Mimi run
 'With the help of Xingy, Nangy causes Mimi to run.'
 (agent-oriented comitative)

d. *Ui səng, Nangy kə Mimi tsao.*
 for play Nangy give Mimi run
 'For playing, Nangy causes Mimi to run.'
 (rationale clause)

(100) The *hai* 'hurt'-causative:

- a. *Nangy eng ganggu hai Mimi tsao.*
Nangy use tool hurt Mimi run

'Nangy uses tools to cause Mimi to run (adversative).'

(instrumental phrase)

- b. *Nangy uyise?gai hai Mimi tsao.*
Nangy intentionally hurt Mimi run

'Nangy intentionally causes Mimi to run (adversative).'

(agent-oriented adverb)

- c. *Nangy do Xingy gai pueban e hai Mimi tsao.*
Nangy at Xingy POSS accompaniment under hurt Mimi run

'With the help of Xingy, Nangy causes Mimi to run (adversative).'

(agent-oriented comitative)

- d. *Ui song, Nangy hai Mimi tsao.*
for play Nangy hurt Mimi run

'For playing, Nangy causes Mimi to run (adversative).'

(rationale clause)

(101) The courteous *bun* 'separate'-causative:

- a. *Nangy eng ganggu bun Mimi tsao.*
Nangy use tool separate Mimi run

'Nangy uses tools to cause Mimi to run by giving precedence to Mimi out of courtesy.'

(instrumental phrase)

- b. *Nangy uyise?gai bun Mimi tsao.*
Nangy intentionally separate Mimi run

'Nangy intentionally causes Mimi to run by giving precedence to Mimi out of courtesy.'

(agent-oriented adverb)

- c. *Nangy do Xingy gai pueban e bun Mimi tsao.*
 Nangy at Xingy POSS accompaniment under separate Mimi run
 ‘with the help of Xingy, Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.’

(agent-oriented comitative)

- d. *Ui səng, Nangy bun Mimi tsao.*
 for play Nangy separate Mimi run
 ‘For playing, Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.’

(rationale clause)

(102) The permissive *bun* ‘separate’-causative:

- a. *Nangy eng ganggu bun Mimi tsao.*
 Nangy use tool separate Mimi run
 ‘Nangy uses tools to let Mimi run.’

(instrumental phrase)

- b. *Nangy uyiseʔgai bun Mimi tsao.*
 Nangy intentionally separate Mimi run
 ‘Nangy intentionally let Mimi run.’

(agent-oriented adverb)

- c. *Nangy do Xingy gai pueban e bun Mimi tsao.*
 Nangy at Xingy POSS accompaniment under separate Mimi run
 ‘With the help of Xingy, Nangy let Mimi run.’

(agent-oriented comitative)

- d. *Ui səng, Nangy bun Mimi tsao.*
 for play Nangy separate Mimi run
 ‘For playing, Nangy let Mimi run.’

(rationale clause)

Therefore, the case of causers in Teochew periphrastic causatives is different from the oblique/dative causer discussed in Schäfer (2012). All of these above

show that the causer in each Teochew periphrastic causative is not introduced by an ApplP on top of *v*P.

Therefore, only one option is left, i.e., that the causers in all Teochew periphrastic causatives are introduced by VoiceP. The animacy of the causer will be further discussed in Chapter 5 and Chapter 6 when it comes to the event structural analysis and the argument interpretations.

Table 3.3 updates the syntactic argument structure of each Teochew periphrastic causative so far, where all the causers are introduced by VoiceP as arguments.

Table 3.3: Syntactic structure differences between Teochew causatives (version 2)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'cou.' <i>bun</i> -caus. | 'per.' <i>bun</i> -caus. |
|---------------------------|-------------------|------------------|-------------------|--------------------------|--------------------------|
| <i>v</i> P recursion? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Embedded CP? | × | × | × | × | × |
| Embedded TP? | × | × | × | × | × |
| Embedded AspP? | × | ✓ | ✓ | ✓ | ✓ |
| Embedded NegP? | × | × | ✓ | × | × |
| Causer as argument? | ✓ | ✓ | ✓ | ✓ | ✓ |
| VoiceP introduces causer? | ✓ | ✓ | ✓ | ✓ | ✓ |

We still need one final piece of analysis to complete the syntax picture, i.e., the syntactic status of causee, which will be given below.

3.3 THE SYNTACTIC STATUS OF CAUSEE

3.3.1 ARGUMENT OR ADJUNCT?

In the following, I will argue that causees in all causative except for those in the courteous *bun*-causative and the permissive *bun*-causative are introduced as arguments rather than adjuncts. There are four pieces of evidence supporting this conclusion.

First, as is shown in Section 3.2, Teochew has a ...*gai dai*... cleft construction, and only an argument, not an adjunct, can be cleft by this construction (86). All the causees except for those in two *bun*-causatives can be cleft by this construction (103).

- (103) a. *Nangy mue tsao gai dai Mimi.*
 Nangy make run PTCP COP Mimi
 'It is Mimi that Nangy makes to run.'
(*mue*-causative)
- b. *Nangy kə tsao gai dai Mimi.*
 Nangy give run PTCP COP Mimi
 'It is Mimi that Nangy causes to run.'
 (Lit. 'It is Mimi that Nangy gives the running event to.')
- (*kə*-causative)
- c. *Nangy hai tsao gai dai Mimi.*
 Nangy hurt run PTCP COP Mimi
 'It is Mimi that Nangy causes to run (adversative).'
- (*hai*-causative)
- d. **Nangy bun tsao gai dai Mimi.*
 Nangy separate run PTCP COP Mimi
 Intended: 'It is Mimi that Nangy causes to run by giving precedence to Mimi out of courtesy.'
- (courteous *bun*-causative)
- e. **Nangy bun tsao gai dai Mimi.*
 Nangy separate run PTCP COP Mimi
 Intended: 'It is Mimi that Nangy lets run.'
- (permissive *bun*-causative)

The second diagnostic is to test whether the embedded objects in these causatives can be promoted since, due to the locality concern, an intermediate

argument will block the movement of another argument to a higher position (cf. Rizzi, 1990).

Teochew, like many other Sinitic languages (c.f., Huang et al., 2009), requires a functional morpheme which optionally introduces the AGENT in a passive construction, and this obligatory functional morpheme is *kə*, syncretic with one of the causative verbs under exploration in this dissertation⁴, and it is obligatory (104a). In contrast, an active construction usually follows the canonical SVO word order (104b).

- (104) a. *Muegia *(kə) (Mimi) tsia o.*
stuff PASS Mimi eat PFV
'Foodstuffs have been eaten (by Mimi).'
- b. *Mimi tsia muegia o.*
Mimi eat stuff PFV
'Mimi has eaten some foodstuffs.'

As is shown in (105), promoting the embedded objects in the courteous *bun*-causative and the permissive *bun*-causative is grammatical but ungrammatical in

⁴In Teochew, *kə* can also be used in passive and unaccusative constructions, as is noted in Matthews et al. (2005), and also in the 'affective' construction (Huang, 2021) with a dummy third-person singular pronoun *yi* (Biggs, 2021). While syncretism between passive and causative is also observed cross-linguistically as one of the classic verbal patterns, e.g. English *get*-passive and *get*-causative (Biggs and Embick, 2022), this dissertation only focuses on the causative one given the discussion scope limit. In addition, based on Biggs (2021), the *kə*-causative and the anti-initiator unaccusative *kə-yi* construction (the 'affective' construction in Huang (2021)) seems to share some similar semantics interpretation (to be discussed more in later chapters); I leave such a connection for future study purpose, again given the research scope limit.

A seemingly similar *hoo* 'give'-causative in Taiwanese Southern Min, another Southern Min variety, is also discussed in the literature (c.f. Cheng et al., 1999). However, Teochew *kə*-causative have some different syntactic and very different semantic properties from the Taiwanese one, based on the data collected from native Teochew speakers. While a comparative study will also be very interesting from both theoretical and empirical perspectives, given the research focus of this dissertation, I also leave such a cross-linguistic comparison for future research.

the other three causatives. Therefore, we can conclude that only the causee in the *bun*-causative is an adjunct, while those in the other three are argument⁵.

- (105) a. **Muegia kə Nangy mue Mimi tisa.*
 stuff PASS Nangy make Mimi eat
 Intended: ‘Some foodstuffs are made to be eaten by Mimi by Nangy.’
 (*mue*-causative)
- b. **Muegia kə Nangy kə Mimi tisa.*
 stuff PASS Nangy give Mimi eat
 Intended: ‘Some foodstuffs are caused to be eaten by Mimi by Nangy.’
 (*kə*-causative)
- c. **Muegia kə Nangy hai Mimi tisa.*
 stuff PASS Nangy hurt Mimi eat
 Intended: ‘Some foodstuffs are caused to be eaten by Mimi by Nangy
 (adversative).’
 (*hai*-causative)
- d. *Muegia kə Nangy bun Mimi tisa.*
 stuff PASS Nangy separate Mimi eat
 ‘Some foodstuffs are caused to be eaten by Mimi by Nangy giving
 precedence to Mimi out of courtesy.’
 (courteous *bun*-causative)
- e. *Muegia kə Nangy bun Mimi tisa.*
 stuff PASS Nangy separate Mimi eat
 ‘Some foodstuffs are allowed to be eaten by Mimi by Nangy.’
 (permissive *bun*-causative)

⁵One might ask why the causers in these Teochew causatives do not block the movement of the object. The intervention effect of the AGENT noun phrase in the passives in Sinitic languages is complicated, which will be another research topic on its own. I refer readers interested in this to the syntax literature of the Mandarin *bei*-passive to Huang (1999), from which the rich line of studies focusing on the unique syntactic and semantics properties of the passive morpheme *bei* is built on, and to Liu (2023) for a recent experimental discussion on this topic from the perspective of language acquisition.

Third, like many other languages, promoting an argument through passives is grammatical in Teochew (106b), but it is ungrammatical to passivize an adjunct, no matter if it is a DP (106c) or a PP (106d).

- (106) a. *Mimi gimdzi? do lai tsia muegia o.*
 Mimi today at home eat stuff PFV
 'Mimi has eaten foodstuffs at home today.'
- (argument)
- b. *Muegia kə Mimi gimdzi? do lai tsia o.*
 stuff PASS Mimi today at home eat PFV
 'Foodstuffs have been eaten by Mimi at home today.'
- c. **Gimdzi? kə Mimi do lai tsia muegia o.*
 today PASS Mimi at home eat stuff PFV
 (DP adjunct)
- d. **Do lai kə Mimi gimdzi? tsia muegia o.*
 at home PASS Mimi today eat stuff PFV
 (PP adjunct)

Promoting the causees in two *bun*-causatives is ungrammatical, while doing so in the other three causatives is grammatical/acceptable (107)⁶. The acceptability issue will be further discussed in Chapter 4 when it comes to the discussion of the causal event structure.

- (107) a. *Mimi kə Nangy mue tsao.*
 Mimi PASS Nangy make run
 'Mimi is made by Nangy to run.'
- (*mue*-causative)

⁶See the previous footnote for the possible blocking by the causer.

- b. ? *Mimi kə Nangy kə tsao.*
 Mimi PASS Nangy give run
 ‘Mimi is caused by Nangy to run.’
 (Lit. ‘Mimi is given the running event by Nangy.’)
 (kə-causative)
- c. *Mimi kə Nangy hai tsao.*
 Mimi PASS Nangy hurt run
 ‘Mimi is caused by Nangy to run (adversative).’
 (hai-causative)
- d. * *Mimi kə Nangy bun tsao.*
 Mimi PASS Nangy separate run
 Intended: ‘Mimi is caused by Nangy to run by being given precedence
 to Mimi out of courtesy.’
 (courteous *bun*-causative)
- e. * *Mimi kə Nangy bun tsao.*
 Mimi PASS Nangy separate run
 Intended: ‘Mimi is let by Nangy to run.’
 (permissive *bun*-causative)

The last diagnostic comes from an argument-targeting construction – the *dui* (lit. ‘towards’)-construction. In Teochew, an argument can be raised before the verb by the morpheme *dui* and receives a strong ‘affectee’ meaning (108b); in contrast, a DP/PP adjunct cannot be raised by this morpheme (108c-108d).

- (108) a. *Mimi gimdzi? do lai tsia muegia o.*
 Mimi today at home eat stuff PFV
 ‘Mimi has eaten foodstuffs at home today.’

b. *Mimi gimdzi? do lai dui muegia tsia o.*
 Mimi today at home towards stuff eat PFV
 'Mimi has eaten foodstuffs at home today (and foodstuffs is the affectee).'

(argument)

c. **Mimi dui gimdzi? do lai tsia muegia o.*
 Mimi towards today at home eat stuff PFV

(DP adjunct)

d. **Mimi dui do lai gimdzi? tsia muegia o.*
 Mimi towards at home today eat stuff PFV

(PP adjunct)

Raising the causees by this construction in two *bun*-causatives is ungrammatical, while doing so in the other three causatives is grammatical/acceptable (109). The acceptability issue will also be further discussed in Chapter 4 when it comes to the discussion of the causal event structure.

(109) a. *Nangy dui Mimi mue tsao.*
 Nangy towards Mimi make run
 'Nangy makes Mimi run (and Mimi is the affectee).'

(*mue*-causative)

b. ?*Nangy dui Mimi kə tsao.*
 Nangy towards Mimi give run
 'Nangy causes Mimi to run (and Mimi is the affectee).'

(*kə*-causative)

c. *Nangy dui Mimi hai tsao.*
 Nangy towards Mimi hurt run
 'Nangy causes Mimi to run (and Mimi is the affectee) (adversative).'

(*hai*-causative)

d. * *Nangy dui Mimi bun tsao.*
 Nangy towards Mimi separate run
 Intended: 'Nangy causes Mimi to run (and Mimi is the affectee) by giving precedence to Mimi out of courtesy.'
 (courteous *bun*-causative)

e. * *Nangy dui Mimi bun tsao.*
 Nangy towards Mimi separate run
 Intended: 'Nangy lets Mimi run (and Mimi is the affectee).'

(permissive *bun*-causative)

To summarize, as shown in Table 3.4, the only causee that is not introduced as an argument is those in the two *bun*-causatives.

Table 3.4: Syntactic status of causees in all Teochew causatives

| | <i>mue</i> | <i>kə</i> | <i>hai</i> | 'c.' <i>bun</i> | 'p.' <i>bun</i> |
|--|------------|-----------|------------|-----------------|-----------------|
| Clefting causee? | ✓ | ✓ | ✓ | × | × |
| Promoting embedded object in passives? | × | × | × | ✓ | ✓ |
| Promoting causee in passives? | ✓ | ✓ | ✓ | × | × |
| Causee raised by <i>dui</i> ? | ✓ | ✓ | ✓ | × | × |
| Causee as an argument? | ✓ | ✓ | ✓ | × | × |

Table 3.5 updates the syntactic structure differences between all Teochew causatives as follows.

Table 3.5: Syntactic structure differences between Teochew causatives (version 3)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'c.' <i>bun</i> -caus. | 'p.' <i>bun</i> -caus. |
|---------------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| <i>v</i> P recursion? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Embedded CP? | × | × | × | × | × |
| Embedded TP? | × | × | × | × | × |
| Embedded AspP? | × | ✓ | ✓ | ✓ | ✓ |
| Embedded NegP? | × | × | ✓ | × | × |
| Causer as argument? | ✓ | ✓ | ✓ | ✓ | ✓ |
| VoiceP introduces causer? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Causee as an argument? | ✓ | ✓ | ✓ | × | × |

The next question is, at what syntactic positions are these causees introduced or adjoined to? In the rest of this section, I will show all of them are introduced by or adjoined to the same syntactic layer VoiceP.

3.3.2 CAUSEE INTRODUCED BY/ADJOINED TO VOICEP

We have seen in Section 3.3.1 that the causees in these causatives are introduced as an argument or an adjunct. However, this causee-introducing head cannot be ApplP, i.e., HApplP (Pylkkänen, 2008), despite for causative constructions in some other languages, this is the case for causee introduction (Zubizarreta, 1985; Ippolito, 2000; Legate, 2014; Nash, 2020; Akkuş, 2021a, 2022).

First, as is shown in the previous discussion, in Teochew a high applicative argument needs to be introduced by a functional word *ga?* (91b). In all examples so far, the causees in these four causatives are not introduced by *ga?*. In addition, the causees in these four causatives can even co-occur with an applied argument occurring on the right of the causee (110).

- (110) a. *Nangy mue Mimi ga? nang tsao.*
 Nangy make Mimi BEN people run
 ‘Nangy makes Mimi run for others.’
(*mue*-causative)
- b. *Nangy kə Mimi ga? nang tsao.*
 Nangy give Mimi BEN people run
 ‘Nangy causes Mimi to run for others.’
(*kə*-causative)
- c. *Nangy hai Mimi ga? nang tsao.*
 Nangy hurt Mimi BEN people run
 ‘Nangy causes Mimi to run for others (adversative).’
(*hai*-causative)

- d. *Nangy bun Mimi ga? nang tsao.*
 Nangy separate Mimi BEN people run
 ‘Nangy causes Mimi to run for others by giving precedence to Mimi out of courtesy.’

(courteous *bun*-causative)

- e. *Nangy bun Mimi ga? nang tsao.*
 Nangy separate Mimi BEN people run
 ‘Nangy lets Mimi run for others.’

(permissive *bun*-causative)

Besides, it is impossible to have two high applied arguments in Teochew, as is shown in (111). However, as is just shown above, all the causees can co-occur with an applied argument.

- (111) * *Nangy kə Mimi ga? Xingy ga? Xingba soi sakou.*
 Nangy give Mimi BEN Xingy BEN Xingba wash clothes
 Intended: ‘Nangy causes Mimi to wash clothes for Xingy for Xingba.’

What is more, the causees in the *mue* ‘make’-causative ((4); copied as (112) below) and the *hai* ‘hurt’-causative ((6); copied as (113) below) are compatible with all the agentive modifications including (i) instrumental phrases, (ii) agent-oriented adverbs, (iii) agent-oriented adverbs and (iv) rationale clauses, suggesting that they have a strong agentive interpretation. Crosslinguistically, such a strong agentive interpretation has not been found to be associated with ApplP.

(112) The *mue* ‘make’-causative:

- a. *Nangy mue Mimi eng gu?bang tsao.*
 Nangy make Mimi use skateboard run
 ‘Nangy makes Mimi use a skateboard to run.’

(instrument phrase)

- b. *Nangy mue Mimi uyiseʔgai tsao.*
 Nangy make Mimi intentionally run
 ‘Nangy makes Mimi intentionally run.’
 (agent-oriented adverb)
- c. *Nangy mue Mimi do Xingy gai pueban e tsao.*
 Nangy make Mimi at Xingy POSS accompaniment under run
 ‘Nangy makes Mimi run with the help of Xingy.’
 (agent-oriented comitative)
- d. *Nangy mue Mimi tsao kə səng.*
 Nangy make Mimi run to play
 ‘Nangy makes Mimi run for the purpose of playing.’
 (rationale clause)

(113) The *hai* ‘hurt’-causative:

- a. *Nangy hai Mimi eng guʔbang tsao.*
 Nangy hurt Mimi use skateboard run
 ‘Nangy causes Mimi to use a skateboard to run (adversative).’
 (instrument phrase)
- b. *Nangy hai Mimi uyiseʔgai tsao.*
 Nangy hurt Mimi intentionally run
 ‘Nangy causes Mimi to intentionally run (adversative).’
 (agent-oriented adverb)
- c. *Nangy hai Mimi do Xingy gai pueban e tsao.*
 Nangy hurt Mimi at Xingy POSS accompaniment under run
 ‘Nangy causes Mimi to run with the help of Xingy (adversative).’
 (agent-oriented comitative)
- d. *Nangy hai Mimi tsao kə səng.*
 Nangy hurt Mimi run to play
 ‘Nangy causes Mimi to run for the purpose of playing (adversative).’
 (rationale clause)

The above evidence suggests that the causees in these five causatives are not introduced by or adjoined to ApplP.

If a relatively standard assumption in the field that only VoiceP and ApplP introduce external arguments severed from verbs in the verbal domain is adopted (e.g., Kratzer, 1996; Pylkkänen, 2008; Legate, 2014; Alexiadou et al., 2015), it follows that all the causees in Teochew periphrastic causatives are located at VoiceP. However, the case of the *kə*-causative and two *bun*-causative makes the picture more complicated, i.e., their causees are incompatible with all the agentive modifications, as is shown in Section 1.1 and copied below.

(114) The *kə* ‘give’-causative:

- a. * *Nangy kə Mimi eng guʔbang tsao.*
 Nangy give Mimi use skateboard run
 Intended: ‘Nangy causes Mimi to use a skateboard to run.’ (Lit. ‘Nangy gives the using-a-skateboard-to-run event to Mimi.’)
 (instrument phrase)
- b. * *Nangy kə Mimi uyiseʔgai tsao.*
 Nangy give Mimi intentionally run
 Intended: ‘Nangy causes Mimi to intentionally run.’ (Lit. ‘Nangy gives the intentionally-running event to Mimi.’)
 (agent-oriented adverb)
- c. * *Nangy kə Mimi do Xingy gai pueban e tsao.*
 Nangy give Mimi at Xingy POSS accompaniment under run
 Intended: ‘Nangy causes Mimi to run with the help of Xingy.’ (Lit. ‘Nangy gives the running-with-the-help-of-Xingy event to Mimi.’)
 (agent-oriented comitative)

- d. * *Nangy kə Mimi tsao kə səng.*
 Nangy give Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing.'
 (Lit. 'Nangy gives the running-for-playing event to Mimi.')
- (rationale clause)

(115) The courteous *bun* 'separate'-causative:

- a. * *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 Intended: 'Nangy causes Mimi to use a skateboard to run by giving precedence to Mimi out of courtesy.'
- (instrument phrase)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy causes Mimi to intentionally run by giving precedence to Mimi out of courtesy.'
- (agent-oriented adverb)

- c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy causes Mimi to run with the help of Xingy by giving precedence to Mimi out of courtesy.'
- (agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing by giving precedence to Mimi out of courtesy.'
- (rationale clause)

(116) The permissive *bun* 'separate'-causative:

- a. * *Nangy bun Mimi eng guʔbang tsao.*
Nangy separate Mimi use skateboard run

Intended: 'Nangy lets Mimi use a skateboard to run.'

(instrument phrase)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
Nangy separate Mimi intentionally run

Intended: 'Nangy lets Mimi intentionally run.'

(agent-oriented adverb)

- c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
Nangy separate Mimi at Xingy POSS accompaniment under run

Intended: 'Nangy lets Mimi run with the help of Xingy.'

(agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
Nangy separate Mimi run to play

Intended: 'Nangy lets Mimi run for the purpose of playing.'

(rationale clause)

Since Kratzer (1996), it has been widely assumed that AGENT is introduced by VoiceP. The above behaviors of the *kə*-causative and two *bun*-causative seem to suggest that their causees are not introduced by or adjoined to VoiceP. The following shows this is not true.

We have already proved that all the causees are not introduced by or adjoined to ApplP. However, there are also two possible alternatives discussed in some recent literature. One is to follow Akkuş (2021a, 2022), arguing that the causee in a causative can be introduced by a CauseeP, another external argument-introducing layer.

Akkuş (2021a, 2022) shows that the causee in Sason Arabic geminate causative, no matter whether it is a DP (117) or a PP (118), is incompatible with agentive

modifications including (i) agent-oriented adverb, (ii) instrumental phrase and (iii) agent-oriented comitatives, a pattern similar to the causees in Teochew *kə*-causative and two *bun*-causative.

(117) Sason Arabic: the geminate causative with a DP causee

- a. *m-mu xassle hasan potad wara furça gbir-e.*
 mother-his washed.CAUS.3F Hasan.M clothes with brush big-F
 ‘His mother made Hasan wash the clothes with a big brush.’

✓ His mother used the brush...

× Hasan used the brush.

(instrumental phrase)

- b. *Oratman ki tı-qarri kemallala kitab bı sabır.*
 teacher PROG.3F 3F-read.CAUS Kemal this.M book with patience
 ‘The teacher is making Kemal read this book patiently.’

✓ The teacher is patient.

× Kemal is patient.

(agent-oriented adverb)

- c. *Leyla hammıl-e kemal mase wara hasan.*
 Leyla carried.CAUS-3F Kemal table with Hasan
 ‘Leyla made Kemal carry the table with Hasan.’

✓ Leyla and Hasan made Kemal carry the table.

× Kemal and Hasan carried the table.

(agent-oriented comitative)

(118) Sason Arabic: the geminate causative with a PP causee

a. *im-mu xassle potad mışa hasan wara furça gbir-e.*
mother-his washed.CAUS.3F clothes to Hasan.M with brush big-F
'His mother made Hasan wash the clothes with a big brush.'

✓ His mother used the brush...

× Hasan used the brush.

(instrumental phrase)

b. *Oratman ki tı-qarri lala kitab mışa kemal bı sabır.*
teacher PROG.3F 3F-read.CAUS this.M book to Kemal with
patience

'The teacher is making Kemal read this book patiently.'

✓ The teacher is patient.

× Kemal is patient.

(agent-oriented adverb)

c. *Leyla hammıl-e mase mışa kemal wara hasan.*
Leyla carried.CAUS-3F table to Kemal with Hasan
'Leyla made Kemal carry the table with Hasan.'

✓ Leyla and Hasan made Kemal carry the table.

× Kemal and Hasan carried the table.

(agent-oriented comitative)

By showing that the embedded structure in the geminate causative with a DP causee (117) behaves as a canonical active while that with a PP (118) behaves as a passive, in the spirit of the 'different flavor of Voice' approach (Legate, 2014), he argues that the causee in the geminate causative is introduced by CauseeP, a functional category other than VoiceP allowing an active-passive-like alternation. Therefore, the 'nonagentive' causee interpretations can be explained since they are not located at VoiceP.

However, when it comes to Teochew *kə*-causative and the two *bun*-causatives, though the causees are also incompatible with all agentive modifications, the embedded structures in these causatives, which only allow DP causees, can only be active.

First, as is shown in all the examples so far, the embedded structures of all Teochew causatives, including the three of which the causees demonstrate some ‘nonagentive’ properties, behave as canonical active sentences in that they do not embed an obligatory passive morpheme *kə* (cf. (104a)).

Second, as is shown in Merchant (2013), in English, sluicing does not allow voice mismatching (119). The same generalization applies in Teochew (120).

(119) a. * *Joe was murdered, but we don't know who.*
(passive, active)

b. * *Someone murdered Joe, but we don't know by who.*
(active, passive)

(120) a. *U nang tsia muegia o, dansi uan mtsai gai di-gai.*
 have people eat stuff PFV but 1.PL NEG.know COP WH-CL
 ‘Someone has eaten some foodstuffs, but we don't know who.’
(active, active)

b. *Muegia kə tsia o, dansi uan mtsai gai kə di-gai.*
 stuff PASS eat PFV but 1.PL NEG.know COP PASS WH-CL
 Intended: ‘Foodstuffs have been eaten, but we don't know by who.’
(passive, passive)

c. * *Muegia kə tsia o, dansi uan mtsai gai di-gai.*
 stuff PASS eat PFV but 1.pl NEG.know COP WH-CL
 Intended: ‘Foodstuffs have been eaten, but we don't know who.’
(passive, active)

- d. * *U nang tsia muegia o, dansi uan mtsai gai kə di-gai.*
 have people eat stuff PFV but 1.PL NEG.know COP PASS WH-CL
 Intended: 'Someone has eaten some foodstuffs, but we don't know by
 who.'
 (active, passive)

The embedded structures in all Teochew causatives, including the three of which the causees demonstrate some 'nonagentive' properties, pattern the same as canonical actives sentences in sluicing (121-125).

(121) The *mue* 'make'-causative:

- a. *Nangy mue nang tsia muegia, dansi uan m.tsai gai di-gai.*
 Nangy make people eat foodstuff, but 1.PL NEG.know COP WH-CL
 'Nangy makes someone eat some foodstuffs, but we don't know who.'
 (active, active)
- b. * *Nangy mue nang tsia muegia, dansi uan mtsai gai kə di-gai.*
 Nangy make people eat foodstuff, but 1.PL NEG.know COP PASS
 WH-CL
 Intended: 'Nangy makes someone eat some foodstuffs, but we don't
 know by who.'
 (active, passive)

(122) The *kə* 'give'-causative:

- a. *Nangy kə nang tsia muegia, dansi uan m.tsai gai di-gai.*
 Nangy give people eat foodstuff, but 1.PL NEG.know COP WH-CL
 'Nangy causes someone to eat some foodstuffs, but we don't know
 who.'
 (active, active)

- b. * *Nangy kə nang tsia muegia, dansi uan mtsai gai kə*
 Nangy give people eat foodstuff, but 1.PL NEG.know COP PASS
di-gai.
 WH-CL
 Intended: 'Nangy causes someone to eat some foodstuffs, but we don't
 know by who.'
 (active, passive)

(123) The *hai* 'hurt'-causative:

- a. *Nangy hai nang tsia muegia, dansi uan m.tsai gai di-gai.*
 Nangy hurt people eat foodstuff, but 1.PL NEG.know COP WH-CL
 'Nangy causes someone to eat some foodstuffs (adversative), but we
 don't know who.'
 (active, active)

- b. * *Nangy hai nang tsia muegia, dansi uan mtsai gai kə*
 Nangy hurt people eat foodstuff, but 1.PL NEG.know COP PASS
di-gai.
 WH-CL
 Intended: 'Nangy causes someone to eat some foodstuffs (adversative),
 but we don't know by who.'
 (active, passive)

(124) The courteous *bun* 'separate'-causative:

- a. *Nangy bun nang tsia muegia, dansi uan m.tsai gai*
 Nangy separate people eat foodstuff, but 1.PL NEG.know COP
di-gai.
 WH-CL
 'Nangy causes someone to eat some foodstuffs by giving precedence to
 Mimi out of courtesy, but we don't know who.'
 (active, active)

- b. * *Nangy bun nang tsia muegia, dansi uan mtsai gai kə*
 Nangy separate people eat foodstuff, but 1.PL NEG.know COP PASS
di-gai.
 WH-CL
 Intended: 'Nangy causes someone to eat some foodstuffs by giving
 precedence to Mimi out of courtesy, but we don't know by who.'
 (active, passive)

(125) The permissive *bun* 'separate'-causative:

- a. *Nangy bun nang tsia muegia, dansi uan m.tsai gai*
 Nangy separate people eat foodstuff, but 1.PL NEG.know COP
di-gai.
 WH-CL
 'Nangy lets someone eat some foodstuffs.'
 (active, active)
- b. * *Nangy bun nang tsia muegia, dansi uan mtsai gai kə*
 Nangy separate people eat foodstuff, but 1.PL NEG.know COP PASS
di-gai.
 WH-CL
 Intended: 'Nangy lets someone eat some foodstuffs.'
 (active, passive)

The above two facts demonstrate that there exists no active-passive-like alternation in the embedded structures of all Teochew periphrastic causatives, not to mention that all their causees can only be DP. Therefore, unlike the causee in the geminate causative of Sason Arabic, the causees in these Teochew causatives are not located at CauseeP.

The second possible alternative is to follow Myler and Mali (2021), arguing that causee can be located at *v*P (the lower *v*P in the framework of this dissertation) or CausP (the higher *v*P in this dissertation). They show that both the unmarked (126a) and instrumental causees (126b) in isiXhosa morphological causatives are

incompatible with agent-oriented adverb ‘on purpose’, again a pattern similar to the causees in Teochew *kə*-causative and two *bun*-causative.

- (126) a. *uDallas_i w-aphul-is-e* *uZoli_j iglasi ngabom_{i/*j}.*
 1Dallas 1SBJ-break.TR-CAUS-PRF 1Zoli 9glass on.purpose
 ✓ ‘Dallas [[made Zoli break the glass] on purpose].’
 × ‘Dallas [made [Zoli break the glass on purpose]].’
- b. *uDallas_i w-aphul-is-e* *ngo-Zoli_j iglasi ngabom_{i/*j}.*
 1Dallas 1SBJ-break.TR-CAUS-PRF INS-Zoli 9glass on.purpose
 ✓ ‘Dallas [[made Zoli break the glass] on purpose].’
 × ‘Dallas [made [Zoli break the glass on purpose]].’

To account for this, they argue that for the unmarked one, it is introduced as an argument at the specifier of CausP (cf. Pytkänen, 2008), and for the instrumental one, it is introduced as an adjunct adjoined to *v*P (cf. Schäfer, 2012). This, as they argue, also helps explain why causee cannot be the grammatical subject of the local clause to bind the reflexive (127) or define a binding domain with respect to Principle B (128) in addition to its incompatibility with agent-oriented adverbs, since it is not introduced by VoiceP.

- (127) a. *uThemba_i u-z_{i/*j}-ong-is-e* *abantwana_j abagulayo.*
 1Themba 1.SBJ-REFL-look.after-CAUS-PRF 2children 2sick
 ‘Themba made himself look after the sick children.’
 *‘Themba made the sick children look after themselves.’
- b. *uThemba_i u-z_{i/*j}-ong-is-e* *ng-abantwana_j abagulayo.*
 1Themba 1.SBJ-REFL-look.after-CAUS-PRF INS-2children 2sick
 ‘Themba had himself looked after by the sick children.’
 *‘Themba made the sick children look after themselves.’

- (128) a. *uThemba_i u-m_{*i/j}-ong-is-e abantwana_j abagulayo.*
 1Themba 1.SBJ-1.OBJ-look.after-CAUS-PRF 2children 2sick
 ‘Themba_i made him_{*i/j} take care of the sick children.’
 Not *‘Themba_i made the sick children look after him_i.’
 Not *‘Themba_i made the sick children look after him_j.’
- b. *uThemba_i u-m_{*i/j}-ong-is-e ng-abantwana_j abagulayo.*
 1Themba 1.SBJ-1.OBJ-look.after-CAUS-PRF INS-2children 2sick
 ‘Themba_i made the sick children look after him_j.’
 Not *‘Themba_i made the sick children look after him_i.’
 Not *‘Themba made himself look after the sick children.’

However, unlike the isiXhosa case, the causee introduced as an argument in the Teochew *kə*-causative can both bind the reflexive (129a) and define a binding domain regarding Principle B (129b). These suggest that it is the grammatical subject of the embedded clause, i.e., an argument introduced by VoiceP defining a local domain.

(129) The *kə*-causative:

- a. *Nangy_i kə Mimi_j tsiogu yi-gagi_{*i/j}.*
 Nangy give Mimi take.care 3.SG-self
 ‘Nangy causes Mimi to take care of himself.’
- b. *Nangy_i kə Mimi_j tsiogu yi_{i/*j}.*
 Nangy give Mimi take.care 3.SG
 ‘Nangy causes Mimi to take care of him.’

Though that fact the causees in two *bun*-causatives cannot bind the reflexive in the position of the embedded objects or define a binding domain in accordance to Principle B (130-131) makes the situation a little bit tricky, I argue that this is due to

the adjuncthood of these causees which possibly bleeds the C-command relation between them and the objects in the embedded structures⁷.

(130) The courteous *bun*-causative:

- a. *Nangy_i bun Mimi_j tsiogu yi-gagi_{i/*j}*.
 Nangy separate Mimi take.care 3.SG-self
 ‘Nangy causes Mimi to take care of himself by giving precedence to Mimi out of courtesy.’
- b. *Nangy_i bun Mimi_j tsiogu yi_{*i/j}*.
 Nangy separate Mimi take.care 3.SG
 ‘Nangy causes Mimi to take care of him by giving precedence to Mimi out of courtesy.’

(131) The permissive *bun*-causative:

- a. *Nangy_i bun Mimi_j tsiogu yi-gagi_{i/*j}*.
 Nangy separate Mimi take.care 3.SG-self
 ‘Nangy lets Mimi take care of himself.’
- b. *Nangy_i bun Mimi_j tsiogu yi_{*i/j}*.
 Nangy separate Mimi take.care 3.SG
 ‘Nangy lets Mimi take care of him.’

In fact, there is another piece of evidence suggesting the causees in these two *bun*-causatives and also the *kə*-causative are not introduced by other layers than VoiceP. As is shown in (132-134), in some context (to be discussed more in Chapter 6), the acceptability of instrument phrase and agent-oriented comitative increases

⁷It might be the case that these adjunct causees are headed by a null preposition, therefore not satisfying the required C-command relation between the causees and the objects to be bound. However, given that Teochew is a language without morphological cases, there is no evidence like dative cases to support the existence of this null preposition, not to mention that such a situation of null prepositions has not been attested in this language. Therefore, I choose to assume the biggest structure for these two adjunct cases as DP in the later discussion.

a little bit, suggesting the causees in these causatives have some agentivity in such a context. If they are introduced by another layer other than VoiceP, such a pattern cannot be explained.

(132) The *kə*-causative in certain contexts:

- a. ?? *Nangy kə Mimi eng guʔbang tsao.*
 Nangy give Mimi use skateboard run
 ‘Nangy causes Mimi to use a skateboard to run.’
 (instrumental phrase: ??)
- b. * *Nangy kə Mimi uyiseʔgai tsao.*
 Nangy give Mimi intentionally run
 Intended: ‘Nangy causes Mimi to intentionally run.’
 (agent-oriented adverb: ×)
- c. ?? *Nangy kə Mimi do Xingy gai pueban e tsao.*
 Nangy give Mimi at Xingy POSS accompaniment under run
 ‘Nangy causes Mimi to run with the help of Xingy.’
 (agent-oriented comitative: ??)
- d. * *Nangy kə Mimi tsao kə səng.*
 Nangy give Mimi run to play
 Intended: ‘Nangy causes Mimi to run for the purpose of playing.’
 (rationale clause: ×)

(133) The courteous *bun*-causative in certain contexts:

- a. ?? *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 ‘Nangy causes Mimi to use a skateboard to run by giving precedence to Mimi out of courtesy.’
 (instrumental phrase: ??)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy causes Mimi to intentionally run by giving precedence to Mimi out of courtesy.'

(agent-oriented adverb: ×)

- c. ?? *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 'Nangy causes Mimi to run with the help of Xingy by giving precedence to Mimi out of courtesy.'

(agent-oriented comitative: ??)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing by giving precedence to Mimi out of courtesy.'

(rationale clause: ×)

(134) The permissive *bun*-causative in certain contexts:

- a. ?? *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 'Nangy lets Mimi use a skateboard to run.'

(instrumental phrase: ??)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy lets Mimi intentionally run.'

(agent-oriented adverb: ×)

- c. ?? *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 'Nangy lets Mimi run with the help of Xingy.'

(agent-oriented comitative: ??)

- d. * *Nangy bun Mimi tsao kə səng.*
Nangy separate Mimi run to play

Intended: 'Nangy lets Mimi run for the purpose of playing.'

(rationale clause: ×)

Given the discussion so far, the only option left to introduce or be adjoined to by the causees in the Teochew periphrastic causatives is VoiceP. The same pattern, i.e., the causee is still connected to VoiceP even with a reduced or no agency diagnosed by its incompatibility with some or all agentive modifications, is also observed in other languages like Acehenese (Legate, 2014), Turkish (Key, 2013; Nie, 2020, 2022), Georgian (Nash, 2020) and Icelandic (Sigurðsson and Wood, 2021) (also see Neu and Akkuş (2024) for a case of nonagentive causer introduced at VoiceP). These suggest Teochew is not a special case.

One crucial takeaway from this cross-linguistic pattern is that it shows that agentive modifications cannot be licensed merely by the presence of VoiceP; in other words, VoiceP is *necessary* but *not sufficient* for agentive modifications. This shows that the listing approach listing argument interpretations with specific syntactic positions does not work, echoing the spirit of works on different causer-introducing positions in Schäfer (2012) mentioned in the previous discussion to dissociate the formal/syntactic licensing and the thematic licensing of arguments. Therefore, the contextual approach to argument interpretation featuring a syntactically-oriented event structure solution, as an alternative, should be more favorable.

Now, it is time to piece together all the above discussion of the syntactic argument structures of all Teochew causative constructions.

3.4 DISCUSSION

3.4.1 SYNTACTIC STRUCTURES OF TEOCHEW PERIPHRASTIC CAUSATIVES

Table 3.6 summarizes the syntactic structure differences of all Teochew periphrastic causatives.

Table 3.6: Syntactic structure differences between all Teochew causatives (final)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'c.' <i>bun</i> -caus. | 'p.' <i>bun</i> -caus. |
|---------------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| <i>v</i> P recursion? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Embedded CP? | × | × | × | × | × |
| Embedded TP? | × | × | × | × | × |
| Embedded AspP? | × | ✓ | ✓ | ✓ | ✓ |
| Embedded NegP? | × | × | ✓ | × | × |
| Causer as argument? | ✓ | ✓ | ✓ | ✓ | ✓ |
| VoiceP introduces causer? | ✓ | ✓ | ✓ | ✓ | ✓ |
| Causee as an argument? | ✓ | ✓ | ✓ | × | × |
| VoiceP introduces causee? | ✓ | ✓ | ✓ | ✓ | ✓ |

The underlying syntactic argument structure of each causative with an embedded predicate 'run' is given below.

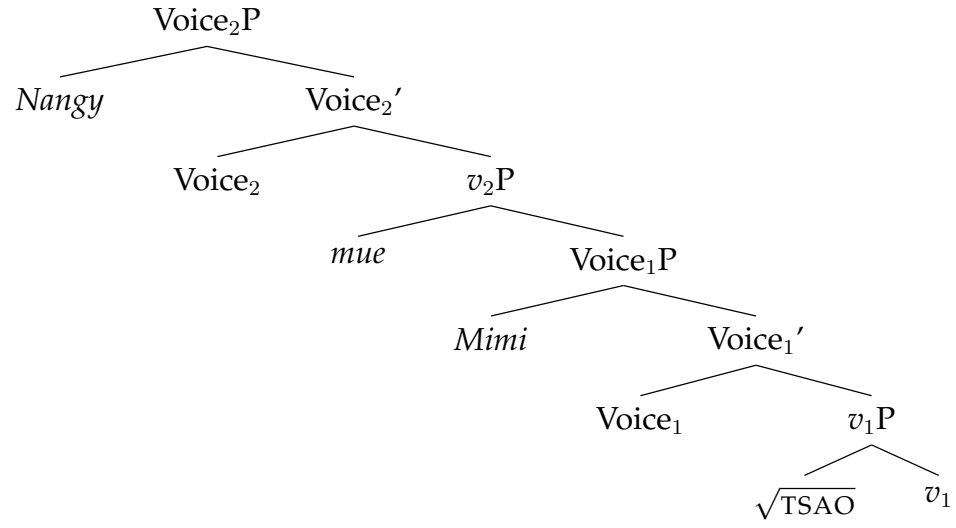
(135) a. The *mue* 'make'-causative:

Nangy mue Mimi tsao.

Nangy make Mimi run

'Nangy causes Mimi to run.'

b.



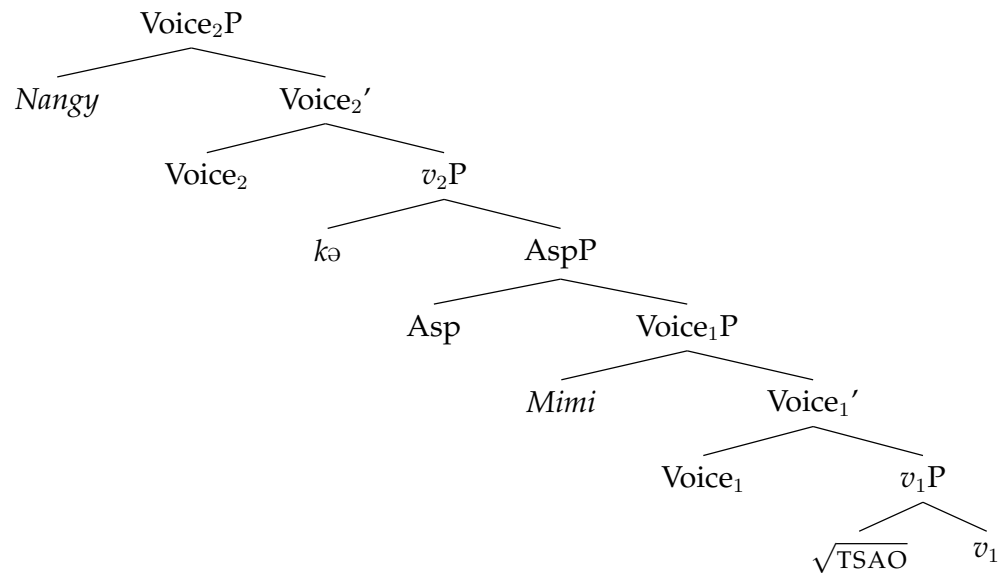
(136) a. The *kə* 'give'-causative:

Nangy kə Mimi tsao.

Nangy give Mimi run

'Nangy causes Mimi to run.'

b.



(137) The *hai* 'hurt'-causative:

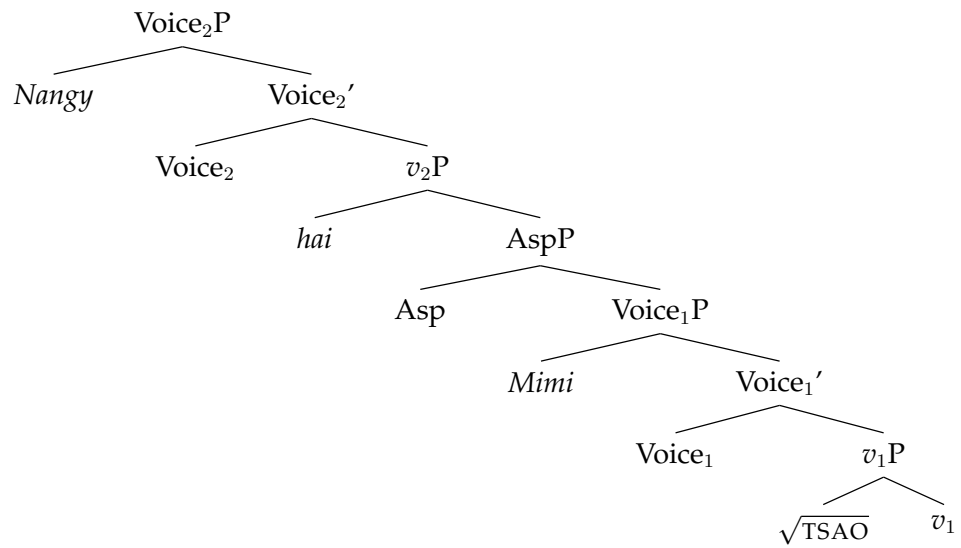
a. i. Without negation:

Nangy hai Mimi tsao.

Nangy hurt Mimi run

'Nangy causes Mimi to run.'

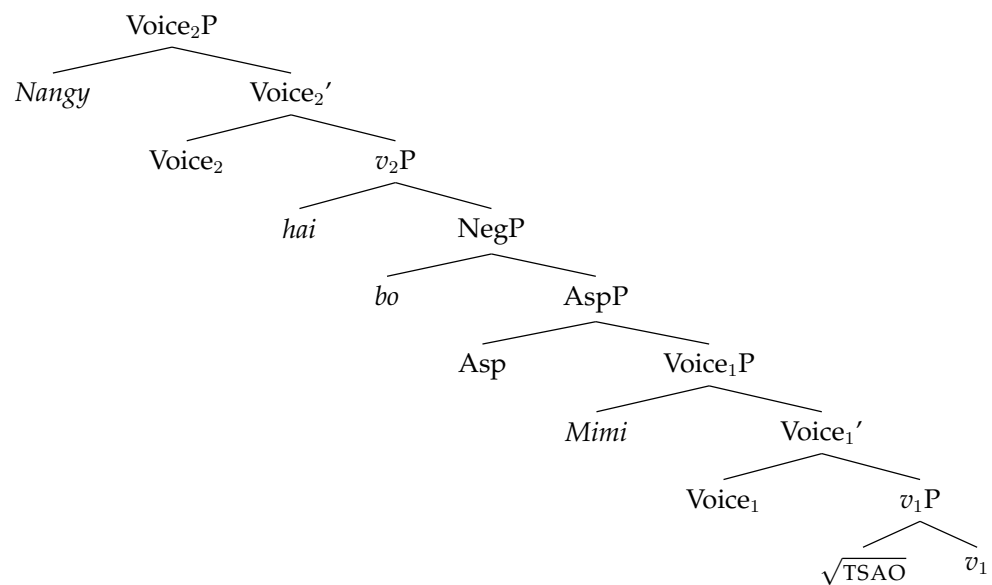
ii.



b. With negation:

- i. *Nangy hai Mimi bo tsao.*
Nangy hurt Mimi NEG run
'Nangy causes Mimi not to run.'

ii.



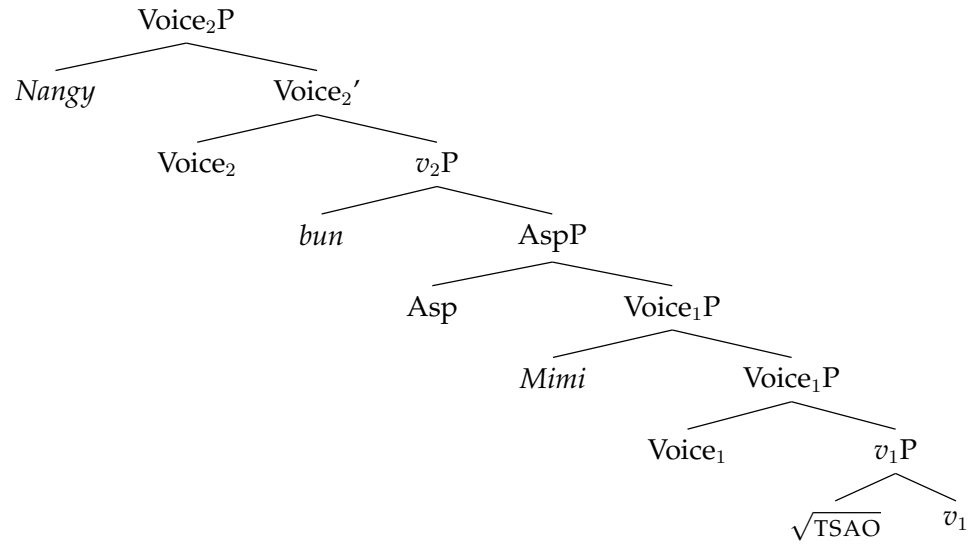
(138) a. The courteous *bun* 'separate'-causative:

Nangy bun Mimi tsao.

Nangy separate Mimi run

'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

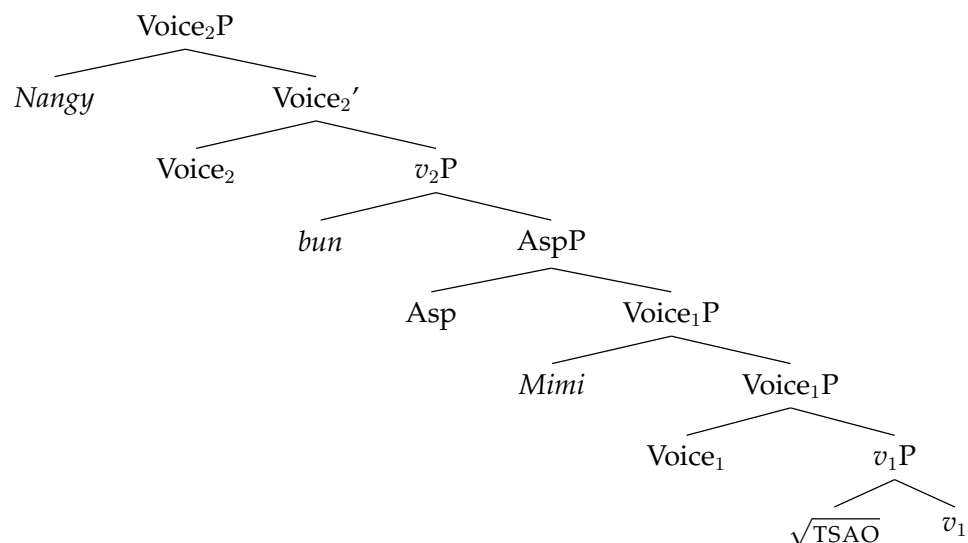
b.



(139) a. The permissive *bun* ‘separate’-causative:

Nangy bun Mimi tsao.
 Nangy separate Mimi run
 ‘Nangy lets Mimi run.’

b.



The structure of causative constructions or complex predicate structures has long been discussed in the literature. In the following, I will draw connections between the Teochew causative structures summarized above and some of the previous studies.

3.4.2 CONNECTIONS WITH PREVIOUS STUDIES ON CAUSATIVES

3.4.2.1 THE *faire-infinitif* vs. *faire-par* DISTINCTION

One of the classic discussion focuses on the *faire-infinitif* (FI) vs. *faire-par* (FP) distinction in Romance languages like French and Italian (e.g., Kayne, 1975; Zubizarreta, 1985; Burzio, 1986; Guasti, 1996; Ippolito, 2000; Folli and Harley, 2007; Torrego, 2010; Pitteroff and Campanini, 2013). For example, In French (140), the subject of the embedded transitive predicate can either be introduced by *à* like

an indirect object (140a), or as an optional adjunct introduced by *par* (140b). A similar contrast in Italian is given in (141).

(140) French (Nash, 2020):

- a. *Paul a fait écrire une lettre à Marie.*
Paul have make write one letter to Mary
'Paul made Mary write a letter.'

(*faire-infinitif*)

- b. *Paul a fait traduire ce document par un spécialiste.*
Paul have make translate this document by a specialist
'Paul made a specialist translate this document.'

(*faire-par*)

(141) Italian (Folli and Harley, 2007):

- a. *Gianni ha fatto riparare la macchina a Mario.*
Gianni has made repair the car to Mario
'Gianni got Mario to repair the car.'

(*faire-infinitif*)

- b. *Gianni ha fatto riparare la macchina da Mario.*
Gianni has made repair the car by Mario
'Gianni got the car repaired by Mario.'

(*faire-par*)

It has been noted that FP and FI have different properties and, therefore, different structures: while FI is flexible with many types of embedded transitive verbs, FP is ungrammatical in the circumstances listed in (142). Based on these, many previous studies have argued for different embedded structures of these two constructions (see Nash (2020) for a detailed review).

(142) Circumstances where FP is ungrammatical:

- a. The embedded transitive predicate (i) cannot be passivized or (ii) is a nonpassivizable idiom
- b. The embedded direct object (i) is unalienable to the embedded subject, (ii) contains a bound variable pronoun, or (iii) is not an argument of change-of-state verb
- c. The matrix subject is inanimate

(Folli and Harley, 2007)

Despite some specific technical detail differences explaining the contrast in (142), there are two agreements across different analyses (e.g., Kayne, 1975; Zubizarreta, 1985; Burzio, 1986; Guasti, 1996; Ippolito, 2000; Folli and Harley, 2007; Torrego, 2010; Pitteroff and Campanini, 2013). One is that both types of causatives have a recursion of verbal projection, i.e., *v*P or VP, depending on whether Distributed Morphology or a Chomskian little *v* (Chomsky, 2000, 2001) is adopted. The other is the embedded subjects of two causatives are introduced in different ways including being not introduced, i.e., as an adjunct.

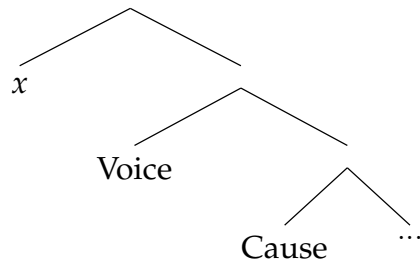
The syntactic argument structures of all Teochew periphrastic causatives echo this line of discussion in two ways. First, Teochew periphrastic causatives are also bi-eventive (*v*P recursion in the analysis of this dissertation). Second, causees can be introduced in different ways: in *mue/kə/hai* 'make/give/hurt'-causative, the causee is introduced as an argument, while in the *bun* 'separate'-causative, the causee is adjoined to the structure as an adjunct.

3.4.2.2 PYLKKÄNEN (2008): 'BUNDLING' AND 'SELECTION'

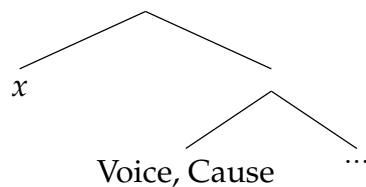
Connected to the analysis of Teochew causative structures in this section is the classic discussion in Pylkkänen (2008). She explores two cross-linguistic variations when it comes to causative constructions. The first one is *Voice bundling*, i.e., whether the Cause head (the highest *v* in this dissertation) can be bundled with the external-argument-introducing Voice into a complex head, e.g., YES in English zero-causative but NO in Japanese lexical causative and Finnish *-tta* causative (143).

(143) Voice bundling:

a. Non-Voice-bundling causative



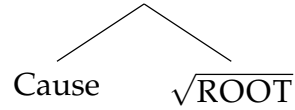
b. Voice-bundling causative:



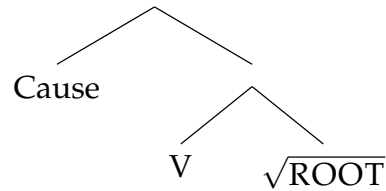
When it comes to the second variation, i.e., the *size/selection* of embedded structures of the causative head, she proposes that a Cause head can select a category-free root (e.g., Japanese lexical causative, English zero-causative), a verb (e.g., Bemba *-eshya* causative, Finnish *-tta* causative) or a phase which, in her system, is a constituent where an external argument has been added (e.g., Venda *-is* causative, Lunganda *-sa* causative) (144).

(144) Selection:

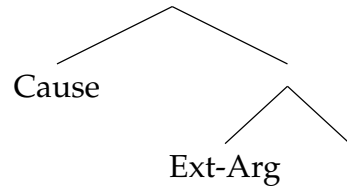
a. Root-selecting Cause:



b. Verb-selecting Cause:



c. Phase-selecting Cause:



In this dissertation, the higher *v* in the syntactic structures of all Teochew periphrastic causatives (135-138) equals the Cause head in Pylkkänen (2008); the *Voice* head in dissertation and that in Pylkkänen (2008) follows the same spirit of severing the external argument from the verb in Kratzer (1996). According to Pylkkänen (2008), one key factor to decide whether a language is a Voice-bundling one or not is to see whether it allows unaccusative causative: if not, then it is a Voice bundling construction.

As to be elaborated in Section 4.1, while the *mue/hai*-causative allows unergatives, transitives, ditransitives, unaccusatives, statives and psych verbs as its embedded predicates, the *kə*-causative and two *bun*-causatives only allow predicates requiring an external argument, i.e., unergatives, transitives and ditransitives as its embedded predicates. This seems to imply that the Teochew *kə/bun*

'give/separate'-causative is a Voice-bundling construction, while the Teochew *mue/hai* 'make/hurt'-causative is a non-Voice bundling one. However, this is not the case. First, when it comes to 'unaccusative causative' requirement, Pylkkänen (2008) focuses more on lexical/morphological causatives, rather than periphrastic causatives. Second, the bundling variation in Pylkkänen (2008) is a language-specific parameter rather than a construction-specific parameter. It makes more sense that in Teochew, different causative verbs simply select different embedded structures.

Then, the connection between the discussion in this dissertation and that in Pylkkänen (2008) might be more relevant to the selection variation (144). To be more specific, the Teochew *mue/kə/hai* 'make/give/hurt'-causative selects an embedded structure with a causee introduced by VoiceP as an argument, while the two *bun* 'separate'-causatives select one with a causee adjoined to VoiceP as an adjunct. Besides, while the *mue* 'make'-causative selects a VoiceP as its embedded structure, the *kə/bun* 'give/separate'-causative selects an AspP and the *hai* 'hurt'-causative selects a (NegP+)AspP. However, one should be aware that the selection variation in Pylkkänen (2008) is a language-specific parameter rather than a construction-specific parameter. Given that in Teochew causatives in (135-139), the causative verbs all select for a structure with an external argument, i.e., the causee, Teochew periphrastic causatives, in fact, behaves more like the phase-selecting type in Pylkkänen (2008).

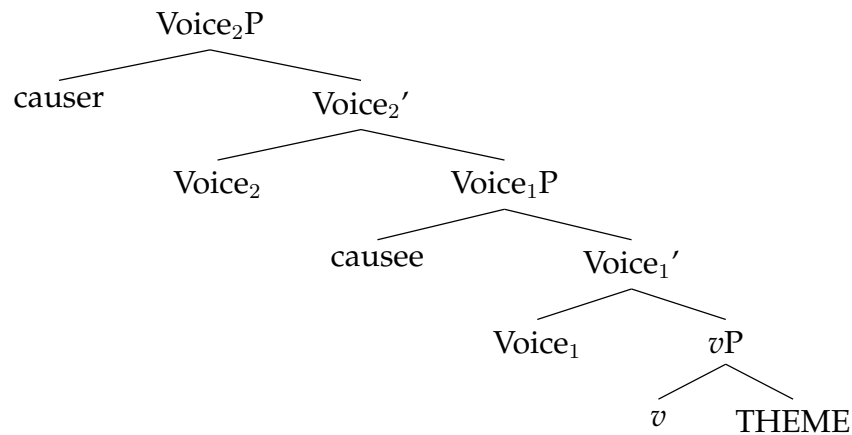
3.4.2.3 NIE (2020): RECURSIVE VOICEP (AND *v*P)

Connected to the analysis of Teochew causative structures in this section is another recent discussion in Nie (2020). She argues that the *Voice* head is an obligatory nominal licenser in every language and it is the *Voice* under T (i.e., the highest

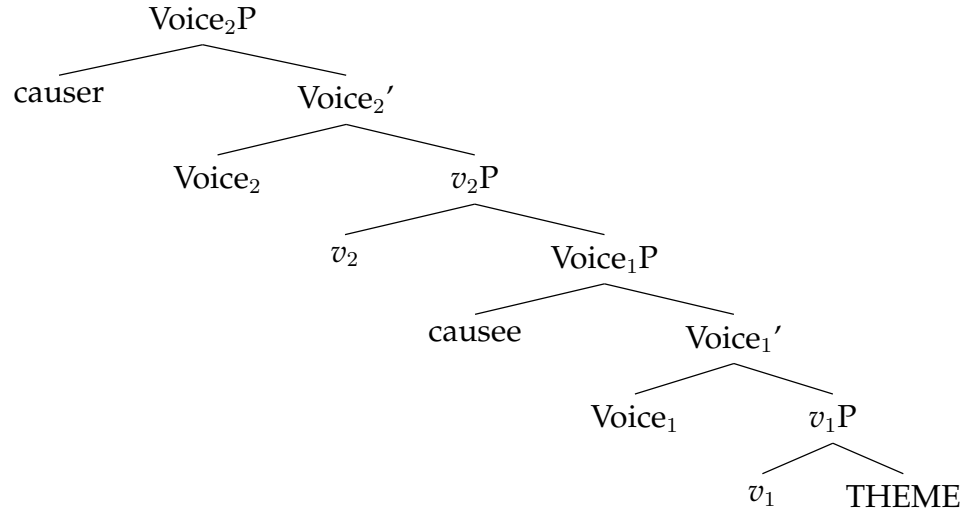
Voice not the embedded one) that defines the licensing domain of a clause. For her, the universal nominal licensing includes thematic role assignment and abstract ϕ -licensing, while Case assignment is language-specific. She argues that causatives *always* have an embedded VoiceP and the size of their embedded structure is derived from independent properties of the lexical flavors of Voice, i.e., [+D], [-D] or [\emptyset] (Kastner (2016, 2019); the [EPP] feature in this dissertation) and the nominal licensing in different languages.

Based on these, she shows that causatives may be built in two ways cross-linguistically. One is called monocausal causative involving VoiceP but not *v*P recursion (145a): the language forms a causative construction simply by adding an external argument and shows the same number of events as the English *break*-type lexical causatives, like Tagalog productive causative. The other one is called bicausal causative with both VoiceP and *v*P recursion (145b): the language forms a causative construction by adding both an additional argument and an additional causing event not existing in their lexical causative counterpart, like Japanese *-(s)ase* causative.

(145) a.



b.



Such two constructions, especially the bicausal one, have been widely adopted to analyze causative structures of many languages in recent years (e.g., Sigurðsson and Wood, 2021; Akkuş, 2021b, 2022; Myler and Mali, 2021).

Teochew periphrastic causatives (135-139) obviously behave like the bicausal one in that they have both recursive VoiceP and recursive *v*P, though all Teochew except for the *mue* ‘make’ one can also embed a structure larger than VoiceP (more in Section 3.4.3).

3.4.2.4 INTERIM SUMMARY

The above discussion shows that the syntactic argument structures of all Teochew causatives demonstrate many similarities with previous analyses on causative constructions in other languages. However, a close comparison between the syntactic argument structures of all Teochew periphrastic causatives shows that the Teochew ones have some different properties, which will be discussed in a more detailed way in the following.

3.4.3 UNIQUENESS OF TEOCHEW PERIPHRASTIC STRUCTURES AND CONNECTIONS WITH PREVIOUS STUDIES ON ‘RESTRUCTURING’

The syntactic structures of the Teochew periphrastic causatives (135-139) demonstrate some unique properties compared to previous studies. First, they allow bigger embedded structures. e.g., AspP or NegP, even though a CP is disallowed. Second, as is shown in Chapter 1, the causees introduced by VoiceP can have more complex argument interpretation rather than as AGENT simpliciter, which I will leave for the discussion in Chapter 6.

For the first one, the evidence clearly shows that Teochew periphrastic causatives can embed a bigger structure than what has been discussed in the literature. For example, the *kə* ‘give’-causative (136) and the two *bun* ‘separate’-causatives (138-139) can embed an AspP layer, and the *hai* ‘hurt’-causative (137) can embed a NegP layer.

These are in some way similar to the English periphrastic causative verbs like *cause*, *make*, *have* and *get* in terms of having different embedded structures (146).

- (146) a. *Gurung caused the children to dance.*
b. *Gurung made the children dance.*
c. *Gurung had the children dance.*
d. *Gurung got the children to dance.*

(Nadathur and Lauer, 2020)

Given that the embedded (in)finiteness of the above English causatives differ from each other, one natural question to ask is whether (in)finiteness is also playing a role in the Teochew case. Sells (2007) points out that there are two senses of the linguistic term *finite*: one is related to the verbal morphology and the other is as

a grammatical property of a sentence. Given that Teochew, like other Sinitic languages, does not have verbal morphology, only the second sense might play a role here.

It has been assumed by most linguists that finiteness is connected with tense, i.e., the TP layer or the traditional IP layer (e.g., Partee, 1973). However, it has been long argued that Sinitic languages like the well-studied Mandarin Chinese do not have the syntactic category tense (e.g., Lin, 2003, 2006, 2010, 2012; Grano, 2017); instead, the temporal meaning of a sentence is contributed by other contextual factors (see Section 3.1.2.2). Therefore, this TP-finiteness connection cannot work in the Teochew case. What is more, as is pointed out in Adger (2007), *finiteness* as a notion itself is a traditional one and it might not find any place in a generative theory of language: ‘it names a possibly open-ended set of phenomena and may vary very well have no satisfactory definition’ (Adger, 2007, p.1).

Given all these above, this dissertation sets aside the finiteness vs. infiniteness distinction in Teochew as a Sinitic language, and follows many previous studies in assuming that embedded structures can have different sizes (e.g., Aissen and Perlmutter, 1976; Rizzi, 1978; Wurmbrand, 2001; Cinque, 2006; Grano, 2015) and that (in)finiteness in Sinitic languages can be replaced/reduced by clausal size (Xue and McFetridge, 1996, 1998).

That is to say, in the case of Teochew periphrastic causatives, different causative verbs select different embedded structures. More importantly, such selections contribute to the discussion of causative construction, given that they show that a causative head can select bigger embedded structures than VoiceP/*v*P/VP. Such a property of causative constructions, to my knowledge, is seldom discussed in the context of causatives and in some way connected to previous research on *complementation*/the clause size.

The topic of ‘complementation’ /the clause size is a big one, given the relevant linguistic phenomena include but are not limited to complex predicate constructions like raising, ECM, control and *restructuring*⁸.

Considering that the sizes of the embedded structure in the Teochew periphrastic causatives, as shown in the previous discussion, vary from VoiceP, AspP to NegP, but never a full CP, this in some way corresponds to the restructuring phenomena well studied in the literature in terms of the deficiency/omission/removal of certain syntactic projections (e.g., Bech, 1955; Rizzi, 1976; Aissen and Perlmutter, 1976; Napoli, 1981; Manzini, 1983; Haegeman and van Riemsdijk, 1986; Rochette, 1988; Rosen, 1990; Rutten, 1991; Broekhuis, 1992; Guasti, 1991; Kayne, 1991; Haider, 1993; Butt, 1995; Guasti, 1996; Terzi, 1996; Roberts, 1997; Wurmbrand, 2001; Grano, 2012; Müller, 2017; Pesetsky, 2019; Lohninger and Wurmbrand, 2020) (see Wurmbrand (2024) for review purposes).

A large body of studies along this line can be classified into two major groups: one adopts the *small-size/synthesis* approach, e.g., works done by Susanne Wurmbrand, and the other follows the *full-size/removal/exfoliation* approach proposed in Müller (2017) and Pesetsky (2019).

For the former, it holds that clause-building does not necessarily contain a full CP, and it can stop whenever the minimal structure is reached depending on the *synthesis* mechanism between syntax and semantics. More specifically, following the three-domain classification in Ramchand and Svenonius (2014), i.e., θ -domain (event), TMA domain (situation) and operator domain (proposition), Wurmbrand and her colleagues argue that there exists a similar implicational semantic hierarchy in terms of the universal properties of complementation, though some vari-

⁸See the connections between control and restructuring in Grano (2015) and the contrast between ECM and restructuring in Wurmbrand (2024).

ations exist across languages (e.g., Lohninger and Wurmbrand, 2020; Wurmbrand, 2024). When it comes to the syntactic size differences of the embedded structure, it results from the fact that the matrix verbs and their complements can *select* each other in a way that reflects a partial autonomy of syntax but also respects the implicational semantic hierarchy.

Such an approach is in contrast to the exfoliation approach proposed in Pesetsky (2019) (see a similar structure removal approach in Müller (2017)). Studies following this approach treat small-size embedded structures as being built by a derivational mechanism that removes a partial structure after a full CP is built. Empirical motivations for this mechanism largely come from both A and A-bar movements, especially the latter.

Given that the structure building of the Teochew causatives discussed in this dissertation mostly relies on the operation Merge, currently it seems to me that this dissertation will contribute little to the debate on which approach is superior, but I leave further explorations on this for future research.

3.5 SUMMARY

The discussion of the syntactic argument structures of all Teochew periphrastic causatives in this Chapter has shown that a syntax-only approach, i.e., listing the argument interpretation with specific syntactic positions, cannot work to solve this problem of causee interpretations; otherwise, all causees introduced by or adjoined to the same syntactic layer, i.e., VoiceP, should be interpreted the same as AGENT.

We also have seen in Chapter 2 that listing the causee interpretation with individual verbs also cannot work. Therefore, the listing approach listing argument

interpretation with either individual verbs or specific syntactic positions cannot solve our complex causee interpretation puzzle.

In contrast, it is promising to explore the contextual approach, especially since previous studies (see Chapter 2) have shown their advantage when it comes to (external) argument interpretations, and causee is one type of external arguments. Given that most of the contextual approaches give a detailed exploration of the event structural interpretation from which the argument interpretation is derived, the next question is what is the event structure of each Teochew periphrastic causative construction, i.e., our second research question in (9).

Comprehensive illustrations of this will be given in the next two chapters, where some of the third research question in (9), i.e., how do pragmatic factors influence the eventuality and argument interpretation, will also be given.

CHAPTER 4

CAUSAL EVENT STRUCTURAL INTERPRETATIONS: A MULTIDIMENSIONAL PERSPECTIVE

This chapter will provide a comprehensive exploration of four causal dimensions encoded in all Te Chew periphrastic causatives, serving as the empirical ground for the formal analysis in Chapter 5.¹

The selectivity of embedded predicates will be discussed in Section 4.1. Building on it, Section 4.2-4.5 will each look at four types of causal differences, namely (i) the direct vs. indirect contrast in terms of temporal and spatial relations and whether an intermediary agent is allowed (Section 4.2), (ii) the deterministic vs. probabilistic contrast (Section 4.3), (iii) the attitude-neural vs. express the speaker's attitude contrast (Section 4.4) and (iv) the permissive vs. non-permissive contrast (Section 4.5), showing that Teo Chew periphrastic causatives differentiate from each other in these four-dimension ways.

I will argue that such a fine elaboration of complex causal relations encoded in each Teo Chew periphrastic causative helps explain the following question: why does a language adopt more than one causative verb in the same surface periphrastic causative structure? A taxonomy of causal relations encoded in Teo Chew is given in Section 4.6, some or all of which I argue could also be found in other languages.

¹I thank Yining Nie for her generous feedback on these complex causal relations for one of my projects developed at the early stage.

4.1 SELECTIVITY OF EMBEDDED PREDICATES

First, the embedded predicates in the *mue* 'make'-causative (147) and the *hai* 'hurt'-causative (148) can be predicates requiring external arguments like unergatives, transitives and ditransitives, or predicates without external arguments like unaccusatives, statives and psych verbs (Harley, 1995; Folli and Harley, 2007).

(147) The *mue* 'make'-causative:

- a. *Nangy mue Mimi tsao.*
Nangy make Mimi run
'Nangy makes Mimi run.'
(unergative)

- b. *Nangy mue Mimi tsia muegia.*
Nangy make Mimi eat stuff
'Nangy makes Mimi eat some foodstuffs.'
(transitive)

- c. *Nangy mue Mimi sang kedzing muegia.*
Nangy make Mimi send guest stuff
'Nangy makes Mimi send the guest some stuffs.'
(ditransitive)

- d. *Nangy mue Mimi bualo?ku.*
Nangy make Mimi fall.over
'Nangy makes Mimi fall over.'
(unaccusative)

- e. *Nangy mue Mimi u gao.*
Nangy make Mimi have dog
'Nangy makes Mimi own a dog.'
(stative)

- f. *Nangy mue Mimi gia gao.*
 Nangy make Mimi fear dog
 'Nangy makes Mimi fear dog.'

(psych verb)

(148) The *hai* 'hurt'-causative:

- a. *Nangy hai Mimi tsao.*
 Nangy hurt Mimi run
 'Nangy causes Mimi to run (adversative).'

(unergative)

- b. *Nangy hai Mimi tsia muegia.*
 Nangy hurt Mimi eat stuff
 'Nangy causes Mimi to eat some foodstuffs (adversative).'

(transitive)

- c. *Nangy hai Mimi sang kedzing muegia.*
 Nangy hurt Mimi send guest stuff
 'Nangy causes Mimi to send the guest some stuffs (adversative).'

(ditransitive)

- d. *Nangy hai Mimi bualo?ku.*
 Nangy hurt Mimi fall.over
 'Nangy causes Mimi to fall over (adversative).'

(unaccusative)

- e. *Nangy hai Mimi u gao.*
 Nangy hurt Mimi have dog
 'Nangy causes Mimi to own a dog (adversative).'

(stative)

- f. *Nangy hai Mimi gia gao.*
 Nangy hurt Mimi fear dog
 'Nangy causes Mimi to fear dog (adversative).'

(psych verb)

In contrast, the embedded predicates in the *kə* ‘give’-causative (149) and two *bun* ‘separate’-causatives (150-151) can only be unergatives, transitives and ditransitives. Unaccusatives, statives and psych verbs cannot be their embedded predicates. This suggests these three causatives require their embedded structures to have an external argument or a layer where the external argument can be connected, echoing the recursive VoiceP analysis in Chapter 3.

(149) The *kə* ‘give’-causative:

a. *Nangy kə Mimi tsao.*

Nangy give Mimi run

‘Nangy causes Mimi to run.’

(unergative)

b. *Nangy kə Mimi tsia muegia.*

Nangy give Mimi eat stuff

‘Nangy causes Mimi to eat some foodstuffs.’

(transitive)

c. *Nangy kə Mimi sang kedzing muegia.*

Nangy give Mimi send guest stuff

‘Nangy causes Mimi to send the guest some stuffs.’

(ditransitive)

d. **Nangy kə Mimi bualo?ku.*

Nangy give Mimi fall.over

Intended: ‘Nangy causes Mimi to fall over.’

(unaccusative)

e. **Nangy kə Mimi u gao.*

Nangy give Mimi have dog

Intended: ‘Nangy causes Mimi to own a dog.’

(stative)

- f. * *Nangy kə Mimi gia gao.*
 Nangy give Mimi fear dog
 Intended: 'Nangy causes Mimi to fear dog.'

(psych verb)

(150) The courteous *bun* 'separate'-causative:

- a. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(unergative)

- b. *Nangy bun Mimi tsia muegia.*
 Nangy separate Mimi eat stuff
 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(transitive)

- c. *Nangy bun Mimi sang kedzing muegia.*
 Nangy separate Mimi send guest stuff
 'Nangy causes Mimi to send the guest some stuffs by giving precedence to Mimi out of courtesy.'

(ditransitive)

- d. * *Nangy kə Mimi u gao.*
 Nangy give Mimi have dog
 Intended: 'Nangy causes Mimi to own a dog by giving precedence to Mimi out of courtesy.'

(stative)

e. * *Nangy bun Mimi bualo?ku.*
 Nangy separate Mimi fall.over
 Intended: 'Nangy causes Mimi to fall over by giving precedence to Mimi out of courtesy.'
 (unaccusative)

f. * *Nangy bun Mimi gia gao.*
 Nangy separate Mimi fear dog
 Intended: 'Nangy causes Mimi to fear dog by giving precedence to Mimi out of courtesy.'
 (psych verb)

(151) The permissive *bun* 'separate'-causative:

a. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 'Nangy lets Mimi run.'
 (unergative)

b. *Nangy bun Mimi tsia muegia.*
 Nangy separate Mimi eat stuff
 'Nangy lets Mimi eat some foodstuffs.'
 (transitive)

c. *Nangy bun Mimi sang kedzing muegia.*
 Nangy separate Mimi send guest stuff
 'Nangy lets Mimi send the guest some stuffs.'
 (ditransitive)

d. * *Nangy kə Mimi u gao.*
 Nangy give Mimi have dog
 Intended: 'Nangy lets Mimi own a dog.'
 (stative)

- e. * *Nangy bun Mimi bualo?ku.*
 Nangy separate Mimi fall.over
 Intended: 'Nangy lets Mimi fall over.'

(unaccusative)

- f. * *Nangy bun Mimi gia gao.*
 Nangy separate Mimi fear dog
 Intended: 'Nangy lets Mimi fear dog.'

(psych verb)

Second, the embedded predicates of these causatives show no difference when it comes to the telicity property. In Teochew, *soi* 'wash' is an atelic predicate (152a) and *soi-di?* 'finish washing' in the form of VV resultative compounds (cf. (10)) is a telic one (152b).

- (152) a. i. * *Mimi do bua diamtseng nei soi sakou.*
 Mimi at half hour inside wash clothes
 Intended: 'Mimi washes clothes in half an hour.'

('in X time')

- ii. *Mimi soi bua diamtseng sakou.*
 Mimi wash half hour clothese
 'Mimi washes clothes for half an hour.'

('for X time')

- b. i. *Mimi do bua diamtseng nei soi-di? sakou.*
 Mimi at half hour inside wash-complete clothes
 'Mimi finishes washing clothes in half an hour.'

('in X time')

- ii. * *Mimi soi-di? bua diamtseng sakou.*
 Mimi wash-complete half hour clothes
 Intended: 'Mimi finishes washing clothes for half an hour.'

('for X time')

Both the telic and atelic predicates are grammatical in the embedded structures of all Teochew causatives (153-157).

(153) The *mue* 'make'-causative:

- a. *Nangy mue Mimi soi sakou.*
Nangy make Mimi wash clothes
'Nangy makes Mimi wash clothes.'
- b. *Nangy mue Mimi soi-di? sakou.*
Nangy make Mimi wash-complete clothes
'Nangy makes Mimi finish washing clothes.'

(154) The *kə* 'give'-causative:

- a. *Nangy kə Mimi soi sakou.*
Nangy give Mimi wash clothes
'Nangy causes Mimi to wash clothes.'
- b. *Nangy kə Mimi soi-di? sakou.*
Nangy give Mimi wash-complete clothes
'Nangy causes Mimi to finish washing clothes.'

(155) The *hai* 'hurt'-causative:

- a. *Nangy hai Mimi soi sakou.*
Nangy hurt Mimi wash clothes
'Nangy causes Mimi to wash clothes (adversative).'
- b. *Nangy hai Mimi soi-di? sakou.*
Nangy hurt Mimi wash-complete clothes
'Nangy causes Mimi to finish washing clothes (adversative).'

(156) The courteous *bun* 'separate'-causative:

- a. *Nangy bun Mimi soi sakou.*
Nangy separate Mimi wash clothes
'Nangy causes Mimi to wash clothes by giving precedence to Mimi out of courtesy.'

- b. *Nangy bun Mimi soi-di? sakou.*
 Nangy separate Mimi wash-complete clothes
 ‘Nangy causes Mimi to finish washing clothes by giving precedence to Mimi out of courtesy.’

(157) The permissive *bun* ‘separate’-causative:

- a. *Nangy bun Mimi soi sakou.*
 Nangy separate Mimi wash clothes
 ‘Nangy lets Mimi wash clothes.’
- b. *Nangy bun Mimi soi-di? sakou.*
 Nangy separate Mimi wash-complete clothes
 ‘Nangy lets Mimi finish washing clothes.’

A summary of the selectivity restrictions of embedded predicates in the Teochew causatives is given in Table 4.1.

Table 4.1: Selectivity of embedded predicates in all Teochew causatives

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | ‘c.’ <i>bun</i> -caus. | ‘p.’ <i>bun</i> -caus. |
|------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| unergative | ✓ | ✓ | ✓ | ✓ | ✓ |
| transitive | ✓ | ✓ | ✓ | ✓ | ✓ |
| ditransitive | ✓ | ✓ | ✓ | ✓ | ✓ |
| unaccusative | ✓ | × | ✓ | × | × |
| stative | ✓ | × | ✓ | × | × |
| psych verb | ✓ | × | ✓ | × | × |
| atelic predicate | ✓ | ✓ | ✓ | ✓ | ✓ |
| telic predicate | ✓ | ✓ | ✓ | ✓ | ✓ |

Based on the data above, I conclude verbal decomposition of the embedded predicates in the spirit of generative semantics (e.g., *kill* means *cause to die*) (cf. Dowty, 1979; Ramchand, 2008)² plays no role when it comes to the causal event structural differences of these four causatives.

In the rest of this dissertation, I will only focus on the syntactically-oriented event structural interpretations composed by the causative verb and the embedded

²But see Fodor (1970) for a contrastive view.

predicate in each causative construction, showing that they can differ in at least four dimensions, i.e., (i) direct vs. indirect (Section 4.2), (ii) deterministic vs. probabilistic (Section 4.3), (iii) attitude-neutral vs. expressing the speaker's attitude (Section 4.4) and (iv) permissive vs. non-permissive (Section 4.5). In the same spirit of *Causal Pluralism* (see Godfrey-Smith (2009) for review purposes), a summary of the plural instantiations of causal relations is given in Section 4.6.

4.2 DIMENSION I: DIRECT VS. INDIRECT

4.2.1 PREVIOUS DISCUSSION

Linguists often differentiate two subtypes of causative constructions, *direct causatives* and *indirect causatives*. There are two kinds of uses for this distinction.

The first type of the distinction between direct and indirect causatives is defined in terms of *structure: lexical* (158a) vs. *productive/morphosyntactic* (158b) causative (e.g., Fodor, 1970; Shibatani, 1976; McCawley, 1978; DeLancey, 1984; Bittner, 1999; Wolff, 2003). In the case of lexical causatives, causality is understood as a part of the lexical meaning of the verb; in the case of productive/morphosyntactic causatives, causality is understood as a part of the meaning of the verbal structure. A fine distinction can be made within the category of morphosyntactic causatives; that is *morphological* vs. *periphrastic/analytic* causative. For example, the geminate causative in Sason Arabic in (29) belongs to the former, while all the Teochew causatives under exploration in this dissertation belong to the latter.

- (158) a. *Mimi melted the candy.*
b. *Mimi caused the candy to melt.*

This dissertation focus on periphrastic causatives, which have been given special attention in the literature, for example, due to the classic *faire-infinitif* FI (140a) vs. *faire-par* FP (140b) distinction in Romance languages (e.g., Kayne, 1975; Zubizarreta, 1985; Burzio, 1986; Guasti, 1996; Ippolito, 2000; Folli and Harley, 2007; Torrego, 2010; Pitteroff and Campanini, 2013) (see Section 3.4.2.1).

The second type of the distinction between direct and indirect causatives is defined in terms of *interpretation*, i.e., the (temporal) closeness between the cause and the result (Nedjalkov and Silnitsky (1973); see the definition in (159) and a similar one given in Levin and Rapport Hovav (1999) (160)), or between the participants in a causal chain (Masica (1976); see the definition in (161)).

(159) ‘In the case of distant causation there is a mediated relationship between the causing subject and the caused state in which a greater or lesser independence of the cause subject is actualized in its initiation (or failure to make an initiation) of the state s_j . This mediation often appears in an actualization of a certain time interval between the causing s_j and caused (s_j) states.’

(Nedjalkov and Silnitsky, 1973)

(160) a. Indirect: ‘a causative event structure consisting of two subevents formed from the conflation of temporally independent events’
 b. Direct: ‘a simple event structure formed from the conflation of two temporally dependent ‘co-identified’ events’

(Levin and Rapport Hovav, 1999)

(161) ‘A causative verb denotes an action that calls forth a particular action or condition in another person or object. This causation may be principally of two kinds, ‘distant’ and ‘contactive’. In the latter, the agent does something to the object, bringing about its new condition by direct contact; in

the former he makes use of an intermediary agent and serves only as the 'instigator' of the act.'

(Masica, 1976)

There are also some interesting discussion trying to connect these two uses of terms. Shibatani and Prashant (2002) argues that these two notions of (in)directness are related: lexical causatives tend to be direct in the interpretation sense, while morphological/syntactic ones tend to be indirect. In contrast, based on Hindi/Urdu causatives, Neeleman and van de Koot (2012) and Ramchand (2014) argue that such a correlation does not exist. All Teochew periphrastic causatives under exploration in this dissertation are indirect causatives in terms of the structural sense, therefore proving a perfect case to test which position is empirically true. We will see that the Teochew case is in favor of the position of Ramchand (2014).

Given *event* is defined as temporal-spatial things, i.e., concrete particular located in time and space (Davidson, 1967), the interpretative (in)directness also looks at inter-eventive temporal (159-160) and spatial relations. In the rest of this section, I will start by exploring the temporal directness properties of the causal event structural interpretations of all Teochew causatives first (Section 4.2.2), then move to the spatial one (Section 4.2.3). In addition, in some previous literature, there is also some discussion of the participant-based (in)directness (see (161)) and Ramchand (2014) argues that a participant-based causal relation deviates from event-based one, i.e., the latter is primary while the former is licensed in a particular event structure configuration. By looking at the acceptability of mediations, i.e., intermediary agents, in each Teochew causative, I will show that, at least in the case of Teochew, this is not true (Section 4.2.4). In other words, an interpretative

(in)directness should be defined in a three-dimensional way, i.e., event (both time and space) and participant (Section 4.2.5).

4.2.2 TEMPORAL (IN)DIRECTNESS

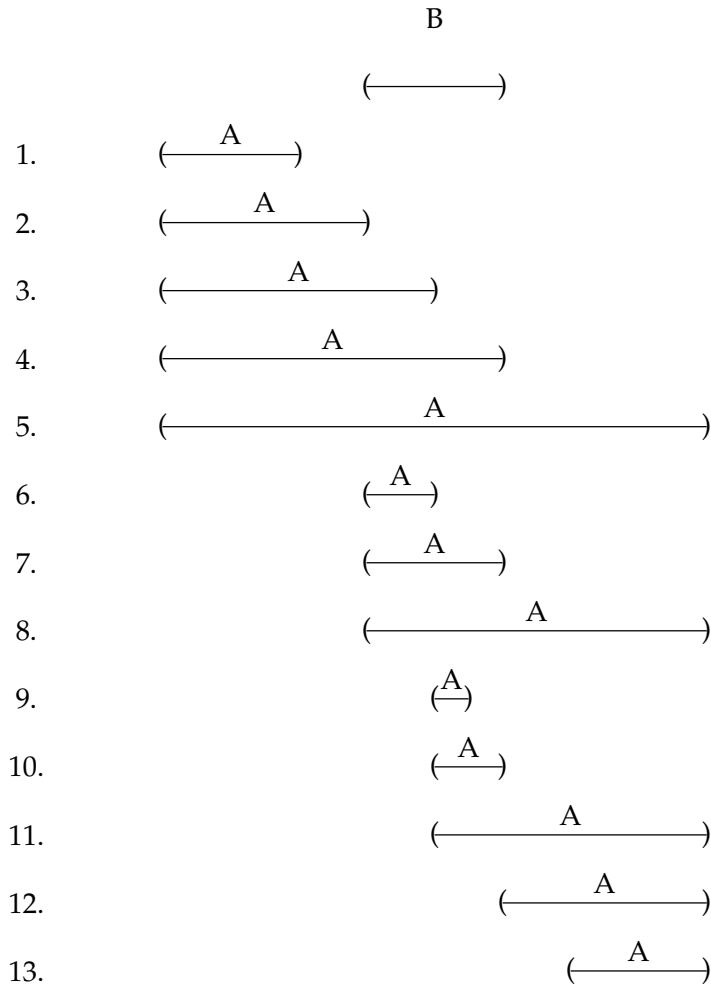
In terms of temporal (in)directness, Grano (2015) explicitly classifies three logically possible temporal relations holding between two events discussed in (162).

(162) Three logically possible temporal relations holding between two events, i.e., e_1 and e_2 (Grano, 2015):

- a. *Posteriority*: e_1 follows e_2
- b. *Simultaneity*: e_1 overlaps with e_2
- c. *Anteriority*: e_1 precedes e_2

As we can see, events are evaluated at instances of time in Grano (2015). However, as pointed out by Kuhn and Portner (2002), some sentences of natural language seem to describe events using extended temporal periods, and such periods can be regarded as comprising continuous stretches of instances of time; therefore, ‘temporal relations among intervals are more diverse than those among instants’. Based on these, Kuhn and Portner (2002) list the following thirteen possible relations that an interval A can bear to the fixed interval B, as is shown in (163).

(163) Thirteen possible temporal relations:



Based on Kuhn and Portner (2002), I list the thirteen possible temporal relations between two events in (165), using the terminologies defined in (164) for clarity.

(164) Terminologies used to classify possible temporal relations holding between two events, i.e., e_1 and e_2 :

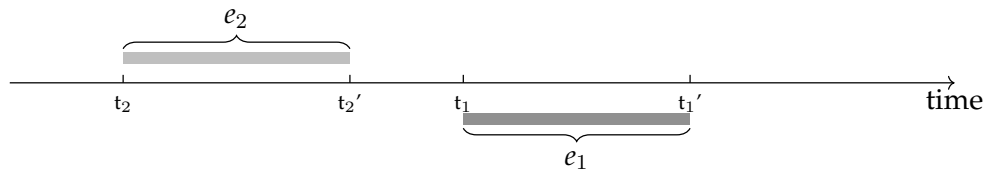
- a. *Posteriority*: the starting time t_1 of e_1 follows the start time t_2 of e_2 .
- b. *Anteriority*: the starting time t_1 of e_1 precedes the starting time t_2 of e_2 .
- c. *Simultaneity*: the starting time t_1 of e_1 is same as the start time t_2 of e_2 .

- d. *Time gap*: a time period between the ending time $t_{x'}$ of one event e_x and the starting time t_y of the other event e_y .
- e. *Immediate adjacency*: the ending time $t_{x'}$ of one event e_x is the starting time t_y of the other event e_y .
- f. *Overlapping*: the time period of e_1 (partially) overlaps with the time period of e_2 .
- g. *Embedding*: the starting time t_x of one event e_x is earlier than or the same as the starting time t_y of the other event e_y , and the ending times $t_{x'}$ is later than or the same as the ending time $t_{y'}$.

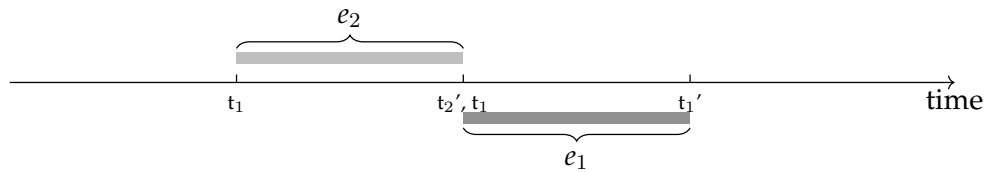
(165) Thirteen logically possible temporal relations holding between two events, i.e., e_1 and e_2

a. Posteriority:

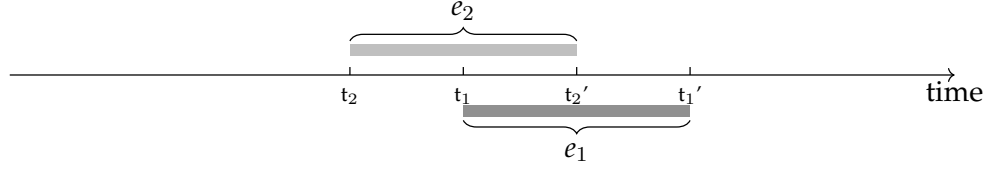
i. Non-overlapping posteriority with a time gap:



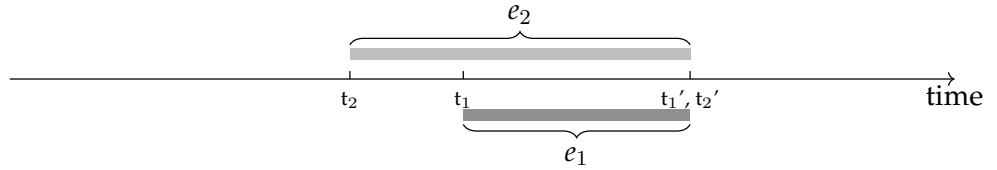
ii. Overlapping posteriority with an immediate adjacency:



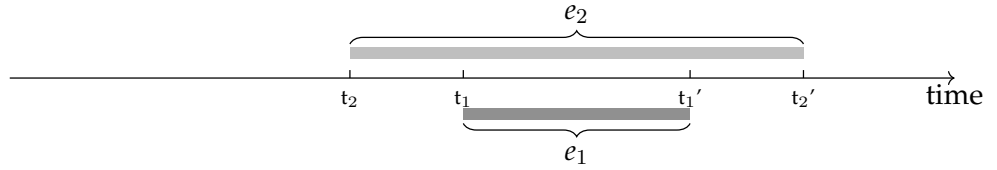
iii. Non-embedding posteriority overlapping:



iv. Embedding posteriority with the same ending:

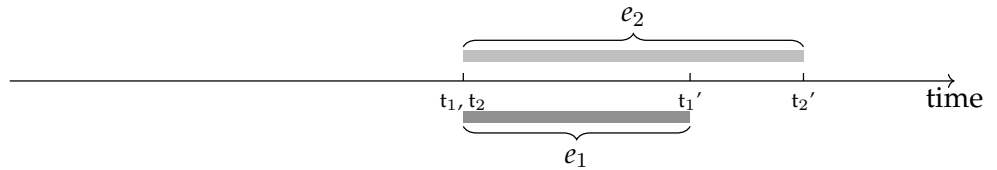


v. Embedding posteriority with an e_2 late ending:

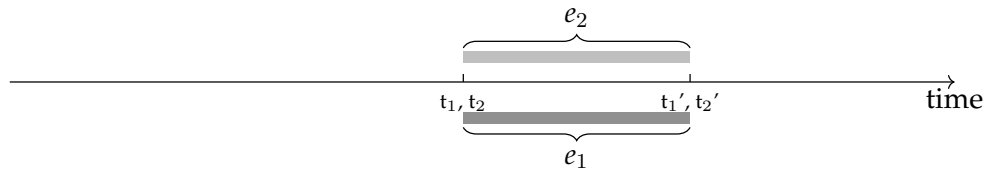


b. Simultaneity

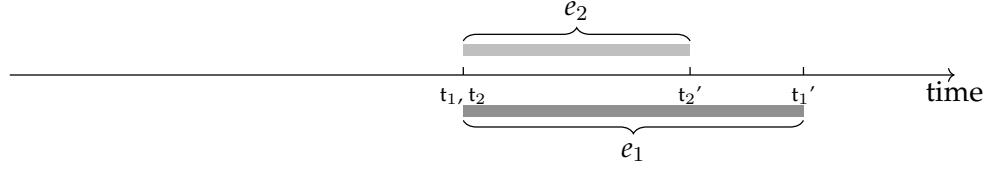
i. Embedding simultaneity with an e_2 late ending:



ii. Complete overlapping:

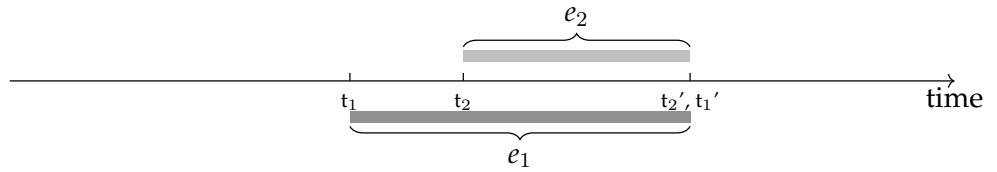


iii. Embedding simultaneity with an e_1 late ending:

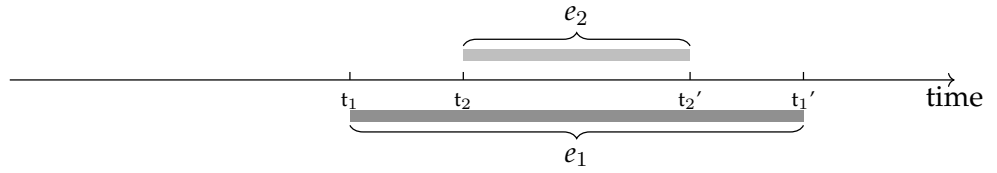


c. Anteriority

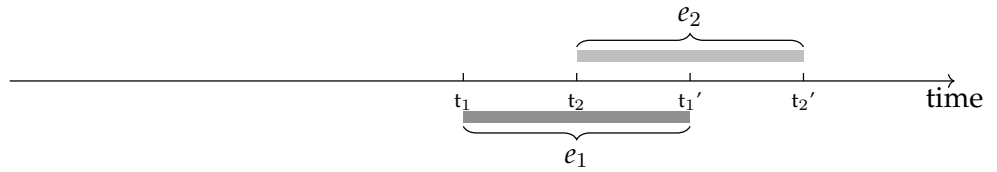
i. Embedding anteriority with the same ending:



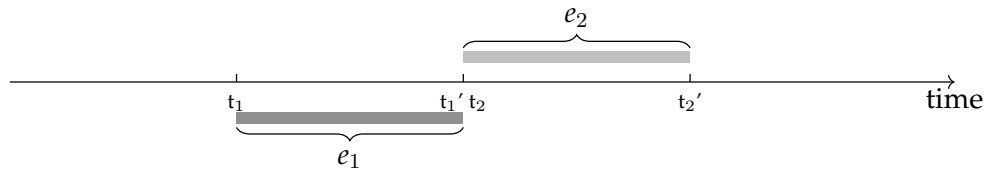
ii. Embedding anteriority with an e_1 late ending:



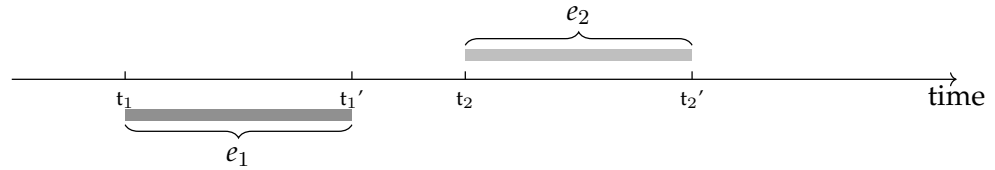
iii. Non-embedding anteriority overlapping:



iv. Non-overlapping anteriority with an immediate adjacency:



v. Non-overlapping anteriority with a time gap:



In the following discussion, I will assume the caused event as e_1 and the causing event as e_2 .

4.2.2.1 ACTIVITY VERBS AS EMBEDDED PREDICATES

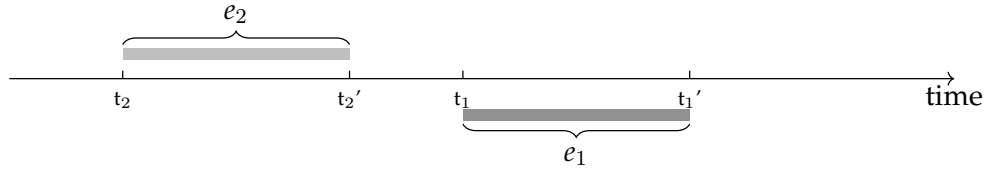
4.2.2.1.1 Posteriority. The *posteriority* property of the causal event structural interpretation should be the most common one, given the intuitive perception of causality captured by the classic definition of Hume (1748) in (166), which influences the counterfactual theory in Lewis (1973) and then is adopted as the CAUSE operator in Dowty (1979).

(166) The definition of causation in Hume (1748):

‘We may define a cause to be an object *followed by* another, and where all the objects, similar to the first, are followed by objects similar to the second. Or in other words, where, if the first object had not been, the second never had existed.’

This turns out true for all Teochew causatives. However, they do differ in which subtypes of posteriority they allow.

First, non-overlapping posteriority with a time gap.



It turns out that while the *kə* ‘give’-causative, the *hai* ‘hurt’-causative and the *bun* ‘separate’-causative with both readings allow a time gap between the causing event and the caused event, the *mue* ‘make’-causative does not. This is shown by using *e-tsek-miao* ‘one second later’ (167) and *ngong-huntsang ao* ‘five minutes later’ (168) to modify the caused event, or using *tsadzi?* ‘yesterday’ and *gimdzi?* ‘today’ to modify the causing event and the caused event respectively (169).³

(167) One-second temporal separation between two events:

- a. ?? *Nangy mue Mimi e-tsek-miao tsao.*
 Nangy make Mimi under-one-second run

Intended: ‘Nangy makes Mimi run one second later.’

(*mue*-causative)

- b. *Nangy kə Mimi e-tsek-miao tsao.*
 Nangy give Mimi under-one-second run

‘Nangy causes Mimi to run one second later.’

(Lit. ‘Nangy gives the one-second-later running event to Mimi.’)

(*kə*-causative)

- c. *Nangy hai Mimi e-tsek-miao tsao.*
 Nangy hurt Mimi under-one-second run

‘Nangy causes Mimi to run one second later (adversative).’

(*hai*-causative)

³Teochew consultants have confirmed that in these cases, the causing event is not interpreted as having a duration overlapping with the time period of the caused event.

d. *Nangy bun Mimi e-tsek-miao tsao.*
 Nangy separate Mimi under-one-second run
 ‘Nangy causes Mimi to run one second later by giving precedence to
 Mimi out of courtesy.’
 (courteous *bun*-causative)

e. *Nangy bun Mimi e-tsek-miao tsao.*
 Nangy separate Mimi under-one-second run
 ‘Nangy lets Mimi run one second later.’
 (permissive *bun*-causative)

(168) Modify the caused event by *ngong-hun-tsang ao* ‘five minutes later’

a. # *Nangy mue Mimi ngong-huntsang ao tsao.*
 Nangy make Mimi five-minute later run
 Intended: ‘Nangy makes Mimi run five minutes later.’
 (*mue*-causative)

b. *Nangy kə Mimi ngong-huntsang ao tsao.*
 Nangy give Mimi five-minute later run
 ‘Nangy causes Mimi to run five minutes later.’
 (Lit. ‘Nangy gives the five-minute later running event to Mimi.’)
 (*kə*-causative)

c. *Nangy hai Mimi ngong-huntsang ao tsao.*
 Nangy hurt Mimi five-minute later run
 ‘Nangy causes Mimi to run five minutes later (adversative).’
 (*hai*-causative)

d. *Nangy bun Mimi ngong-huntsang ao tsao.*
 Nangy separate Mimi five-minute later run
 ‘Nangy causes Mimi to run five minutes later by giving precedence to
 Mimi out of courtesy.’
 (courteous *bun*-causative)

- e. *Nangy bun Mimi ngong-huntsang ao tsao.*
 Nangy separate Mimi five-minute later run
 ‘Nangy lets Mimi run five minutes later.’

(permissive *bun*-causative)

(169) Modify the causing event by *tsadzi?* ‘yesterday’ and modify the caused event by *gimdzi?* ‘today’:

- a. # *Nangy tsadzi? mue Mimi gimdzi? tsao.*
 Nangy yesterday make Mimi today run
 Intended: ‘Yesterday, Nangy makes Mimi run today.’

(*mue*-causative)

- b. *Nangy tsadzi? kə Mimi gimdzi? tsao.*
 Nangy yesterday give Mimi today run
 ‘Yesterday, Nangy causes Mimi to run today.’

(Lit. ‘Nangy gives the one-day-later running event to Mimi.’)

(*kə*-causative)

- c. *Nangy tsadzi? hai Mimi gimdzi? tsao.*
 Nangy yesterday hurt Mimi today run
 ‘Yesterday, Nangy caused Mimi to run today (adversative).’

(*hai*-causative)

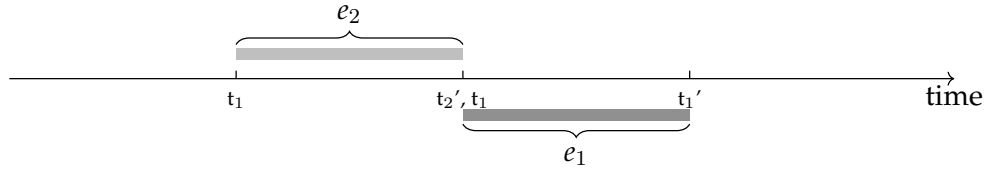
- d. *Nangy tsadzi? bun Mimi gimdzi? tsao.*
 Nangy yesterday separate Mimi today run
 ‘Yesterday, Nangy caused Mimi to run today by giving precedence to Mimi out of courtesy.’

(courteous *bun*-causative)

- e. *Nangy tsadzi? bun Mimi gimdzi? tsao.*
 Nangy yesterday separate Mimi today run
 ‘Yesterday, Nangy let Mimi run today.’

(permissive *bun*-causative)

Second, overlapping posteriority with an immediate adjacency.



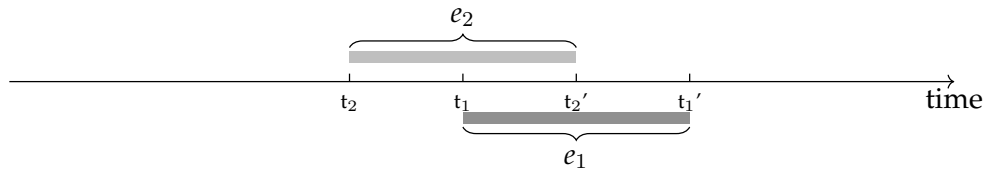
The data in (170) establish that all Teochew causatives allow a relation of immediate adjacency between the caused event e_1 and the causing event e_2 , since their caused events can be modified by *tsiaʔkeʔ* ‘immediately’.

- (170) a. *Nangy mue Mimi tsiaʔkeʔ tsao.*
 Nangy make Mimi immediately run
 ‘Nangy makes Mimi run immediately.’
(*mue*-causative)
- b. *Nangy kə Mimi tsiaʔkeʔ tsao.*
 Nangy give Mimi immediately run
 ‘Nangy causes Mimi to run immediately.’
 (Lit. ‘Nangy gives the immediate running event to Mimi.’)
(*kə*-causative)
- c. *Nangy hai Mimi tsiaʔkeʔ tsao.*
 Nangy hurt Mimi immediately run
 ‘Nangy causes Mimi to run immediately (adversative).’
(*hai*-causative)
- d. *Nangy bun Mimi tsiaʔkeʔ tsao.*
 Nangy separate Mimi immediately run
 ‘Nangy causes Mimi to run immediately by giving precedence to Mimi out of courtesy.’
(courteous *bun*-causative)

- e. *Nangy bun Mimi tsiaʔkeʔ tsao.*
 Nangy separate Mimi immediately run
 'Nangy lets Mimi run immediately.'

(permissive *bun*-causative)

Third, non-embedding posterior overlapping.



(171-174) shows that in a context allowing such kind of temporal partial overlapping, all Teochew causatives are felicitous.

(171) Context: *Xing is brushing Mimi's fur. After he does so for about a minute, Mimi the cat starts to purr due to enjoyment and comfort, and continues even after Xing stops brushing it.*

- a. *Xing mue Mimi pahu.*
 Xing make Mimi purr
 'Xing makes Mimi purr.'

(*mue*-causative)

- b. *Xing kə Mimi pahu.*
 Xing give Mimi purr
 'Xing causes Mimi to purr.'

(*kə*-causative)

(172) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. After a short while, Mimi perceives the courtesy intention from Nangy and walks to the food bowl and eats.*

Mimi keeps eating even though Nangy has stopped stepping back to show his courtesy.

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

‘Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.’

(courteous *bun*-causative)

- (173) Context: *Xing is mopping the floor. After he does so for a while, Mimi the cat starts to walk with unsteady steps since the floor is wet, and continues even after Xing finishes the mopping since the floor is not dry yet.*

Xing hai Mimi gia boi un.
Xing hurt Mimi walk NEG steady

‘Xing causes Mimi to walk in an unsteady way (adversative).’

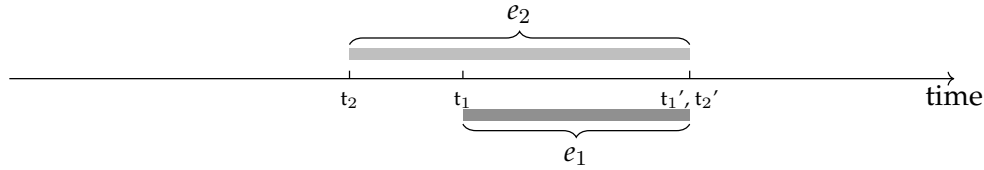
- (174) Context: *Mimi, the cat, wants to run up to the place on the bed Xing is lying on and looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. After about a minute, Mimi finally perceives the permission, jumps up to the bed, and slowly moves towards Xing. In the end, Mimi reaches the position Xing is lying on, even though Xing has stopped patting the bedding the moment Mimi jumps on the bed.*

Xing bun Mimi tsao gao sim-bi.
Xing separate Mimi run reach body-side

‘Xing lets Mimi run to his side.’

(permissive *bun*-causative)

Fourth, embedding posteriority with the same ending.



(175-178) shows that in a context allowing such kind of temporal partial overlapping, all Teochew causatives are felicitous.

(175) Context: *Xing is brushing Mimi's fur. After he does so for about a minute, Mimi, the cat, starts to purr due to enjoyment and comfort, but stops purring when Xing stops brushing it.*

- a. *Xing mue Mimi pahu.*
Xing make Mimi purr
'Xing makes Mimi purr.'

(mue-causative)

- b. *Xing kə Mimi pahu.*
Xing give Mimi purr
'Xing causes Mimi to purr.'

(kə-causative)

(176) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. After a short while, Mimi perceives the courtesy intention from Nangy and walks to the food bowl and eats. Mimi stops eating as soon as Nangy stops stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

- (177) Context: *Xing is mopping the floor. After he does so for a while, Mimi the cat starts to play with the mop because it likes moving items, which the speaker views as a 'bad' action since it will make Mimi become wet and dirty. When Xing finishes the mopping, Mimi also stops playing with the mop.*

Xing hai Mimi səng tuaba.
Xing hurt Mimi play mop

'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

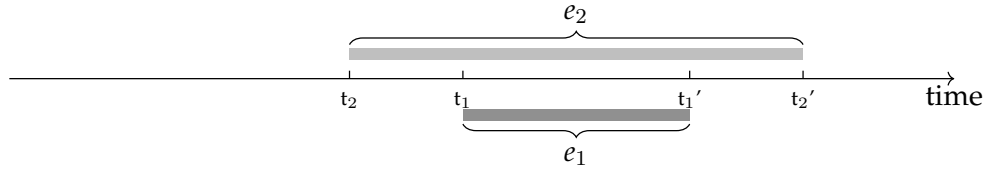
- (178) Context: *Mimi, the cat, wants to run up to the place on the bed Xing is lying on and it looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. After about a minute, Mimi finally perceives the permission, jumps up to the bed, and slowly moves towards Xing. In the end, Xing stops patting the bedding when Mimi reaches the position Xing is lying on.*

Xing bun Mimi tsao gao sim-bi.
Xing separate Mimi run reach body-side

'Xing lets Mimi run to his side.'

(permissive *bun*-causative)

Fifth, embedding posteriority with an e_2 late ending.



(179-182) shows that in a context allowing such kind of temporal partial overlapping, all Teochew causatives except the permissive *bun*-causative are felicitous.

(179) Context: *Xing is brushing Mimi's fur. After he does so for about a minute, Mimi the cat starts to purr due to enjoyment and comfort, but it stops purring at the same point, though Xing is still brushing it.*

- a. *Xing mue Mimi pahu.*
 Xing make Mimi purr
 'Xing makes Mimi purr.'

(*mue*-causative)

- b. *Xing kə Mimi pahu.*
 Xing give Mimi purr
 'Xing causes Mimi to purr.'

(*kə*-causative)

(180) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. After a short while, Mimi perceives the courtesy intention from Nangy and walks to the food bowl and eats. Mimi stops eating even though Nangy keeps stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

- (181) Context: *Xing is mopping the floor. After he does so for a while, Mimi the cat starts to play with the mop because it likes moving items, which the speaker views as a 'bad' action since it will make Mimi become wet and dirty. After a while, Mimi stops playing with the mop because it is tired, even though Xing is still mopping the floor.*

Xing hai Mimi səng tuaba.
Xing hurt Mimi play mop

'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

- (182) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. After about a minute, Mimi finally perceives the permission, jumps up to the bed, and slowly moves towards Xing. However, Mimi, at some point, stops moving even when Xing is still patting the bedding, indicating that he permits Mimi to come closer.*

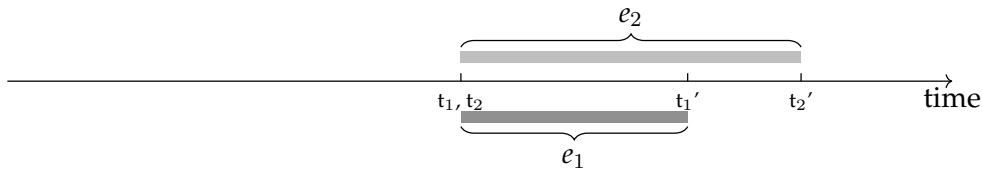
Xing bun Mimi kaogən.
Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close to him.'

(permissive *bun*-causative)

To summarize, when it comes to different subtypes of posteriority relations, except the *mue* ‘make’-causative disallows the causal relation featuring non-overlapping posteriority with a time gap, and the permissive *bun* ‘separate’-causative disallows the causal relation featuring embedding posteriority without an e_2 late ending, all Teochew causatives allow all subtypes of posteriority temporal relations.

4.2.2.1.2 Simultaneity and anteriority. **Sixth, embedding simultaneity with e_2 late ending.**



The data in (183-186) show that it is impossible to do so in this scenario using periphrastic causatives.

(183) Context: *Xing is brushing Mimi’s fur. As soon as he touches Mimi, Mimi starts to purr because it really likes it. But after a while, Mimi stops to purr even though Xing is still brushing.*

- a. # *Xing mue Mimi pahu.*
 Xing make Mimi purr
 Intended: ‘Xing makes Mimi purr.’

(*mue*-causative)

- b. # *Xing kə Mimi pahu.*
 Xing give Mimi purr
 Intended: ‘Xing causes Mimi to purr.’

(*kə*-causative)

(184) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. As soon as Nangy starts stepping back, Mimi immediately walks to the food bowl and eats. Mimi stops eating even though Nangy keeps stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

Intended: 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

(185) Context: *Xing is mopping the floor. As soon as he does it, Mimi plays with the mop because it likes moving items, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. After a while, Mimi stops playing with the mop, even though Xing is still mopping the floor.*

Xing hai Mimi səng tuaba.
Xing hurt Mimi play mop

Intended: 'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

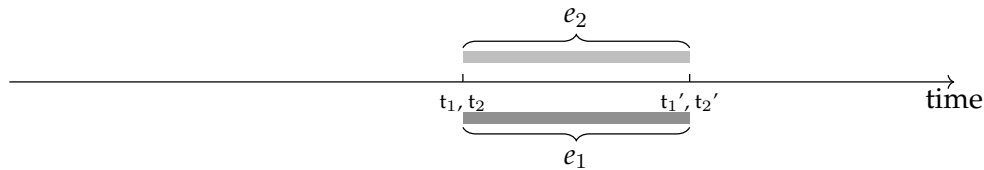
(186) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. As soon as Xing pats the bedding, Mimi perceives the permission, immediately jumps up to the bed, and slowly moves towards Xing. However, Mimi, at some point, stops moving even when Xing is still patting the bedding, indicating that he permits Mimi to come closer.*

Xing bun Mimi kaogən.
 Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close.'

(permissive *bun*-causative)

Seventh, complete overlapping.



The data in (187-190) show that it is impossible to do so in this scenario using Teochew periphrastic causatives.

(187) Context: *Xing is brushing Mimi's fur. As soon as he touches Mimi, Mimi starts to purr because it really likes it. But Mimi stops to purr as soon as Xing stops brushing.*

a. # *Xing mue Mimi pahu.*
 Xing make Mimi purr
 Intended: 'Xing makes Mimi purr.'

(*mue*-causative)

b. # *Xing kə Mimi pahu.*
 Xing give Mimi purr
 Intended: 'Xing causes Mimi to purr.'

(*kə*-causative)

(188) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. As soon as Nangy starts stepping back, Mimi immediately walks to the food bowl and eats. Mimi stops eating as soon as Xingy stops stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

Intended: 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

(189) Context: *Xing is mopping the floor. As soon as he does it, Mimi plays with the mop because it likes moving items, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. But Mimi stops playing with the mop as soon as Xing stops mopping the floor.*

Xing hai Mimi səng tuaba.
Xing hurt Mimi play mop

Intended: 'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

(190) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. As soon as Xing pats the bedding, Mimi perceives the permission, immediately jumps up to the bed, and slowly moves towards Xing. As soon as Mimi reaches a position close to him, Xing stops patting the bedding and Mimi also stops immediately.*

Xing bun Mimi kaogən.
Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close.'

(permissive *bun*-causative)

Interestingly, native speakers report that such a scenario is compatible with VV resultative compound (191).

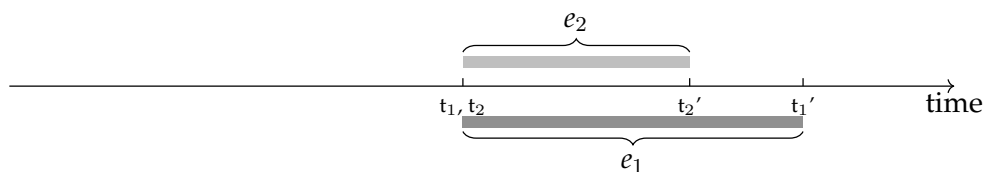
- (191) Context: *Nangy wants Mimi to play with him, but Mimi is only interested in sleeping. In order to make Mimi move, Nangy pushes him. Every time as soon as Nangy pushes Mimi, Mimi moves a little bit but stops immediately when Nangy stops pushing.*

Nangy tui-dingdang Mimi.

Nangy push-move Mimi

'Mimi causes Mimi to move by pushing him.'

Eighth, embedding simultaneity with an e_1 late ending.



The data in (192-195) show that it is impossible to do so in this scenario using Teochew periphrastic causatives.

- (192) Context: *Xing is brushing Mimi's fur. As soon as he touches Mimi, Mimi starts to purr because it really likes it. Mimi even continues to purr even after Xing stops brushing.*

a. # *Xing mue Mimi pahu.*

Xing make Mimi purr

Intended: 'Xing makes Mimi purr.'

(*mue*-causative)

b. # *Xing kə Mimi pahu.*

Xing give Mimi purr

Intended: 'Xing causes Mimi to purr.'

(*kə*-causative)

(193) Context: *Xing is mopping the floor. As soon as he does it, Mimi plays with the mop because it likes moving items, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. Mimi keeps playing with the mop and continues even after Xing stops mopping the floor.*

Xing hai Mimi sɔng tuaba.
Xing hurt Mimi play mop

Intended: 'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

(194) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. As soon as Nangy starts stepping back, Mimi immediately walks to the food bowl and eats. Mimi continues eating even though Nangy stops stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

Intended: 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(*courteous bun*-causative)

(195) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it looks at Xing for permission. Xing, therefore, starts patting the bedding near him, indicating that he allows it. As soon as Xing pats the bedding, Mimi perceives the permission, immediately jumps up to the bed, and slowly moves towards Xing. As soon as Mimi reaches a position close to him, Xing stops patting the bedding, but Mimi is still moving towards him.*

Xing bun *Mimi kaogən.*
Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close.'

(permissive *bun*-causative)

Again, native speakers report that such a scenario is compatible with VV resultative compound (196).

(196) Context: *Nangy shows up behind Mimi but Mimi does not notice this. As soon as Nangy touches upon Mimi, the latter immediately runs away. Even though Nangy cannot touch him since he is too far away, Mimi keeps running straight to the other room.*

Nangy gia-tsao *Mimi.*
Nangy frighten-run Mimi

'Mimi causes Mimi to run by frightening him.'

The data above suggests a causal relation with a simultaneous start is impossible for all Teochew periphrastic causatives. This is further shown by the fact that all these Teochew causatives are incompatible with a subordinate clause using *dang sigan* 'at the same time' to indicate the simultaneous happening of the causing event (197a-197e). In contrast, native speakers report that they prefer using VV resultative compounds in such scenarios (197f).

(197) a. *Nangy mue Mimi tsao, # Mimi dang sigan tsu tsao o.*
Nangy make Mimi run Mimi same time then run PFV
Intended: 'Nangy makes Mimi run, and Mimi runs at the same time when Nangy does the causing event.'

(*mue*-causative)

- b. *Nangy kə Mimi tsao, # Mimi dang sigan tsu tsao o.*
 Nangy give Mimi run Mimi same time then run PFV
 Intended: 'Nangy causes Mimi to run, and Mimi runs at the same time when Nangy does the causing event.'
- (*kə*-causative)
- c. *Nangy hai Mimi tsao, # Mimi dang sigan tsu tsao o.*
 Nangy hurt Mimi run Mimi same time then run PFV
 Intended: 'Nangy causes Mimi to run (adversative), and Mimi runs at the same time when Nangy does the causing event.'
- (*hai*-causative)
- d. *Nangy bun Mimi tsao, # Mimi dang sigan tsu tsao o.*
 Nangy separate Mimi run Mimi same time then run PFV
 Intended: 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy, and Mimi runs at the same time when Nangy does the causing event.'
- (courteous *bun*-causative)
- e. *Nangy bun Mimi tsao, # Mimi dang sigan tsu tsao o.*
 Nangy separate Mimi run Mimi same time then run PFV
 Intended: 'Nangy lets Mimi run, and Mimi runs at the same time when Nangy does the causing event.'
- (permissive *bun*-causative)
- f. *Nangy dui tsao Mimi, Mimi dang sigan tsu tsao o.*
 Nangy chase run Mimi Mimi same time then run PFV
 'Nangy causes Mimi to run by chasing it, and Mimi runs at the same time when Nangy does the causing event.'
- (VV resultative compound)

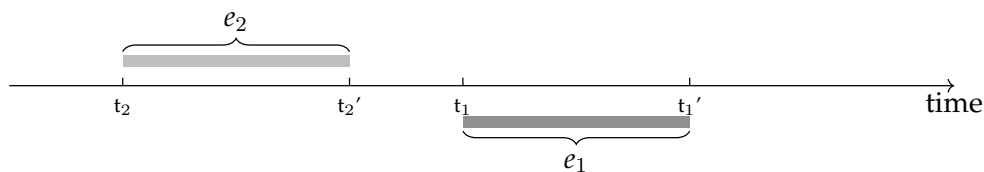
These suggest at least for Teochew periphrastic causatives, a causal relation featuring simultaneity is not possible; however, such causal relation is possible for VV resultative compounds.

When it comes to those anterior causal relations, given the classic definition of causation in Hume (1748) shown in (166), we should never find a case where the starting time of the caused event is before the starting time of the causing event. This prediction is borne out and supported by the fieldwork data collected in Appendix B.

4.2.2.2 STATIVES AND PSYCH VERBS AS EMBEDDED PREDICATES

As is shown in Table 4.1, the *mue* 'make'-causative and the *hai* 'hurt'-causative allow their embedded predicates to be unaccusative, stative and psych verbs, in contrast to the other periphrastic causatives. While an unaccusative verb can be an activity verb like 'fall over', stative and psych verbs cannot. The following will look at the temporal (in)directness between the causing event and the caused event/state when the latter is denoted by a stative or psych verb.

4.2.2.2.1 Posteriority. **First, non-overlapping posteriority with a time gap.**



As is shown in (198-200), while the *hai* 'hurt'-causative allows such a causal relation, the *mue* 'make'-causative disallows it. It is the same as the case with activity verbs as embedded predicates.

(198) One-second temporal separation between two events:

a. ?? *Nangy mue Mimi e-tsek-miao u siokao.*

Nangy make Mimi under-one-second own wound

Intended: 'Nangy makes Mimi have wounds one second later.'

(*mue*-causative with an embedded stative verb)

b. ?? *Nangy mue Mimi e-tsek-miao geʔsim.*

Nangy make Mimi under-one-second sad

Intended: 'Nangy makes Mimi sad one second later.'

(*mue*-causative with an embedded psych verb)

c. *Nangy hai Mimi e-tsek-miao u siokao.*

Nangy hurt Mimi under-one-second own wound

'Nangy causes Mimi to have wounds one second later (adversative).'

(*hai*-causative with an embedded stative verb)

d. *Nangy hai Mimi e-tsek-miao geʔsim.*

Nangy hurt Mimi under-one-second sad

'Nangy causes Mimi to be sad one second later (adversative).'

(*hai*-causative with an embedded psych verb)

(199) Modify the caused event by *ngong-hun-tsang ao* 'five minutes later'

a. # *Nangy mue Mimi ngong-huntsang ao u siokao.*

Nangy make Mimi five-minute later own wound

Intended: 'Nangy makes Mimi have wounds five minutes later.'

(*mue*-causative with an embedded stative verb)

b. # *Nangy mue Mimi ngong-huntsang ao geʔsim.*

Nangy make Mimi five-minute later sad

Intended: 'Nangy makes Mimi be sad five minutes later.'

(*mue*-causative with an embedded psych verb)

c. *Nangy hai Mimi ngong-huntsang ao u siokao.*
 Nangy hurt Mimi five-minute later own wound
 ‘Nangy causes Mimi to have wounds five minutes later (adversative).’
 (*hai*-causative with an embedded stative verb)

d. *Nangy hai Mimi ngong-huntsang ao ge?sim.*
 Nangy hurt Mimi five-minute later sad
 ‘Nangy causes Mimi to be sad five minutes later (adversative).’
 (*hai*-causative with an embedded psych verb)

(200) Modify the causing event by *tsadzi?* ‘yesterday’ and modify the caused event by *gimdzi?* ‘today’:

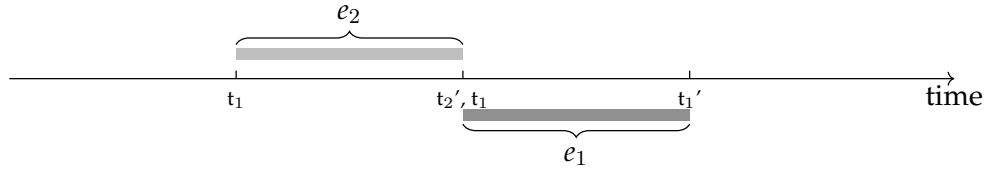
a. # *Nangy tsadzi? mue Mimi gimdzi? u siokao.*
 Nangy yesterday make Mimi today own wound
 Intended: ‘Yesterday, Nangy made Mimi have wounds today.’
 (*mue*-causative with an embedded stative verb)

b. # *Nangy tsadzi? kə Mimi gimdzi? tsao.*
 Nangy yesterday give Mimi today run
 Intended: ‘Yesterday, Nangy made Mimi run today.’
 (*mue*-causative with an embedded psych verb)

c. *Nangy tsadzi? hai Mimi gimdzi? u siokao.*
 Nangy yesterday hurt Mimi today own wound
 ‘Yesterday, Nangy caused Mimi to have wounds today (adversative).’
 (*hai*-causative with an embedded stative verb)

d. *Nangy tsadzi? bun Mimi gimdzi? ge?sim.*
 Nangy yesterday separate Mimi today sad
 ‘Yesterday, Nangy caused Mimi to be sad today (adversative).’
 (*hai*-causative with an embedded psych verb)

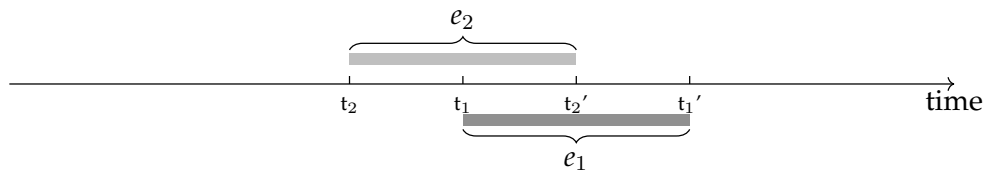
Second, overlapping posteriority with an immediate adjacency.



The data in (201) show that same as the case with an embedded activity verb, both the *mue* 'make'-causative and the *hai* 'hurt'-causative allow it.

- (201) a. *Nangy mue Mimi tsiaʔkeʔ u siokao.*
 Nangy make Mimi immediately own wound
 'Nangy makes Mimi have wounds immediately.'
 (*mue*-causative with an embedded stative verb)
- b. *Nangy mue Mimi tsiaʔkeʔ geʔsim.*
 Nangy make Mimi immediately sad
 'Nangy makes Mimi be sad immediately.'
 (*mue*-causative with an embedded psych verb)
- c. *Nangy hai Mimi tsiaʔkeʔ u siokao.*
 Nangy hurt Mimi immediately own wound
 'Nangy causes Mimi to have wounds immediately (adversative).'
 (*hai*-causative with an embedded stative verb)
- d. *Nangy hai Mimi tsiaʔkeʔ geʔsim.*
 Nangy hurt Mimi immediately sad
 'Nangy causes Mimi to be sad immediately (adversative).'
 (*hai*-causative with an embedded psych verb)

Third, non-embedding posterior overlapping.



(202-203) shows that same as the case with an embedded activity verb, both the *mue* 'make'-causative and the *hai* 'hurt'-causative allow it.

(202) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and, therefore, leaves a wound on Mimi. The wound starts bleeding a minute later, and Nangy stops biting after noticing it another minute later. But the wound keeps bleeding.*

a. *Nangy mue Mimi u huekao.*

Nangy make Mimi own blood.wound

'Nangy makes Mimi have a bleeding wound.'

(*mue*-causative with an embedded stative verb)

b. *Nangy hai Mimi u huekao.*

Nangy hurt Mimi own blood.wound

'Nangy causes Mimi to have a bleeding wound (adversative).'

(*hai*-causative with an embedded stative verb)

(203) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and therefore Mimi becomes sad a minute later. However, Nangy does not notice it till several minutes later, and Nangy stops biting then. But Mimi keeps being sad.*

a. *Nangy mue Mimi geʔsim.*

Nangy make Mimi sad

'Nangy makes Mimi be sad.'

(*mue*-causative with an embedded psych verb)

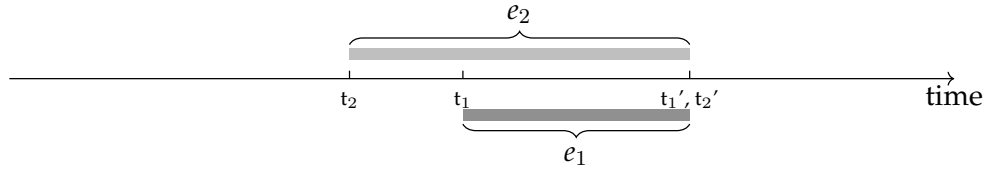
b. *Nangy hai Mimi geʔsim.*

Nangy hurt Mimi sad

'Nangy causes Mimi to be sad (adversative).'

(*hai*-causative with an embedded psych verb)

Fourth, embedding posteriority with the same ending.



(204-205) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative allow it.

(204) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Every time Nangy does something bad, Mimi observes it for a while and imitates Nangy's behavior. However, once Nangy stops his behaviors, Mimi also immediately stops the imitative action.*

- a. *Nangy mue Mimi u ts'igui sio.*
 Nangy make Mimi own bad action.look
 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

- b. *Nangy hai Mimi u ts'igui sio.*
 Nangy hurt Mimi own bad action.look
 'Nangy causes Mimi to have a bad-action look (adversative).'

(*hai*-causative with an embedded stative verb)

(205) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and therefore Mimi becomes sad. However, Nangy does not notice it till a minute later, and Nangy stops biting then. Mimi stops being sad immediately as well.*

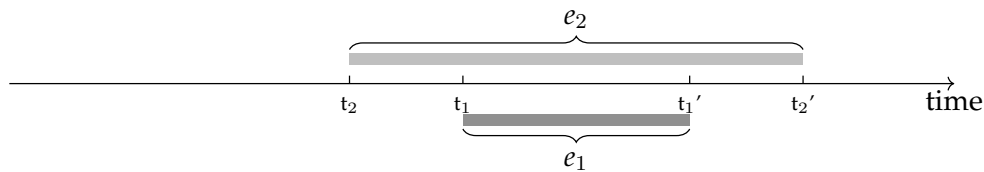
- a. *Nangy mue Mimi ge?sim.*
 Nangy make Mimi sad
 'Nangy makes Mimi be sad.'

(*mue*-causative with an embedded psych verb)

- b. *Nangy hai Mimi geʔsim.*
 Nangy hurt Mimi sad
 ‘Nangy causes Mimi to be sad (adversative).’

(*hai*-causative with an embedded psych verb)

Fifth, embedding posteriority with an e_2 late ending.



(206-207) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative allow it.

(206) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Every time Nangy does something bad, Mimi observes it for a while and imitates Nangy’s behavior. However, Mimi stops the imitative action before Nangy stops his behaviors.*

- a. *Nangy mue Mimi u ts’igui sio.*
 Nangy make Mimi own bad action.look
 ‘Nangy makes Mimi have a bad-action look.’

(*mue*-causative with an embedded stative verb)

- b. *Nangy hai Mimi u ts’igui sio.*
 Nangy hurt Mimi own bad action.look
 ‘Nangy causes Mimi to have a bad-action look (adversative).’

(*hai*-causative with an embedded stative verb)

(207) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and therefore Mimi becomes sad. However, Mimi stops being sad very quickly even though Nangy keeps biting him for fun.*

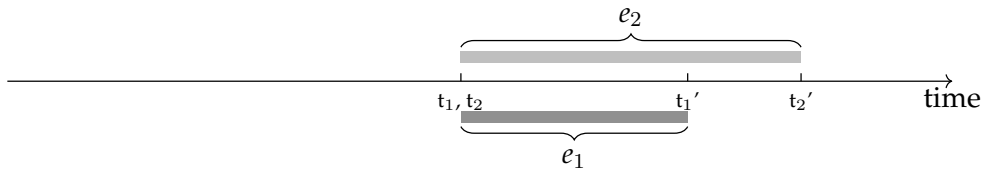
- a. *Nangy mue Mimi geʔsim.*
 Nangy make Mimi sad
 'Nangy makes Mimi be sad.'

(*mue*-causative with an embedded psych verb)

- b. *Nangy hai Mimi geʔsim.*
 Nangy hurt Mimi sad
 'Nangy causes Mimi to be sad (adversative).'

(*hai*-causative with an embedded psych verb)

4.2.2.2.2 Simultaneity and anteriority. **Sixth, embedding simultaneity with e_2 late ending.**



(208-209) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(208) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Every time Nangy starts doing something bad, Mimi imitates Nangy's behavior at the same moment. However, Mimi stops the imitative action before Nangy stops his behaviors.*

- a. # *Nangy mue Mimi u ts'igui sio.*
 Nangy make Mimi own bad action.look
 Intended: 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

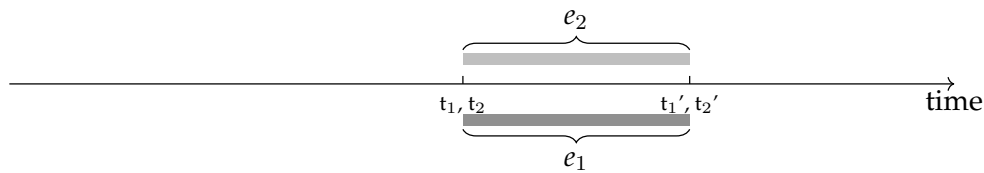
- b. # *Nangy hai Mimi u ts'igui sio.*
 Nangy hurt Mimi own bad action.look
 Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'
 (*hai*-causative with an embedded stative verb)

(209) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and at the same moment, Mimi becomes sad. However, Mimi stops being sad very quickly, even though Nangy keeps biting him for fun.*

- a. # *Nangy mue Mimi ge?sim.*
 Nangy make Mimi sad
 Intended: 'Nangy makes Mimi be sad.'
 (*mue*-causative with an embedded psych verb)

- b. # *Nangy hai Mimi ge?sim.*
 Nangy hurt Mimi sad
 Intended: 'Nangy causes Mimi to be sad (adversative).'
 (*hai*-causative with an embedded psych verb)

Seventh, complete overlapping.



(210-211) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(210) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Every time Nangy starts doing something bad, Mimi imitates Nangy's behavior at the same moment. However, Mimi stops the imitative action at the same time as Nangy stops his behaviors.*

a. # *Nangy mue Mimi u ts'igui sio.*
 Nangy make Mimi own bad action.look
 Intended: 'Nangy makes Mimi have a bad-action look.'
 (*mue*-causative with an embedded stative verb)

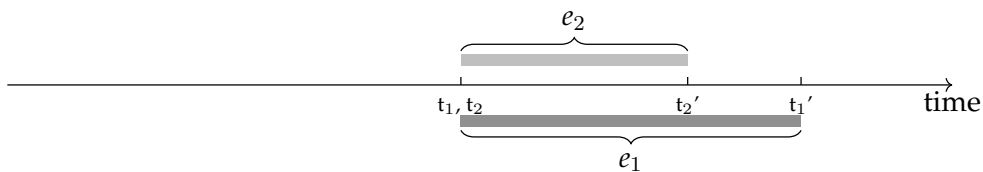
b. # *Nangy hai Mimi u ts'igui sio.*
 Nangy hurt Mimi own bad action.look
 Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'
 (*hai*-causative with an embedded stative verb)

(211) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and at the same moment, Mimi becomes sad. However, Mimi stops being sad at the same time as Nangy stops biting him.*

a. # *Nangy mue Mimi ge?sim.*
 Nangy make Mimi sad
 Intended: 'Nangy makes Mimi be sad.'
 (*mue*-causative with an embedded psych verb)

b. # *Nangy hai Mimi ge?sim.*
 Nangy hurt Mimi sad
 Intended: 'Nangy causes Mimi to be sad (adversative).'
 (*hai*-causative with an embedded psych verb)

Eighth, embedding simultaneity with an e_1 late ending.



(212-213) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(212) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Every time Nangy starts doing something bad, Mimi imitates Nangy's behavior at the same moment. However, Mimi continues the imitative action even after Nangy stops his behaviors.*

a. # *Nangy mue Mimi u ts'igui sio.*

Nangy make Mimi own bad action.look

Intended: 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

b. # *Nangy hai Mimi u ts'igui sio.*

Nangy hurt Mimi own bad action.look

Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'

(*hai*-causative with an embedded stative verb)

(213) Context: *Nangy and Mimi are playing together. Accidentally, Nangy bites Mimi too hard and at the same moment, Mimi becomes sad. However, Mimi keeps being sad after Nangy stops biting him.*

a. # *Nangy mue Mimi geʔsim.*

Nangy make Mimi sad

Intended: 'Nangy makes Mimi be sad.'

(*mue*-causative with an embedded psych verb)

b. # *Nangy hai Mimi geʔsim.*

Nangy hurt Mimi sad

Intended: 'Nangy causes Mimi to be sad (adversative).'

(*hai*-causative with an embedded psych verb)

Therefore, I conclude none of the Teochew periphrastic causatives allow simultaneous causal relations with an embedded stative/psych verb.

When it comes to the anterior causal relations, the same as what has been shown in the case of embedded activity verbs, they are also impossible in the

case of embedded statives and psych verbs. Relevant empirical data is provided in Appendix C.

4.2.2.3 INTERIM SUMMARY

Table 4.2 summarizes the temporal ‘(in)directness’ of all Teochew causatives discussed above.

Table 4.2: Temporal ‘(in)directness’ of all Teochew causatives

| Temporal ‘(in)directness’ | | <i>mue</i> | <i>kə</i> | <i>hai</i> | ‘c.’ <i>bun</i> | ‘p.’ <i>bun</i> |
|---------------------------|--|------------|-----------|------------|-----------------|-----------------|
| Posteriority | Non-overlapping posteriority with a time gap | × | ✓ | ✓ | ✓ | ✓ |
| | Overlapping posteriority with an immediate adjacency | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Non-embedding posteriority overlapping | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Embedding posteriority with same ending | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ... with an e_2 late ending | ✓ | ✓ | ✓ | ✓ | × |
| Simultaneity | Embedding simultaneity with an e_2 late ending | × | × | × | × | × |
| | ... with e_1 late ending | × | × | × | × | × |
| | Complete overlapping | × | × | × | × | × |
| Anteriority | Embedding anteriority with a same ending | × | × | × | × | × |
| | ...with an e_1 late ending | × | × | × | × | × |
| | Non-embedding anteriority overlapping | × | × | × | × | × |
| | Non-overlapping anteriority with immediate adjacency | × | × | × | × | × |
| | Non-overlapping anteriority with a time gap | × | × | × | × | × |

As has been shown in the previous discussion, no matter whether the embedded predicate is an activity, stative or psych verb, the causal relations compatible with each periphrastic causative are the same. In addition, even though all Teochew periphrastic causatives disallow the three possible simultaneity causal relations, Teochew resultative VV compounds allow two of them, i.e., (i) embedding simultaneity with e_1 late ending and (ii) complete overlapping.

Recall the syntactic structure of each causative discussed in Chapter 3. The fact that only the *mue* ‘make’-causative disallows a time gap between two events in a posterior temporal relation intuitively corresponds to the fact that it is the only causative construction without an embedded AspP layer. Following the standard assumption that a viewpoint aspect locates an event to a reference time, the lack

of an embedded AspP suggests that even as bi-eventive, the *mue*-causative only has one viewpoint aspect (i.e., contributed by the higher AspP). Intuitively it is easier for two events in an event chain without an overlapping event duration to have two different reference times (i.e., the first type of the posteriority relation). In contrast, if two events in an event chain are required to share their event duration (i.e., the other four types of the posteriority relation; the case of the *mue*-causative), two viewpoint aspects are more difficult to retrieve than one. This explains why the *mue*-causative disallows an embedded AspP layer; in contrast, the other four causatives, allowing both sharing and not sharing event durations of the causing and the caused events, embed an AspP.

4.2.3 SPATIAL (IN)DIRECTNESS

The data in (214) establish the fact that all Teochew causatives allow spatial directness.

(214) Modifying the caused event by *dəngdio* ‘on the spot’:

- a. *Nangy mue Mimi dəngdio tsao / u siokao / geʔsim.*
 Nangy make Mimi on.the.spot run / own wound / sad
 ‘Nangy makes Mimi run/have wounds/be sad on the spot.’

(*mue*-causative)

- b. *Nangy kə Mimi dəngdio tsao.*
 Nangy give Mimi on.the.spot run
 ‘Nangy causes Mimi to run on the spot.’

(Lit. ‘Nangy gives the on-the-spot running event to Mimi.’)

(*kə*-causative)

- c. *Nangy hai Mimi dǝngdio tsao / u siokao / geʔsim.*
 Nangy hurt Mimi on.the.spot run / own wound / sad
 ‘Nangy causes Mimi to run/have wounds/be sad on the spot (adver-
 sative).’

(*hai*-causative)

- d. *Nangy bun Mimi dǝngdio tsao.*
 Nangy separate Mimi on.the.spot run
 ‘Nangy causes Mimi to run on the spot by giving precedence to Mimi
 out of courtesy.’

(courteous *bun*-causative)

- e. *Nangy bun Mimi dǝngdio tsao.*
 Nangy separate Mimi on.the.spot run
 ‘Nangy lets Mimi run on the spot.’

(permissive *bun*-causative)

In (215), I use *do bang lai* ‘inside the room’ to modify the causing event and the *do bang duakao* ‘outside the room’ to modify the caused event. By doing so, the two events are entailed to occur in different locations.

(215) Modify the causing event by *do bang lai* ‘inside the room’ and modify the caused event by *do bang duakao* ‘outside the room’:

- a. # *Nangy do bang lai mue Mimi do bang duakao tsao / u*
 Nangy at room inside make Mimi at room outside run / own
siokao / geʔsim.
 wound / sad
 Intended: ‘Inside the room, Nangy makes Mimi run/have wounds/be
 sad outside the room.’

(*mue*-causative)

- b. *Nangy do bang lai kə Mimi do bang duakao tsao.*
 Nangy at room inside give Mimi at room outside run
 ‘Inside the room, Nangy causes Mimi to run outside the room.’
 (Lit. ‘Inside the room, Nangy gives the running-outside-the-room event
 to Mimi.’)
 (kə-causative)
- c. *Nangy do bang lai hai Mimi do bang duakao tsao / u siokao /
 Nangy at room inside hurt Mimi at room outside run / own wound /
 geʔsim.
 sad*
 ‘Inside the room, Nangy causes Mimi to run/have wounds/be sad out-
 side the room (adversative).’
 (hai-causative)
- d. # *Nangy do bang lai bun Mimi do bang duakao tsao.*
 Nangy at room inside separate Mimi at room outside run
 Intended: ‘Inside the room, Nangy causes Mimi to run outside the room
 by giving precedence to Mimi out of courtesy.’
 (courteous bun-causative)
- e. *Nangy do bang lai bun Mimi do bang duakao tsao.*
 Nangy at room inside separate Mimi at room outside run
 ‘Inside the room, Nangy lets Mimi run outside the room.’
 (permissive bun-causative)

As we can see above, while the *mue* ‘make’-causative and the courteous *bun* ‘separate’-causative disallow the spatial indirectness between the causing event and the caused event, the rest of Teochew causatives allow it.

4.2.4 ACCEPTABILITY OF AN INTERMEDIARY AGENT

In Chapter 2, I introduced a *participant-based* notion of causal (in)directness in (161), which is repeated as (216) below. Basically, it targets the acceptability of mediation, i.e., an intermediary agent, in a causal chain.

(216) 'A causative verb denotes an action that calls forth a particular action or condition in another person or object. This causation may be principally of two kinds, 'distant' and 'contactive'. In the latter, the agent does something to the object, bringing about its new condition by direct contact; in the former, he makes use of *an intermediary agent* and serves only as the 'instigator' of the act.'

(Masica, 1976)

The data in (217) show that all Teochew causatives allow *contactive*, i.e., participant-based direct causal chains.

(217) Context: *Nangy wants to cause Mimi to run/have wounds/be sad. It does so by pushing Mimi.*

- a. *Nangy mue Mim tsao / u siokao / geʔsim.*
Nangy make Mimi run / own wound / sad
'Nangy makes Mimi run/have wounds/be sad.'

(*mue*-causative)

- b. *Nangy kə Mimi tsao.*
Nangy give Mimi run
'Nangy causes Mimi to run.'

(*kə*-causative)

c. *Nangy hai Mimi tsao / u siokao / geʔsim.*
 Nangy hurt Mimi run / own wound / sad
 ‘Nangy causes Mimi to run/have wounds/be sad (adversative).’
 (*hai*-causative)

d. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 ‘Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.’
 (courteous *bun*-causative)

e. *Nangy bun Mimi tsao.*
 Nangy separate Mimi run
 ‘Nangy lets Mimi run.’
 (permissive *bun*-causative)

However, the following show that the *mue* ‘make’-causative, *hai* ‘hurt’-causative and the courteous *bun* ‘separate’-causative do not allow a mediator between the causing event and the caused event. In contrast, a mediator can exist between the causing event and the caused event in the *kə* ‘give’-causative and the permissive *bun* ‘separate’-causative.

(218) a. Context: *Nangy wants to cause Mimi to run/have wounds/be sad. It does so by waking up Xingy first and letting Xingy push Mimi.*

Nangy mue Mim tsao / u siokao / geʔsim.
 Nangy make Mimi run / own wound / sad
 Intended: ‘Nangy makes Mimi run/have wounds/sad.’
 (*mue*-causative)

- b. Context: *Nangy wants to cause Mimi to run. It does so by waking up Xingy first and letting Xingy chase Mimi.*

Nangy kə Mimi tsao.
Nangy give Mimi run
'Nangy causes Mimi to run.'

(*kə*-causative)

- c. Context: *Nangy wants to cause Mimi to run/have wounds/be sad. It does so by waking up Xingy first and letting Xingy push Mimi. And the speaker views running/having wounds/being sad as bad for Mimi.*

Nangy hai Mimi tsao / u siokao / geʔsim.
Nangy hurt Mimi run / own wound / sad

Intended: 'Nangy causes Mimi to run/have wounds/be sad (adversative).'

(*hai*-causative)

- d. Context: *Nangy planned to run to the top of the cat tree in front of the window itself after hearing some birdsong from outside. Then it saw Mimi came, also planning to run to the cat tree. It knew that Mimi was also caught attention by the birdsong and was interested in seeing the view outside the window too. Out of courtesy, Nangy stops its running action, and asks Xingy to perform as a mediator to let Mimi run to the cat tree first.*

Nangy bun Mimi tsao.
Nangy separate Mimi run

Intended: 'Nangy causes Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

- e. Context: *Mimi is older than Nangy; therefore, Mimi has a higher social status than Nangy according to social convention. Nangy wants to run in the area where Mimi usually occupies. In order to do it, Nangy asks Xingy to help ask Mimi for permission and Mimi gives permission to Xingy, who then passes the permission to Nangy.*

Mimi bun Nangy tsao.

Mimi separate Nangy run

'Mimi lets Mimi run.'

(permissive *bun*-causative)

To summarize, while all the causatives allow participant-based direct causal chain, only the *kə* 'give'-causative and the permissive *bun* 'seperate'-causative allow the participant-based indirect one.

4.2.5 INTERIM SUMMARY

Table 4.3 summarizes the '(in)direct' causal event structural interpretations of all Teochew causatives discussed in this section.

Table 4.3: '(In)direct' causality in each Teochew causative

| '(In)directness' (e_2 : causing event; e_1 : the caused even) | | <i>mue</i> | <i>kə</i> | <i>hai</i> | 'c.' <i>bun</i> | 'p.' <i>bun</i> | |
|--|---|------------|-----------|------------|-----------------|-----------------|---|
| Temporal | Posteriority | | × | ✓ | ✓ | ✓ | ✓ |
| | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | | ✓ | ✓ | ✓ | ✓ | × |
| | Simultaneity | | × | × | × | × | × |
| | | | × | × | × | × | × |
| | | | × | × | × | × | × |
| | Anteriority | | × | × | × | × | × |
| | | | × | × | × | × | × |
| | | × | × | × | × | × | |
| | | × | × | × | × | × | |
| | | × | × | × | × | × | |
| Spatial | Directness (i.e., proximal) | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Indirectness (i.e., distal) | × | ✓ | ✓ | × | ✓ | |
| Mediation | Directness (i.e., no intermediary agent) | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | Indirectness (i.e., allow intermediary agent) | × | ✓ | × | × | ✓ | |

As was demonstrated in the table, even though all Teochew causatives are indirect in the structural sense, they have different (in)direct causal event structural interpretations. The *mue* ‘make’-causative turns out to be a direct causative in terms of temporal, spatial and participant-based interpretation. It serves as a counterexample to the structural-interpretative (in)directness correlation argued by Shibatani and Prashant (2002) and as a new piece of empirical evidence to support Neeleman and van de Koot (2012) and Ramchand (2014) in dissociating two kinds of (in)directness mentioned at the beginning of this section.

In addition, Ramchand (2014) argues that a participant-based causal relation deviates from an event-based one and that the latter is primary while the former is licensed in a particular event structure configuration. As is shown in the table, at least in the case of Teochew, this is not true, given that the (in)directness correlation between time, space and mediation does not seem to exist. That is to say, interpretative (in)directness should be defined in terms of a three-dimensional way, i.e., event (both time and space) and participant.

4.3 DIMENSION II: DETERMINISTIC VS. PROBABILISTIC

In this section, I will present evidence showing that the *kə* ‘give’-causative and two *bun* ‘separate’-causatives are *probabilistic causatives*. More specifically, the actuality of the caused event is not entailed in these three causatives. In contrast, the *mue* ‘make’-causative and the *hai* ‘hurt’-causative are *deterministic causatives* where the happening of the caused event is entailed. In Section 4.3.1, I will focus on cases where embedded predicates of these causatives are simplex. Then in Section 4.3.2, I will explore the cases where the causing event is a complex one denoted by a resultative VV compound.

4.3.1 SIMPLEX EMBEDDED PREDICATES

Three groups of diagnostics with a total number of nine are used to show this deterministic vs. probabilistic contrast in the case of simplex embedded predicates. They are (i) negating the caused event (Section 4.3.1.1), ii) paraphrasing with ‘affectee’-targeting or resultative constructions (Section 4.3.1.2) and (iii) different scope readings in the case of scope-ambiguous items (Section 4.3.1.3). Together, they show that there is no actuality entailment of the caused event in the *kə/bun*-causative.

4.3.1.1 NEGATING THE CAUSED EVENT

Negating the caused event in the *kə* ‘give’-causative (219b) and two *bun* ‘separate’-causatives (219d-219e) is felicitous, while in the *mue*-causative (219a) and the *hai* ‘hurt’-causative (219c) it is not.

- (219) a. *Nangy mue Mimi tsao, # dansi yi bo tsao.*
Nangy make Mimi run but 3sg NEG run
‘Nangy makes Mimi run, #but it does not run.’
(*mue*-causative)
- b. *Nangy kə Mimi tsao, dansi yi bo tsao.*
Nangy give Mimi run but 3sg NEG run
‘Nangy causes Mimi to run, but it does not run.’
(Lit. Nangy gives the running to Mimi, but it does not run.)
(*kə*-causative)
- c. *Nangy hai Mimi tsao, # dansi yi bo tsao.*
Nangy hurt Mimi run but 3sg NEG run
‘Nangy causes Mimi to run (adversative), #but it does not run.’
(*hai*-causative)

- d. *Nangy bun Mimi tsao, dansi yi bo tsao.*
 Nangy separate Mimi run but 3sg NEG run
 ‘Nangy causes Mimi to run by giving precedence to Mimi for running
 out of courtesy, but it does not run.’
 (courteous *bun*-causative)

- e. *Nangy bun Mimi tsao, dansi yi bo tsao.*
 Nangy separate Mimi run but 3sg NEG run
 ‘Nangy lets Mimi run, but it does not run.’
 (permissive *bun*-causative)

This shows that while the *mue/hai*-causative entails the actual happening of the caused event after the causing event, the *kə/bun*-causative, however, does not.

4.3.1.2 PARAPHRASE

The second group of diagnostics comes from attempts to paraphrase the causatives into *affectee*-targeting or resultative constructions.⁴

The second diagnostic comes from passivizing the causee, as has been shown in (107) in Chapter 3 (copied as (220) below). As is shown below, while it is grammatical to do so in the *mue* ‘make’-causative and the *hai* ‘hurt’-causative, the acceptability is relatively lower in the case of the *kə* ‘give’-causative and it is ungrammatical in two *bun* ‘separate’-causatives.

- (220) a. *Mimi kə Nangy mue tsao.*
 Mimi PASS Nangy make run
 ‘Mimi is made by Nangy to run.’
 (*mue*-causative)

⁴Note that though a *paraphrase* usually requires the same meaning, the term adopted in this section is used in its looser sense.

- b. ? *Mimi kə Nangy kə tsao.*
 Mimi PASS Nangy give run
 ‘Mimi is caused by Nangy to run.’
 (Lit. ‘Mimi is given the running event by Nangy.’)
 (kə-causative)
- c. *Mimi kə Nangy hai tsao.*
 Mimi PASS Nangy hurt run
 ‘Mimi is caused by Nangy to run (adversative).’
 (hai-causative)
- d. * *Mimi kə Nangy bun tsao.*
 Mimi PASS Nangy separate run
 Intended: ‘Mimi is caused by Nangy to run by being given precedence
 to Mimi out of courtesy.’
 (courteous *bun*-causative)
- e. * *Mimi kə Nangy bun tsao.*
 Mimi PASS Nangy separate run
 Intended: ‘Mimi is let by Nangy to run.’
 (permissive *bun*-causative)

I argue that the low acceptability in the case of *kə* ‘give’-causative is due to the fact that the passivized subject usually has an affectee interpretation. However, given that the *kə* ‘give’-causative, unlike the *mue* ‘make’-causative and the *hai* ‘hurt’-causative, does not entail the happening of the caused event, it is relatively harder to passivize the causee, the subject of the embedded predicate encoding the caused event, given that it is not deterministically affected. As for the ungrammaticality in the case of two *bun* ‘separate’-causatives, it is predicted by the adjunct-hood of the causee, as is shown in Chapter 3.

The third diagnostic comes from the *dui* ‘towards’-construction, also shown in (109) in Chapter 3 (copied as (221) below). Similar to the former diagnostic,

the acceptability of raising the causee in the *kə* ‘give’-causative by the argument-targeting *dui*-construction is lower and it is ungrammatical in two *bun* ‘separate’-causatives; but it is grammatical in the case of the *mue* ‘make’-causative and the *hai* ‘hurt’-causative.

- (221) a. *Nangy dui Mimi mue tsao.*
 Nangy towards Mimi make run
 ‘Nangy makes Mimi run (and Mimi is the affectee).’
(*mue*-causative)
- b. ? *Nangy dui Mimi kə tsao.*
 Nangy towards Mimi give run
 ‘Nangy causes Mimi to run (and Mimi is the affectee).’
(*kə*-causative)
- c. *Nangy dui Mimi hai tsao.*
 Nangy towards Mimi hurt run
 ‘Nangy causes Mimi to run (and Mimi is the affected) (adversative).’
(*hai*-causative)
- d. * *Nangy dui Mimi bun tsao.*
 Nangy towards Mimi separate run
 Intended: ‘Nangy causes Mimi to run (and Mimi is the affectee) by giving precedence to Mimi out of courtesy.’
(courteous *bun*-causative)
- e. * *Nangy dui Mimi bun tsao.*
 Nangy towards Mimi separate run
 Intended: ‘Nangy lets Mimi run (and Mimi is the affectee).’
(permissive *bun*-causative)

I argue that the low acceptability in the case of *kə* ‘give’-causative is because the argument raised by the *dui* ‘towards’-construction is interpreted as an affectee, similar to the argument raised by the Mandarin counterpart *ba*-construction (e.g.,

Huang et al., 2009). And again, given the causee is not deterministically affected, the acceptability issue is expected. As for the ungrammaticality in the case of the ambiguous *bun* ‘separate’-causative, it is predicted by the adjuncthood of the causee, as shown in Chapter 3.

The last two diagnostics of this group come from two resultative constructions, which have been shown in (10) in Chapter 1.

The first one is the VV resultative compound construction (also shown in (10a)) with a *Subject-Verb₁-Verb₂/Adjective₂-Object* surface structure. In this construction, *Verb₁*, transitive or intransitive, indicates the means or the causing event, while *Verb₂/Adjective₂*, intransitive only, indicates the result event/state (222).

- (222) a. *Mimi tsao he? o.*
 Mimi run tired PFV
 ‘Mimi run and therefore has become tired.’
- b. *Mimi nia? ts’ui muegia o.*
 Mimi pound broken stuff PFV
 ‘Mimi pounds the stuff broken.’

It is possible to paraphrase the *mue* ‘make’-causative (223a) and the *hai* ‘hurt’-causative (223c) into this construction, but impossible for the *kə* ‘give’-causative (223b) and two *bun* ‘separate’-causative (223d-223e). Though there might be other syntactic analysis for these given the rich discussion of the Mandarin VV resultative compound in the literature (cf. Williams, 2015), I argue that this can also potentially serve as one diagnostic to differentiate the deterministic vs. probabilistic contrast.

- (223) a. *Nangy mue tsao Mimi.*
 Nangy make run Mimi
 ‘Nangy causes Mimi to run.’

(*mue*-causative)

- b. * *Nangy kə tsao Mimi.*
 Nangy give run Mimi
 Intended: 'Nangy causes Mimi to run.'
 (kə-causative)
- c. *Nangy hai tsao Mimi.*
 Nangy hurt run Mimi
 'Nangy causes Mimi to run (adversative).'
- (hai-causative)
- d. * *Nangy bun tsao Mimi.*
 Nangy separate run Mimi
 Intended: 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'
 (courteous bun-causative)
- e. * *Nangy bun tsao Mimi.*
 Nangy separate run Mimi
 Intended: 'Nangy lets Mimi run.'
 (permissive bun-causative)

In Teochew, there is another resultative construction – the resultative *V-gao* 'arrive' construction (also shown in (10b)). The V denoting the causing event can be either intransitive, transitive or ditransitive (224).

- (224) a. *Mimi tsao-gao ho he?*
 Mimi run-arrive very tired
 'Mimi run and therefore has become tired.'
- b. *Mimi tsia-gao ho ba.*
 Mimi eat-arrive very full
 'Mimi ate a lot and therefore has become full.'

- c. *Mimi sang-gao ho he?*
 Mimi send-arrive very tired
 ‘Mimi sent some stuff to someone/somewhere and therefore has become tired.’

Similarly, the *mue* ‘make’-causative (225a) and the *hai* ‘hurt’-causative (225c) can be paraphrased into this resultative structure, but the *kə* ‘give’-causative (225b) and two *bun* ‘separate’-causative cannot (225d-225e). I take this as another piece of evidence to support the non-result-actuality entailment analysis.

- (225) a. *Nangy mue-gao Mimi tsao.*
 Nangy make-arrive Mimi run
 ‘Nangy causes Mimi to run.’
- b. **Nangy kə-gao Mimi tsao.*
 Nangy give-arrive Mimi run
 Intended: ‘Nangy causes Mimi to run.’
- c. *Nangy hai-gao Mimi tsao.*
 Nangy hurt-arrive Mimi run
 ‘Nangy causes Mimi to run (adversative).’
- d. **Nangy bun-gao Mimi tsao.*
 Nangy separate-arrive Mimi run
 Intended: ‘Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.’
- e. **Nangy bun-gao Mimi tsao.*
 Nangy separate-arrive Mimi run
 Intended: ‘Nangy lets Mimi run.’

4.3.1.3 DIFFERENT SCOPE READINGS

The **sixth** diagnostic is also related to negation. Pre-verbal negative morpheme *bo* can have different scopes in the *mue* ‘make’-causative (226a) and the *hai* ‘hurt’-causative (226c), targeting either the causing event or the caused event, it can only

target the causing event in the *kə* 'give'-causative (226b) and two *bun* 'separate'-causatives (226d-226e) when no context regarding the happening of the caused event is provided.

(226) *No context regarding the happening of the caused event is provided:*

- a. *Nangy bo mue Mimi tsao.*
Nangy NEG make Mimi run

Meaning 1: 'Nangy does not do the causing-Mimi-to-run thing and Mimi does not run.'

Meaning 2: 'Nangy fails to cause Mimi to run.'

(*mue*-causative)

- b. *Nangy bo kə Mimi tsao.*
Nangy NEG give Mimi run

The only meaning: 'Nangy does not do the causing-Mimi-to-run thing.'

(Lit. 'Nangy does not give the running to Mimi.')

(*kə*-causative)

- c. *Nangy bo hai Mimi tsao.*
Nangy NEG hurt Mimi run

Meaning 1: 'Nangy does not do the causing-Mimi-to-run thing and Mimi does not run (adversative).'

Meaning 2: 'Nangy fails to cause Mimi to run (adversative).'

(*hai*-causative)

- d. *Nangy bo bun Mimi tsao.*
Nangy NEG separate Mimi run

The only meaning: 'Nangy does not do the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

e. *Nangy bo bun Mimi tsao.*

Nangy NEG separate Mimi run

The only meaning: 'Nangy does not do the thing causing Mimi to run by giving permission to Mimi to run.'

(permissive *bun*-causative)

However, when a context where the actuality of the caused event is known, the *kə* 'give'-causative (227a) and two *bun* 'separate'-causatives (227b-227c) pattern like the other two causatives in that they can have ambiguous meanings.

(227) *In the context where the caused event is known not to happen:*

a. *Nangy bo kə Mimi tsao.*

Nangy NEG give Mimi run

Meaning 1: 'Nangy does not do the causing-Mimi-to-run thing.'

(Lit. 'Nangy does not give the running to Mimi.')

Meaning 2: 'Nangy fails to cause Mimi to run.'

(Lit. 'Nangy fails to give to the running to Mimi')

(*kə*-causative)

b. *Nangy bo bun (Mimi) tsao.*

Nangy NEG separate Mimi run

Meaning 1: 'Nangy does not do the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

Meaning 2: 'Nangy fails to cause Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

- c. *Nangy bo bun (Mimi) tsao.*
 Nangy NEG separate Mimi run
Meaning 1: ‘Nangy does not do the thing causing Mimi to run by giving permission to Mimi for running.’
Meaning 2: ‘Nangy fails to cause Mimi to run by giving permission to Mimi to run.’

(permissive *bun*-causative)

Seventh, clause-final perfective marker *o/ku* can target both the causing event and the caused event in the *mue* ‘make’-causative and the *hai* ‘hurt’-causative, but it can only target the causing event, not the caused event in the *kə* ‘give’-causative and two *bun* ‘separate’-causatives (228), unless a context where the caused event is known to happen is provided (229). The detailed distinctions between the two forms of perfective markers will be discussed in Section 4.4.

- (228) a. *No context regarding the happening of the caused event is provided:*

Nangy mue Mimi tsao o/ku.
 Nangy make Mimi run PFV

Meaning 1: ‘Nangy HAS DONE the causing-Mimi-to-run thing.’

Meaning 2: ‘Nangy caused Mimi to run and Mimi HAS RUN.’

(*mue*-causative)

- b. *Nangy kə Mimi tsao o/ku.*
 Nangy give Mimi run PFV

The only meaning: ‘Nangy HAS DONE the causing-Mimi-to-run thing.’

(Lit. ‘Nangy HAS GIVEN the running to Mimi.’)

(*kə*-causative)

- c. *Nangy hai Mimi tsao ku.*
 Nangy hurt Mimi run PFV
Meaning 1: 'Nangy HAS DONE the causing-Mimi-to-run thing (adversative).'
- Meaning 2: 'Nangy caused Mimi to run and Mimi HAS RUN (adversative).'

(*hai*-causative)

- d. *Nangy bun Mimi tsao o.*
 Nangy separate Mimi run PFV
 The only meaning: 'Nangy HAS DONE the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

- e. *Nangy bun Mimi tsao o/ku.*
 Nangy separate Mimi run PFV
 The only meaning: 'Nangy HAS DONE the thing causing Mimi to run by giving permission to Mimi to run.'

(permissive *bun*-causative)

(229) *In the context where the caused event is known to happen:*

- a. *Nangy kə Mimi tsao o.*
 Nangy give Mimi run PFV
Meaning 1: 'Nangy HAS DONE the causing-Mimi-to-run thing.'
 (Lit. 'Nangy HAS GIVEN the running to Mimi.')
- Meaning 2: 'Nangy caused Mimi to run and Mimi HAS RUN.'
 (Lit. 'Nangy gave the running to Mimi and Mimi HAS RECEIVED it.')

(*kə*-causative)

- b. *Nangy bun Mimi tsao o.*
 Nangy separate Mimi run PFV
Meaning 1: 'Nangy HAS DONE the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'
Meaning 2: 'Nangy caused Mimi to run by giving precedence to Mimi for running out of courtesy and Mimi HAS RUN.'
 (courteous *bun*-causative)
- c. *Nangy bun Mimi tsao o/ku.*
 Nangy separate Mimi run PFV
Meaning 3: 'Nangy HAS DONE the thing causing Mimi to run by giving permission to Mimi for running.'
Meaning 4: 'Nangy caused Mimi to run by giving permission to Mimi to run and Mimi HAS RUN.'
 (permissive *bun*-causative)

The **eighth** diagnostics comes from the *almost* modification in the context of accomplishment. It can have ambiguous readings, depending on either modifying the onset of the event or the final produced state by that event (e.g., McCawley, 1971; Rapp and von Stechow, 1999). Following a similar spirit, we can see that while *gihu* 'almost' can modify both the causing event and the caused event in the *mue* 'make'-causative and the *hai* 'hurt'-causative, but without any context, it can only modify the former in the *kə* 'give'-causative and two *bun* 'separate'-causatives (230).

(230) *No context regarding the happening of the caused event is provided:*

- a. *Nangy gihu mue Mimi tsao.*
Nangy almost make Mimi run

Meaning 1: 'Nangy almost does the causing-Mimi-to-run thing.'

Meaning 2: 'Nangy almost succeeds in causing Mimi to run.'

(*mue*-causative)

- b. *Nangy gihu kə Mimi tsao.*
Nangy almost give Mimi run

The only meaning: 'Nangy almost does the causing-Mimi-to-run thing.'

(Lit. 'Nangy almost gives the running to Mimi.')

(*kə*-causative)

- c. *Nangy gihu hai Mimi tsao.*
Nangy almost hurt Mimi run

Meaning 1: 'Nangy almost does the causing-Mimi-to-run thing (adversative).'

Meaning 2: 'Nangy almost succeeds in causing Mimi to run (adversative).'

(*hai*-causative)

- d. *Nangy gihu bun Mimi tsao.*
Nangy almost separate Mimi run

The only meaning: 'Nangy almost does the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

- e. *Nangy gihu bun Mimi tsao.*
Nangy almost separate Mimi run

The only meaning: 'Nangy almost does the thing causing Mimi to run by giving permission to Mimi to run.'

(permissive *bun*-causative)

However, if the speaker knows that the caused event fails to happen but it is close, then these two causatives are ambiguous for them (231).

(231) *In the context where the caused event is known to almost happen:*

a. *Nangy gihu kə Mimi tsao.*

Nangy almost give Mimi run

Meaning 1: 'Nangy almost does the causing-Mimi-to-run thing.'

(Lit. 'Nangy almost gives the running to Mimi.')

Meaning 2: 'Nangy almost succeeds in causing Mimi to run.'

(Lit. 'Nangy almost succeeds in giving the running to Mimi.')

(*kə*-causative)

b. *Nangy gihu bun Mimi tsao.*

Nangy almost separate Mimi run

Meaning 1: 'Nangy almost does the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

Meaning 2: 'Nangy almost succeeds in causing Mimi to run by giving precedence to Mimi for running out of courtesy.'

(courteous *bun*-causative)

c. *Nangy gihu bun Mimi tsao.*

Nangy almost separate Mimi run

Meaning 1: 'Nangy almost does the thing causing Mimi to run by giving permission to Mimi for running.'

Meaning 2: 'Nangy almost succeeds in causing Mimi to run by giving permission to Mimi to run.'

(permissive *bun*-causative)

The modifier *yi* 'again', following the same spirit of the *almost* modification on diagnosing sub-event of an event chain, serves as the **ninth** diagnostic (e.g., McCawley, 1968; Dowty, 1979; von Stechow, 1995; Pylkkänen, 2008). In the *mue*

'make'-causative (232a) and the *hai* 'hurt'-causative (232c), both *repetitive* and *restitutive* readings are available; and in the presuppositions of both readings, the 'Mimi's running' event is known to happen before, considering that the repetitive reading also implies the restitutive reading. However, while there is no context regarding the happening of the cased event provided, either of these two readings cannot be retrieved in the *kə* 'give'-causative (232b) and two *bun* 'separate'-causatives (232d-232e); the only reading is that the causing event happens again.

(232) *No context regarding the happening of the caused event is provided:*

- a. *Nangy you mue Mimi tsao.*
Nangy again make Mimi run

Meaning 1 (repetitive): 'Nangy does the causing-Mimi-to-run thing again and Mimi runs again.'

Meaning 2 (restitutive): 'Mimi run before and Nangy causes Mimi to run again.'

(*mue*-causative)

- b. *Nangy you kə Mimi tsao.*
Nangy again give Mimi run

The only meaning: 'Nangy does the causing-Mimi-to-run thing again.'

(Lit. 'Nangy gives the running to Mimi again.')

(*kə*-causative)

- c. *Nangy you hai Mimi tsao.*
Nangy again hurt Mimi run

Meaning 1 (repetitive): 'Nangy does the causing-Mimi-to-run thing again and Mimi runs again (adversative).'

Meaning 2 (restitutive): 'Mimi run before and Nangy causes Mimi to run again (adversative).'

(*hai*-causative)

- d. *Nangy you bun Mimi tsao.*
 Nangy again separate Mimi run
 The only meaning: ‘Again, Nangy does the thing causing Mimi to run
 by giving precedence to Mimi for running out of courtesy.’
 (courteous *bun*-causative)

- e. *Nangy you bun Mimi tsao.*
 Nangy again separate Mimi run
 The only meaning: ‘Again, Nangy does the thing causing Mimi to run
 by giving permission to Mimi to run.’
 (permissive *bun*-causative)

However, when a context regarding the happening of the cased event is provided, the *kə* ‘give’-causative and two *bun* ‘separate’-causatives also have the repetitive and the restitutive readings (233).

(233) *In the context where the caused event is known to happen:*

- a. *Nangy you kə Mimi tsao.*
 Nangy again give Mimi run
Meaning 1 (repetitive): ‘Nangy does the causing-Mimi-to-run thing
 again and Mimi runs again.’
 (Lit. ‘Nangy gives the running to Mimi again and Mimi receives again.’)
Meaning 2 (restitutive): ‘Mimi run before and Nangy causes Mimi to
 run again.’
 (Lit. ‘Mimi run before and Nangy gives the running to Mimi and Mimi
 receives again.’)
 (*kə*-causative)

- b. *Nangy you bun Mimi tsao.*
 Nangy again separate Mimi run
Meaning 1: ‘Again, Nangy does the thing causing Mimi to run by giving precedence to Mimi for running out of courtesy and Mimi runs again.’
Meaning 2: ‘Mimi run before and again, Nangy succeeds in causing Mimi to run by giving precedence to Mimi for running out of courtesy.’
 (courteous *bun*-causative)
- c. *Nangy you bun Mimi tsao.*
 Nangy again separate Mimi run
Meaning 1: ‘Again, Nangy does the thing causing Mimi to run by giving permission to Mimi/that one for running and Mimi/that one runs again.’
Meaning 2: ‘Mimi run before and again, Nangy succeeds in causing Mimi to run by giving permission to Mimi for running.’
 (permissive *bun*-causative)

To summarize, when there is no context given regarding the happening of the causing event, scope-ambiguous items including (i) the pre-verbal negative morpheme *bo*, (ii) the clause-final perfective marker *o*, (iii) the *gihu* ‘almost’ modification and (iv) the *yiu* ‘again’ modification can only target the causing event in the *kə* ‘give’-causative and two *bun* ‘separate’-causatives. In contrast, both the causing event and the caused event in the *mue* ‘make’-causative and the *hai* ‘hurt’-causative can be targeted by these items.

Together, these show the *kə* ‘give’-causative and two *bun* ‘separate’-causatives, unlike the *mue* ‘make’-causative and the *hai* ‘hurt’-causative, do not entail the actuality of the caused event. Therefore, the caused events in the former group, compared to those in the latter, are harder to be targeted by scope-ambiguous

items unless additional information is provided by the context. However, when the speaker is given the context regarding the actuality of the caused event, the *kə* ‘give’-causative and two *bun* ‘separate’-causatives pattern like the other two. These different scope readings also provide evidence of the recursive *vP*, i.e., bi-eventive analysis of all four causatives in Chapter 3.

4.3.1.4 INTERIM SUMMARY

So far, the above discussion use the following three groups of nine diagnostics to show the causal event structural differences between two periphrastic causatives in terms of the actuality entailment of the caused event. The results are summarized in Table 4.4.

Table 4.4: Diagnostics on deterministic vs. probabilistic causation distinction (simplex embedded predicates)

| Group | Diagnostics | <i>mue</i> | <i>kə</i> | <i>hai</i> | <i>bun</i> (both) |
|--|---|------------|---------------|------------|----------------------|
| Group 1 | Negating the caused event? | × | ✓ | × | ✓ |
| Group 2: paraphrase | Paraphrasing by passivizing the causee? | ✓ | ? | ✓ | * |
| | ... by the <i>dui</i> -construction? | ✓ | ? | ✓ | * |
| | ... by the VV compound? | ✓ | * | ✓ | * |
| | ... by the V- <i>gao</i> construction? | ✓ | * | ✓ | * |
| Group 3: different scope readings | Targeting the caused event by negative <i>bo</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by perfective marker <i>o</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>gihu</i> ‘almost’? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>yiu</i> ‘again’? | ✓ | × w/o context | ✓ | × w/o context |

Together, they prove that in the case of embedding a simplex predicate, in contrast to the *mue* ‘make’-causative and the *hai* ‘hurt’-causative, the *kə* ‘give’-causative and two *bun* ‘separate’-causatives are probabilistic causatives that do not entail the actuality of the caused event.

4.3.2 MAKING THE PICTURE MORE COMPLICATED: EMBEDDING RESULTATIVE VV COMPOUNDS

So far, we have seen the contrast in terms of the actuality entailment of the caused event between all Teochew periphrastic causatives when the embedded predicate is a simplex one. One natural question to ask is, what will the actuality entailment of the caused event look like if the embedded predicate is a (semantically) complex one, i.e., a resultative VV compound (234), given the embedded predicate itself also denotes a cause-result relation?

- (234) *Mimi ts'iŋ-be? ts'un.*
Mimi wipe-clean table
'Mimi wipes the table clean.'

Interestingly, Teochew speakers report that when these resultative VV compounds occur as the embedded predicates of three probabilistic causatives, i.e., the *kə* 'give'-causative and two *bun* 'separate'-causatives, the actuality entailment issue of the caused event seems to become even more complicated given that it is a complex event itself. As shown in (235), three potential interpretations exist. One of them is deterministic, i.e., the caused event happens, the other two are probabilistic: either the caused event does not happen, or it has started happening but not completed.

- (235) a. *Nangy kə Mimi ts'iŋ-be? ts'un.*
Nangy give Mimi wipe-clean table
If given the context that the caused event happens, then Meaning 1:
'Nangy causes Mimi to wipe the table clean, and Mimi does the wiping, and the table becomes clean.'
Meaning 2: 'Nangy causes Mimi to wipe the table clean, and Mimi does not do the wiping.'

Meaning 3: 'Nangy causes Mimi to wipe the table clean, and Mimi does the wiping, but the table does not become completely clean.'

(*kə*-causative)

- b. *Nangy bun Mimi ts'iʔ-beʔ ts'un.*
Nangy separate Mimi wipe-clean table

If given the context that the caused event happens, then Meaning 1:

'Nangy causes Mimi to wipe the table clean by giving precedence to Mimi out of courtesy, and Mimi does the wiping, and the table becomes clean.'

Meaning 2: 'Nangy causes Mimi to wipe the table clean by giving precedence to Mimi out of courtesy, and Mimi does not do the wiping.'

Meaning 3: 'Nangy causes Mimi to wipe the table clean by giving precedence to Mimi out of courtesy, and Mimi does the wiping, but the table does not become completely clean.'

(courteous *bun*-causative)

- c. *Nangy bun Mimi ts'iʔ-beʔ ts'un.*
Nangy separate Mimi wipe-clean table

If given the context that the caused event happens, then Meaning 1:

'Nangy lets Mimi wipe the table clean, and Mimi does the wiping, and the table becomes clean.'

Meaning 2: 'Nangy lets Mimi wipe the table clean, and Mimi does not do the wiping.'

Meaning 3: 'Nangy lets Mimi wipe the table clean, but the table does not become completely clean.'

(permissive *bun*-causative)

This three-kind-of-interpretation phenomenon seems to suggest that the deterministic vs. probabilistic contrast is more complicated than what is discussed above. However, the following pieces of evidence suggest this is not the case.

4.3.2.1 NEGATING THE CAUSED EVENT

First, recall that when the embedded predicates are simplex, the caused event can be negated in the case of the probabilistic causative, i.e., the *kə*-causative and two *bun*-causatives, but not in the other two causatives, which are deterministic.

Given that in the case of embedded resultative VV compounds, the caused event is a complex one, it is possible that either the beginning/cause/manner of the caused event denoted by the first verb (236a), or the ending/result of the caused event denoted by the second verb can be negated (236b). However, the data shows that only the former can be negated.

- (236) a. *Nangy kə / bun Mimi ts'iŋ-beŋ ts'un, dansi yi bo ts'iŋ.*
 Nangy give / separate Mimi wipe-clean table but 3.SG NEG wipe
 'Nangy causes Mimi to wipe the table clean, but Mimi does not do the
 wiping.'
- b. *Nangy kə / bun Mimi ts'iŋ-beŋ ts'un. #Yi ts'iŋ o, dansi*
 Nangy give / separate Mimi wipe-clean table 3.SG wipe PFV but
ts'un huasi ts'iyi.
 table still dirty
 'Nangy causes Mimi to wipe the table clean. #Mimi does the wiping
 but the table is still dirty.'

This shows that it is very likely that in the case of embedded complex predicates, like that of the simplex one, the caused event in the probabilistic causative either happens or does not happen, both in a 'complete' way. The following pieces of evidence further confirm this.

4.3.2.2 PARAPHRASE

In the discussion of cases with embedded simplex predicates, four paraphrase diagnostics are adopted to differentiate probabilistic causative from deterministic one, including paraphrasing the causatives (i) by promoting the causee in passive, (ii) by the ‘affectee’-targeting *dui*-construction, (iii) by the resultative VV compound, and (iv) the resultative *V-gao* ‘arrive’-construction.

Given that the first two diagnostics directly target the affectee property of the causee, rather than the internal eventuality property of the caused event, they will not help us in diagnosing the possible differences brought by the simplex vs. complex dictions on embedded predicates. As is shown in (237-238), each causative behaves in the same way as when their embedded predicates are simplex ones.

- (237) a. *Mimi kə Nangy mue ts'iŋ-beŋ ts'un.*
 Mimi PASS Nangy make wipe-clean table
 ‘Mimi is made by Nangy to wipe the table clean.’
(*mue*-causative)
- b. ? *Mimi kə Nangy kə ts'iŋ-beŋ ts'un.*
 Mimi PASS Nangy give wipe-clean table
 ‘Mimi is caused by Nangy to wipe the table clean.’
 (Lit. ‘Mimi is given the wiping-the-table-clean event by Nangy.’)
(*kə*-causative)
- c. *Mimi kə Nangy hai ts'iŋ-beŋ ts'un.*
 Mimi PASS Nangy hurt wipe-clean table
 ‘Mimi is caused by Nangy to wipe the table clean (adversative).’
(*hai*-causative)

d. * *Mimi kə Nangy bun ts'iŋ-beŋ ts'un.*
 Mimi PASS Nangy separate wipe-clean table
 Intended: 'Mimi is caused by Nangy to wipe the table clean by being given precedence to Mimi out of courtesy.'
 (courteous *bun*-causative)

e. * *Mimi kə Nangy bun ts'iŋ-beŋ ts'un.*
 Mimi PASS Nangy separate wipe-clean table
 Intended: 'Mimi is let by Nangy to wipe the table clean.'
 (permissive *bun*-causative)

(238) a. *Nangy dui Mimi mue ts'iŋ-beŋ ts'un.*
 Nangy towards Mimi make wipe-clean table
 'Nangy makes Mimi wipe the table clean (and Mimi is the affectee).'
 (*mue*-causative)

b. ? *Nangy dui Mimi kə ts'iŋ-beŋ ts'un.*
 Nangy towards Mimi give wipe-clean table
 'Nangy causes Mimi to wipe the table clean (and Mimi is the affectee).'
 (*kə*-causative)

c. *Nangy dui Mimi hai ts'iŋ-beŋ ts'un.*
 Nangy towards Mimi hurt wipe-clean table
 'Nangy causes Mimi to wipe the table clean (and Mimi is the affectee) (adversative).'
 (*hai*-causative)

d. * *Nangy dui Mimi bun ts'iŋ-beŋ ts'un.*
 Nangy towards Mimi separate wipe-clean table
 Intended: 'Nangy causes Mimi to wipe the table clean (and Mimi is the affectee) by giving precedence to Mimi out of courtesy.'
 (courteous *bun*-causative)

- e. * *Nangy dui Mimi bun ts'iŋ-beŋ ts'un.*
 Nangy towards Mimi separate wipe-clean table
 Intended: 'Nangy lets Mimi wipe the table clean (and Mimi is the
 affectee).'
- (permissive *bun*-causative)

In addition, when it comes to the resultative VV compounds, it has been noted in some Mandarin literature that it is impossible to have a complex predicate as the second V (cf. Li, 1998; Huang et al., 2009) and the same restrictions apply in Teochew (239). Therefore, it is impossible to paraphrase any causative with an embedded resultative VV compound serving as the second V; in other words, the third diagnostic cannot serve our purpose.

- (239) * *Mimi ts'iŋ-ho-beŋ ts'un.*
 Mimi wipe-very-clean table
 Intended: 'Mimi wipes the table very clean.'

However, the resultative *V-gao* 'arrive'-construction does not have such a restriction (240/10b); therefore, it could serve as a diagnostic here.

- (240) *Mimi tsao-gao ho heŋ.*
 Mimi run-arrive very tired
 'Mimi run and has become tired.'

As is shown in (241), in the case of embedded complex predicates, like that of the simplex one, all probabilistic causatives cannot be paraphrased by this construction (241b), in contrast to two deterministic ones (241a). Interestingly, both the deterministic and probabilistic causatives disallow the partial development of the caused event, i.e., the caused event starts but is not completed.

- (241) a. *Nangy mue/hai gao Mimi ts'iʔ-beʔ ts'un.*
 Nangy make/hurt arrive Mimi wipe-clean table
 'Nangy causes Mimi to wipe the table clean.'
 # 'Nangy causes Mimi to do the wiping, but the table is not completely clean.'
- b. * *Nangy kə/bun gao Mimi ts'iʔ-beʔ ts'un.*
 Nangy give/separate arrive Mimi wipe-clean table
 Intended: 'Nangy causes Mimi to wipe the table clean.' or
 'Nangy causes Mimi to do the wiping, but the table is not completely clean.'

Again, this suggests that in the case of embedded complex predicates, like that of the simplex one, the caused event in the probabilistic causative either happens or does not happen, both in a complete way.

4.3.2.3 DIFFERENT SCOPE READINGS

Recall that in the previous discussion, four scope-ambiguous items are made use of to differentiate deterministic causatives from probabilistic ones, including (i) the negative morpheme *bo*, (ii) the perfective marker *o*, (iii) the adverb *gihu* 'almost' and (iv) the adverb *yiū* 'again'. In the previous discussion, I showed that when there is no context regarding the happening of the caused events, in the case of probabilistic causatives, these items can only target the causing event. However, when the context regarding the (almost/not) happening of the caused event is given, both the causing event and the caused event can be targeted.

Given that in the case of embedded resultative VV compounds, the caused event is a complex one, it should follow that these scope-ambiguous items can target (i) the causing event, (ii) the beginning/manner/cause of the caused event denoted by the first verb and (iii) the ending/result of the caused event denoted

by the second verb, if given appropriate contexts. However, (242-245) shows this is not true.

- (242) *Nangy bo kə/bun Mimi ts'iŋ-beŋ ts'un.*
Nangy NEG give/separate Mimi wipe-clean table
Meaning 1: 'Nangy does not do the causing-Mimi-to-wipe-the-table-clean thing.'
Meaning 2: 'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, but Mimi does not do the wiping.'
'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, Mimi does the wiping, but the table is not completely clean.'
(The negative morpheme *bo*)

- (243) *Nangy kə/bun Mimi ts'iŋ-beŋ ts'un o/ku.*
Nangy give/separate Mimi wipe-clean table PFV
Meaning 1: 'Nangy has done the causing-Mimi-to-wipe-the-table-clean thing.'
Meaning 2: 'Nangy did the causing-Mimi-to-wipe-the-table-clean thing, and Mimi has done the wiping and the table is completely clean.'
'Nangy did the causing-Mimi-to-wipe-the-table-clean thing, Mimi has done the wiping but the table has not yet been completely clean.'
(The perfective marker *o*)

- (244) *Nangy gihu kə/bun Mimi ts'iŋ-beŋ ts'un.*
Nangy almost give/separate Mimi wipe-clean table
Meaning 1: 'Nangy almost does the causing-Mimi-to-wipe-the-table-clean thing.'
Meaning 2: 'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, but Mimi almost does the wiping.'

#'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, Mimi does the wiping and the table is almost clean.'

(The adverb *gihu* 'almost')

(245) *Nangy yiu kə/bun Mimi ts'iʔ-beʔ ts'un.*
Nangy again give/separate Mimi wipe-clean table

Meaning 1: 'Again, Nangy does the causing-Mimi-to-wipe-the-table-clean thing.'

Meaning 2: 'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, Mimi, who did the wiping-the-table-clean thing before, does it again.'

#'Nangy does the causing-Mimi-to-wipe-the-table-clean thing, Mimi does the wiping, and the table, which was clean before, becomes clean again.'

(The adverb *yiū* 'again')

Again, these confirm that in the case of embedded complex predicates, like that of the simplex one, the caused event in the probabilistic causative either happens or does not happen, both in a complete way.

4.3.2.4 RETURN TO THE TWO PROBABILISTIC READINGS

In fact, the resultative VV compound construction itself requires a deterministic causal relation, as is shown by the infelicity to negate the result denoted by the second verb in (246). This, together with the above discussion, shows that in Teochew, it is impossible to have a complex event denoted by the resultative VV compound being incomplete.

(246) *Mimi ts'iʔ-beʔ ts'un, #dansi ts'un huasi boi beʔ.*
Mimi wipe-clean table but table still NEG clean

Intended: 'Mimi wipes the table clean, but the table is not yet clean.'

Then, a natural question arises: why do native speakers of Teochew have three readings when it comes to examples like (235), simplified as (247) below?

(247) *Nangy kə / bun Mimi ts'iŋ-beŋ ts'un.*
Nangy give / separate Mimi wipe-clean table

If given the context that the caused event happens, then Meaning 1: 'Nangy causes Mimi to wipe the table clean, and Mimi does the wiping, and the table becomes clean.'

Meaning 2: 'Nangy causes Mimi to wipe the table clean, and Mimi does not do the wiping.'

Meaning 3: 'Nangy causes Mimi to wipe the table clean, and Mimi does the wiping, but the table does not become completely clean.'

I argue that the third reading is an epiphenomenon of the second one. Further evidence comes from the fact that if native speakers, who report the third reading, are further asked to confirm the actual happening of the wiping event, i.e., the beginning/manner/cause of the complex caused event denoted by the second verb, they usually will hesitate and then report that only one probabilistic reading, i.e., the second reading, is available to them. Therefore, the second and third readings are in fact equivalent to each other. This echoes the above diagnostic results.

Table 4.5 summarizes the discussion above regarding the deterministic vs. probabilistic distinction in the case of complex embedded predicates.

Table 4.5: Diagnostics on deterministic vs. probabilistic causation distinction (complex embedded predicates)

| Group | Diagnostics | <i>mue</i> | <i>kə</i> | <i>hai</i> | <i>bun</i> (both) |
|--|--|------------|---------------|------------|----------------------|
| Group 1 | Negating the caused event? | × | ✓ | × | ✓ |
| Group 2: paraphrase | Paraphrasing by passivizing the causee? | ✓ | ? | ✓ | * |
| | ... by the <i>dui</i> -construction? | ✓ | ? | ✓ | * |
| | ... by the VV compound? | × | * | × | * |
| | ... by the V- <i>gao</i> construction? | ✓ | * | ✓ | * |
| Group 3: different scope readings | Targeting the caused event by negative <i>bo</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by perfective marker <i>o</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>gihu</i> 'almost'? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>yiū</i> 'again'? | ✓ | × w/o context | ✓ | × w/o context |

4.3.3 INTERIM SUMMARY

In this section, we saw that all Teochew causatives can be differentiated from each other in the actuality entailment of the caused event. More specifically, as is shown in Table 4.6, the *mue* 'make'-causative and the *hai* 'hurt'-causative are deterministic causatives, entailing the actual and complete happening of the caused event, while the *kə* 'give'-causative and two *bun* 'separate'-causatives are probabilistic causative and do not the actual (and complete) happening of the caused event.

Table 4.6: Diagnostics on deterministic vs. probabilistic causation distinction (both simplex and complex embedded predicates)

| Group | Diagnostics | <i>mue</i> | <i>kə</i> | <i>hai</i> | <i>bun</i> (both) |
|--|--|------------|---------------|------------|----------------------|
| Group 1 | Negating the caused event? | × | ✓ | × | ✓ |
| Group 2: paraphrase | Paraphrasing by passivizing the causee? | ✓ | ? | ✓ | * |
| | ... by the <i>dui</i> -construction? | ✓ | ? | ✓ | * |
| | ... by the VV compound? | × | * | × | * |
| | ... by the V- <i>gao</i> construction? | ✓ | * | ✓ | * |
| Group 3: different scope readings | Targeting the caused event by negative <i>bo</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by perfective marker <i>o</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>gihu</i> 'almost'? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>yiū</i> 'again'? | ✓ | × w/o context | ✓ | × w/o context |

4.4 DIMENSION III: ATTITUDE-NEUTRAL VS. EXPRESSING THE SPEAKER'S ATTITUDE

As is briefly introduced in Chapter 1, the *hai* 'hurt'-causative and the courteous *bun* 'separate'-causative express the speaker's attitude, in contrast to the *mue* 'make'-causative, the *kə*-causative and the permissive *bun*-causative. In the following, I will show the properties of these two types of attitude-expressing causatives; more specifically, the *hai* 'hurt'-causative is interpreted as an adversative causative (Section 4.4.1) and the courteous *bun* 'separate'-causative a benefactive causative (Section 4.4.2).

4.4.1 ADVERSATIVE CAUSATIVE

4.4.1.1 THE *hai* 'HURT'-CAUSATIVE

The *hai* 'hurt'-causative, unlike the other periphrastic causatives in Teochew, is interpreted as an adversative causative, i.e., the causee is adversatively affected by the caused event in the eye of the speaker. In other words, the speaker views that the caused event affects the causee in a bad way, and the causee suffers from something harmful.

This adversative event structural interpretation exists even in the case where, for the causer and the causee, the caused event is regarded as *a good result* (248), suggesting the attitude-expressing reading is linked to the speaker rather than the event participants.

(248) Context: *Mimi the cat wants to run and Nangy the cat helps by causing the running. Both Mimi and Nangy are happy about the running. But the speaker knows that Mimi should not run because Mimi hurt his nail several days ago and running is bad for the healing of its nail.*

Nangy hai Mimi tsao.
Nangy hurt Mimi run

'Nangy causes Mimi to run (adversative).'

Meaning: 'In the eye of the speaker, Mimi's running caused by Nangy is 'bad' for Mimi, and Nangy should hold responsibility.'

This adversative reading can be further attested by two pieces of evidence. The first is the form of the perfective aspectual marker. Teochew marks the speaker's attitude in the form of perfective markers: *o* (neutral/positive) and *ku* (negative) (249). Misuse of aspectual markers is regarded as being impolite or ruthless.

- (249) a. *Nangy pueban Mimi o / #ku.*
 Nangy help Mimi PFV_{Neu/Pos} / PFV_{Neg}
 ‘Nangy has helped Mimi.’
- b. *U nang sebe ku / #o.*
 have people sick PFV_{Neg} / PFV_{Neu/Pos}
 ‘Some people have been sick.’

Only *ku* is compatible with the *hai* ‘hurt’-causative (250a). In contrast, the *mue* ‘make’-causative (250b), the *kə* ‘give’-causative (250c) and the permissive-*bun* ‘separate’-causative (250d) demonstrate a ?? pattern in the case of *ku* but is compatible with *o*.

- (250) a. *Nangy hai Mimi tsao ku / #o.*
 Nangy hurt Mimi run PFV_{Neg} / PFV_{Neu/Pos}
 ‘Nangy has done the causing-Mimi-to-run thing (adversative).’
 Or ‘Nangy did the causing-Mimi-to-run thing and Mimi has run (adversative).’
(*hai*-causative)
- b. *Nangy mue Mimi tsao ??ku / o.*
 Nangy make Mimi run PFV_{Neg} / PFV_{Neu/Pos}
 ‘Nangy has done the causing-Mimi-to-run thing’
 Or ‘Nangy did the causing-Mimi-to-run thing and Mimi has run.’
(*mue*-causative)

- c. *Nangy kə Mimi tsao ??ku / o.*
 Nangy give Mimi run PFV_{Neg} / PFV_{Neu/Pos}
 ‘Nangy has done the causing-Mimi-to-run thing.’ (Lit. ‘Nangy has given the running event to Mimi.’)
 Or if given a context regarding the happening of the caused event:
 ‘Nangy did the causing-Mimi-to-run thing and Mimi has run.’ (Lit. ‘Nangy gave the running event to Mimi and Mimi has received it.’)
 (kə-causative)

- d. *Nangy bun Mimi tsao ??ku / o.*
 Nangy separate Mimi run PFV_{Neg} / PFV_{Neu/Pos}
 ‘Nangy has done the causing-Mimi-to-run thing by giving his permission to Mimi.’
 Or if given a context regarding the happening of the caused event:
 ‘Nangy did the causing-Mimi-to-run thing by giving his permission and Mimi has run.’
 (permissive *bun*-causative)

The second diagnostic is the Teochew sentence-final confirming yes/no question marker *ho*, which is a relic of Old Chinese sentence-final yes/no question marker *hu*. It can only occur in sentences indicating the neutral or positive meaning of the speaker (251). Misuse of this question marker is regarded as being impolite or ruthless.

- (251) a. *Nangy pueban Mimi ho?*
 Nangy help Mimi Q_{confirm}
 ‘Is it true that Nangy help Mimi?’
 b. # *U nang sebe ho?*
 have people sick Q_{confirm}
 Intended: ‘Is it true that some people have been sick?’

This sentence-final question marker is incompatible with the *hai* ‘hurt’-causative, but can occur in the *mue* ‘make’-causative, the *kə* ‘give’-causative, and both *bun* ‘separate’-causatives (252).

- (252) a. # *Nangy hai Mimi tsao ho?*
 Nangy hurt Mimi run *Qconfirm*
 Intended: ‘Is it true that Nangy has caused Mimi to run (adversative)?’
 (*hai*-causative)
- b. *Nangy mue Mimi tsao ho?*
 Nangy make Mimi run *Qconfirm*
 ‘Is it true that Nangy causes Mimi to run?’
 (*mue*-causative)
- c. *Nangy kə Mimi tsao ho?*
 Nangy give Mimi run *Qconfirm*
 ‘Is it true that Nangy causes Mimi to run?’
 (Lit. ‘Is it true that Nangy gives the running event to Mimi?’)
 (*kə*-causative)
- d. *Nangy bun Mimi tsao ho?*
 Nangy separate Mimi run *Qconfirm*
 ‘Is it true that Nangy lets Mimi run?’
 (permissive *bun*-causative)

I conclude that the *hai* ‘hurt’-causative in Teochew is an adversative causative express the speaker’s negative attitude, in contrast with the other causatives.

4.4.1.2 COMPARISONS WITH JAPANESE CAUSATIVES

In the literature, the discussion of adversative causatives is mostly connected with Japanese lexical causatives.

It has been argued in the literature that one of the diagnostics to distinguish lexical causatives from productive causatives in Japanese is that only the former is associated with a *adversity interpretation* in addition to a regular causative meaning (Oehrle and Hiroko, 1981; Miyagawa, 1989; Harley, 1996). As is shown in (253), the lexical causative has an adversity meaning where the nominative argument, bearing a possession relation with the accusative one, is not a causer but an affected argument of the event denoted by the noncausative verb.

- (253) *Taroo-ga musuko-o sin-ase-ta.*
 Taro-NOM son-ACC die-CAUSE-PAST
 ‘Taro’s son died on him.’

(Pylkkänen, 2008)

Pylkkänen (2008) analyzes such causatives as structures with a root-selecting Cause head and a low source applicative head introducing the affected argument. However, as is shown in Chapter 3, the *hai* ‘hurt’-causative has a recursive *v*P structure where the causer and the causee are both introduced by a Voice head. Therefore, even setting aside the syntactic locus of causative semantics (Cause head in Pylkkänen (2008); higher *v* head in this paper), Japanese adversity causatives and Teochew adversative *hai* ‘hurt’-causative are structurally different.

When it comes to causal event structural interpretation, Pylkkänen (2008) shows that Japanese adversity causative has a causative meaning through (i) adding a *ni-yotte* phrase (*by*-phrase) specifying a causing event (254a) and (ii) showing such constructions cannot occur in the context where no obvious cause exists (254b-254c). In addition to this regular causative interpretation, the nominative argument in this lexical causative, in contrast to that in Japanese productive causative, can be interpreted as an adversely affected argument.

- (254) a. *Taroo-ga sensoo-ni-yotte musuko-o sin-ase-ta.*
 Taro-NOM war-BY son-ACC die-CAUSE-PAST
 'Taro's son was caused to die on him by the war.'
- b. Context: *Taro's father dies of natural causes.*
 # *Taroo-ga titioya-o sin-ase-ta.*
 Taro-NOM father-ACC die-CAUSE-PAST
 Intended: 'Taro was affected by his father's dying.'
- c. The incompatibility with *katteni* 'by itself' (i.e., 'without a cause'):
 ?? *Taroo-ga musuko-o katteni korob-ase-ta.*
 Taro-NOM son-ACC by.self fall.down-CAUSE-PAST
 Intended: 'Something caused Taro's son to fall down on him all by himself.'

(Pylkkänen, 2008)

In the case of Teochew *hai* 'hurt'-causative, in addition to the regular causative meaning, the intermediate external argument, i.e., the causee, is also interpreted as an adversely affected argument as is shown in the previous discussion. What is interesting is that the causer is also interpreted as a party to be blamed for bringing a bad caused event to the causee, no matter whether the causer intentionally does so or not (255).

- (255) a. *Nangy guyi hai Mimi tsao.*
 Nangy deliberately hurt Mimi run
 'Nangy deliberately causes Mimi to run (adversative).'
- Meaning: 'The running event is 'bad' for Mimi in the eye of the speaker, and it is because of Nangy, who deliberately does the causing event, that Mimi suffers, therefore it should be blamed on.'

(intentional causer)

b. *Nangy boyi hai Mimi tsao.*

Nangy unintentionally hurt Mimi run

'Nangy accidentally causes Mimi to run (adversative).'

Meaning: 'The running event is 'bad' for Mimi in the eye of the speaker, and it is because of Nangy, who accidentally does the causing event, that Mimi suffers, therefore it should be blamed on, even though it is unintentional.'

(unintentional causer)

Such an interpretation is not found in the Japanese lexical causatives; in addition, a possession relation between the causer and the causee in the Teochew *hai* 'hurt'-causative is not required (256).

(256) *Huang hai ts'iu-hio? galao? lo?lai.*

wind hurt tree-leaf fall down

'Winds cause the tree leaves to fall down (adversative).'

Meaning: 'The falling-down event is 'bad' for tree leaves in the eye of the speaker, and it is because of winds that the tree leaves need to go through this; therefore winds should be blamed on.'

Therefore, Teochew *hai* 'hurt'-causative serves as an interesting case to show that adversative causative not only does not require a possession relation involved or a root-selecting causal structure, but also can have a *to-blame-on* interpretation of causer in addition to the *adversely affected* causee interpretation and a normal recursive VoiceP+vP structure.

4.4.2 BENEFACTIVE CAUSATIVE

The courteous *bun* 'separate'-causative is interpreted as benefactive causative by the speaker. More specifically, the causative meaning is literally interpreted

by the speaker as ‘the causer originally plans to do the caused event himself/herself/itself/ themselves, then find(s) out the causee also plans to do so; therefore the causer decides to give precedence to the causee out of courtesy by letting the causee do the caused event first’ (257).

(257) Context: *Nangy planned to run to the top of the cat tree in front of the window itself after hearing some birdsong from outside. Then it saw Mimi come, also planning to run to the cat tree. It knew that Mimi’s attention was also caught by the birdsong and that Mimi was interested in seeing the view outside the window too. Out of courtesy, Nangy stops its running action and lets Mimi run to the cat tree first.*

Nangy bun Mimi tsao.
Nangy separate Mimi run

‘Nangy causes Mimi to run by giving precedence to Mimi for running out of courtesy.’

This *benefactive* reading exists even in the case where the causer is reluctant and the causee is not happy about the result (258), suggesting the attitude-expressing reading is associated to the speaker’s attitude rather than the event participants’.

(258) Context: *Nangy planned to run to the top of the cat tree in front of the window itself to enjoy the sunshine. At the same time, Mimi, who just finished bathing, was happily concentrating on playing with the ball. Though very reluctant, Nangy knew that it was better for Mimi to stop playing and run to the cat tree to bask in the sunshine for fur drying. Therefore, out of courtesy, he stops his running action and lets Mimi run to the cat tree first, which means Mimi will have to stop playing and will not be happy about it.*

Nangy bun Mimi tsao.
Nangy separate Mimi run

‘Nangy causes Mimi to run by giving precedence to Mimi for running out of courtesy.’

Three pieces of evidence support the attitude-expressing properties. First, the courteous *bun* ‘separate’-causative is only compatible with the neutral/positive-attitude-expressing aspectual marker *o* (259) (cf. (250a)).

(259) The courteous *bun* ‘separate’-causative:

Nangy bun Mimi tsao o / #ku.
Nangy separate Mimi run PFV_{Neu/Pos} / PFV_{Neg}

‘Nangy has caused Mimi to run by giving precedence to Mimi for running out of courtesy.’

Or if given a context regarding the happening of the caused event: ‘Nangy did the causing-Mimi-to-run thing by giving precedence to Mimi for running out of courtesy and Mimi has run.’

Second, the Teochew sentence-final confirming yes/no question marker *ho* is compatible with the courteous *bun* ‘separate’-causative (260), but not with the *hai* ‘hurt’-causative (252a).

(260) The courteous *bun* ‘separate’-causative:

Nangy bun Mimi tsao ho?
Nangy separate Mimi run Q_{confirm}

‘Is it true that Nangy causes Mimi to run by giving precedence to Mimi for running out of courtesy?’

So far, the above two diagnostics show that the speaker’s attitude born by the courteous *bun* ‘separate’-causative cannot be negative, i.e., it is neutral or positive. The following third diagnostic further shows that the speaker’s attitude is positive.

Teochew is a language making use of a lot of emotional interjections to express emotions or the speaker's attitude, many of which are relics of Old Chinese (Lin, 1997b). *Aodai!* is an emotional interjection used to indicate a strong positive attitude or appreciation towards an event that the speaker views as a morally good action (261).

(261) a. *Aodai! Mimi diam pueban ts'ubitaobue.*
 Aodai Mimi always help neighbors
 'Mimi always helps neighbors, and this is very nice!'

b. # *Aodai! Mimi diam kihu ts'ubitaobue.*
 Aodai Mimi always bully neighbors
 Intended: 'Mimi always bullies neighbors, and this is very nice!'

(262) shows that it is compatible with the courteous *bun* 'separate'-causative but not the adversative *hai* 'hurt'-causative, and its acceptability with the non-attitude-expressing causatives, i.e., the *mue* 'make'-causative, the *kə* 'give'-causative and the permissive *bun* 'separate'-causative, is relatively lower. Native speakers report that a more concrete context indicating the courteous reading of the non-attitude-expressing causatives is required in order to make these constructions compatible with *Aodai!*.

(262) a. ?? *Aodai! Nangy mue Mimi tsao.*
 Aodai Nangy make Mimi run
 Intended: 'Nangy causes Mimi to run, and this is very nice!'
(*mue*-causative)

b. ?? *Aodai! Nangy kə Mimi tsao.*
 Aodai Nangy give Mimi run
 Intended: 'Nangy causes Mimi to run, and this is very nice!'
 (Lit. 'Nangy gives the running event to Mimi, and this is very nice!')
(*kə*-causative)

c. # *Aodai! Nangy hai Mimi tsao.*
 Aodai Nangy hurt Mimi run
 Intended: 'Nangy causes Mimi to run (adversative), and this is very nice!'
 (*hai*-causative)

d. *Aodai! Nangy bun Mimi tsao.*
 Aodai Nangy separate Mimi run
 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy, and this is very nice!'
 (courteous *bun*-causative)

e. ?? *Aodai! Nangy bun Mimi tsao.*
 Aodai Nangy separate Mimi run
 Intended: 'Nangy lets Mimi run, and this is very nice!'
 (permissive *bun*-causative)

Therefore, based on the above three pieces of evidence, I conclude that the courteous *bun* 'hurt'-causative in Teochew is a causative expressing the speaker's positive attitude, in contrast with the other causatives.

4.4.3 INTERIM SUMMARY

To summarize, different from the other Teochew periphrastic causatives, the *hai* 'hurt'-causative expresses the negative attitude of the speaker, interpreted as an adversative causative, while the courteous *bun* bears the positive attitude of the speaker, interpreted as a benefactive causative.

4.5 DIMENSION IV: PERMISSIVE VS. NON-PERMISSIVE

4.5.1 THE PERMISSIVE *bun*-CAUSATIVE ENCODING SOCIAL RELATIONS

In addition to the semantics differences already discussed, Teochew periphrastic causatives also differ in whether they are *permissive* or not. To be more specific, in the permissive *bun* 'separate'-causative, the causee is interpreted as interacting with the causer in a way related to their social relationship: the causer, as someone with a higher social status, permits the causee, someone with a lower social status, to do something (263).

- (263) a. Context: *Mimi is older than Nangy; therefore, Mimi has a higher social status than Nangy according to social convention. Nangy wants to run in the area that Mimi usually occupies. In order to do it, Nangy asks Mimi for permission and Mimi agrees.*

Mimi bun Nangy tsao.
Mimi separate Nangy run

'Mimi causes Nangy to run by giving permission to Nangy to run.'

- b. Context: *Mimi is older than Nangy; therefore Mimi has a higher social status than Nangy according to social convention. Mimi wants to run in the area that Nangy usually occupies and Nangy lets him do so, considering Mimi has a higher social status than Nangy.*

Nangy bun Mimi tsao.
Nangy separate Mimi run

Intended: 'Nangy causes Mimi to run by giving permission to Mimi to run.'

Evidence from sentence-final particles further proves the existence of this social status implication. In Teochew, the clause-final emphatic yes/no-question marker *meh* can only target an event participant of higher social status in the context, no matter its syntactic position (264).

(264) a. *Meh* targeting the subject:

Tsiangbue lo gi haosegia meh?
senior PROG meet junior Q

'Is the senior that is meeting with the junior?'

NOT 'Is the junior that the senior is meeting with?'

b. *Meh* targeting the object:

Haosegia lo gi tsiangbue meh?
junior PROG meet senior Q

'Is the senior that is meeting with the junior?'

NOT 'Is the junior that the senior is meeting with?'

(265) shows that it can only target the cause, not the causee in the permissive *bun*-causative, even though both the causer and causee are indicated by proper name, and there is no context provided.

(265) *Nangy bun tsao Mimi meh?*
Nangy separate Mimi run Q

'Is Nangy that cause Mimi to run by giving permission to that one for running?'

NOT 'Is Mimi that Nangy causes to run by giving permission to that one for running?'

However, *meh* can target either the causer or the causee in the other Teochew causatives depending on the world knowledge of the speakers about the hierarchical social relations between the event participants (266).

- (266) a. *Nangy mue tsao Mimi meh?*
 Nangy make Mimi run Q
 ‘Is Nangy that cause Mimi to run?’
 OR ‘Is Mimi that Nangy causes to run?’
(*mue*-causative)
- b. *Nangy kə tsao Mimi meh?*
 Nangy give Mimi run Q
 ‘Is Nangy that cause Mimi to run?’
 OR ‘Is Mimi that Nangy causes to run?’
(*kə*-causative)
- c. *Nangy hai tsao Mimi meh?*
 Nangy hurt Mimi run Q
 ‘Is Nangy that cause Mimi to run?’
 OR ‘Is Mimi that Nangy causes to run?’
(*hai*-causative)
- d. *Nangy bun tsao Mimi meh?*
 Nangy separate Mimi run Q
 ‘Is Nangy that cause Mimi to run out of courtesy?’
 OR ‘Is Mimi that Nangy causes to run out of courtesy?’
(courteous *bun*-causative)

The above data shows that the hierarchical social relation between the causer and the causee is encoded in the permissive *bun*-causative, but not other ones.

4.5.2 COMPARISONS WITH KOREAN SPEECH STYLE PARTICLES

In the literature, it has been long noticed that certain cross-linguistic periphrastic causative have a similar *permissive* or *allowing* interpretation, e.g., English *let*-causative, Mandarin *rang*-causative (Luo and Kang, 2023) and German *lassen*-causatives (Pitteroff, 2014). However, to my knowledge, there are very few explicit

discussions of what a permissive implication is. As is shown above and to be shown with more details later, at least in Teochew, the permissive *bun* ‘separate’-causative requires that the causer has a higher social status than the causee.

Honorific markers and speech style particles in languages like Korean and Japanese (cf. Yamada, 2019; Portner et al., 2019, 2022) are known as marking social relations (between speaker and addressee). Portner et al. (2022) extend the *participant structure analysis* in Portner et al. (2019) to capture two distinct but related dimensions of social relations encoded in Korean speech style particles, as is shown in (267). They argue that the latter helps classify social relations and serves as the basis/source for hierarchical relations.

- (267) a. *Hierarchy* concerns the hierarchical relation between speaker and addressee along some socially relevant scale (e.g., seniority, age, kingship, etc.).
- b. *Formality* has to do with the type of relation between the interlocutors that is highlighted in a given conversation.

Though the participant relation in Teochew permissive *bun* ‘separate’-causative is not a speaker-addressee one, as is shown in the above example, the concept of *hierarchy*, more specifically, age, plays an important role in measuring the social relation. Two natural questions to ask are: (i) Can other kinds of hierarchical relations other than age between the causer and the causee be encoded in these Teochew causatives, just like Korean speech-style particles? and (ii) Is there a dimension like *formality* that helps classify the social relation as the basis/source for the hierarchical relation, which is similar to Korean speech-style particles?

For the first question, the data in (268-269) shows that in addition to ages, seniority (268) and kinship hierarchy (269) can also be the basis for a permission reading in Teochew permissive *bun*-causatives.

(268) Context: *Meng is a third-year Ph.D. student and Zhuotong is a second-year Ph.D. student. They are both supervised by the same professor at the same university, therefore Meng is more senior than Zhuotong.*

a. *When Meng lets Zhuotong present first in the group meeting:*

Meng bun Zhuotong soi da.
Meng separate Zhuotong first say
'Meng lets Zhuotong present first.'

b. *When Zhuotong lets Meng present first in the group meeting:*

Zhuotong bun Meng soi da.
Zhuotong separate Meng first say
Intended: 'Zhuotong lets Meng present first.'

(269) Context: *Zhuosi and Zhuotong are sisters. Zhuosi is four years older than Zhuotong. Therefore, Zhuosi has a higher kinship hierarchy than Zhuotong.*

a. *When Zhuosi lets Zhuotong talk first in the family meeting:*

Zhuosi bun Zhuotong soi da.
Zhuosi separate Zhuotong first say
'Zhuosi lets Zhuotong talk first.'

b. *When Zhuotong lets Zhuosi present first in the family meeting:*

Zhuotong bun Zhuosi soi da.
Zhuotong separate Zhuosi first say
Intended: 'Zhuotong lets Zhuosi talk first.'

Portner et al. (2022) also mentioned that in the case of Korean speech particles, when there exists a conflict between seniority and age, it is seniority that takes

precedence. The Teochew permissive *bun*-causative is different in this aspect. This is shown in (270) where age takes precedence over seniority.

(270) Context: *'Xiangsheng' is a traditional performing art in Chinese comedy and it has a very rigid hierarchical relation between the performers based on the generations of their master/teacher and/or their father (i.e., the 'Xiangsheng' seniority). Degang Guo, aged 50, is one of the most well-known 'Xiangsheng' performers in China. However, he has a lower 'Xiangsheng'-seniority hierarchical status than Jin Xie, aged 40. Both of them belong to the same 'Xiangsheng' company, 'De Yun She', which has a lot of weekly performances.*

a. *When Degang Guo lets Jin Xie perform first on the stage:*

Gue? De?gang bun Sia Gim soi yin.
Guo Degang separate Xie Jin first perform
'Degang Guo lets Jin Xie perform first.'

b. *When Jin Xie lets Degang Guo perform first on the stage:*

Sia Gim bun Gue? De?gang soi yin.
Xie Jin separate Guo Degang first perform
Intended: 'Jin Xie lets Degang Guo perform first.'

The data in (271) shows that when there is a conflict between kinship hierarchy and age, the former takes precedence.

(271) Context: *Huamei and Zhuotong are aunt and niece. However, Zhuotong is much older than her aunt. Therefore, Huamei has a higher kinship hierarchy than Zhuotong.*

- a. *When Huamei lets Zhuotong talk first in a family meeting by giving her permission:*

Huamei bun Zhuotong soi da.
Huamei separate Zhuotong first say
'Huamei lets Zhuotong talk first.'

- b. *When Zhuotong lets Huamei present first in the group meeting by giving her permission:*

Zhuotong bun Huamei soi da.
Zhuotong separate Huamei first say
Intended: 'Zhuotong lets Huamei talk first.'

Therefore, the priority hierarchy order among age, seniority and kinship hierarchy encoded in Teochew permissive *bun*-causative should be *kinship hierarchy* \prec_H *age* \prec_H *seniority*. I take this as a linguistic reflection of a Confucius culture (cf. Portner et al., 2022)⁵.

When it comes to the second question, unlike Korean speech style particles, the social relation encoded by Teochew permissive *bun*-causative does not have other dimensions of formality in addition to hierarchy. As is shown in (272), in Korean, in the case where two friends work together and one is more senior than the other in the work setting (one is a boss and the other is the assistant of the boss), the junior one can shift the speech style (particles) depending on which social relation in the more complex overall relationship is highlighted (i.e., 'formal' or 'informal').

⁵Native speakers report that in certain imaginary cases, say the case of the hierarchical status between a princess and the mother of her husband, (*imperial-related*) *seniority* can take precedence over *kinship hierarchy* and *age*.

(272) Assistant:

sacang-nim, cikum chwulpalha-si- eya ha- pnita.
BOSS-ADD.HON now leave-HON must DEC.DEF

‘Boss, you must leave now.’

Boss:

alkeyss-eyo.
okay-DEC.POLITE

‘Okay.’

[after a certain amount of repetition]

Assistant:

ya, ne cikum ka- ya ha- n-ta-ko malha-esse-canh-a!
hey you now go must PRS-DEC-CMP say-PST-CANH-DEC.INTIM

‘Hey, I said you have to go now!’

(Portner et al., 2022)

In contrast, Teochew permissive *bun*-causative does not allow such a social-relation shift. Consider the Xiangsheng case in (270). In the formal working setting, where a Xiangsheng seniority hierarchy should be more highlighted than age, age still takes precedence. That is to say, the same precedence holds in every setting, no matter whether it is formal or not.

We can reach the conclusion that though both Korean speech style particles and Teochew permissive *bun*-causative encode a social relation, while the social relations between the conversation participants encoded in the former allow interpretations with more than one dimension, the social relations between the causal event participants encoded in the latter only has a hierarchy-oriented interpretation. To be more specific, the social relations encoded in Teochew permissive *bun*-causative demonstrates a hierarchical social status between the causer and the

causee, following the order of *kinship hierarchy* \prec_H *age* \prec_H *seniority*, which holds in every setting.

4.6 SUMMARY: PLURAL INSTANTIATIONS OF CAUSAL RELATIONS

So far, we have explicitly demonstrated four dimensions of differences when it comes to the causality notions encoded in the Teochew periphrastic causatives. In Section 4.1, I showed that verbal decomposition in the spirit of generative semantics does not play a role when it comes to the event structure differences of these causatives. I then illustrated in Section 4.2 a fine (in)directness distinction of these causatives. In Section 4.3-4.5, I further showed that these Teochew causatives also differ in (i) whether they are deterministic, (ii) whether they express the speaker's attitude, and (iii) whether they are permissive causatives encoding a hierarchical social relation between the causer and the causee. All these causal event structural distinctions are summarized in Table 4.7.

Table 4.7: Causal event structural differences among Teochew causatives

| | | Differences | | | | | |
|------------|---------------------------------|--|------------|-----------|------------|-----------------|-----------------|
| (In)direct | Temporal | posteriority | <i>mue</i> | <i>kə</i> | <i>hai</i> | 'c.' <i>bun</i> | 'p.' <i>bun</i> |
| | | Non-overlapping posteriority with a time gap | × | ✓ | ✓ | ✓ | ✓ |
| | | Overlapping posteriority with an immediate adjacency | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Non-embedding posteriority overlapping | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Embedding posteriority with same ending | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | ... with an e2 late ending | ✓ | ✓ | ✓ | ✓ | × |
| | Simultaneity | Embedding simultaneity with e2 late ending | × | × | × | × | × |
| | | ... with e1 late ending | × | × | × | × | × |
| | | Complete overlapping | × | × | × | × | × |
| | Anteriority | Embedding anteriority with a same ending | × | × | × | × | × |
| | | ...with an e1 late ending | × | × | × | × | × |
| | | Non-embedding anteriority overlapping | × | × | × | × | × |
| | | Non-overlapping anteriority with immediate adjacency | × | × | × | × | × |
| | | Non-overlapping anteriority with a time gap | × | × | × | × | × |
| | Spatial | Directness | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Indirectness | × | ✓ | ✓ | × | ✓ |
| | Mediation | Directness (i.e., no mediation) | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Indirectness (i.e., with mediation) | × | ✓ | × | × | ✓ |
| | Deterministic vs. probabilistic | With an actual caused event | ✓ | ✓ | ✓ | ✓ | ✓ |
| | | Without an actual caused event | × | ✓ | × | ✓ | ✓ |
| | | Bear the speaker's attitude? | × | × | ✓ | ✓ | × |
| | | 'Permissive' encoding a hierarchical social relation between the causer and the causee? | × | × | × | × | ✓ |

To my knowledge, this study is one of the very few that discusses the causal differences in such a detailed and comprehensive way. I argue that based on Teochew, the causal relation encoded in human languages can differ in at least four dimensions, i.e., (i) direct vs. indirect, (ii) deterministic vs. probabilistic, (iii) attitude-neutral vs. expressing the speaker's attitude, and (iv) permissive vs. non-permissive. For the first dimension, there are three subdimensions, including temporal and spatial relations and whether an intermediary agent is allowed.

When it comes to the temporal subdimension, though there are three possible major relations between two events (posterity, simultaneity and anteriority), only a posterity relation, i.e., the starting time of the causing event precedes the starting time of the caused event, is allowed in Teochew periphrastic causatives. What is more, such a temporal relation can be further divided into five cases, as is shown in Table 4.7. As for the simultaneous temporal relations, in the previous discussion, though I show it cannot be encoded in Teochew periphrastic causative constructions, I also showed that Teochew resultative VV compounds actually can encode two simultaneous causal relations, i.e., complete overlapping and embedding simultaneity with e_1 late ending. Lastly, the anteriority temporal relations logically cannot occur in a causal relation, which is in the same spirit as many philosophical discussions in that cause must precede result (cf. (166)).

Based on Teochew, I conclude human languages can *at least* encode four major conceptual differences as is shown above. Appendix D illustrates a detailed taxonomy layout of possible combinatory possibilities of causal relations encoded in human languages, some of which I assume should also be able

to be attested in languages other than Teochew. Appendix E shows the detailed taxonomy of causal relations encoded in Teochew periphrastic causatives.⁶

The next chapter will provide a formal linguistic analysis of these complex causal relations.

⁶I also refer readers interested in the typology of causality encoded in other languages to the research project *Causality Across Language* led by Jürgen Bohnemeyer (Project website: <https://causalityacrosslanguages.wordpress.com>).

CHAPTER 5

CAUSALITY AND MODALITY: CAUSE(E_1 , E_2) IS NOT SOPHISTICATED ENOUGH

This chapter provides a formal analysis featuring event semantics paired with modal semantics of the complex causal relations discussed in Chapter 4. Section 5.1 will give an introduction to the theoretical background. Analyses of four different dimensions of causal differences will be made in Section 5.2-5.5, and a combinatory summary of all of these differences will be provided in Section 5.6 together with a preliminary discussion on the compatibility issue in Section 5.7. Section 5.8 will briefly discuss an alternative analysis of a Causal Model approach. Overall, this chapter argues that the complex causal relations shown in Chapter 4 mainly result from their event structures being influenced by different modal flavors of sublexical modality encoded in each causative verb.

5.1 THEORETICAL BACKGROUND

5.1.1 EVENT SEMANTICS

In pre-Davidsonian theories, a transitive verb like *eat* would be interpreted as introducing a relation between the subject and the object (273).

- (273) a. *Mimi eats snacks.*
b. EAT(Mimi, snacks)

Davidson (1967) observes that the representation in (273b) does not allow us to represent the meaning of some adverbial modifiers like *slowly*, *in the living room*

and *in the evening*. Therefore, the Davidsonian approach introduces an event argument as an additional argument of a verb and the representation of a transitive verb is changed from (273b) to (274b). The logical form of the sentence in (274c) is in (274d).

- (274) a. *Mimi eats snacks.*
 b. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e)]$
 c. *Mimi slowly eats snacks in the living room in the evening.*
 d. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e) \wedge \text{SLOW}(e) \wedge \text{IN}(e, \text{the living room}) \wedge \text{In}(e, \text{the evening})]$

One straightforward advantage of this approach is that it treats some adverbial modifiers as first-order predicates of the event argument; in this way, it can account for the entailment patterns of sentences with these modifiers. For example, the truth value of the sentences in (275) can be inferred from (274c), considering the entailment relations between (274d) and (276). Further evidence for the existence of the event argument comes from anaphoricity, quantification and definite descriptions (Maienborn, 2011).¹

- (275) a. *Mimi slowly eats snacks in the living room in the evening.*
 b. *Mimi slowly eats snacks in the living room.*
 c. *Mimi slowly eats snacks.*
 d. *Mimi eats snacks.*

¹Built on the discussion of the existence of event argument, there is also some discussion of its ontological properties, including the comparisons between events and states and the stage- vs. individual-level distinction (see Maienborn (2011) and Trueswell (2019) for reviews). This dissertation will set aside this ontological discussion since it is not the focus of this project.

(276) Logical forms of (275):

- a. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e) \wedge \text{IN}(e, \text{the living room}) \wedge \text{In}(e, \text{the evening})]$
- b. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e) \wedge \text{SLOW}(e) \wedge \text{IN}(e, \text{the living room})]$
- c. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e) \wedge \text{SLOW}(e) \wedge \text{In}(e, \text{the evening})]$
- d. $\exists e.[\text{EAT}(\text{Mimi}, \text{snacks}, e)]$

Davidson initially proposed the event argument is present in action verbs; however, the Neo-Davidsonian approach developed in Higginbotham (1985, 2000) and Parsons (1990, 2000) argues that the event argument has a much wider application, i.e., that any verbal predicate will have it. What connects the Neo-Davidsonian Events Semantics to the **General Research Question** (8) of this dissertation, i.e., ‘What are the contextualization conditions for the interpretations of the external arguments including the understudied causee?’, is another innovation: the use of thematic roles to link the event argument with its participants. This assumption treats thematic roles as two-place relations between an individual and an event and being ‘generally applied only to those relations that are entailed relations for the relevant verb’ (Williams, 2015). A relatively comprehensive list of these roles is given in (15).

Under these assumptions, the logical form in (274b) is further developed into (277b).

- (277) a. ‘Mimi eats snacks.’
- b. $\exists e.[\text{EAT}(e) \wedge \text{AGENT}(e, \text{Mimi}) \wedge \text{PATIENT}(e, \text{snacks})]$

However, as was discussed in the literature (e.g., Dowty, 1989, 1991; Williams, 2015), thematic roles like AGENT represent *highly general* thematic relations, abstracting out commonalities of certain verb-specific thematic relations, in contrast to *very specific* thematic relations like EATER, PLAYER, CARRIER, KICKER

etc., among which the notion of AGENT is shared. While thematic roles are helpful when it comes to capturing linguistic generalizations and, therefore, grammatical patterns, they do not have clear definitions, and there is no agreed list, not to mention criteria for inclusion, as is comprehensively reviewed in Dowty (1991). In addition, we face some logical problems when it comes to labeling thematic relations borne by event participants of predicates (nearly) inverse to each other like *buy* and *sell* or symmetrical predicates like *resemble* and *opposite to*. Therefore, despite the wide adoption of thematic roles in current event semantics analysis, they still have some inherent problems.

The third major proposal made in Parsons' approach, in the spirit of some Generative Semantics (e.g., Lakoff, 1965, 1971; McCawley, 1971; Ross, 1972; Dowty, 1972, 1979), is the idea that we should further decompose the verbal meaning into more basic atomic operators like DO, CAUSE and BECOME indicating relations between events. A simplified version of Parsons' *subatomic* approach is in (278). Such a semantics analysis is called an *Event Structure* where different subevents of the clause are related through the above-mentioned operators.

(278) The logical form of 'to close' combining (i) the assumption of event argument, (ii) thematic roles and (iii) verbal decompositions:

$$\lambda x.\lambda y.\lambda e.[\text{AGENT}(e, x) \wedge \text{THEME}(e, y) \wedge \exists e'[\text{CAUSE}(e, e') \wedge \text{THEME}(e', y) \wedge \exists s[\text{BECOME}(e', s) \wedge \text{CLOSED}(s) \wedge \text{THEME}(s, y)]]]]$$

'The transitive verb *to close* expresses an action *e* taken by an agent *x* on a theme *y* which causes an event *e'* of *y* changing into a state of *s* of being closed.'

(Maienborn, 2011)

This kind of event-structural decomposition is motivated by the semantics relations between the following sentences where (i) the overt *-en* morpheme seems to trigger the meaning difference (279a-279b), and (ii) (279c) entails (279b) in the sense that CAUSE(A, B) entails B (Lakoff, 1965; Hall, 1965).

- (279) a. *The glass is hard.*
b. *The glass hardened.*
c. *Floyd hardened the glass.*

Dowty (1979) also argues that the sentences in (279), together with the sentence type like *Floyd viewed glass* actually demonstrate the four aspectual classes in Vendler (1957), i.e., states, activities, achievements and accomplishments (280), can be analyzed using the DO, BECOME and CAUSE operators.

- (280) a. Stative:
The glass is hard.
b. Activity (DO):
Floyd viewed the glass.
c. Achievement (BECOME+stative):
The glass hardened.
d. Accomplishment (DO+CAUSE+BECOME+stative):
Floyd hardened the glass.

This dissertation adopts the first assumption of the Neo-Davidsonian Event Semantics, but as discussed in Chapter 2, will take a step back in terms of the second assumption of the Neo-Davidsonian event semantics, i.e., the thematic roles. In terms of the third assumption, this dissertation is in the same spirit as event structure, though the domain of the eventual decomposition in this

study is a construction, i.e., the causative structure, rather than individual verbs (cf. Section 4.1). In addition, this dissertation will further complicate the monolithic CAUSE operator, arguing that it is inadequate to capture different causality notions encoded in natural languages, as was demonstrated in Chapter 4.

5.1.2 MODAL SEMANTICS

Modality is a linguistic phenomenon that empowers grammar to allow one to say things about/on the basis of situations that do not need to be real (Portner, 2009). This dissertation will adopt a version of Modal/Possible World Semantics built on Kratzer (1977, 1978, 1981, 1986, 1991) and Portner (2009, 2018).

The main tool in the Modal Semantics representation is *Possible World* (w), specifying a particular total state of affairs. Modal expressions quantify the possible worlds. In addition to the quantification force differences between *universal* and *existential*, this approach to Modal Semantics specifies the modal flavor by making use of two conversational backgrounds (Kratzer, 1981) of which the categories are provided in Kratzer (1977, 1981) (281)².

(281) Categories of conversational background:

- a. Epistemic: $f(x)$ is a set of facts known in w .
- b. Deontic: $f(x)$ is a set of rules in force in w .

²As has been shown in decades of studies, finer distinctions regarding the conversational background can be made (see Chapter 3-4 in Portner (2009) for a review). In addition to this classification system based on the modal specifications built on the quantification force, the modal base and the ordering source, another way to divide them is to relate them to sentence structure and beyond. Portner (2009) divides the modals into (i) sentential modality, (ii) sub-sentential modality and (iii) discourse modality. Arregui et al. (2017) also shows that modality distributes in a much more extensive syntactic domain than traditionally thought: (i) the LOW modality includes the verbal and nominal domain, (ii) the MIDDLE modality refers to those structurally linked to tense and aspect, (iii) the HIGH modality refers to those appearing above tense and aspect.

- c. Teleological: $f(x)$ is a set of goals in w .
- d. Bouletic: $f(x)$ is a set of desires in w .
- e. Circumstantial: $f(x)$ is a set of circumstances holding in w .
- f. Stereotypical: $f(x)$ is a set of expectations concerning what w is like.

(Portner, 2009)

The first conversational background is *Modal Base* (f) which is a set of premises determining the domain of quantification, represented as $\bigcap f(x)$. The second conversational background is *Ordering Source* (g), providing the internal structure of the set of the accessible worlds already limited by the modal base and ordering the worlds as $\leq_{g(w)}$ (Portner, 2009). A simplified representation of the possibility modal expression with the $R_{f,g}$ flavor in the context c is given in (282a); the necessity counterpart is given in (282b). $R_{f,g}$ denotes an accessibility relation given a modal base f and an ordering source g and can be defined as $R_{f,g}(w, w')$ iff $w' \in \text{BEST}(f(w), g(w))$ ³.

- (282) a. $\llbracket \diamond \beta \rrbracket^{c,f,g} \rightsquigarrow \{w: \exists w' [R_{f,g}(w, w') \wedge w' \in \llbracket \beta \rrbracket^{c,f,g}]\}$
 b. $\llbracket \square \beta \rrbracket^{c,f,g} \rightsquigarrow \{w: \forall w' [R_{f,g}(w, w') \rightarrow w' \in \llbracket \beta \rrbracket^{c,f,g}]\}$

In the same spirit, Koenig and Davis (2001) largely expand the application of modality to the sublexical level of verbs, including those that are not attitude predicates. They show that, though many previous works maintain that properties of participant roles in the situation types denoted by predicates are a major determinant of the syntactic function of the dependents that denote these participants, in the case of (283), this view seems to fail. To be specific, each series of verbs with identical linking patterns, i.e., the correspondence between semantic arguments

³A 'best' set does not always exist. This is a simplification of the full ordering semantics in the Kratzerian framework.

and syntactic functions, seems to not share the participant-role properties typically claimed to underlie the relationship between their semantic arguments and syntactic dependents.

- (283) a. *Burns sent/offered/owed/promised/charged/denied* Smithers \$10 for the dinner.
- b. *Bill had/received/lost/lacked/needed* many books.
- c. *Sue perceived/noticed/overlooked/missed* him.
- d. *Bill managed/tried/failed/neglected* to read the books.
- e. *Sue forced/urged/denied/forbade* Bill to go.

To solve this issue, they argue that verbs in each series do share the relevant participant-role properties and the semantic grounding of linking can be maintained, if the semantics of predicators is divided into two components, a *situational core* component categorizing types of relations between participants in situations and the roles these participants play in them, and a *sublexical modality* component evaluating these relations at various world and time indices. To be more specific, the semantics of verbs includes a sublexical modality component evaluating the participant-internal relations in situations at various world and time indices, relativizing or restricting the lexical entailments of the verbs, and often includes the lexical counterpart of the contextual modal base selections by modal verbs in the spirit of Kratzer (1981). By further hypothesizing that semantically-sensitive linking constraints for direct arguments *only* depend on the situation core one, the same linking patterns in each series of verbs can be explained. Koenig and Davis (2001) call this 'Modal Component Hypothesis'.

This type of sublexical modal analysis is also adopted in some other languages and phenomena, including but not limited to the 'out-of-control' *ka-a* circumfix

in St’at’imcets (Davis et al., 2009), the involuntary construction in Polish (Rivero et al., 2010), the ‘control’ phenomena in Skwxw7mes (Jacobs, 2011), the defeasible causative verbs in Frech and German (Martin and Schäfer, 2012, 2017) and the Tagalog ability/involuntary action form (Alonso-Ovalle and Hsieh, 2021).

This dissertation will make use of Modal/Possible World Semantics, more specifically, sublexical modality, to help explain different causality notions shown in Chapter 4.

5.2 DIMENSIONS I: DIRECT VS. INDIRECT

In Chapter 4, we show that Teochew periphrastic causatives differ in three sub-dimensions of (in)directness, i.e., (i) temporal (in)directness, (ii) spatial (in)directness and (iii) acceptability of mediation. The following will provide an analysis of these subdimensions.

5.2.1 SUBDIMENSION: TIME

In Section 4.2.2, we discussed the complex (in)direct causality encoded in all Teochew causatives, repeated as Table 5.1 below.

Table 5.1: Temporal ‘(in)directness’ of all Teochew causative (repeated)

| Temporal ‘(in)directness’ | | <i>mue</i> | <i>kə</i> | <i>hai</i> | <i>‘c.’ bun</i> | <i>‘p.’ bun</i> |
|---------------------------|--|------------|-----------|------------|-----------------|-----------------|
| Poster- iority | Non-overlapping posteriority with a time gap | × | ✓ | ✓ | ✓ | ✓ |
| | Overlapping posteriority with an immediate adjacency | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Non-embedding posteriority overlapping | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Embedding posteriority with same ending | ✓ | ✓ | ✓ | ✓ | ✓ |
| | ... with an e_2 late ending | ✓ | ✓ | ✓ | ✓ | × |
| Simul- taneity | Embedding simultaneity with an e_2 late ending | × | × | × | × | × |
| | ... with e_1 late ending | × | × | × | × | × |
| | Complete overlapping | × | × | × | × | × |
| Anter- iority | Embedding anteriority with a same ending | × | × | × | × | × |
| | ...with an e_1 late ending | × | × | × | × | × |
| | Non-embedding anteriority overlapping | × | × | × | × | × |
| | Non-overlapping anteriority with immediate adjacency | × | × | × | × | × |
| | Non-overlapping anteriority with a time gap | × | × | × | × | × |

In terms of the notations of temporal relations between the causing event e_2 and the caused event e_1 , I adopt the notations in Kuhn and Portner (2002) shown in (284).

(284) Notations of temporal relations:

- a. $>$: precedence
- b. $<$: succession
- c. $>>$: immediate precedence; for example, $A >> B$ can be defined by $A > B \wedge \neg \exists x(A > x > B)$
- d. $<<$: immediate succession
- e. \subset : inclusion
- f. \supset : containment
- g. \circ : overlap
- h. The subscript l : 'left'; for example, $A \circ_l B$ can be defined by $\exists x(x \subset A \wedge x < B) \wedge \exists x(x \subset A \wedge x \subset B) \wedge \exists x(x \subset B \wedge x > A)$
- i. The subscript r : 'right'

In this way, the thirteen logically possible temporal relations in (165) can be notated as (285).

(285) Notations of thirteen logically possible temporal relations holding between two events, i.e., e_1 and e_2 (Kuhn and Portner, 2002):

a. Posteriority:

- i. Non-overlapping posteriority with a time gap:

$$e_2 < e_1$$

- ii. Non-overlapping posteriority with an immediate adjacency:

$$e_2 << e_1$$

iii. Non-embedding posteriority overlapping:

$$e_2 \circ_l e_1$$

iv. Embedding posteriority with the same ending:

$$e_2 \supset_r e_1$$

v. Embedding posteriority with an e_2 late ending:

$$e_2 \supset e_1$$

b. Simultaneity

i. Embedding simultaneity with an e_2 late ending:

$$e_2 \supset_l e_1$$

ii. Complete overlapping:

$$e_2 = e_1$$

iii. Embedding simultaneity with an e_1 late ending:

$$e_2 \subset_l e_1$$

c. Anteriority

i. Embedding anteriority with the same ending:

$$e_2 \subset_r e_1$$

ii. Embedding anteriority with an e_1 late ending:

$$e_2 \subset e_1$$

iii. Non-embedding anteriority overlapping:

$$e_2 \circ_r e_1$$

iv. Non-overlapping anteriority with an immediate adjacency:

$$e_2 \gg e_1$$

v. Non-overlapping anteriority with a time gap:

$$e_2 > e_1$$

Based on Table 5.1, the temporal relations compatible with each Teochew periphrastic causative can be formalized in Table 5.2.

Table 5.2: Temporal relations encoded in Teochew periphrastic causatives (formalized)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'court.' <i>bun</i> -caus. | 'perm.' <i>bun</i> -caus. |
|---------------------------------|-------------------|------------------|-------------------|----------------------------|---------------------------|
| $\tau(e_2) < \tau(e_1)$ | × | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \ll \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \circ_l \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \supset_r \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \supset \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | × |
| $\tau(e_2) \supset_l \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) = \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset_l \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset_r \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \circ_r \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \gg \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) > \tau(e_1)$ | × | × | × | × | × |

As we can see from this table, there are 5 maximum temporal relations available across all Teochew periphrastic causatives: (i) $\tau(e_2) < \tau(e_1)$, (ii) $\tau(e_2) \ll \tau(e_1)$, (iii) $\tau(e_2) \circ_l \tau(e_1)$, (iv) $\tau(e_2) \supset_r \tau(e_1)$ and (v) $\tau(e_2) \supset \tau(e_1)$. However, the *mue*-causative disallows (i) and the permissive *bun*-causative disallows (v), while the other three allow all.

5.2.2 SUBDIMENSION: SPACE

In Section 4.2.3, I showed that the *mue* 'make'-causative and the courteous *bun* 'separate'-causative disallow spatial indirectness between the causing event and the caused event, but the rest of Teochew causatives allow it.

Though it would be ideal if we could try to find similar complex interactive spatial relations, like what we did for the temporal one, in reality, it is actually hard to compare the relative spatial locations between two events. This is mainly

because defining what counts as a spatial location of one single event is already difficult, given the issue of the vague spatial boundary⁴.

Therefore, I will adopt the analysis of spatial inflection in Nez Perce by Deal (2009). She shows that in Nez Perce, spatial notions are expressed by verbal inflectional morphology, and there are two morphemes for these in this language. One is the cislocative *-m*, which expresses a proximal spatial relation (311a). The other is the translocative *-ki*, encoding a distal spatial relation (287).

(286) Proximal spatial relation:

- a. *meet'u téemux 'e-wehye-m.*
but footprint 3.POSS-com-CIS
'But his footprints lead this way.'
- b. *walíms sis 'inp'i-m.*
W mush take-CIS
'Walims, take mush from here!'

(287) Distal spatial relation:

- a. *kawo' heenek'e hi-q'uyim-cen-ki.*
the again 3.SUBJ-climb-IMPERF-TRANS
'He climbed farther up.'
- b. *'iskit hi-ku-s'een-ki.*
trail S.SUBJ-go-IMPERF-TRANS
'The trail goes that way (away from the speaker).'

Deal (2009) represents the lexical semantics of these two morphemes in (288), where *s* is situation and *s** is indexical to the utterance situation.

⁴I thank Catherine Huang for asking this thought-triggering question when I presented the analysis at the Georgetown Semantics Reading Group.

- (288) a. Cislocative *m*: $\lambda s.s \sim_{sp} s^*$
 b. Translocative *-ki*: $\lambda s.s \not\sim_{sp} s^*$

In this dissertation, in the same spirit as Deal (2009) and following event semantics, I denote the spatial relations compatible with each Teochew periphrastic causative in Table 5.3, where e_2 is the causing event and e_1 is the caused event.

Table 5.3: Spatial relations compatible with each Teochew periphrastic causative (formalized)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'c.' <i>bun</i> -caus. | 'p.' <i>bun</i> -caus. |
|-------------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| $e_2 \sim_{sp} e_1$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $e_2 \not\sim_{sp} e_1$ | × | ✓ | ✓ | × | ✓ |

As we can see from the table, while the *mue*-causative and the courteous *bun*-causative both disallow a $e_2 \not\sim_{sp} e_1$ spatial relation, the other three causative allow both this one and $e_2 \sim_{sp} e_1$.

5.2.3 SUBDIMENSION: INTERMEDIARY AGENT

In Section 4.2.4, I showed that all the causatives allow participant-based direct causal chains; However, only the *kə* 'give'-causative and the permissive *bun* 'separate'-causative allow a participant-based indirect chain.

One natural question to ask is whether, given the mediation of an event participant, is it possible that its existence indicates the existence of another event other than the causing event and the caused event. However, the following evidence indicates this is not true, i.e., all Teochew periphrastic causatives are bi-eventive, supporting our analysis of recursive *vP* in Chapter 3.

First, in appropriate contexts where there exists a mediation, and the *kə*-causative and the permissive *bun*-causative are compatible with these contexts, there cannot be more than two manner adverbs, as is shown in (289).

(289) *Context: There is an intermediary agent in the causing chain.*

a. * *Nangy meme kə meme / manman Mimi manman tsao.*

Nangy quickly give quickly / slowly Mimi slowly run

Intended: 'Nangy quickly causes some intermediary agent to quickly/slowly cause Mimi to slowly run.'

(*kə*-causative)

b. * *Nangy meme bun meme / manman Mimi manman tsao.*

Nangy quickly separate quickly / slowly Mimi slowly run

Intended: 'Nangy quickly lets some intermediary agent quickly/slowly cause Mimi to slowly run.'

(permissive *bun*-causative)

Second, a third temporal modification is also disallowed in these two causatives (290).

(290) *Context: There is an intermediary agent in the causing chain.*

a. * *Nangy metsa kə metsa / egua Mimi*

Nangy in.the.morning give in.the.morning / in.the.afternoon Mimi
egua tsao.
in.the.afternoon run

Intended: 'In the morning, Nangy causes some intermediary agent, in the morning/afternoon, to cause Mimi to run in the afternoon.'

(*kə*-causative)

b. * *Nangy metsa bun metsa / egua*

Nangy in.the.morning separate in.the.morning / in.the.afternoon
Mimi egua tsao.
Mimi in.the.afternoon run

Intended: 'In the morning, Nangy lets some intermediary agent, in the morning/afternoon, cause Mimi to run in the afternoon.'

(permissive *bun*-causative)

Third, similarly, more than two spatial modifications are ungrammatical in these two causatives (291).

- (291) a. **Nangy do bang lai kə do bang lai / ua Mimi do bang*
 Nangy at room inside give at room inside / outside Mimi at room
ua tsao.
 outside run
 Intended: 'Inside the room, Nangy causes some intermediary agent,
 inside/outside the room, to cause Mimi to run outside the room.'
 (kə-causative)
- b. **Nangy do bang lai bun do bang lai / ua Mimi do*
 Nangy at room inside separate at room inside / outside Mimi at
bang ua tsao.
 room outside run
 Intended: 'Inside the room, Nangy lets some intermediary agent,
 inside/outside the room, cause Mimi to run outside the room.'
 (permissive *bun*-causative)

Altogether, these show that there exists no other event in addition to the causing event and the caused event in the *kə*-causative and the permissive *bun*-causative. Therefore, the mediation or the intermediary agent will either participate in the causing event or in the caused event. In this dissertation, I assume the former with an aim to treat the causee as the most prominent participant in the caused event. When it comes to denotation, I will assume a mereological (i.e., part-whole) relation in the same spirit as (e.g., Link, 1983) in the domain of event (e.g., Link, 1998; Bach, 1986; Krifka, 1992). Following Krifka (1992), I use \subseteq to denote the 'part' relation and \subset the 'proper part' relation. A caused event e_1 and a causing event e_2 disallowing the existence of an intermediary agent is denoted in (292a) (in contrast to (292b)). I assume that without such a specification, the causal chain will be compatible with an intermediary agent if any.

- (292) a. $\exists e_1. \exists e_2. \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]$
- b. $\exists e_1. \exists e_2. \exists e_3. [e_3 \subset e_2 \wedge \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]$

5.2.4 INTERIM SUMMARY

Table 5.4 summarizes the (in)direct causal relations compatible with each Teochew periphrastic causative.

Table 5.4: (In)direct causal relations encoded in Teochew periphrastic causatives (formalized)

| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'c.' <i>bun</i> -caus. | 'p.' <i>bun</i> -caus. |
|---------------------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| $\tau(e_2) < \tau(e_1)$ | × | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \ll \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \circ_l \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \supset_r \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $\tau(e_2) \supset \tau(e_1)$ | ✓ | ✓ | ✓ | ✓ | × |
| $\tau(e_2) \supset_l \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) = \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset_l \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset_r \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \subset \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \circ_r \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) \gg \tau(e_1)$ | × | × | × | × | × |
| $\tau(e_2) > \tau(e_1)$ | × | × | × | × | × |
| $e_2 \sim_{sp} e_1$ | ✓ | ✓ | ✓ | ✓ | ✓ |
| $e_2 \not\sim_{sp} e_1$ | × | ✓ | ✓ | × | ✓ |
| (292a) | ✓ | ✓ | ✓ | ✓ | ✓ |
| (292b) | × | ✓ | × | × | ✓ |

Based on the above discussion, the (in)direct causal relations compatible with each Teochew causative verb and their formalization can be summarized in (293-

297). The three subdimensions (temporal, spatial and intermediate AGENT) are underlined differently for clarity purposes.

For each causative, I first spell out the concrete causal relations compatible with it for clarity purposes; then, I propose a streamlined version of the temporal representation compatible with those in each concrete causal relation. In the end, building on these, the lexical entry for each causative is provided. Besides, by not specifying the spatial relation and whether there exists an intermediate AGENT in the denotations, e.g., the denotations in (294), I assume this causative is neutral in terms of these two subdimensions of (in)directness, i.e., it allows both proximal and distal spatial relation, and it allows an intermediary agent but does not require an intermediary agent to exist.

(293) **The *mue* ‘make’-causative:**

a. **Concrete causal relations compatible with this causative:**

- i. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \ll \tau(e_1) \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\underline{\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x]} \wedge \underline{\exists y[\text{AGENT}(y)(e_2) \wedge y \neq x}]]] \wedge P(e_1)$
- ii. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \circ_l \tau(e_1) \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\underline{\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x]} \wedge \underline{\exists y[\text{AGENT}(y)(e_2) \wedge y \neq x}]]] \wedge P(e_1)$
- iii. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \supset_r \tau(e_1) \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\underline{\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x]} \wedge \underline{\exists y[\text{AGENT}(y)(e_2) \wedge y \neq x}]]] \wedge P(e_1)$
- iv. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \supset \tau(e_1) \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\underline{\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x]} \wedge \underline{\exists y[\text{AGENT}(y)(e_2) \wedge y \neq x}]]] \wedge P(e_1)$

b. **The streamlined temporal representation:**

$$\underline{\exists t.[t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'.[t' \in \tau(e_1) \rightarrow \exists t''.[t'' \in \tau(e_2) \wedge t'' < t']]}$$

c. **The lexical entry for the causative verb *mue* 'make':**

$$\begin{aligned} \llbracket mue \rrbracket \rightsquigarrow & \lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\exists t.[t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'.[t' \in \tau(e_1) \rightarrow} \\ & \underline{\exists t''.[t'' \in \tau(e_2) \wedge t'' < t']]} \wedge \underline{e_2 \sim_{sp} e_1} \wedge \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-} \\ & \text{AGENT}(x)(e_2, e_3, e_1) \wedge \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge} \\ & \underline{y \neq x}]]] \wedge P(e_1) \end{aligned}$$

(to be revised)

(294) **The *kə* 'give'-causative:**

a. **Concrete causal relations compatible with this causative:**

- i. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) < \tau(e_1)} \wedge P(e_1)$
- ii. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \ll \tau(e_1)} \wedge P(e_1)$
- iii. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) o_l \tau(e_1)} \wedge P(e_1)$
- iv. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \supset_r \tau(e_1)} \wedge P(e_1)$
- v. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \supset \tau(e_1)} \wedge P(e_1)$

b. **The streamlined temporal representation:**

$$\underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t]]}$$

c. **The lexical entry for the causative verb *kə* 'give':**

$$\llbracket kə \rrbracket \rightsquigarrow \lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t]]} \wedge P(e_1)$$

(to be revised)

(295) **The *hai* 'hurt'-causative:**

a. **Concrete causal relations compatible with this causative:**

$$\text{i. } \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) < \tau(e_1) \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

$$\text{ii. } \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \tau(e_2) \ll \tau(e_1) \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

$$\text{iii. } \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \circ_l \tau(e_1) \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

$$\text{iv. } \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \supset_r \tau(e_1) \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

$$\text{v. } \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \tau(e_2) \supset \tau(e_1) \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

b. **The streamlined temporal representation:**

$$\forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t]]$$

c. **The lexical entry for the causative verb *hai* 'hurt'-causative:**

$$[[\textit{hai}]] \rightsquigarrow \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t]] \wedge \\ \forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z[\text{AGENT}(z)(e_1) \\ \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]] \wedge P(e_1)$$

(to be revised)

(296) **The courteous *bun* ‘separate’-causative:**

a. **Concrete causal relations compatible with this causative:**

- i. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\tau(e_2) < \tau(e_1)} \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$
- ii. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\tau(e_2) \ll \tau(e_1)} \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$
- iii. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\tau(e_2) \circ_l \tau(e_1)} \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$
- iv. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\tau(e_2) \supset_r \tau(e_1)} \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$
- v. $\lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\tau(e_2) \supset \tau(e_1)} \wedge \underline{e_2 \sim_{sp} e_1} \wedge$
 $\underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$
 $\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$

b. **The streamlined temporal relations:**

$$\underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]}$$

c. **The lexical entry for courteous *bun*-causative:**

$$\llbracket \textit{bun} \rrbracket \rightsquigarrow \lambda P.\lambda e_2.\exists e_1.\text{CAUSE}(e_2, e_1) \wedge \underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]}$$

$$\wedge \underline{e_2 \sim_{sp} e_1} \wedge \underline{\forall e_3.[e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge$$

$$\exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]}] \wedge P(e_1)$$

(to be revised)

(297) **The permissive *bun* ‘separate’-causative:**

a. **Concrete causal relations compatible with this causative:**

- i. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) < \tau(e_1)} \wedge P(e_1)$
- ii. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \ll \tau(e_1)} \wedge P(e_1)$
- iii. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \circ_l \tau(e_1)} \wedge P(e_1)$
- iv. $\lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\tau(e_2) \supset_r \tau(e_1)} \wedge P(e_1)$

b. **The streamlined temporal representations:**

$$\underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''.[t'' \in \tau(e_2) \wedge t < t'']]}$$

c. **The lexical entry for permissive *bun*-causative:**

$$\llbracket bun \rrbracket \rightsquigarrow \lambda P.\lambda e_2.\exists e_1.CAUSE(e_2, e_1) \wedge \underline{\forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''.[t'' \in \tau(e_2) \wedge t < t'']] \wedge P(e_1)}$$

(to be revised)

The next section will examine the actuality of the caused event in Teochew periphrastic causatives and start eliminating the monolithic CAUSE operator in the lexical entries.

5.3 DIMENSION II: DETERMINISTIC VS. PROBABILISTIC

In Section 4.3, I showed that the Teochew causatives can be differentiated from each other in the actuality of the caused event. As is shown in Table 4.6 (repeated as Table 5.5 below), they demonstrate different patterns when it comes to results of diagnostics sensitive to the actuality of the caused event. More specifically, the *mue* ‘make’-causative and the *hai* ‘hurt’-causative are deterministic causatives, entailing

the actual and complete happening of the caused event. In contrast, the *kə* ‘give’-causative and both *bun* ‘separate’-causatives are probabilistic causatives and do not entail the actual (and complete) happening of the caused event.

Table 5.5: Diagnostics on deterministic vs. probabilistic causation distinction (repeated)

| Group | Diagnostics | <i>mue</i> | <i>kə</i> | <i>hai</i> | <i>bun</i> (both) |
|--|---|------------|---------------|------------|----------------------|
| Group 1 | Negating the caused event? | × | ✓ | × | ✓ |
| Group 2: paraphrase | Paraphrasing by passivizing the causee? | ✓ | ? | ✓ | * |
| | ... by the <i>dui</i> -construction? | ✓ | ? | ✓ | * |
| | ... by the VV compound? | × | * | × | * |
| | ... by the <i>V-gao</i> construction? | ✓ | * | ✓ | * |
| Group 3: different scope readings | Targeting the caused event by negative <i>bo</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by perfective marker <i>o</i> ? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>gihu</i> ‘almost’? | ✓ | × w/o context | ✓ | × w/o context |
| | ... by <i>yi</i> ‘again’? | ✓ | × w/o context | ✓ | × w/o context |

5.3.1 PREVIOUS MODAL SEMANTIC ANALYSIS

In the literature, there is much research on issues relevant to actuality entailment, though they are not all described in this way.

First, despite previous works making great use of the CAUSE operator to link events in a causal chain (cf. Pustejovsky, 1995; Higginbotham, 2000), which later develops into a functional head in syntax (Kratzer, 2005; Pylkkänen, 2008; Ramchand, 2008), defeasible causation, where the (normal) happening of the second (sub)event might not happen, poses a challenge to this approach. This is because the lack of actuality entailment contradicts the counterfactuality analysis of the CAUSE operator (Dowty, 1979) widely adopted in many studies.

Even before defeasible causation was noticed, linguists have noticed the absence of actuality entailment in other language phenomena, suggesting this

is an issue with a wider scope than what people thought. Among these phenomena, the most studied case is *imperfective paradox* (Dowty, 1979; Parsons, 1990; Landman, 1992; Portner, 1998). For example, Dowty (1979) shows that when the sentence is in a progressive aspect, it does not entail the sentence in a simple tense, if the predicate is an accomplishment verb (298a), contra the case where the predicate is an activity verb (298b).

- (298) a. i. *John was drawing a circle.*
 ii. \Rightarrow *John drew a circle.*
 (accomplishment)
- b. i. *John was pushing a cart.*
 ii. \rightarrow *John pushed a cart.*
 (activity)

Adopting ordering semantics and incorporating reference to events into the modal theory built by Kratzer, Portner (1998) proposes a Modal Semantics analysis of progressive in (299), where CirC represents a circumstantial modal base, i.e., ‘a set of circumstances relevant to whether e is completed’, and NI refers to the ordering source, i.e., ‘the set of propositions which assert that e does not get interrupted’. The key takeaway here is that the internal relations between different subevents in the event chain are represented in terms of modality.

- (299) a. $\text{Best}(\text{CIRC}, \text{NI}, e, P) =$ the set of worlds w' in $\bigcap \text{CIRC}(e, P)$ such that there is no w'' in $\bigcap \text{CIRC}(e, P)$ where $w'' <_{\text{NI}, e} w'$.
- b. $\text{PROG}(e, P)$ is true at a world w iff for all worlds w' in $\text{BEST}(\text{CIRC}, \text{NI}, e, P)$, there is an event e' which includes e as a nonfinal subpart, such that $P(w')(e')$ is true.

Another classic instance of the actuality entailment is given in Bhatt (1999), where the terminology *actuality entailment* was coined. As is shown in Bhatt (1999), in the case of the *ability modal*, in languages like Modern Greek (300a) and Hindi (300b), the actuality of the event is entailed only in the case of perfective aspect but not the imperfection. Hacquard (2006), building on Bhatt (1999) and more data from French and Italian, argues that the contrast between perfective and imperfective results from the relative interpretation positions between the circumstantial modal and the aspect⁵. That is to say, the actuality entailment issue in the case of the ability modal is still influenced by modality⁶.

(300) a. Greek:

- i. *Borusa na sikoso afto to trapez ala den to*
 CAN.IMPFV.1S NA lift.non-PST-PFV.1S this the table but NEG it
sikosa.
 lift.IMPFV
 '(In those days), I could lift this table but I didn't lift it.'
 (imperfective)
- ii. *Boresa na tu miliso (# ala den tu*
 CAN.PSET.PFV.1S NA him talk.non-PST-PFV.1S but NEG him
milisa).
 talk.PST-PFV
 'I was able to talk to John (#but I did not talk to him).'
- (perfective)

⁵In the case of imperfective, it is because the circumstantial modal is interpreted below aspect; therefore, it cannot take the actual world as its world argument. This actually echoes the discussion in Chapter 4, where the clause-final perfective marker *o* can only target the causing event but not the caused event in probabilistic causatives without any context.

⁶See Nadathur (2019, 2023) for more recent studies on the actuality entailment/inference issue in the case of ability reading where a Causal Model analysis is adopted.

b. Hindi:

- i. *Yusuf havaii-jahaaz uraa sak-taa hai/thaa (lekin vo*
Yusuf air-ship fly CAN-IMPFV be.PRS/be.PST but he
havaii-jahaaz nahii uraa-taa hai/thaa.
air-ship NEG fly-IMPFV be.PRS/be.PST
'Yusuf is/was able to fly airplanes but he doesn't/didn't fly air-
planes.'

(imperfective)

- ii. *Yusuf havaii-jahaaz uraa sak-aa (# lekin us-ne havaii-jahaaz nahii*
Yusuf air-ship fly CAN-PFV but he-erg air-ship NEG
uraa-taa).
fly-PFV

'Yusuf could fly the airplane (#but he didn't fly the airplane).'

(perfective)

Other morpheme/construction-specific research, which can also be grouped into the modal analysis of actuality entailment, includes but is not limited to implicative verbs (Karttunen, 1971), the 'out-of-control' *ka-a* circumfix in St'át'imcets (Davis et al., 2009), the involuntary-state construction in Polish (Rivero et al., 2010) and the French & German defeasible causative verbs (Martin and Schäfer, 2017) and different English causative verbs (Nadathur and Lauer, 2020)⁷.

Davis et al. (2009) shows that in St'át'imcets, the so-called 'out-of-control' *ka-...-a* circumfix makes the actuality of the event indicated by the predicate surrounded by it cancelable (301).

⁷In additions, there are some other research adopts a force-theoretical approach (e.g., Copley and Harley, 2015) or a Causal Modeals approach (e.g., Nadathur and Lauer, 2020). Given that the semantic analysis in this dissertation is built on event semantics and modal semantics, I will set aside the line of discussion using the force-theoretical approach. The discussion of the alternative Causal Models analysis will be made in Section 5.8.

(301) St'át'imcets:

qwenúxw=kan i=nátcw=as,
 sick=1SG.SUBJ when.PAST=DAY=3CONJ
ka-tsunam'-cal=lhkán-a=ka, t'u7 cw7áoy=t'u7.
 CIRC-teach-ACT=1SG.SUBJ-CIRC=IRR but NEG=ADD

'I was sick yesterday. I could have taught, but I didn't.'

Adopting the formal Kratzerian framework on modality, they argue that this circumfix lexically encodes a modality, as is shown in (302).

(302) a. $\llbracket ka-a \rrbracket^c$ is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.

If defined, $\llbracket ka-a \rrbracket^c \rightsquigarrow \lambda P_{\langle e, \langle s, t \rangle \rangle}. \lambda x. \lambda w. \forall w' [w' \in f_x(B(w)) \rightarrow P(x)(w')]$

(Personal interpretation)

b. $\llbracket ka-a \rrbracket^c$ is only defined if c provides a circumstantial modal base B and a stereotypical ordering source.

If defined, $\llbracket ka-a \rrbracket^c \rightsquigarrow \lambda P_{\langle s, t \rangle}. \lambda w. \forall w' [w' \in f(B(w)) \rightarrow P(x)(w')]$

(Impersonal reading)

Similarly, Martin and Schäfer (2017) shows that for defeasible causative verbs like 'offer' in French (303a) and 'flatter' in German (303b), though they are used to denote an act performed with the intention to trigger a certain change of state and this change by default is assumed to take place, this change of state does not have to occur for the sentence to be true.

(303) a. *Pierre m'a offert une nouvelle vie, mais je n'en voulais pas.*
 Pierre me.has offered a new life but I NEG.of.it wanted NEG
 'Pierre offered me a new life, but I didn't want it.'

- b. *Hans schmeichelte Maria, aber sie fühlte sich überhaupt nicht geschmeichelt.*
 Hans flattered Marie but she felt REFL absolutely NEG flattered.
 'John flattered Mary, but she felt absolutely not flattered.'

In the same spirit as the Modal Component Hypothesis (Koenig and Davis, 2001) (see Section 5.1.2), they analyze the causative structure as encoding a sublexical modal base, containing what they call 'causal successful' worlds (304).

$$(304) \quad [{}_{VP} \text{ offer } y \text{ a } z] \rightsquigarrow$$

$$\lambda y. \lambda z. \lambda e. [\text{offer}(e) \wedge \text{theme}(e, y) \wedge \text{recipient}(e, y) \wedge$$

$$\Box_{\text{causal success}} \exists e' (\text{cause}(e, e') \wedge \text{have}(e') \wedge \text{possessee}(e', y) \wedge \text{possessor}(e', y))]$$

$$\rightsquigarrow_{\text{def}} \lambda y. \lambda z. \lambda e [\text{OFFER}(e, z, y)]$$

5.3.2 ANALYSIS

Let us return to the causatives in Teochew. Adopting the framework of Kratzer (1977, 1981, 1991), in the same spirit as the Modal Component Hypothesis (Koenig and Davis, 2001) and based on previous studies on the actuality entailment mentioned above, my analysis is as follows.

I argue that the causative verbs *kə* 'give', courteous *bun* 'separate' and permissive *bun*-causative lexically encode a modality. Following Martin and Schäfer (2017), I assume that an event can be associated with the verb even though it is not entailed in the actual world; in this way, the bi-eventive analysis in the previous discussion can be kept. Evidence from scope ambiguities derived from the interaction between modals and quantifiers (e.g., von Stechow and Iatridou, 2003; Huitink, 2008; Kratzer, 2013; Wolf, 2014; Martin and Schäfer, 2017) also provides evidence for the existence of a sublexical modality encoded in the causative verbs (305): in

the first meaning, the modality out-scopes the indefinite *tsek tsia yi* ‘one bench’; in the second one, the existential quantifier out-scopes the modality⁸.

(305) a. The *kə*-causative:

Nangy kə Mimi kiot tsao tsek tsia yi.

Nangy give Mimi take away one CL bench

Modal < quantifier: there might be no actual bench that Nangy can cause Mimi to take away.

Quantifier < modal: there exists a bench in the base world of the modal.

b. The courteous *bun*-causative:

Nangy bun Mimi kiot tsao tsek tsia yi.

Nangy separate Mimi take away one CL bench

Modal < quantifier: there might be no actual bench that Nangy can cause Mimi to take away by giving precedence to Mimi out of courtesy.

Quantifier < modal: there exists a bench in the base world of the modal.

c. The permissive *bun*-causative:

Nangy bun Mimi kiot tsao tsek tsia yi.

Nangy separate Mimi take away one CL bench

Modal < quantifier: there might be no actual bench that Nangy can let Mimi take away.

Quantifier < modal: there exists a bench in the base world of the modal.

Before looking at the specific flavors of the sublexical modal encoded in the causative verbs, let’s look at the issue of causee animacy first. As is shown (306-309), the causees in the Teochew probabilistic *kə*-causative and both *bun*-causatives

⁸One might argue that in (305), the second meaning is just a subcase of the first one. However, my Teochew consultants report that for the first meaning, they tend to assume the non-existence of the bench unless they know Mimi, in fact, does take away a bench.

can only be [+animate]. In contrast, the causees in the *mue*-causative and the *hai*-causative can be either [+animate] or [-animate]. This contrast is summarized in Table 5.6, where the animacy of their causers mentioned in Table 3.2 is also added.

(306) The *mue* 'make'-causative:

- a. *Mimi mue Nangy tsao.*
Mimi make Nangy run
'Mimi causes Nangy to run.'

(animate causee)

- b. *Mimi mue giu tsao.*
Mimi make ball run
'Mimi causes the ball to run.'

(inanimate causee)

(307) The *kə* 'give'-causative:

- a. *Mimi kə Nangy tsao.*
Mimi give Nangy run
'Mimi causes Nangy to run.'

(animate causee)

- b. **Mimi kə giu tsao.*
Mimi give ball run
Intended: 'Mimi causes the ball to run.'

(inanimate causee)

(308) The *hai* 'hurt'-causative:

- a. *Mimi hai Nangy tsao.*
Mimi hurt Nangy run
'Mimi causes Nangy to run.'

(animate causee)

- b. *Mimi hai giu tsao.*
 Mimi hurt ball run
 ‘Mimi causes the ball to run.’

(inanimate causee)

(309) The *bun* ‘separate’-causative:

- a. *Mimi bun Nangy tsao.*
 Mimi separate Nangy run
 ‘Mimi causes Nangy to run (both readings).’

(animate causee)

- b. **Mimi bun giu tsao.*
 Mimi separate ball run
 Intended: ‘Mimi causes the ball to run (both readings).’

(inanimate causee)

Table 5.6: Causer and causee animacy in all Teochew periphrastic causatives

| | | <i>mue</i> -causative | <i>kə</i> -causative | <i>hai</i> -causative | <i>bun</i> -causative (both) |
|--------|------------|-----------------------|----------------------|-----------------------|------------------------------|
| causer | [+animate] | ✓ | ✓ | ✓ | ✓ |
| | [-animate] | ✓ | ✓ | ✓ | × |
| causee | [+animate] | ✓ | ✓ | ✓ | ✓ |
| | [-animate] | ✓ | × | ✓ | × |

Portner (2009) proposes that there are three primary categories of sentential modality: (i) factual (epistemic, alethic, metaphysical), (ii) priority (deontic, bouletic, teleological) and (ii) *dynamic*. For the dynamic modals, there are two primary subgroups: (i) quantificational (existential and universal) and (ii) *volitional* (ability, opportunity and dispositional). The volitional type is related to ‘the ways circumstances affect the actions available to a volitional individual’. I argue that considering the animacy requirement of the causees, the modality sublexically encoded in the causative verbs *kə*, courteous *bun* and permissive *bun* is a universal volitional modality with a circumstantial modal base and a

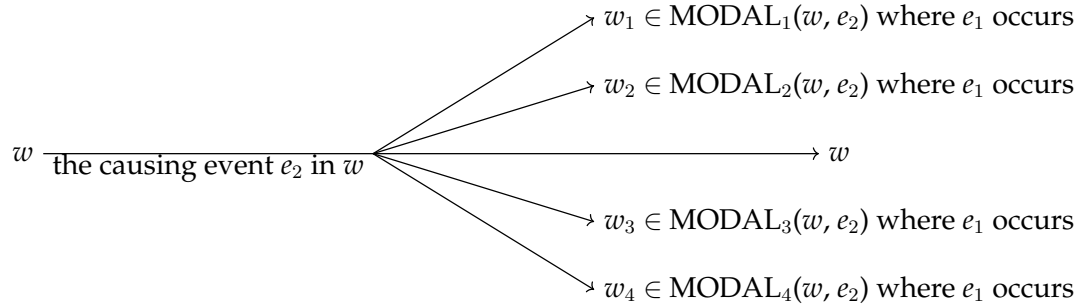
stereotypical ordering source representing the normal course of events in the picked-up possible worlds⁹. In contrast, the deterministic causative verbs *mue* and *hai* each sub-lexically encodes a universal *metaphysical modality* with a modal base consisting of the metaphysical alternatives and a circumstantial ordering source (Portner, 2009).

The animacy restrictions on the causees follow from the sublexical modality flavor encoded in the causative verbs. More specifically, the volitional modality presupposes their causees must be animate, in a way that an epistemic modality presupposes an animate argument. In contrast, the metaphysical modality encoded in the *mue*-causative and the *hai*-causative does not have any animacy requirement for their causees, given that such a modality only concerns what is metaphysically possible. The difference in the actuality entailment of the caused event between Teochew periphrastic causatives also results from different flavors of the sublexical modality encoded in different causative verbs.

In my analysis (311), I replace the CAUSE operator (Dowty, 1979) with a modality-linked causal relation, where the caused event is connected to the causing event in a way that it is treated as the final stage of the causing event developing along certain courses (310).

⁹This study will not further discuss the specific sub-flavor of this volitional modality, given the research scope limit; however, it is likely that this would be a new flavor slightly different from the ability, opportunity and dispositional ones. I leave the discussion along this line for future study.

(310)



(311) a. Probabilistic causation in Teochew:

$$\begin{aligned}
 & \llbracket \textit{probabilistic causation in Teochew} \rrbracket \rightsquigarrow \\
 & \exists P. \exists e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1: \forall x. [\text{AGENT}(e_1, x) \rightarrow \\
 & \text{Animate}(x)]. [P(e_1)(w')]]
 \end{aligned}$$

where e_1 represents the caused event and e_2 represents the causing event. $\text{VOL}(w, e_2)$ is defined as $\text{BEST}(\text{CIRC}, \text{ST}, e_2)$, i.e., the set of worlds w' in $\bigcap \text{CIRC}(e_2)$ such that there is no w'' in $\bigcap \text{CIRC}(e_2)$ where $w'' <_{\text{ST}, e_2} w'$.

b. Deterministic causation in Teochew:

$$\begin{aligned}
 & \llbracket \textit{deterministic causation in Teochew} \rrbracket \rightsquigarrow \\
 & \exists P. \exists e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w')]]
 \end{aligned}$$

where e_1 represents the caused event and e_2 represents the causing event. $\text{META}(w, e_2)$ is defined as $\text{BEST}(\text{META}, \text{CIRC}, e_2)$, i.e., the set of worlds w' in $\bigcap \text{META}(e_2)$ such that there is no w'' in $\bigcap \text{META}(e_2)$ where $w'' <_{\text{CIRC}, e_2} w'$.

According to the denotations of *probabilistic causation* in (311a), the caused event e_1 is only entailed to those possible worlds where circumstances are satisfied, e.g., ‘the causee is animate’ (the presupposition of e_1 , which will be omitted for simplicity purposes in later discussions), ‘the causee is in good physical and mental conditions to do the caused event’, ‘the causer does the causing event’, etc. That is to say, there are chances that the caused event might not actually occur in spite of the existence of the causing event. In contrast, when it comes to *deterministic causation* (311b), the connections between the causing event and the caused event depend on what is metaphysically possible, i.e., whether the causing event turns out to be or evolves into a caused event in a metaphysically sensible condition. Given that the existence of metaphysically insensible conditions is very rare, this leads to the almost definite happening of the caused event in this case.

Based on the above discussion, the causal relations denoted in each causative verb in (293-297) can be further revised into (312-316).

(312) The lexical entry for the causative verb *mue* ‘make’:

$$\begin{aligned} \llbracket mue \rrbracket \rightsquigarrow & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge \\ & t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t''. [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \\ & \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z. [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \\ & \exists y. [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]] \end{aligned}$$

(final)

(313) The lexical entry for the causative verb *kə* ‘give’:

$$\begin{aligned} \llbracket kə \rrbracket \rightsquigarrow & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]] \end{aligned}$$

(final)

(314) The lexical entry for the causative verb *hai* ‘hurt’:

$$\begin{aligned} \llbracket hai \rrbracket \rightsquigarrow & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \\ & \wedge \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]] \end{aligned}$$

(to be revised)

(315) The lexical entry for the courteous causative verb *bun* ‘separate’:

$$\begin{aligned} \llbracket bun \rrbracket \rightsquigarrow & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, \\ & e_3, e_1) \wedge \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]] \end{aligned}$$

(to be revised)

(316) The lexical entry for the permissive causative verb *bun* ‘separate’:

$$\begin{aligned} \llbracket bun \rrbracket \rightsquigarrow & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]] \end{aligned}$$

(to be revised)

As is shown above, the lexical entries for the last three causative verbs will be further revised.

5.4 DIMENSION III: ATTITUDE-NEUTRAL VS. EXPRESSING THE SPEAKER’S ATTITUDE

In Section 4.4, I showed the *hai* ‘hurt’-causative expresses the negative attitude of the speaker, interpreted as *adversative causative*, while the courteous *bun* bears the positive attitude of the speaker, interpreted as *benefactive causative*. This dissertation argues that these attitude-expressing properties result from the flavors of sublexical modality encoded in the causative verbs.

Since Hintikka (1961), a modal analysis for propositional attitudes has been common. If using a Kratzerian modal semantics approach, the Hintikkan analysis of the attitude predicate can be expressed as (317), where the verb ‘believe’ serves as an example. Similar modal semantic analyses have also been extended to other attitude predicates like ‘want’ and ‘hope’ (e.g., Karttunen, 1974; Heim, 1992; Giorgi, 1997; Portner, 1997; von Stechow, 1999; Schlenker, 2005; Kratzer, 2006; Rubinstein, 2017; Portner and Rubinstein, 2020).

$$(317) \quad \llbracket \text{believe} \rrbracket \rightsquigarrow \lambda p. \lambda x. \lambda w. \forall w' [\text{DOX}_x(w)(w') \rightarrow p(w')]$$

Let us return to the Teochew causatives that express the speaker’s attitude. In the same spirit as a Modal Semantics analysis of attitude predicates, I assume that the adversative causative verb *hai* and the courteous/benefactive causative verb *buneach* also sub-lexically encode a doxastic modality. When it comes to the ordering source, in the case of the adversative causative, the sublexical doxastic modal has a *priority* ordering source pertaining to *malefaction*. In contrast, in the case of the benefactive causative, the ordering source of the sublexical doxastic modal is a *priority* one pertaining to *benefaction*.

Interestingly, unlike the previous two dimensions, i.e., (in)directness and (no) actuality entailment, these attitude-expressing properties only affect the felicitous condition rather than the truth value, as is shown in (318).

(318) *In the context with the same causal (in)directness, Nangy causes Mimi to run by giving precedence to Mimi, but the speaker has no attitude towards the running event.*

- a. *Nangy mue Mimi tsao.*
Nangy make Mimi run
'Nangy makes Mimi run.'

(*mue*-causative)

- b. # *Nangy hai Mimi tsao.*
Nangy hurt Mimi run
Intended: 'Nangy causes Mimi to run (adversative).'

(*hai*-causative)

- c. # *Nangy bun Mimi tsao.*
Nangy separate Mimi run
Intended: 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

The following evidence uses classic presupposition diagnostics to support the claim that these attitude-expressing properties are encoded as a presupposition.

First, like presuppositions (319), the attitude-expressing properties escape from presupposition 'hole' like negation (320).

(319) *It is not the case that Mimi's brother is cute.*

→ *Mimi has a brother.*

(320) *Nangy bo hai / bun Mimi tsao.*
Nangy NEG hurt / separate Mimi run
'Nangy does not cause Mimi to run.'

→ The speaker views the (possibly) running event as a 'bad/good' one for Mimi.

Second, like presuppositions (321), the attitude-expressing properties of the *hai*-causative and the courteous *bun*-causative escape from modals (322).

(321) *Mimi's brother might be cute.*

→ *Mimi has a brother.*

(322) *Nangy koleng hai / bun Mimi tsao.*

Nangy might hurt / separate Mimi run

'Nangy might cause Mimi to run.'

→ The speaker views the (possibly) running event as a 'bad/good' one for Mimi.

Third, like presuppositions (323), the attitude-expressing properties of the two causatives are bound in the *if*-clause (324).

(323) *If Mimi has a brother, Mimi's brother must be cute.*

→ *No presupposition*

(324) *Yasi tsao dui Mimi ho / mo, Nangy oi hai / bun Mimi tsao.*

If run towards Mimi good / bad Nangy will hurt / separate Mimi run

'If running is good/bad for Mimi, Nangy will cause Mimi to run.'

→ *No presupposition*

Last but not least, like presuppositions (325), the attitude-expressing properties of the two causatives occur in a modified form when embedded by an attitude verb like *believe* (326) (cf. Potts, 2005; McCready, 2012).

(325) *Mary believes that the king of Gambia is bald.*

→ *Mary believes that Gambia has a king.*

(326) *Xingy siosiang Nangy hai / bun Mimi tsao.*
 Xingy believe Nangy hurt / separate Mimi run
 ‘Xingy believes Nangy causes Mimi to run.’

→ It is Xingy rather than the speaker who views the (possibly) running event as a ‘bad/good’ one for Mimi.

The above four pieces of evidence show that the attitude-expressing properties of the *hai*-causative and the courteous *bun*-causative are from a presupposition.

By adding this third dimension of causal difference, the causal relations denoted by the causative verbs *hai* (314) and courteous *bun* (315) can be further revised as in (328-329), where in addition to the at-issue meaning including the (in)directness and (no) actuality entailment, these two causative verbs also each have a doxastic modality encoded as a presupposition. Adopting the selection function Sim_w in Heim (1992), which helps indicate a preference for one scenario over another through making use of a concept of comparative similarities among worlds (327), I argue that, for the causative verb *hai*, the $DOX_{MAL}(P)(e_1)(w)$ in the presupposition is defined in (328b); for the courteous *bun*, the doxastic modality $DOX_{BEN}(P)(e_1)(w)$ is defined in (329b)¹⁰.

(327) For any world w and proposition p , $Sim_w(p) = \{ w' : w' \in p \text{ and } w' \text{ resembles } w \text{ no less than any other world in } p \}$

(Portner, 2018); adapted from Heim (1992)

¹⁰Another way to encode this type of world comparisons is to introduce a degree-based compositional semantics like Kennedy (1999) and associate modalities with measure functions taking proposition to degree. Given that graded modality is not the focus of this dissertation, I leave the discussion along these lines aside. Interested readers can refer to Lassiter (2017) for one version of the analysis.

- (328) a. $\llbracket hai \rrbracket \rightsquigarrow \lambda P. \lambda e_2. \lambda w: \underline{\underline{DOX_{MAL}(P)(e_1)(w). [\forall w'. w' \in META(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [Intermediary-AGENT(x)(e_2, e_3, e_1) \wedge \exists z [AGENT(z)(e_1) \wedge z \neq x] \wedge \exists y [AGENT(y)(e_2) \wedge y \neq x]]]]]]}}$
- b. $DOX_{MAL}(P)(e_1)(w)$ is true in w iff for every $w'' \in DOX_{MAL}(w)$,
 $Sim_{w''}(\{ v: v \in DOX(w) \wedge \exists e_1. [P(e_1)(v)] \}) \prec_{PRIO-MAL}$
 $Sim_{w''}(\{ v': v' \in DOX(w) \wedge \neg \exists e_1. [P(e_1)(v')] \})$.
- (final)**

- (329) a. $\llbracket bun \rrbracket \rightsquigarrow \lambda P. \lambda e_2. \lambda w: \underline{\underline{DOX_{BEN}(P)(e_1)(w). [\forall w'. w' \in VOL(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [Intermediary-AGENT(x)(e_2, e_3, e_1) \wedge \exists z [AGENT(z)(e_1) \wedge z \neq x] \wedge \exists y [AGENT(y)(e_2) \wedge y \neq x]]]]]]}}$
- b. $DOX_{BEN}(P)(e_1)(w)$ is true in w iff for every $w'' \in DOX_{BEN}(w)$,
 $Sim_{w''}(\{ v: v \in DOX(w) \wedge \exists e_1. [P(e_1)(v)] \}) \prec_{PRIO-BEN}$
 $Sim_{w''}(\{ v': v' \in DOX(w) \wedge \neg \exists e_1. [P(e_1)(v')] \})$.
- (final)**

In fact, connections between causality and moral reasoning (in this case, it is reflected by the positive and negative attitudes of the speaker) have been long discussed in the philosophical literature (cf. Lagnado and Gerstenberg, 2017). These two Teochew periphrastic causatives serve as an interesting case to see how grammatical causative structures encode moral reasoning. This further proves the traditional, reductionist approaches to causation, i.e., only using the CAUSE operator to connect events, is not sophisticated enough and lends additional support to my claim that many variations we find in causative structures are attributed to sublexical modality.

The lexical semantics of all Teochew causative verbs except that of the permissive *bun* are now finalized. So far, we have incorporated three dimensions of causal differences into the lexical semantics of each causative verb. The next section looks at the final dimension.

5.5 DIMENSION IV: PERMISSIVE VS. NON-PERMISSIVE

In Section 4.5, I show that the permissive *bun*-causative, different from other Teochew causatives, encodes a social relation between the causer and the causee, i.e., the causer has a higher social status than the causee. Let's unpack the permissive implication first before we analyze how this social relation, which I will argue serves as a premise for the permissive implication, is encoded.

In the literature, it has been long noticed that certain cross-linguistic periphrastic causative have a similar *permissive* or *allowing* interpretation, e.g., the English *let*-causative, Mandarin *rang*-causative (Luo and Kang, 2023), and German *lassen*-causatives (Pitteroff, 2014) (330).

(330) a. *Nangy lets Mimi run.*

(English)

b. *Xiaoxing rang Xiaonang pao.*
 Xiaoxing let Xiaonang run
 'Xiaoxing allows Xiaonang to run.'

(Mandarin; Luo and Kang (2023))

c. *Die Mutter lässt die Kinder länger aufbleiben.*
 the mother lets the children longer up.stay
 'The mother allows the children to stay up longer'

(German; Pitteroff (2014))

However, to my knowledge, there is very few explicit discussion of what a permissive implication in the context of causatives is.

Regarding the permissive implication alone, Kamp (1973) gives an important early analysis. Exploring the possible entailment relations between two permission sentences in (331) (i.e., what the speaker in fact permits was less than what they first intended to permit) through reducing them to assertive statements in (332) (i.e., Pp where P is read as 'it is permitted that'), he shows *Standard Deontic Logic* cannot account for the 'permission' meaning.

(331) a. *You may go to the beach or go to the cinema.*

I almost told my son Michael. But I thought better of it, and said:

b. *You may go to the beach.*

Boys shouldn't spend their afternoons in the stuffy dark of a cinema, especially not with such lovely weather as today's.

(332) a. *It is permitted (to Michael) to go to the beach or to go to the cinema.*

b. *It is permitted (to Michael) to go to the beach.*

More specifically, while it is intuitive that $O(p \wedge q) \rightarrow Op$ (O stands for 'ought' or 'obligatory') and it is sound enough to analyze the meaning of 'permission' as $Pp \leftrightarrow \neg O\neg p$ ¹¹, the standard deontic logic will derive $Pp \rightarrow P(p \vee q)$ based on the above two formulas. This is counterintuitive and does not derive the intended formula $P(p \vee q) \rightarrow Pp$ capturing the intuitive entailment relation in (331).

However, as was explicitly pointed out by Kamp, it is not the inadequacy of deontic logic itself, but rather the initial attempt of treating (331) as assertions (332),

¹¹This is read as 'for any sentence p , it is permitted that p be (made) true just in case it is not obligatory that its negation be (made) true'.

that causes the problem. In other words, *Pp* is not an appropriate formal representation of the 'permission' cases like (331). When it comes to the specific function of a permission statement, though Kamp does not provide a formal semantic analysis for all the observations he makes, there are some important insights we could take from his discussion (333).

- (333)
- a. 'Permission' involves a certain authority of the permitter over the permittee.
 - b. 'Permission' removes a previous prohibition towards a certain class of individual actions in which the permittee might engage.
 - c. 'Prohibition' means the permittee is prohibited from realizing any possible world in which the individual action is true.
 - d. 'Prohibition' has different 'forces', i.e., *weak* (vague) and *strong* (explicit; may enforced by means of more severe penalties).¹²

While the first three can be smoothly transferred to the meaning of permissive causation, one natural question is, which kind of permission force is encoded in permissive causative, *strong* or *weak*?

Lewis (1979) elaborates on the issues in a language game between a Master giving imperative/command or permission and a Slave. He points out that, when permission is given, say in a scenario where the Master permits the slave to take a day off on Friday from the daily work of carrying rocks, he just 'partly undo several past commands, without fully undoing any of them'. If latter, it may be perceived by the Slave as being permitted to spend a holiday guzzling in the Master's

¹²This contrast can be observed in quantified permission statements like *you may pick some flowers* (it can be understood as removing a strong prohibition against picking a few flowers rather than roses is lifted) and *you may pick any flowers* (this can be understood as removing a weak prohibition against picking no matter which flowers including roses is lifted).

wine cellar, which is definitely not intended when the Master gives the permission. Based on these, I propose that the permission force in a permissive causative is a strong/explicit one, i.e., the prohibitions have been lifted in an explicit way only targeting the caused event.

Building on the insights from these studies and the modal analysis of imperative (e.g., Schwager, 2006; Crnic and Trinh, 2009; Grosz, 2011; Condoravdi and Lauer, 2012; Kaufmann, 2012; Keshet, 2013; Keshet and Medeiros, 2019; Oikonomou, 2023), I argue that the permissive causative verb *bun* sublexically encodes a deontic modality (334). This modality has a circumstantial modal base, and a deontic ordering force that is sensitive to the social hierarchy between event participants serving as the premise of the permission (cf. (333a); see the discussion on the social hierarchy in Section 4.5.2)¹³. Given that in the permissive *bun*-causative, both the causer and the causee must be [+animate] (see Table 5.6) and the embedded predicate must be an activity verb (see Table 4.1), i.e., the causer is the AGENT of the causing event, and the causee the AGENT of the caused event, I represent the causer and the causee as AGENTs when it comes to denoting their hierarchical relation. I propose that, for some of the possible worlds quantified by this modality, the caused event happens after the starting time of the causing event (334a); in some other ones, the caused event does not happen before the starting time of the causing event (334b) (see the discussion on the temporal relations in Section 5.2.4). In this way, all insights in (333) can be appropriately captured.

¹³Such a way to incorporate properties of the event participant into the modal grounds can also find correspondence in studies on attitude predicates; see Anand and Hacquard (2013) and Portner and Rubinstein (2020) as two of the examples.

(334) DEON(P)(e_2)(w) is true in w iff

- a. $\exists v.[v \in \text{DEON}(w, e_2) \wedge \exists e_1.[P(e_1)(v) \wedge \forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''.[t'' \in \tau(e_2) \wedge t < t'']]]]$ and
- b. $\exists v'.[v' \in \text{DEON}(w, e_2) \wedge \neg \exists e_1.[P(e_1)(v') \wedge \exists t.[t \in \tau(e_1) \wedge \forall t'.[t' \in \tau(e_2) \rightarrow t < t']]]]$

where $\text{DEON}(w, e_2)$ is defined as $\text{BEST}(\text{CIRC}, \text{DEON}_H(e_1), e_2)$, i.e., the set of worlds w' in $\cap \text{CIRC}(e_2)$ such that there is no w'' in $\cap \text{CIRC}(e_2)$ where $w'' <_{\text{DEON}_H, e_2} w'$ and $\text{DEON}_H(e_1, e_2)$ is defined as $\{ p: p \text{ is required on } \text{AGENT}(e_1) \text{ under the authority over } \text{AGENT}(e_2), \text{ where the authority is ranked along kinship hierarchy, age, seniority... when cross-scale ranking happens, kinship hierarchy } <_H \text{ age } <_H \text{ seniority. } \}$.

Like the attitude-expressing properties in Teochew *hai*-causative and courteous, this permissive implication is not encoded as at-issue meaning. As is shown in (335), it affects the felicitous condition rather than the truth value.

(335) *In the context with the same causal (in)directness, Nangy causes Mimi to run but not in a permissive way.*

- a. *Nangy mue Mimi tsao.*
Nangy make Mimi run
'Nangy makes Mimi run.'

(*mue*-causative)

- b. # *Nangy bun Mimi tsao.*
Nangy separate Mimi run
Intended: 'Nangy lets Mimi run.'

(permissive *bun*-causative)

In addition, similar to presuppositions (319); (321), the permissive implication escapes from negation (336a) and modals (336b).

- (336) a. *Nangy bo bun Mimi tsao.*
 Nangy NEG separate Mimi run
 'Nangy does not let Mimi run.'¹⁴
 → The causing event involves permission built on a certain authority of Nangy over Mimi.
- b. *Nangy koleng bun Mimi tsao.*
 Nangy might separate Mimi run
 'Nangy might let Mimi run.'
 → The causing event involves permission built on a certain authority of Nangy over Mimi.

However, unlike presupposition (323), the permissive implication cannot be bound in the *if*-clause (337).

- (337) *Yasi Nangy ubian unhu, Nangy oi bun Mimi tsao.*
 If Nangy can allow Nangy will separate Mimi run
 'If Nangy can allow it, Nangy will let Mimi run.'
 → The causing event involves permission built on a certain authority of Nangy over Mimi.

Also, unlike presupposition (325), the social-relation interpretation projects as usual, rather than in a modified form, when being the complement of attitude verb *believe* (338) (e.g., Potts, 2005; McCready, 2012).

- (338) *Xingy siosiang Nangy bun Mimi tsao.*
 Xingy believe Nangy separate Mimi run
 'Xingy believes Nangy lets Mimi run.'
 → Both the speaker and Xingy believe that the causing event involves permission built on a certain authority of Nangy over Mimi.

¹⁴See the possible ambiguous readings in Section 4.3.1.3.

Therefore, I conclude that the permissive implication is encoded as a *conventional implicature*. I adopt the *Multi-dimensional Semantics* in the same spirit as Potts (2003, 2007a,b) and McCready (2009, 2012) for analysis. I argue that the meaning of the causative verb *bun* is a pair of at-issue meanings and a permissive implication as a conventional implicature that is indicated by denotations following •. The lexical semantics of the permissive causative verb *bun* is accordingly finalized in (339). As is shown, there are two sublexical modalities in the lexical semantics of this causative verb. One is the volitional modality, which affects the at-issue meaning, and the other is the deontic modality located in the conventional implicature encoding the permissive implication.

(339) The lexical entry for the permissive causative verb *bun* ‘separate’:

- a. $\llbracket bun \rrbracket \rightsquigarrow \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]]] \bullet \underline{\underline{\text{DEON}(P)(e_2)(w)}}$
- b. $\text{DEON}(P)(e_2)(w)$ is true in w iff
 - i. $\exists v. [v \in \text{DEON}(w, e_2) \wedge \exists e_1. [P(e_1)(v) \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]]]$ and
 - ii. $\exists v'. [v' \in \text{DEON}(w, e_2) \wedge \neg \exists e_1. [P(e_1)(v') \wedge \exists t. [t \in \tau(e_1) \wedge \forall t'. [t' \in \tau(e_2) \rightarrow t < t']]]]]$

where $\text{DEON}(w, e_2)$ is defined as $\text{BEST}(\text{CIRC}, \text{DEON}_H(e_1, e_2))$, i.e., the set of worlds w' in $\bigcap \text{CIRC}(e_2)$ such that there is no w'' in $\bigcap \text{CIRC}(e_2)$ where $w'' <_{\text{DEON}_H, e_2} w'$ and $\text{DEON}_H(e_1, e_2)$ is defined as $\{ p: p \text{ is required on } \text{AGENT}(e_1) \text{ under the authority over } \text{AGENT}(e_2), \text{ where the authority is ranked along kinship hierarchy, age, seniority... when cross-scale ranking happens, kinship hierarchy } \prec_H \text{ age } \prec_H \text{ seniority. } \}$.

(final)

5.6 INTERIM SUMMARY

Based on the discussion so far, the complete lexical semantics of the Teochew causative verbs are as follows.

As we can see, the causal relations encoded in these Teochew causative verbs are different in four dimensions: (i) direct vs. indirect (i.e., **temporal**, **spatial**, **whether an intermediate agent is allowed**), (ii) **deterministic vs. probabilistic**, (iii) **attitude-neutral vs. expressing the speaker's attitude** and (iv) **permissive vs. non-permissive**. These differences are reflected in the lexical entry of each causative verb, which also explains why one language will use more than one causative verb in constructions of the same surface structure.

(340) Lexical semantics of each Teochew causative verb:

a. $\llbracket mue \rrbracket \rightsquigarrow$

$$\begin{aligned} & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \\ & \exists t. [t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t''. [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \\ & \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ & \exists z. [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y. [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]] \end{aligned}$$

b. $\llbracket k\text{ə} \rrbracket \rightsquigarrow$

$$\begin{aligned} & \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]] \end{aligned}$$

c. $\llbracket hai \rrbracket \rightsquigarrow$

$$\lambda P. \lambda e_2. \lambda w. \text{DOX}_{MAL}(P)(e_1)(w). [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z. [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y. [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]]$$

d. courteous $\llbracket bun \rrbracket \rightsquigarrow$

$$\lambda P. \lambda e_2. \lambda w. \text{DOX}_{BEN}(P)(e_1)(w). [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z. [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y. [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]$$

e. permissive $\llbracket bun \rrbracket \rightsquigarrow$

$$\lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]] \bullet \text{DEON}(P)(e_2)(w)$$

5.7 A PRELIMINARY DISCUSSION ON THE DIMENSION COMPATIBILITY ISSUE

One might ask whether it is possible that some of the above causal (sub)dimensions are complementary to each other or whether some of them entail or are associated with others. Here, I will provide a preliminary discussion of the compatibility between each (sub)dimension in every causative.

First, the *mue* ‘make’-causative (340a), a **pure deterministic causative**, disallows a gap between the ending time of the causing event and the start time of the caused event, a distal spatial relation and the existence of an intermediate agent. Such a preference for directness in a causal relation entailing the actuality of the

caused event intuitively makes sense. When there is no temporal, spatial, or participant gap between the caused event following the causing event, there is a higher likelihood that the caused event will happen in the end. This kind of connection is also discussed by Lauer (2010), Martin (2018), Baglini and Bar-Asher Siegal (2020), among others.

Second, in the case of *kə* 'give'-causative, which is a **pure probabilistic causative**, (340b) shows that it allows any kind of temporal relation as long as the starting time of causing event is before that of the caused event; it is neutral when it comes to spatial and participant (in)directness. This also intuitively makes sense since a causal relation that does not entail the actuality of the result has no preference for different subdimensions of (in)directness.

Third, the *hai* 'hurt'-causative (340c), which is a **adversative deterministic causative** allows any kind of temporal relation as long as the starting time of the causing event is before that of the caused event and it is neutral when it comes to spatial (in)directness. But interestingly, it disallows the existence of an intermediate agent. This also intuitively makes sense in that in an adversative causative, where the causer is interpreted as someone to be blamed for bringing about a bad result, if an intermediate agent exists, it may lead to difficulty in picking out the party to take responsibility.

Fourth, the courteous *bun* 'separate'-causative, which is a **benefactive probabilistic causative** allows any kind of temporal relation as long as the starting time of the causing event is before that of the caused event, but disallows spatial indirectness and the existence of an intermediate agent. The incompatibility between a courteous action with an intermediate agent intuitively makes sense, since it is also connected to the responsibility issue mentioned in the case of **adversative deterministic causative**, though in this case, it is about giving credit. In other words,

attitude-expressing causatives, at least in the case of Teochew, disallow an intermediate agent out of concern of convenience for the ability to trace back the responsibility/credit to the causer. In addition, the ungrammaticality of an indirect/distal spatial relation may be due to the fact that a courteous action, at least in the case of Teochew, requires a proximal spatial relation between the causer and the causee, henceforth the causing event and the caused event.

Additionally, there is an interesting contrast between **adversative deterministic causative** and **benefactive probabilistic causative** in terms of the actuality entailment issue of the caused event, i.e., while an adversative reading pairs with a deterministic causative, a benefactive reading pairs with a probabilistic causative. Intuitively, it does follow that once the result actually happens, it is easier to project a negative attitude towards it; in contrast, while one has no idea about the result actuality, they may tend to be positive or neutral rather than being negative.¹⁵

Finally, in the case of the permissive *bun*-causative (330), which is **permissive probabilistic causative**, given that a permission action has no requirement of a proximal spatial relation and the (non)existence of an intermediate agent (i.e., someone else can pass on the permission from the causer to the causee), its neutrality towards these two subdimensions is expected. In terms of temporal relation, in addition to marking that the starting time of the causing event must be before that of the caused event, the ending time of the causing event cannot be later than that of the caused event. This also intuitively follows, given that it is unnecessary

¹⁵Lelia Glass (p.c.) pointed me to the so-called *Anna Karenina Principle* (Diamond, 1997) in the field of social psychology, which might help link the necessity/sufficiency contrast to an emotional distinction between good and bad outcomes here. See Lelia's manuscript in revision which she makes use of this principle to explain why the English *cause* favors negative-sentiment complements. I thank her for generously sharing the manuscript with me. Interested readers can also refer to works done by Joshua Knobe on experimental philosophical studies on the relation between causality and morality.

to continue the causing event indicating the permission once the caused event has ended. Last but not least, the permission implication is also compatible with the no actuality entailment of the caused event. Intuitively, a permission action usually does not guarantee the permitted action will happen in the end. The discussion along a similar line on permittee with free choice can be found in Kamp (1973) and Portner (2012), among others.

In this chapter, I used event semantics paired with modal semantics to analyze the causal relations encoded in Teochew periphrastic causatives and show the widely-adopted monolithic CAUSE operator is theoretically inadequate. I show that the majorities of causal complexities illustrated in Chapter 4 is attributed to different flavors of the sublexical modality encoded in each causative verb. Some recent studies have used a *Causal Model* approach to unpack the causality notions encoded in human language. The rest of this chapter will briefly discuss this alternative.

5.8 ALTERNATIVE: A CAUSAL MODEL ANALYSIS

5.8.1 THEORETICAL BASICS

A *Causal Model* is ‘a formal representation of the structure that causal relations give to our conceptual model of the world’ (Copley, 2021a). This approach originates in the field of statistics in the early 20th century. The following are some basic assumptions of this approach, building on works in Pearl (2000, 2009), Halpern (2000), Halpern and Pearl (2005), Paul and Hall (2013) and Pearl and Mackenzie (2018).¹⁶

¹⁶I sincerely thank the organizer Bridget Copley, presenters and participants of the *Converging on Causal Ontology Analyses* workshop for sharing their research and insights with

First, when it comes to the formal setup (cf. Halpern and Pearl, 2005; Copley, 2021a), a Causal Model (or a Structural model) is a tuple $M=(S, F)$.

- S is a tuple (u, v, R) where u is a set of endogenous variables, v is a set of exogenous variables, and R associates with every variable $Y \in u \cup v$ a nonempty set $R(Y)$ of possible values for Y .
- F associates with each variable $X \in v$ a function denoted $F_X=(\times_{U \in u} R(U)) \times (\times_{Y \in v-X} R(Y)) \rightarrow R(X)$. It is a function determining the value of X given the values of all the other valuables¹⁷.

Second, a *directed acyclic graph* is used when it comes to the formal representation of causal structures. In this graph, there is a set of variables, both endogenous and exogenous, that are the nodes in the causal graph. Nodes pointed by a set of arrows in the graph are endogenous variables, and these arrows represent the dependency of one value on another. Nodes without arrows pointing at them are exogenous variables and their value depends only on background circumstances not represented in the model. Here is an example from Lifschitz (1990), Schulz (2007), and Nadathur and Lauer (2020).

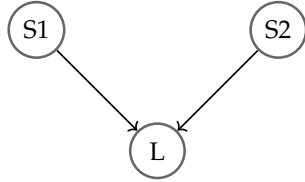
- (341) a. The circuit example:
- i. Suppose there is a circuit with two switches and one light, such that the light (L) is on exactly when both switches are in the same position (up or not up)

me in the past years, and also for their feedback on my modal analysis in this chapter when I presented it at that workshop.

¹⁷When it comes to the notation, $(\times_{U \in u} R(U))$ is the ordered n -tuple of all the values of all the variables in u . $(\times_{Y \in v-X} R(Y))$ is the ordered n -tuple of all the values of all the variables except X in v . $A \times B$ denotes the Cartesian product of A , to which a in all ordered pairs (a, b) belongs, and B , to which b in all ordered pairs (a, b) belong.

ii. At the moment S(witch) 1 is down, and S(witch) 2 is up, the light is off.

b. The graphic representation of the circuit example:



| S1 | S2 | L |
|----|----|---|
| 0 | 0 | 1 |
| 0 | 1 | 0 |
| 1 | 0 | 0 |
| 1 | 1 | 1 |

Some recent philosophical discussions also further develop the Causal Model approach. For example, Paul and Hall (2013) further develop a detailed causal graph model, i.e., the *neuron diagram*. This model assumes that the causal relations are events, making it easier to represent complex causal relations. The major notations of this model are given in (342).

(342) Major annotations in Paul and Hall (2013):

a. Circle:

i. Circle: a neuron



ii. Shading a circle: a neuron fires



iii. Darkening a circle: a neuron fires more intensely



- iv. Circle with a thick border line: a stubborn neuron, needing more than one stimulation in order to fire



- v. Circle with checkboard pattern: a neuron acts as a kind of 'shunt'

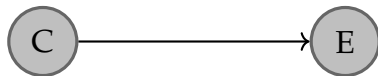


- vi. Striping a circle: if and only if there are two incoming signals of the same kind but different intensities, this neuron emits an inhibitory signal along exactly one of the exit channels, equal in strength to the two incoming signals

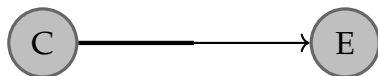


b. *Arrow and line*:

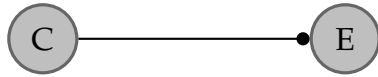
- i. Arrow: token-level stimulatory connections between neurons



- ii. Fat and half-dark arrow: the stimulatory signal is probabilistic, having a very small chance of dying out before reaching the next neuron

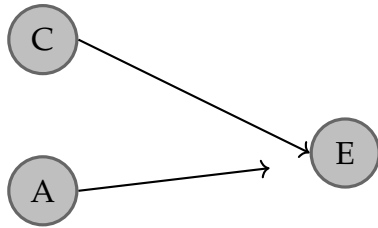


iii. Line ending with a black dot: token-level inhibitory connections

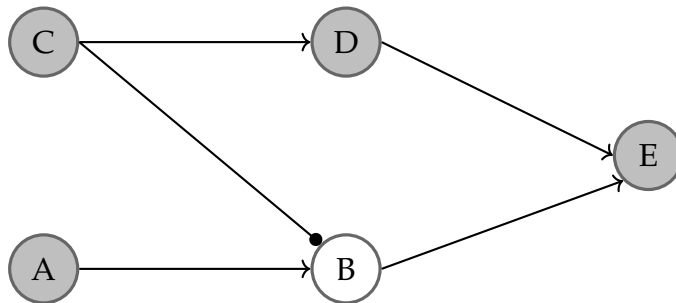


c. *Order:*

- i. The temporal order is represented by reading from left to right
- ii. The following graph shows that the stimulatory signal from C reaches E just before the stimulatory signal from A; the diagram represents this fact by being a 'snapshot' of a time



d. *An example:*



At time 0, C and A both fire. C sends a stimulatory signal to D, which fires at time 1. A sends a stimulatory signal to B, but the inhibitory signal from C (symbolized by the line with the blob on the end) blocks it, so B does not fire. D sends a stimulatory signal to E, which fires at time 2.

In the following section, I first introduce some of the previous works using the Causal Model approach to some complex causal relations similar to those that have been discussed in Teochew causatives. Then, I will show the current model of such analyses cannot capture the complex causality notions we observed in Teochew; therefore, unless some refinements are made to these causal model analyses, the event semantics paired with modal semantics appears to be superior.

5.8.2 SOME PREVIOUS LINGUISTIC ANALYSES

5.8.2.1 DIFFERENTIATE LEXICAL CAUSATIVES FROM PERIPHRASTIC ONES

The puzzle of asymmetrical entailment relations between lexical causatives (343a) and periphrastic causatives (343b) has been long observed in the literature.

- (343) a. *Sam killed Lee.*
→ *Sam caused Lee to die.*
- b. *Sam caused Lee to die.*
→ *Sam killed Lee.*

Some previous studies argue that it is due to the fact that the lexical causative has an additional prerequisite of direct causation such that the cause and effect are contiguous and there is no third event in between (Fodor, 1970; Katz, 1970). Baglini and Bar-Asher Siegal (2020), however, points out such a solution cannot work¹⁸. Theoretically, in order to capture causal directness, complex causal chains are required to be explicitly modeled. In addition, as is pointed out by Neeleman and van de Koot (2012), lexical causatives do not always prohibit intervening causes (344).

¹⁸I thank Elitzur A. Bar-Asher Siegal for sharing an extended version of this project with me.

(344) a. *Opening bus lanes to motorcycles will redden the streets of London with cyclists' blood.*

Implied causal chain:

[opening bus lanes > accidents increase > some cyclists die]

b. *A large fleet of fast-charging cars will melt the grid.*

Implied causal chain:

[many electric cars on roads > many cars charging simultaneously > high electricity demand > heating of electric cables > melting the grid]

Instead, Baglini and Bar-Asher Siegal (2020) observe the contrast between periphrastic causative and lexical causative shown in (345). While the former can select as its subject any condition on which the value causally depends, the latter must select the condition completing a sufficient set¹⁹, and under such a scenario, 'electricity' is not one.

(345) In a regular scenario of an opening of an automatic door:

a. *John/Josh's pushing the button/the button/electricity/the closed circuit **caused** the door **to open**.*

b. *John/Josh's pushing the button/the button/#electricity **opened** the door.*

They argue that the asymmetrical entailment relations in (343) actually result from the contrast between *causal sufficiency* and *causal necessity* as well as the sensitivity to the 'last straw effect' of lexical causatives, i.e, they must select the condition that completes a sufficient set. They adopt a Causal Model approach

¹⁹Following Mackie (1965), they assume *causal sufficiency* is sets of conditions individually necessary but only sufficient when together, rather than a property of singular conditions.

based on most of the theoretical assumptions in Section 5.8.1 to explain the different causality notions encoded in different structures in (343)²⁰. For them, causal models represent a unified concept of dependency between a cause and the effect of the cause, but different causative expressions realize different construction-specific requirements on a causal model. The causative components of lexical and periphrastic causatives under such an analysis are formally represented in (346). As we can see in (346b), the information about temporal relations between the nodes is also incorporated to make sure of the ‘last straw effect’, in contrast to the formula of the periphrastic causative.

(346) a. **Periphrastic causative**

$$\exists Q \exists e \exists t \exists S: \text{SUFF}(S)^{M,R} = 1 \ \& \ (Q \in S^M \ \& \ Q(e))$$

where M represents a causal model, a pair of $\langle D, \Theta_D \rangle$ consisting of a causal structural D and a set of parameter Θ_D compatible with D , the function $\text{SUFF}(\text{ICIENT})$ takes a situation and returns 1 if it is a sufficient set in the model for a specific result (R) and a condition Q is part of the set of conditions that constitutes a sufficient set.

b. **Lexical causative**

$$\begin{aligned} &\exists Q \exists e \exists t \exists S: \text{SUFF}(S)^{M,R} = 1 \ \& \ (Q \in S)^M \ \& \ S(e) \ \& \ \tau(e) \subseteq t \ \& \ \forall t' < t \forall e': \tau(e') \\ &\subseteq t' \rightarrow [\neg Q(e')] \end{aligned}$$

where M represents a causal model, a pair of $\langle D, \Theta_D \rangle$ consisting of a causal structural D and a set of parameter Θ_D compatible with D , the function $\text{SUFF}(\text{ICIENT})$ takes a situation and returns 1 if it is a sufficient set in the model for a specific result (R), and a condition Q is part of the

²⁰They call it *Structural Equation Models (SEMs)*.

set of conditions that constitutes a sufficient set, also taking *a completion event* into consideration

Baglini and Bar-Asher Siegal (2020) argue that the above formula can help explain the contrast in (343): a lexical causative always corresponds to a condition individually a necessary one; therefore, the truth of a periphrastic causative is entailed. In contrast, a periphrastic causative selects a condition that does not necessarily complete a sufficient set. Therefore, a reverse entailment relation does not hold. This also helps explain why an indirect causal relation can be denoted by lexical causatives observed by Neeleman and van de Koot (2012), given that intuition about directness is an epiphenomenon arising from the stronger selection pattern of lexical causatives, which may exclude those conditions that are temporally distant.

5.8.2.2 DIFFERENT PERIPHRASTIC CAUSATIVES

In addition to using Causal Models to differentiate the lexical causatives from the periphrastic ones, Nadathur and Lauer (2020) show that the periphrastic causative constructions in English making use of different causative verbs like *cause*, *make*, *have* and *get* 'do not describe the same situation or chain of causation'. For 'a means of representing acquired knowledge about causal relations in the world', Nadathur and Lauer (2020) makes use of a Causal Model approach based on most assumptions introduced in Section 5.8.1 to represent the world knowledge of a language user, both generalized and situation-specific.

Focusing on *cause* and *make*, Nadathur and Lauer argue that the former asserts a causal necessity relation between a cause and its stated effect, similar to the counterfactual necessity notion in Lewis (1973), and the relation asserted by the latter

is causal sufficiency in terms of inevitability. The upshot is that the causal relations encoded by these two causative verbs are neither unanalyzable nor defined in terms of a logical relationship, but analyzed as picking up their own configurations in a complex causal network, represented by a Causal Model. Based on the assumptions about adding/subtracting a fact to a situation providing background information for the causal dynamics in (347), the definitions of *causal necessity* and *causal sufficiency* are given in (348-349).

(347) Let s be a situation, and X a proposition.

- a. **Adding a fact to a situation.** Suppose s does not contain a valuation for X . Then $s + (X = x)$, where $x \in \{0,1\}$, is the supersituation of s which is identical to s , except that it also fixes $X = x$.
- b. **Subtracting a fact from a situation.** Suppose s contains the valuation $X = x$, where $x \in \{0,1\}$. Then $s \setminus (X = x)$ is the subsituation of s which is identical to s , except that it does not fix a value for X .

(348) **Causal sufficiency** (of one fact for another). Given a dynamics and a background situation s , a fact $C=c$, where $c \in \{0, 1\}$, is **causally sufficient** for a fact $E=e$, where $e \in \{0, 1\}$ iff:

- a. the maximal normal causal development of s does not fix $E=e$
- b. the maximal normal causal development of $s+(C=c)$ fixes $E=e$

(349) **Causal necessity** (of one fact for another). Given a dynamics and a background situation s , a fact $C=c$, where $c \in \{0, 1\}$, is **causally necessary** for a fact $E=e$, where $e \in \{0, 1\}$ iff:

- a. the maximal normal causal development of s does not fix $E=e$
- b. there is a supersituation s' of $s+(C=c)$ such that s' does not contain $E=e$ and the maximal normal causal development of s' fixes $E=e$

- c. there is no supersituation s'' of s such that s'' does not contain $E=e$, and the maximal normal causal development of s'' fixes $E=e$, but does not fix $C=c$.

(350) shows the semantics for *make* and *cause* given in Nadathur and Lauer (2020).

(350) Given a background situation $s \subseteq w_e(\textit{valuation})$ (i.e., a background situation s partially specifies the evaluation world $w_e(\textit{valuation})$), and a dynamic D (i.e., the contextually-developed network of causal relationships), let $s'=s \setminus (C=1)$ if s contains the occurrence of C ; else let $s'=s$.

- a. $\llbracket X \textit{ make } Y \textit{ VP} \rrbracket^{D,s}=1$ iff $C=1$ is causally sufficient for $E=\llbracket \textit{ VP} \rrbracket(\llbracket Y \rrbracket)$ relative to s' , and $w_e(C)=1$
- b. $\llbracket X \textit{ cause } Y \textit{ VP} \rrbracket^{D,s}=1$ iff $C=1$ is causally necessary for $E=\llbracket \textit{ VP} \rrbracket(\llbracket Y \rrbracket)$ relative to s' , and $w_e(C)=w_e(E)=1$

What is interesting is that Nadathur and Lauer (2020) also observes some temporal (in)directness of these two causative verbs, as is shown in (351). They explain that the contrast is due to the fact that while both the 'earthquake' and the 'storm' represent necessary causes, only the latter is a sufficient one. Therefore, the different temporal relations are somehow subsumed by the concepts of causal sufficiency and causal necessity.

(351) **The lighthouse scenario:** *the lighthouse was built with a very sturdy foundation, designed to withstand high winds at the tower top, but the foundation sustained structural damage in an earthquake about ten years ago. Even that would have been fine, but this year, there were record-setting winds and the worst hurricane season anyone can remember and given the prior damage, it could not take the extra strain.*

a. *The earthquake caused/#made the tower to collapse.*

b. *The storms caused/made the tower collapse.*

The main supporting assumption of this subsumption is that a causative claim observes the *Temporal Location Constraint* (352), treating causal sufficiency as a property of a singular condition rather than as sets of conditions individually necessary. In the case of (351a), there is no valid background situation provided in the case of *make*: the fact of the storm occurring after the earthquake is not settled at the evaluation time. Therefore using the causative verb *make* denoting a causal sufficient relation violates (352).

(352) **Temporal location constraint:**

In the evaluation of a causative claim involving causing fact $C = 1$ and caused fact $E = 1$, the background situation can fix only those facts that are settled at the evaluation time of the causative claim. By default, the evaluation time is the time at which C is determined.

In addition, they further subsume the ‘coercive’ implication of the causative verb *make*, i.e., if $\llbracket VP \rrbracket$ is a volitional action, then the *NP-subject made NP-object CP* implies that $\llbracket NP_{object} \rrbracket$ did not make a free decision to $\llbracket VP \rrbracket$, using the concept of ‘causal sufficiency’. Because if $\llbracket NP_{object} \rrbracket$ makes a free decision, it may lead to

changing their mind in the middle of the action, and the event denoted by [[VP]] does not happen.

5.8.2.3 INTERIM SUMMARY

As we can see, though the two studies focus on different empirical facts, they both observe a conceptual contrast, i.e., causal necessity and causal sufficiency. This actually, in some way, echoes the second dimension of causal difference I discussed earlier in this chapter, i.e., (no) actuality entailment or deterministic vs. probabilistic causative, in the case of Teochew causatives, given that a sufficient cause entails the actuality of the result but a sufficient one does not.

One natural question to ask is, can a Causal Model approach be applied to explain all the four-dimensional differences of causality encoded in Teochew causatives and if yes, is it superior to the event semantics paired with modal semantics analysis provided so far? The short answer is NO to both questions. The next subsection will illustrate these by showing an attempt of a Causal Model approach to Teochew causatives.

5.8.3 AN ATTEMPT OF A CAUSAL MODEL ANALYSIS OF TEOCHEW CAUSATIVES

Though using a *Causal Model* analysis based on the assumptions in Section 5.8.1 to analyze the complex causal relations encoded in Teochew periphrastic causatives shown in Chapter 4 will be another dissertation itself, to my knowledge, this technique is more immature compared to event semantics paired with modal semantics. I will try to give a preliminary and brief attempt here, showing that much more works are needed if one wishes to pursue such an analysis for Teochew causatives²¹.

²¹I thank Bryce for many very helpful discussions on these.

First, for **Dimension I on the (in)directness in terms of temporality, space and mediation**, though the majority of the causal model analysis assumes that those variables represented by circles are *events* and the temporal relation is represented by reading from left to right, Copley (2021a) argues that actually *everything relevant* can be included as variable and people can choose whether or not a Davidsonian event is chosen as a circle node. For example, Nadathur and Lauer (2020) treat those variables as facts, i.e., propositions rather than events. Following Halpern and Pearl (2005), Copley (2021a) proposes that the value of those variables can be relativized to time. Setting aside all the compatibility or incompatibility issues when it comes to the specific technical details, even though we could also make *space* and *mediation* another two relators, there is an obvious problem here.

I have shown in Chapter 4 that when it comes to causal (in)directness, time, space and participant are three required primitives. Compared with the temporal and spatial properties of an event, which are usually used to define an event, whether an event allows an intermediary agent is a separate issue. It seems that in order to account for this, the variable in a causal model is defined in a two-dimension (i.e., event and participant) or a three-dimension (i.e., time, space and participant) way. While adding two different types of relators into the variable nodes might seem possible, it also makes this mechanism theoretically too unconstrained.

Second, there are two possible ways to analyze the **Dimension II on (no) actuality entailment** and connect it to the *causal sufficiency vs. causal necessity* contrast. One alternative is to follow what Baglini and Bar-Asher Siegal (2020) and Nadathur and Lauer (2020) did, making the distributions of directed nodes in the causal graph representing the causal knowledge a representation of this causal sufficiency/necessity relation. The other alternative is to follow Paul and Hall (2013),

assuming that the arrows are token-level stimulatory connections between nodes and that the stimulatory signal can be probabilistic. In my view, the former is superior to the latter in that the causal chain will be more straightforward in presenting what conditions are necessary or sufficient to trigger a certain result, compared to directly encoded in the arrow, which will require a detailed exploration of what kind of division of labor between the nodes and the arrows is needed.

Third, the **Dimension III on (not) encoding speaker attitude** is more like that someone, say, the speaker, is looking at the causal model and projecting the moral judgments to it. Though morality is also well discussed with causality when it comes to causal reasoning (cf. Lagnado and Gerstenberg, 2017), it is hard to build into the causal model with the current assumptions about this approach in the field. Either a relator relevant to an attitude-holder or a judge is needed to be added to the value of variables (cf. Copley, 2021a), or a manipulation of the arrows incorporating this is needed (cf. Paul and Hall, 2013). Either way, we still face the same technique issues mentioned before, i.e., the constraints on relators of variable value and the division of labor between nodes and arrows. A third way out is to add techniques other than nodes and arrows to the causal model graph. To my knowledge, there is very little research along this line. The closest technique might be the *efficacy models* in Copley (2021b), by adding some subject-oriented nodes like *desire* (D), *dislike* (\tilde{D}), *ability* (A) and *avoid-ability* (\tilde{A}) into the causal model, and the *constraint on volitional action* in Nadathur and Lauer (2020) when it comes to coercive causative. However, even if these work, it only covers the state of event participants, rather than the event attitude-holder.

Last but not least, for the **Dimension IV on (not) encoding permission with social relation as a premise**, given that the social-relation reading actually targets event participants rather than events themselves and also relies on some prag-

matics factors relevant to the event observer's judgment on the social relations between the event participant, we face a mix of issues here. Like the discussion of **Dimension I on (in)directness in terms of the (non)existence of an intermediate agent**, we need to incorporate the event participants into the model somehow. At the same time, like the discussion of **Dimension III on (not) encoding speaker attitude**, we also need a technique to include an event observer into the model.

Given the discussion so far, I think we are safe to conclude that a Causal Model approach developed at this stage is not as sophisticated and fine-grained as an analysis featuring event semantics paired with modal semantics. Though I am optimistic about and looking forward to the future development of the former in the field of linguistics, I choose the latter as the causal event structural analysis for Teochew periphrastic causatives, which is summarized in Section 5.6.

5.9 SUMMARY

Now, we have finished the syntactic (Chapter 3), causal event structure analysis (Chapter 4 and Chapter 5) of all Teochew periphrastic causatives. It is time to solve our puzzle of argument interpretations mentioned in Chapter 1, which is a research gap in our field now (cf. Chapter 2).

CHAPTER 6

CONTEXTUAL ARGUMENT INTERPRETATIONS AND THE NATURE OF AGENTIVE MODIFICATIONS

This chapter aims to solve the causee interpretation puzzle observed in Chapter 1. More specifically, it aims to explain why the causees in different Teochew periphrastic causatives have different argument interpretations in spite of the same embedded agentive predicate.

The previous discussion has shown that a listing approach listing argument interpretations with individual verbs, or with specific syntactic positions (all causees are introduced by or adjoined to VoiceP) cannot account for the complex causee interpretations. I also argued that the causality notion encoded in the various causative verbs is different from each other, and each one of them is much more complicated than what can be captured by the widely adopted CAUSE operator. These lay the foundation to explore how the causee interpretations are contextualized by the syntactically-oriented causal event structure in this Chapter.

In Section 6.1, I will provide a fine-grained implementation of the contextualization conditions previously applied to external arguments when it comes to the interpretations of causers in Teochew causative; in addition, I will argue that the contextualization conditions of causee interpretation are more complex and require a two-step contextual approach, and propose a post-syntactic interpretation mechanism implementing this approach.

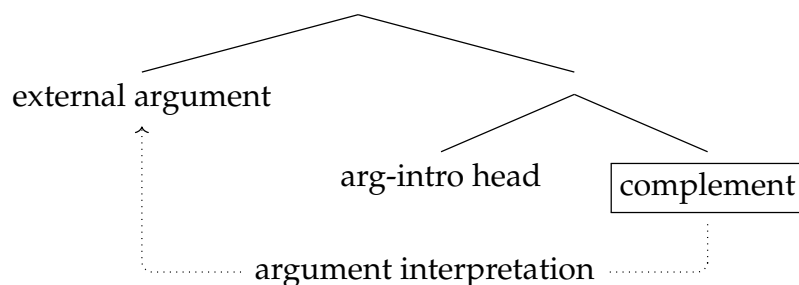
I then provide an intentional version of compositional semantics derivations of each Teochew periphrastic causative in Section 6.2, showing that the initial causee interpretation is modified by the sublexical modality encoded in each causative verb.

Given that the final causee interpretations are indirectly reflected by their patterns when tested by different linguistics diagnostics and that most of the diagnostics are agentive modifications, I explore the nature of these modifications in Section 6.3, showing that not all of them uniformly target the same argument property and that not all of them are reliable tests for a grammatical AGENT (i.e., some of them target an intuitive AGENT). The contextualization condition of causee interpretations correctly predicts the compatibility between causee and these agentive modifications targeting different argument properties, as to be shown in Section 6.4.

6.1 CONTEXTUALIZATION CONDITIONS

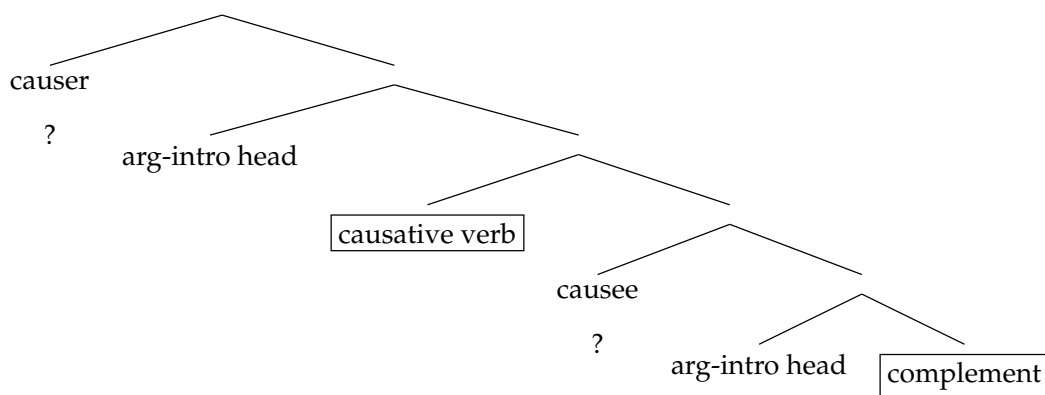
In Chapter 2, I discussed how the previous studies on external arguments support the following contextualization condition. The interpretation of an external argument is contextualized by the event structural interpretation of the syntactic complement of the functional heads introducing it (353). In the following discussion, I will refer to this contextualization condition as a *complement-oriented* approach.

(353)



However, the question is whether (353) is empirically true, especially for the event participants in a causative construction with a much more complex predicative structure (354).

(354)



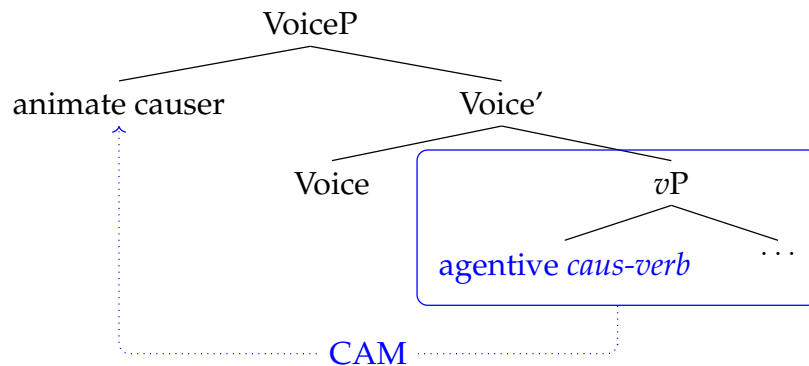
Moreover, while previous studies *exclusively* focus on external arguments like AGENT, HOLDER, applied, FIGURE and inanimate CAUSER/causer (e.g., the causing event in Alexiadou et al. (2015)), there have been few discussions about the animate causer and the causee, an intermediate external argument shared by the syntactically higher causative verb and the syntactically lower embedded predicate. The remainder of this section aims to fill in these research gaps.

6.1.1 CAUSER: A FINE-GRAINED IMPLEMENTATION OF THE COMPLEMENT-ORIENTED APPROACH

This section will show that the complement-oriented approach can be applied to the case of causer. In addition, a fine-grained implementation of the contextualized causer implementations that has never been discussed in the literature will be given, contributing another line of study to this approach reviewed in Section 2.3.2.1.

First, as is shown in Section 3.2.3, when causers are animate in all Teochew causatives, they are compatible with many agentive modifications. Given the eventuality of the syntactic complement of the causer-introducing Voice head is agentive (i.e., ‘dong the causing event’), this compatibility suggests that a complement-oriented approach is on the right track. (355) accordingly implements this contextualized causer interpretation, where CAM refers to ‘compatible with all agentive modifications’.

(355)



Recall in Chapter 3 I proposed that all the causers are introduced as an argument by VoiceP. Such a CAM interpretation is also consistent with the Voice interpretation rule in the literature (356): an argument introduced by a Voice head is

interpreted as AGENT, if the complement of the argument-introducing Voice head describes an agentive, dynamic event (356a).

(356) Rules for the interpretation of Voice (cf. Kratzer, 1996; Myler, 2016; Wood, 2015; Myler, 2016; Wood and Marantz, 2017; Marantz, 2022):

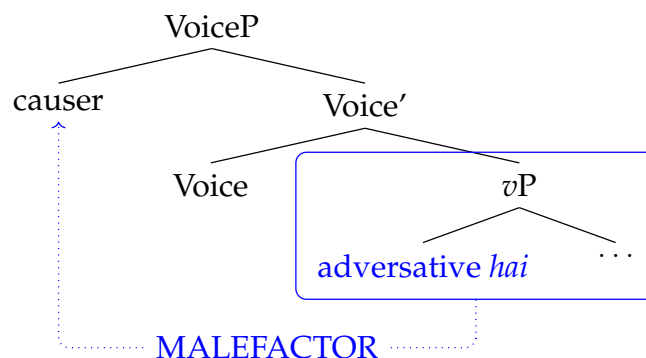
- a. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{AGENT}(x, e) / \text{---}$ (agentive, dynamic event)
- b. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{HOLDER}(x, e) / \text{---}$ (stative eventuality)
- c. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{CAUSER}(x, e) / \text{---}$ (causing event)
- d. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.x / \text{---}$ (elsewhere)

Second, in Chapter 4, I showed that the causer in the adversative *hai* ‘hurt’-causative is interpreted as someone to be blamed, i.e., the MALEFACTOR, for bringing the caused event the speaker views as a ‘bad’ one to the causee¹. A similar attitude-expressing interpretation also exists in the case of the courteous *bun* ‘separate’-causative: native Teochew speakers reported that they interpreted the causer as the BENEFACTOR responsible for bringing about the ‘good’ caused event to the causee.

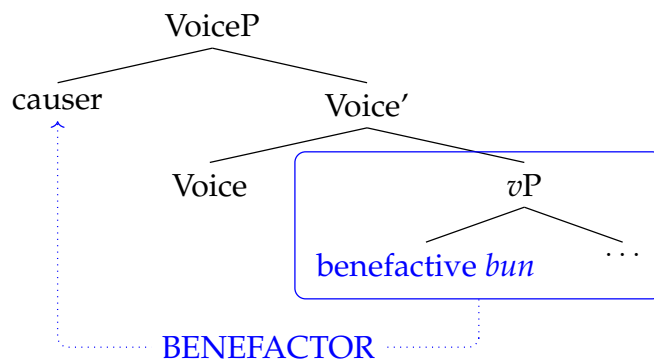
The above-mentioned contextualized causer interpretations are also predicted by the complement-oriented approach (357-358): the flavor of modalities sublexically encoded in causative verbs (in these two cases, it is due to the sublexical doxastic modality; see Section 5.4) will influence the causal event structural interpretations by adding the speaker’s attitude during semantic composition, therefore feeding the MALEFACTOR/BENEFACTOR interpretation of the causer.

¹As was mentioned in Chapter 4, such a causer interpretation is one of the differences between Teochew adversative causatives and Japanese adversative causatives.

(357) The *hai*-causative:



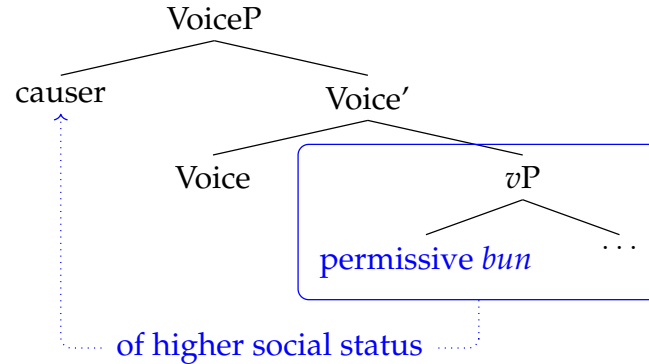
(358) The courteous *bun*-causative:



Last but not least, in Chapters 1 and 4, I showed that the causee in the permissive *bun* ‘separate’-causative is interpreted as someone of a lower social status than the causer; in other words, the causer has a higher social status. Again, a complement-oriented approach can explain why the causer is interpreted in this way. As is shown in (359), the sublexical modality, with a deontic ordering source encoding the social relation hierarchy between the causer and the causee (see Section 5.5), in the causative verb will influence the causal event structural interpre-

tation of the syntactic complement of the causer-introducing Voice head, therefore feeding the interpretation of the causer.

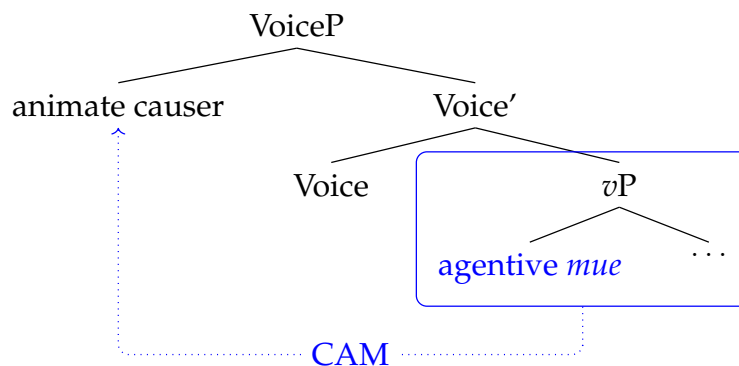
(359) The permissive *bun*-causative:



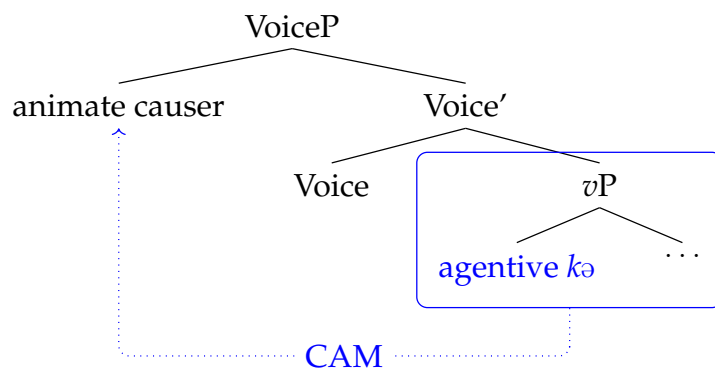
The listing approach listing the causer interpretation with the same highest VoiceP layer will predict all these causers should be interpreted the same, contra the empirical data. Though listing the causer interpretation with individual causative verbs seems to be a plausible solution, I have explicitly shown in Chapter 2 that such an approach could not account for the complex causee interpretation. Therefore, these again prove that the contextual approach is superior.

To summarize, the comprehensive animate causer interpretations in five Teochew periphrastic causatives depend on the event structural interpretation of the syntactic complement of the functional head introducing these causers. This is consistent with the complement-oriented approach, as is summarized in (360).

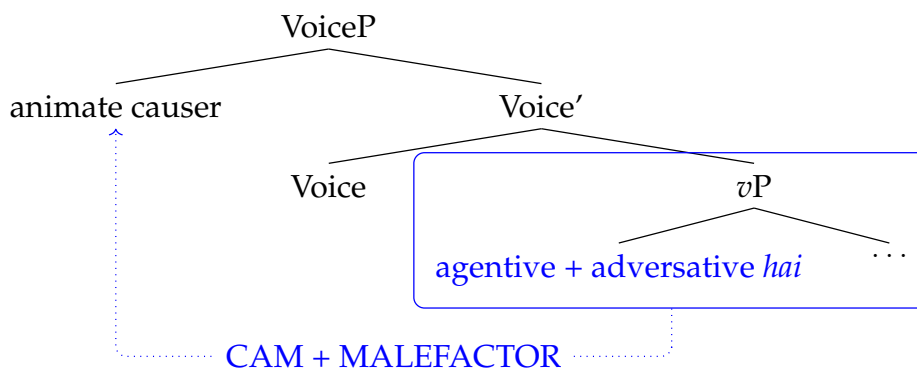
(360) a. Contextualized animate causer interpretation in *mue* 'make'-causative:



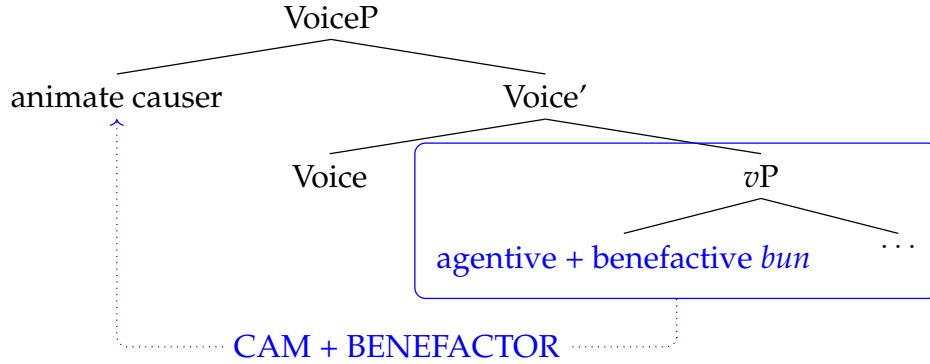
b. Contextualized animate causer interpretation in *kə* 'give'-causative:



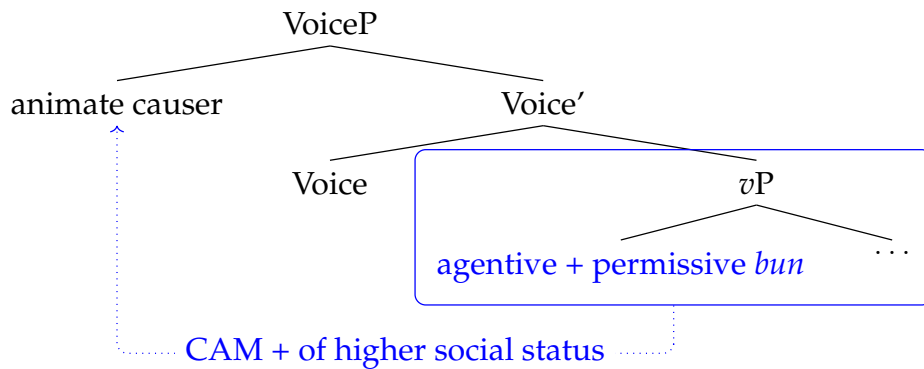
c. Contextualized animate causer interpretation in *hai* 'hurt'-causative:



- d. Contextualized animate causer interpretation in courteous *bun* 'separate'-causative:



- e. Contextualized animate causer interpretation in permissive *bun* 'separate'-causative:



It is necessary to point out that, as we can see, although all the animate causers are introduced by Voice (360) (same as the inanimate ones; see Chapter 3), not all of them are interpreted as AGENT simpliciter. This does not suggest the Voice interpretation rules in (356) are wrong, given that the compatibility between the CAM interpretation of the causer introduced by Voice and the agentive complement of this Voice head is correctly predicted by (356a). What (360) shows is that there exist more complex eventuality interpretations of the syntactic complement

of the higher Voice (e.g., agentive + permissive); therefore, the interpretation of a Voice-introducing argument should accordingly be more complicated.

A complement-oriented approach also helps explain the causer animacy of these Teochew causatives. Recall in the previous discussion (see Table 3.2) that the courteous *bun*-causative and the permissive-causative disallow an inanimate causer. This is actually predicted. It is impossible for an inanimate entity to conduct a courteous or permissive action.

6.1.2 CAUSEE: A TWO-STEP CONTEXTUAL APPROACH

I have demonstrated a fine-grained implementation of the complement-oriented approach that has never been discussed in the literature when it comes to the causer interpretation. However, when it comes to the intermediate external argument, i.e., the causee, the matter is not quite so straightforward.

More specifically, **first**, as shown in Chapter 1, without any context, the causees in the *kə* 'give'-causative and both readings of the *bun*-causative are incompatible with many agentive modifications including instrumental phrases, agent-oriented comitative, rationale clauses and agent-oriented adverbs. In contrast, the causees in the *mue* 'make'-causative and the *hai* 'hurt'-causative are compatible with all of these agentive modifications.

Second, the causees in the *hai* 'hurt'-causative and the courteous *bun* 'separate'-causative are also interpreted as expressing the speaker's attitude. The causee in the *hai* 'hurt'-causative is interpreted as MALEFICIARY; the causee in the courteous *bun*-causative is interpreted as BENEFICIARY receiving a courteous from the causer.

Last but not least, the causee in the permissive *bun* ‘separate’-causative is also interpreted as interacting with that of the causer in a way related to social relationships, i.e., it is of a lower social status than the causer.

All of these are summarized in Table 1.1 (copied as Table 6.1 below)², showing that the formal properties of the causee ‘role’ are somehow between AGENT as a too narrow label and CAUSEE as a too general one (7).

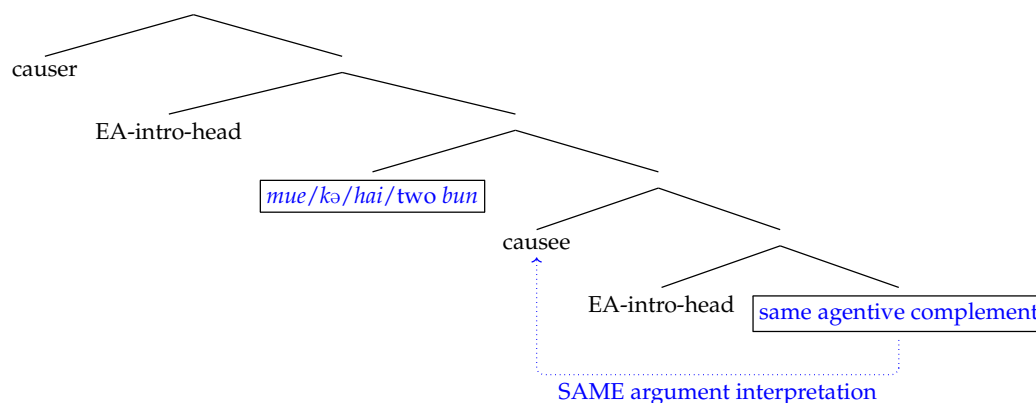
Table 6.1: Complex causee interpretations in Teochew periphrastic causatives (repeated)

| Construction | Compatible with all agentive modifications? | Other |
|--|---|-------------------------------------|
| <i>mue</i> ‘make’-causative | ✓ | - |
| <i>kə</i> ‘give’-causative | × | - |
| <i>hai</i> ‘hurt’-causative | ✓ | MALEFICIARY |
| courteous <i>bun</i> ‘separate’-causative | × | BENEFICIARY |
| permissive <i>bun</i> ‘separate’-causative | × | lower social status than the causer |

The miscellaneous behaviors of the causee above cannot be explained by a complement-oriented approach. Otherwise, given that the embedded predicate is kept uniform (i.e., the activity verb ‘run’) (1), all the causees will be contextualized into having the same argument interpretations (361), contra the empirical fact.

²In later discussions in this section, I will discuss cases where the compatibility between the causees in the *kə*-causative and two *bun*-causative, and instrumental phrases and agent-oriented comitative increases slightly, when a context regarding the actuality is given. This pattern is also reflected in this table in some way: when identifying the causees in these two causative is not compatible with all agentive modifications, it implies that they can be compatible with some.

(361)



However, following traditional descriptions, causees, unlike other external arguments, are shared by the causative verb and the embedded predicate (361). Besides, The contextual conditions of causee interpretation, i.e., the causal event structural interpretation, is more complex. In Chapter 4 and Chapter 5, we saw that the causal relations encoded in the five causative verbs are quite distinct from each other, and cannot be uniformly captured by the monolithic CAUSE operator (Dowty, 1979). Therefore, a contextual approach other than a complement-oriented one is required to interpret the causee.

Given that all causatives have very similar syntactic structures (see Chapter 3), and the event structural difference between two causatives results from the difference of causative verbs (see Chapter 5), it follows that the lexical semantics of the causative verb affects the causee interpretation. Another piece of evidence further confirms this. The same causee 'Mimi' is compatible with the agentive modifications, after both the causer and causative verb *kə/bun* are removed, as is shown in (362).

- (362) a. *Mimi eng guʔbang tsao.*
 Mimi use skateboard run
 'Mimi uses a skateboard to run.'
 (instrument phrase: ✓)
- b. *Mimi uyiseʔgai tsao.*
 Mimi intentionally run
 'Mimi intentionally runs.'
 (agent-oriented adverb: ✓)
- c. *Mimi do Xingy gai pueban e tsao.*
 Mimi at Xingy POSS accompaniment under run
 'Mimi runs with the help of Xingy.'
 (agent-oriented comitative: ✓)
- d. *Mimi tsao kə səng.*
 Mimi run to play
 'Mimi runs for playing.'
 (rationale clause: ✓)

This is in contrast with the original causative sentences with these two causative verbs and the causees incompatible with these modifications.

- (363) The *kə* 'give'-causative: (=2))
- a. **Nangy kə Mimi eng guʔbang tsao.*
 Nangy give Mimi use skateboard run
 Intended: 'Nangy causes Mimi to use a skateboard to run.' (Lit. 'Nangy gives the using-a-skateboard-to-run event to Mimi.')
- (instrument phrase)
- b. **Nangy kə Mimi uyiseʔgai tsao.*
 Nangy give Mimi intentionally run
 Intended: 'Nangy causes Mimi to intentionally run.' (Lit. 'Nangy gives the intentionally-running event to Mimi.')
- (agent-oriented adverb)

c. * *Nangy kə Mimi do Xingy gai pueban e tsao.*
 Nangy give Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy causes Mimi to run with the help of Xingy.' (Lit.
 'Nangy gives the running-with-the-help-of-Xingy event to Mimi.')

(agent-oriented comitative)

d. * *Nangy kə Mimi tsao kə səng.*
 Nangy give Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing.'
 (Lit. 'Nangy gives the running-for-playing event to Mimi.')

(rationale clause)

(364) The courteous *bun* 'separate'-causative: (=3)

a. * *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 Intended: 'Nangy causes Mimi to use a skateboard to run by giving
 precedence to Mimi out of courtesy.'

(instrument phrase)

b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy causes Mimi to intentionally run by giving prece-
 dence to Mimi out of courtesy.'

(agent-oriented adverb)

c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy causes Mimi to run with the help of Xingy by giving
 precedence to Mimi out of courtesy.'

(agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy causes Mimi to run for the purpose of playing by giving precedence to Mimi out of courtesy.'
 (rationale clause)

(365) The permissive *bun* 'separate'-causative: (=4)

- a. * *Nangy bun Mimi eng guʔbang tsao.*
 Nangy separate Mimi use skateboard run
 Intended: 'Nangy lets Mimi use a skateboard to run.'
 (instrument phrase)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy lets Mimi intentionally run.'
 (agent-oriented adverb)

- c. * *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy lets Mimi run with the help of Xingy.'
 (agent-oriented comitative)

- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy lets Mimi run for the purpose of playing.'
 (rationale clause)

One follow-up question is whether the embedded predicate, of which the causee is the external argument, also plays a role in interpreting the causee. The following pieces of evidence prove that it does.

As shown in Chapter 4, the *kə*-causative and both *bun*-causatives, can pattern like the *mue*-causative and the *hai*-causative, if a context regarding the actual situation of the caused event is given. Teochew speakers also report that when a clear

context that the causee finally does the causing event is given, the acceptability of instrumental phrases and agent-oriented comitatives, in contrast to that of agent-oriented adverbs and rationale clauses, increases slightly, though they still report that the sentences are slightly degraded. Relevant data are copied in (366-368).

(366) The *kə* 'give'-causative (=132):

Context: It is known that Mimi finally runs.

- a. ?? *Nangy kə Mimi eng guʔbang tsao.*
 Nangy give Mimi use skateboard run

Intended: 'Nangy causes Mimi to use a skateboard to run.'

(instrument phrase: ??)

- b. * *Nangy kə Mimi uyiseʔgai tsao.*
 Nangy give Mimi intentionally run

Intended: 'Nangy causes Mimi to intentionally run.'

(agent-oriented adverb: ×)

- c. ?? *Nangy kə Mimi do Xingy gai pueban e tsao.*
 Nangy give Mimi at Xingy POSS accompaniment under run

Intended: 'Nangy causes Mimi to run with the help of Xingy.'

(agent-oriented comitative: ??)

- d. * *Nangy kə Mimi tsao kə səng.*
 Nangy give Mimi run to play

Intended: 'Nangy causes Mimi to run for the purpose of playing.'

(rationale clause: ×)

(367) The courteous *bun* 'separate'-causative (=133):

Context: It is known that Mimi finally runs.

a. ?? *Nangy bun Mimi eng gu?bang tsao.*

Nangy separate Mimi use skateboard run

Intended: 'Nangy causes Mimi to use a skateboard to run by giving precedence to Mimi out of courtesy.'

(instrument phrase: ??)

b. * *Nangy bun Mimi uyise?gai tsao.*

Nangy separate Mimi intentionally run

Intended: 'Nangy causes Mimi to intentionally run by giving precedence to Mimi out of courtesy.'

(agent-oriented adverb: ×)

c. ?? *Nangy bun Mimi do Xingy gai pueban e tsao.*

Nangy separate Mimi at Xingy POSS accompaniment under run

Intended: 'Nangy causes Mimi to run with the help of Xingy by giving precedence to Mimi out of courtesy.'

(agent-oriented comitative: ??)

d. * *Nangy bun Mimi tsao kə səng.*

Nangy separate Mimi run to play

Intended: 'Nangy causes Mimi to run for the purpose of playing by giving precedence to Mimi out of courtesy.'

(rationale clause: ×)

(368) The permissive *bun* 'separate'-causative (=134):

Context: It is known that Mimi finally runs.

a. ?? *Nangy bun Mimi eng gu?bang tsao.*

Nangy separate Mimi use skateboard run

Intended: 'Nangy lets Mimi use a skateboard to run.'

(instrument phrase: ??)

- b. * *Nangy bun Mimi uyiseʔgai tsao.*
 Nangy separate Mimi intentionally run
 Intended: 'Nangy lets Mimi intentionally run.'
 (agent-oriented adverb: ×)
- c. ?? *Nangy bun Mimi do Xingy gai pueban e tsao.*
 Nangy separate Mimi at Xingy POSS accompaniment under run
 Intended: 'Nangy lets Mimi run with the help of Xingy.'
 (agent-oriented comitative: ??)
- d. * *Nangy bun Mimi tsao kə səng.*
 Nangy separate Mimi run to play
 Intended: 'Nangy lets Mimi run for the purpose of playing.'
 (rationale clause: ×)

This suggests that the causees are more agentive in these cases, which can only be explained when the eventuality of the embedded agentive predicate also plays a role in the causee interpretation. Otherwise, the causative verb *kə* or *bun* will make the causee always incompatible with all agentive modifications.

Another piece of evidence also helps prove the role of embedded predicates in interpreting the causee. Recall in Chapter 4, we saw the following selectivity of embedded predicates in all Teochew causatives.

Table 6.2: Selectivity of embedded predicates in all Teochew causatives (repeated)

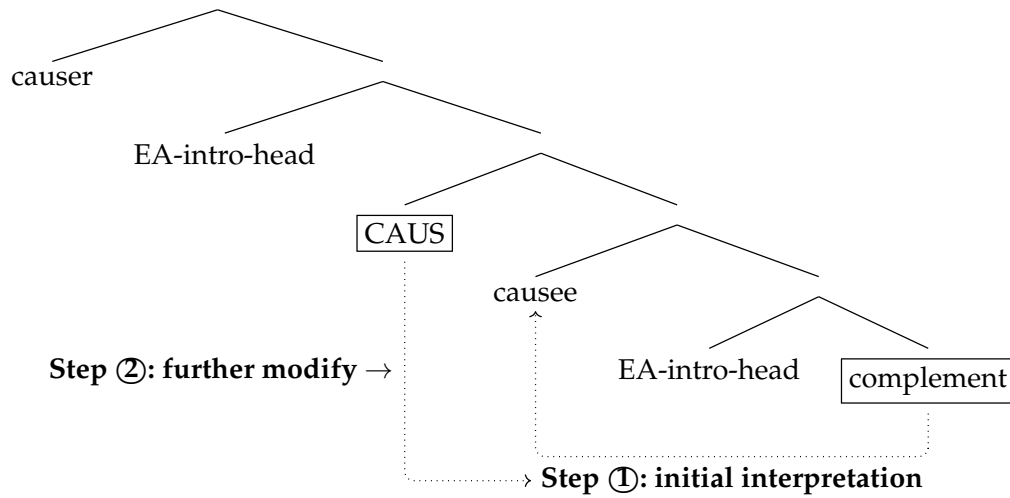
| | <i>mue</i> -caus. | <i>kə</i> -caus. | <i>hai</i> -caus. | 'c.' <i>bun</i> -caus. | 'p.' <i>bun</i> -caus. |
|------------------|-------------------|------------------|-------------------|------------------------|------------------------|
| unergative | ✓ | ✓ | ✓ | ✓ | ✓ |
| transitive | ✓ | ✓ | ✓ | ✓ | ✓ |
| ditransitive | ✓ | ✓ | ✓ | ✓ | ✓ |
| unaccusative | ✓ | × | ✓ | × | × |
| stative | ✓ | × | ✓ | × | × |
| psych verb | ✓ | × | ✓ | × | × |
| atelic predicate | ✓ | ✓ | ✓ | ✓ | ✓ |
| telic predicate | ✓ | ✓ | ✓ | ✓ | ✓ |

As we can see, the embedded predicates in the *mue*-causative and the *hai*-causative can also be unaccusatives, statives or psych verbs. These suggest the causees in the *mue*-causative and the *hai*-causative can also be THEME, HOLDER or EXPERIENCER accordingly, proving that the embedded predicate also affects the causee interpretation.

Based on the above discussion, I propose a *two-step contextual approach* to the causee interpretation to account for the co-influence of the causative verb and the embedded predicate (369). When the causee is introduced by or adjoined to the external argument introducing head, based on the complement-oriented approach applied to other external arguments including the causers, it will have an initial argument interpretation. This initial interpretation will be further modified by the lexical semantics of the causative verb (see Chapter 5) by being scoped over during the process of semantic composition. Compared to this mechanism, a complement-oriented approach to external argument interpretation can only be counted as a partial explanation of the final interpretation of the causee, considering it is an intermediate external argument shared by the causative verb and the embedded predicate.³

³Paul once discussed with me another alternative way to frame this complex contextualization condition of the causee interpretation: the causee is assigned a complement-oriented role at Step ① plus contextual modification of entailments (cf. Dowty (1991)) at Step ②, leading to a complex overall interpretation; in this system, we see a contrast between *argument assignment* (what many previous literature focus on) and *argument interpretation* (what this dissertation focuses on).

(369)



Given that all the causees in Teochew periphrastic causatives are introduced by or adjoined to VoiceP (Chapter 3), another alternative would be to add another Voice interpretation in (356), following the spirit of the allosemy approach (Wood, 2015; Wood and Marantz, 2017; Myler, 2016; Myler and Mali, 2021; Marantz, 2022). Then, this new Voice interpretation would be something like (370e), where θ represents a causee interpretation reflected in Table 6.1.

- (370) a. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{AGENT}(x, e) / \text{---}$ (agentive, dynamic event)
b. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{HOLDER}(x, e) / \text{---}$ (stative eventuality)
c. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.\lambda e.\text{CAUSER}(x, e) / \text{---}$ (causing event)
d. $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x.x / \text{---}$ (elsewhere)
e. $\llbracket \text{Voice} \rrbracket \rightsquigarrow$
 $\lambda x.\lambda e.\theta(x, e) /$ (some complicated version of CAUSE) --- (agentive, dynamic event)

However, there are some remaining issues with this allosemy approach, and none of them are trivial. First, a solution like (370e) will throw a monkey

wrench to the compositional semantics long following the tradition of Heim and Kratzer (1998). This is because in order to make (370e) work, the semantics of the embedded predicate and that of the causative verb need to be composed first, circumventing the intermediate causee surrounded by them. Accordingly, another Event Identification rule other than the one proposed in Kratzer (1996) (55) is needed, given that the latter follows a straight bottom-up order but we need another one not to compose the causee interpretation before we compose the semantics of the causative verb syntactically-higher than it. This obviously violates the bottom-up syntax-semantics composition, and requires some technical ways to fix this issue.

What is more, a thematic label is required to be given to θ in (370e). Such an approach to using discrete labels for accounting for argument interpretations has been receiving a lot of criticism in the literature (see Dowty (1991) for a classic summative criticism on the theta role theory and the relevant discussions in Chapter 2).

Last but not least, even for the previous Voice interpretation rules in (370a-370d), there also exist some issues regarding the compositionality of semantic derivations, though they are not as serious as those of the rule in (370e). More specifically, classic compositional semantics, say between the node α and β , requires the lexical entry of each node to be independent of each other, and a type mismatch will lead to the crash of the semantic derivations, which can be solved by techniques like type shifting. However, in (370a-370d) (and also in (370e)), the lexical entry of one node is dependent on that of its neighboring node, which is not what is typically pursued in compositional semantics.

Based on the discussion so far, I conclude such an alternative cannot work. Therefore, this dissertation chooses the contextualization mechanism in (369). It

also allows the widely-adopted AGENT interpretation rule of Voice (cf. (370a)) to be kept in the way that it provides the correct initial argument interpretation (in spite of the compositionality issue raised above), a welcome solution with respect to a bottom-up derivation.

6.1.3 A POST-SYNTACTIC INTERPRETATION MECHANISM

The next question is how exactly the two-step contextual approach, including the complement-oriented one is implemented.

Adopting Distributed Morphology (Halle and Marantz, 1993, 1994) featuring *late-insertion*, I assume the parallelism between less-studied LF and the well-studied PF side (see Bobaljik (2017) for a review) in Figure 6.1. More specifically, I assume that after syntactic derivations sensitive to phasehood, a chunk of syntactic structure will be sent to PF and LF respectively. On the PF side, there are still some morphological operations sensitive to syntax at the stage between Linearization and Spell-Out, paralleling the stage where there might be some LF operations sensitive to syntax (e.g., Quantifier Raising) between Semantic interpretation and Spell-Out on the LF side. On the PF side, after Linearization, some phonological operations start to take place, which leads to the Vocabulary insertion assigning sounds/signs to those abstract linguistic representations. In parallel, on the LF side, after those LF operations are finished, abstract linguistic representations will be sent to the Semantics module to be assigned meaning. All of these together illustrate the division of labor between different modules of grammar. Such a parallelism between PF and LF is also found in recent studies adopting the allosemy approach (e.g., Wood, 2015; Myler, 2016; Wood and Marantz, 2017; Marantz, 2022).

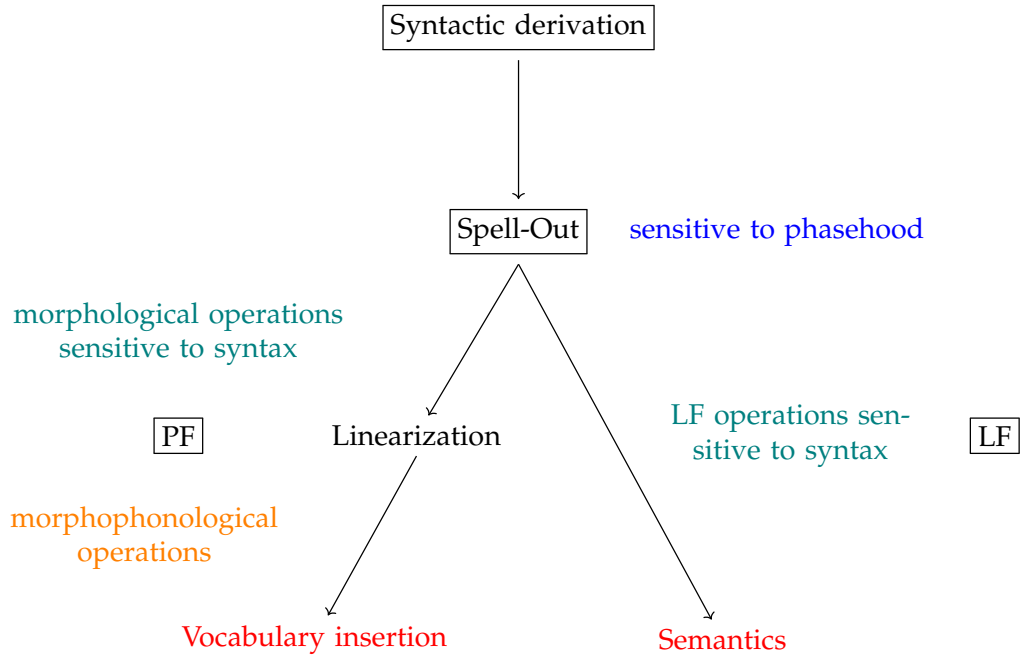


Figure 6.1: Parallelism between PF and LF

When it comes to the causee interpretation on the LF side, Figure 6.2 illustrates how it is achieved in a post-syntactic way. Following previous research (e.g., Kratzer, 1996; Pylkkänen, 2008; Wood and Marantz, 2017; Nie, 2020; Wood and Tyler, 2023), I treat the highest VoiceP as a defining boundary of phase (cf. Chomsky, 2000, 2001), given it is a complete thematic domain and serves as a border between event structure and temporal structure⁴. When it comes to the stage after Spell-Out but before the Semantics module on the LF side, I argue that the compositional semantics derivation will lead to the fact that the initial AGENT interpretation of causee fed by the agentive eventuality of the embedded predicate will be scoped over by the modalities sublexically encoded in the embedding

⁴See the discussion on ‘first phase’ in Ramchand (2008) for a spiritually similar approach.

causative verb and be modified. The properties of the final causee interpretation can be diagnosed by some linguistics tests.

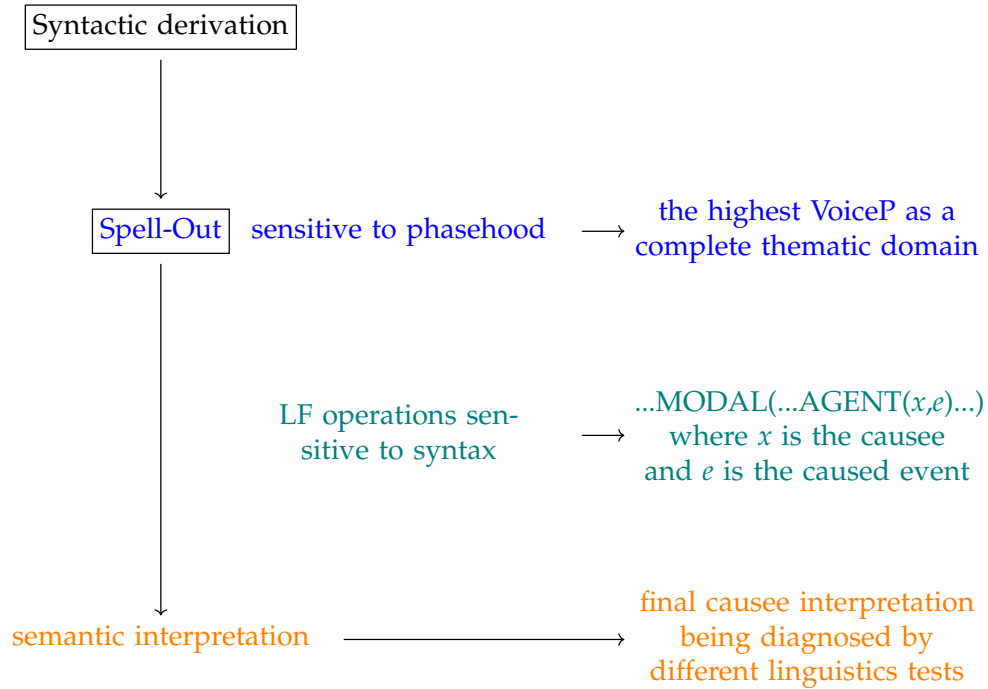


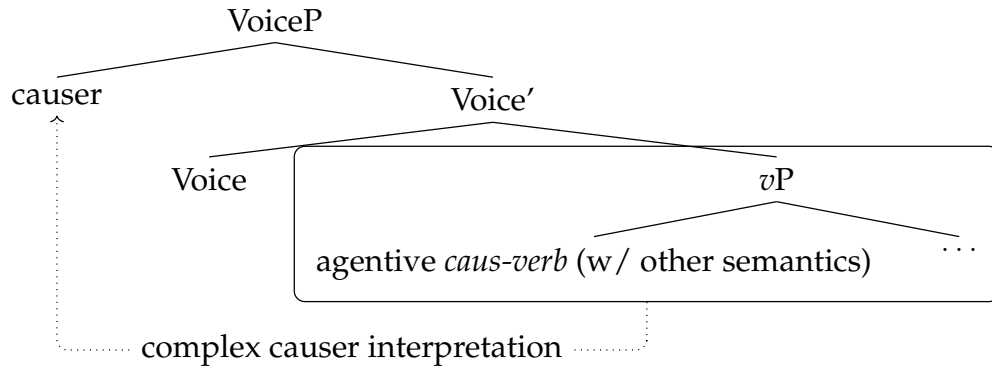
Figure 6.2: Causee interpretation at the LF

Sections 6.2 and 6.3 will elaborate more on the final two steps respectively (marked in green and orange in Figure 6.2).

6.1.4 INTERIM SUMMARY

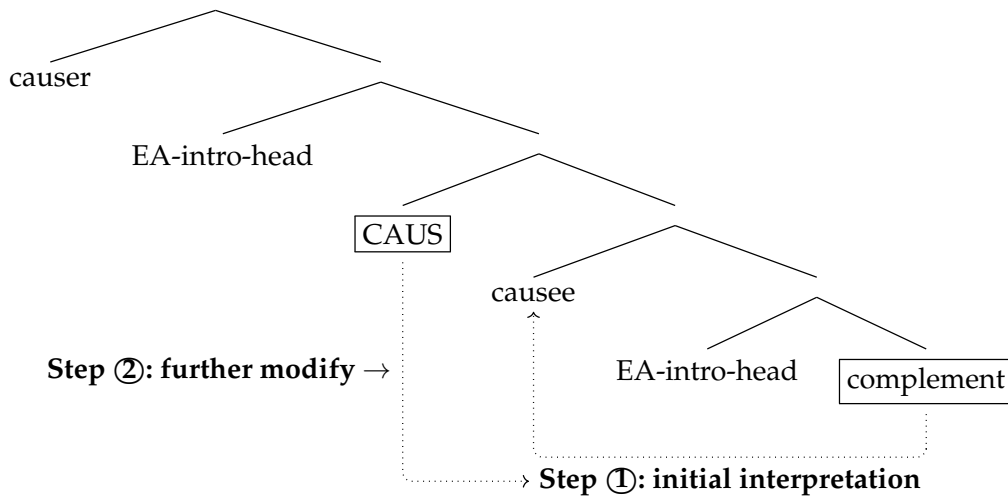
So far, this section has contributed a detailed and concrete implementation of the complement-oriented approach to the complex interpretations of causers in Teochew causative (371).

(371)



In contrast, when it comes to the interpretations of the causees, given that the causee is an intermediate external argument shared by a syntactically higher causative verb and a syntactically lower embedded predicate, its contextualization conditions are more complex, as is shown in a two-step mechanism below.

(372)



In Section 6.2, combining both the syntactic analysis in Chapter 3 and the event structural analysis in Chapter 5, I will illustrate the compositional semantics derivations for each Teochew periphrastic causative. Building on that, in Section 6.4, I will show how the causees, with an initial AGENT interpretation fed by the

eventuality of the embedded agentivity verb, are interpreted at the end of Step ② under the modifications of the lexical semantics of different causative verbs, which is reflected by their incompatibilities with different linguistics diagnostics targeting different argument properties (Section 6.3).

6.2 CAUSEE INTERPRETATIONS ARE MODIFIED BY MODAL PROPERTIES

6.2.1 COMPOSITIONAL DERIVATIONS OF ALL TEOCHEW CAUSATIVES

When it comes to the technical details of compositional semantics, like many other research, the lexical entries of two Voice heads follow the Voice interpretation rules in (356). However, given the modal analysis of causal event structure in Chapter 5, I add a possible world argument w_s in the same spirit of Intensional Semantics (von Stechow and Heim, 1997) (373).

(373) $\llbracket \text{Voice} \rrbracket \rightsquigarrow \lambda x_e. \lambda e_v. \lambda w_s. \text{AGENT}(e, x)(w)$ if the eventuality of the Voice complement is (grammatically) agentive

Accordingly, I make use of an intentional version of the Event Identification rule in (374), where a possible world argument w and its presupposition (if any)⁵ is incorporated to account for the composition between *v*P and the Voice head, following the same spirit of ‘Event Identification’ (Kratzer, 1996) (55).

⁵In this dissertation, I did not consider the presupposition of $\llbracket \beta \rrbracket$ in (374), mainly because $\llbracket \beta \rrbracket$ in the later derivation refers to (373) which does not have a presupposition.

(374) Intensional Event identification rule:

If α is a branching node, $\{\beta, \gamma\}$ is the set of α 's daughters, and $\llbracket\beta\rrbracket$ is in the domain of $\langle e, \langle v, \langle s, t \rangle \rangle \rangle$, and $\llbracket\gamma\rrbracket$ is in the domain of $\langle v, \langle s, t \rangle \rangle$, then $\llbracket\alpha\rrbracket \rightsquigarrow \lambda x_e. \lambda e_v. \lambda w_s. \llbracket\beta\rrbracket(x)(e)(w) \wedge \llbracket\gamma\rrbracket(e)(w)$ and the presupposition component of w_s in $\llbracket\gamma\rrbracket$ (if any) is kept in $\llbracket\alpha\rrbracket$.

Now we are all set for compositional semantics derivations for Teochew periphrastic causatives.

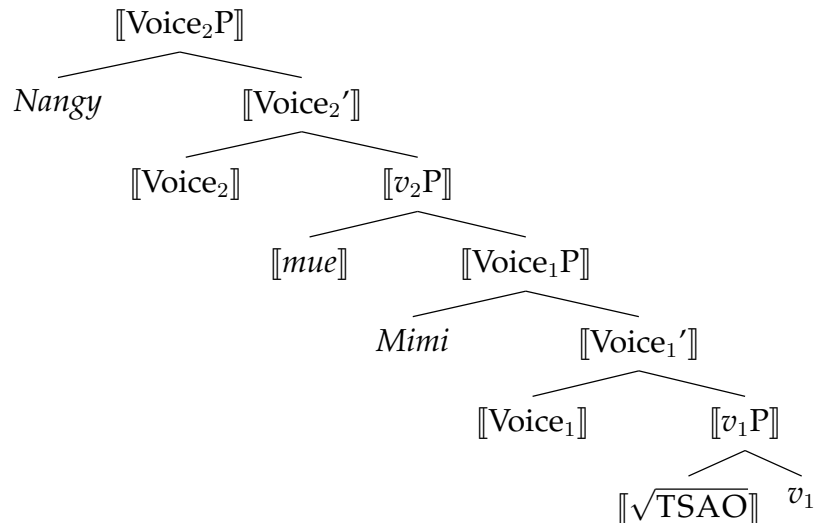
6.2.1.1 THE *mue* 'MAKE'-CAUSATIVE

The semantic derivations of the *mue* 'make'-causative are shown below.

(375) a. The *mue* 'make'-causative:

Nangy mue Mimi tsao.
 Nangy make Mimi run
 'Nangy causes Mimi to run.'

b.



c. **Lexical entries of relevant terminal nodes:**

$\llbracket\sqrt{\text{TSAO}}\rrbracket \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$[[\text{Voice}_1]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w')$

$[[\text{mue}]] \rightsquigarrow \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t''. [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

$[[\text{Voice}_2]] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w)$

Derivations:

$[[v_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$[[\text{Voice}_1']] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w') \wedge \text{run}(e_1)(w')$

$[[\text{Voice}_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w')$

$[[v_2P]] \rightsquigarrow \lambda e_2. \lambda w. [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t'' [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

$[[\text{Voice}_2']] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y) \wedge [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t'' [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

$[[\text{Voice}_2P]] \rightsquigarrow \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy}) \wedge [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t'' [t'' \in \tau(e_2) \wedge t'' < t']]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

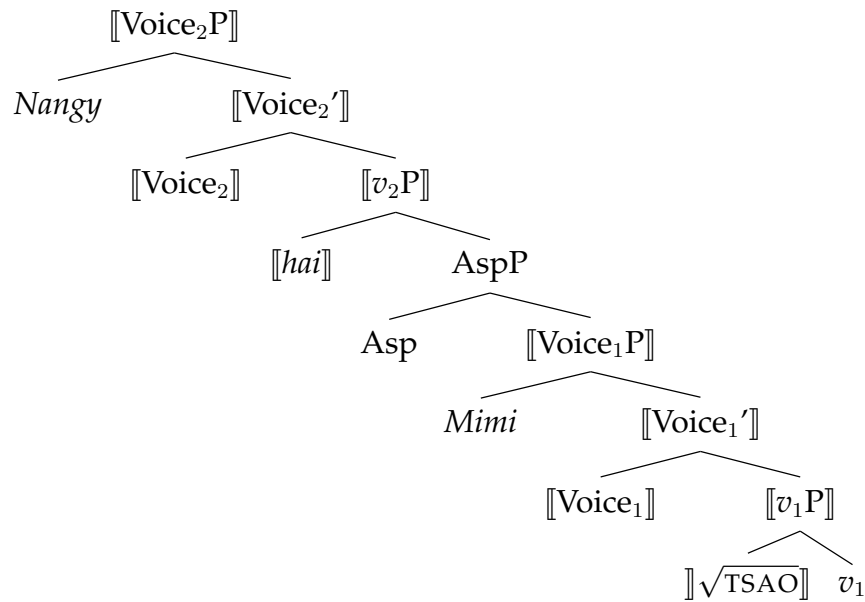
6.2.1.2 THE *hai* 'HURT'-CAUSATIVE

The following shows what the semantics derivations of the *hai*-causative looks like; the semantic derivation of embedded AspP is ignored, given it is irrelevant to the discussion.

(376) a. The *hai* 'hurt'-causative:

Nangy hai Mimi tsao.
 Nangy hurt Mimi run
 'Nangy causes Mimi to run.'

b.



c. **Lexical entries of relevant terminal nodes:**

$[[\sqrt{\text{TSAO}}]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$[[\text{Voice}_1]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w')$

$[[\text{hai}]] \rightsquigarrow \lambda P. \lambda e_2. \lambda w: \text{DOX}_{MAL}(P)(e_1)(w). [\forall w'. w' \in \text{META}(w, e_2)$

$\rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subseteq e_2$

$\rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge$

$z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]$

$\llbracket \text{Voice}_2 \rrbracket \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w)$

Derivations:

$\llbracket v_1P \rrbracket \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$\llbracket \text{Voice}_1' \rrbracket \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w') \wedge \text{run}(e_1)(w')$

$\llbracket \text{Voice}_1P \rrbracket \rightsquigarrow \lambda e_1. \lambda w'. \text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w')$

$\llbracket v_2P \rrbracket \rightsquigarrow \lambda e_2. \lambda w: \text{DOX}_{MAL}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w)).$

$[\forall w'. w' \in \text{META}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \\ \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \\ \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \\ \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

$\llbracket \text{Voice}_2' \rrbracket \rightsquigarrow \lambda y. \lambda e_2. \lambda w: \text{DOX}_{MAL}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w)).$

$\text{AGENT}(e_2, y)(w) \wedge [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \\ \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. \\ [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-} \\ \text{AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \\ \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

$\llbracket \text{Voice}_2P \rrbracket \rightsquigarrow \lambda e_2. \lambda w: \text{DOX}_{MAL}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w)).$

$\text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{META}(w, e_2) \\ \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-} \\ \text{AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \\ \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$

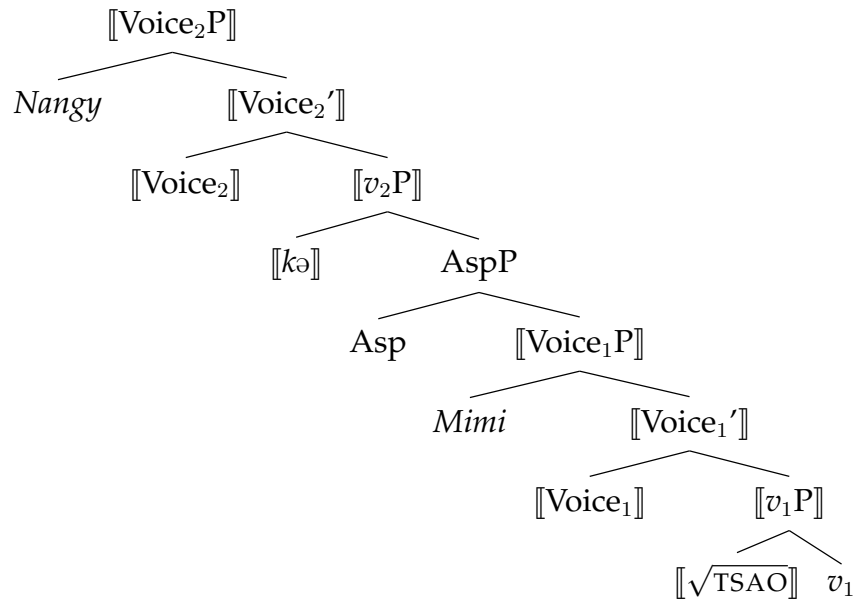
6.2.1.3 THE *kə* 'GIVE'-CAUSATIVE

The compositional semantics of the *kə*-causative is given below; the semantic derivation of embedded AspP is ignored.

(377) a. The *kə* 'give'-causative:

Nangy kə Mimi tsao.
 Nangy give Mimi run
 'Nangy causes Mimi to run.'

b.



c. **Lexical entries of relevant terminal nodes:**

$[[\sqrt{\text{TSAO}}]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$[[\text{Voice}_1]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w')$

$[[kə]] \rightsquigarrow \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]]]$

$[[\text{Voice}_2]] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w)$

Derivations:

$[[v_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$

$[[\text{Voice}_1']] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w') \wedge \text{run}(e_1)(w')$

$[[\text{Voice}_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w')$

$[[v_2P]] \rightsquigarrow \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]]]$

$[[\text{Voice}_2']] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]]]$

$[[\text{Voice}_2P]] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]]]]$

6.2.1.4 THE COURTEOUS *bun* 'SEPARATE'-CAUSATIVE

The following shows how the semantics derivation of the courteous *bun*-causative looks like, with the omission of the AspP layer.

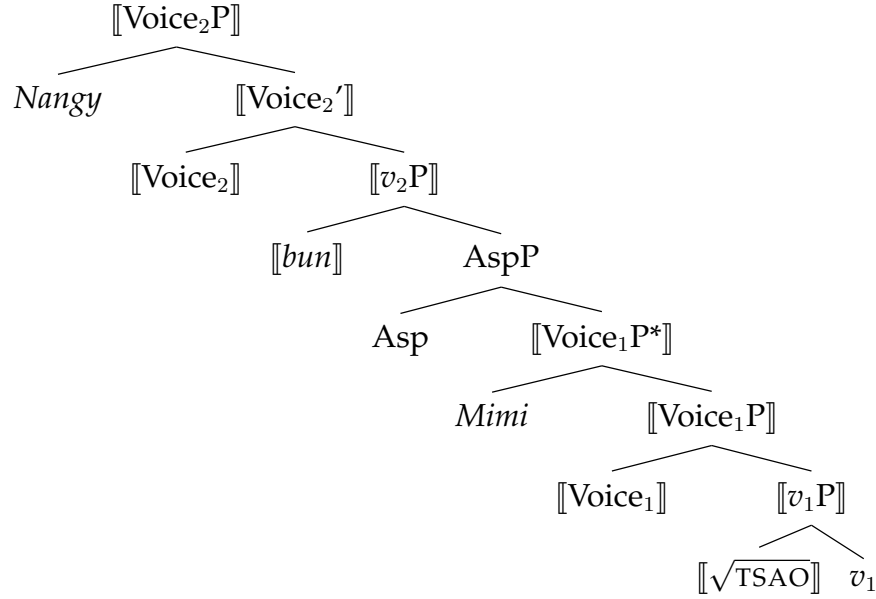
(378) a. The courteous *bun* 'separate'-causative:

Nangy bun Mimi tsao.

Nangy separate Mimi run

'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

b.



c. **Lexical entries of relevant terminal nodes:**

$$[[\sqrt{\text{TSAO}}]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$$

$$[[\text{Voice}_1]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w')$$

$$[[bun]] \rightsquigarrow \lambda P. \lambda e_2. \lambda w: \text{DOX}_{BEN}(P)(e_1)(w). [\forall w'. w' \in \text{VOL}(w, e_2) \\ \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]]] \wedge e_2 \sim_{sp} e_1 \wedge \\ \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]]$$

$$[[\text{Voice}_2]] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w)$$

Derivations:

$$[[v_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$$

$$[[\text{Voice}_1P]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w') \wedge \text{run}(e_1)(w')$$

$$[[\text{Voice}_1P^*]] \rightsquigarrow \lambda e_1. \lambda w'. \text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w')$$

$$[[v_2P]] \rightsquigarrow \lambda e_2. \lambda w: \text{DOX}_{BEN}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w'')).$$

$$[\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge$$

$$\begin{aligned}
& \forall t.[t \in \tau(e_1) \rightarrow \exists t'.[t' \in \tau(e_2) \wedge t' < t]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3.[e_3 \subset e_2 \rightarrow \\
& \neg \exists x.[\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z[\text{AGENT}(z)(e_1) \wedge \\
& z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]] \\
\llbracket \text{Voice}_2' \rrbracket \rightsquigarrow & \lambda y. \lambda e_2. \lambda w: \text{DOX}_{BEN}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w'')). \\
& \text{AGENT}(e_2, y)(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi}) \\
& (w') \wedge \text{run}(e_1)(w') \wedge \forall t.[t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge \\
& e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\
& \exists z[\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]] \\
\llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow & \lambda e_2. \lambda w: \text{DOX}_{BEN}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w'')). \\
& \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\
& \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t.[t \in \tau(e_1) \rightarrow \\
& \exists t'. [t' \in \tau(e_2) \wedge t' < t]] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \\
& \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z[\text{AGENT}(z)(e_1) \wedge \\
& z \neq x] \wedge \exists y[\text{AGENT}(y)(e_2) \wedge y \neq x]]]]]]
\end{aligned}$$

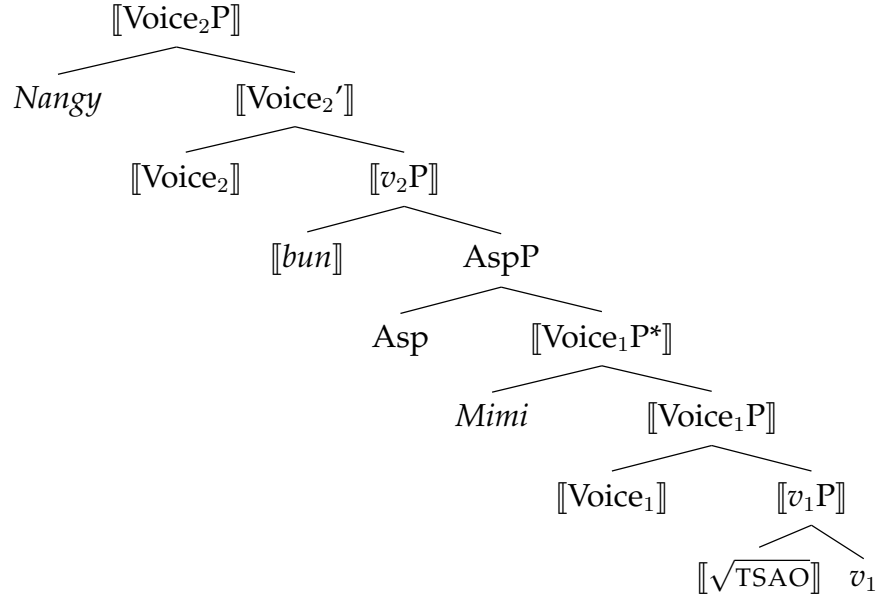
6.2.1.5 THE PERMISSIVE *bun* 'SEPARATE'-CAUSATIVE

The following shows the semantics derivation of our final causative, i.e., the permissive *bun* 'separate'-causative with the omission of the AspP layer.

(379) a. The permissive *bun* 'separate'-causative:

Nangy bun Mimi tsao.
Nangy separate Mimi run
'Nangy lets Mimi run.'

b.



c. **Lexical entries of relevant terminal nodes:**

$$[[\sqrt{\text{TSAO}}]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$$

$$[[\text{Voice}_1]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w')$$

$$[[\text{bun}]] \rightsquigarrow \lambda P. \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [P(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]]] \bullet \text{DEON}(P)(e_2)(w)$$

(For reading convenience, given that the denotation for $\text{DEON}(P)(e_2)(w)$ is complicated (334), I save the compositional semantics for the conventional implicature part $\lambda P. \lambda e_2. \lambda w. \text{DEON}(P)(e_2)(w)$ till the end)

$$[[\text{Voice}_2]] \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w)$$

Derivations:

$$[[v_1P]] \rightsquigarrow \lambda e_1. \lambda w'. \text{run}(e_1)(w')$$

$$[[\text{Voice}_1P]] \rightsquigarrow \lambda x. \lambda e_1. \lambda w'. \text{AGENT}(e_1, x)(w') \wedge \text{run}(e_1)(w')$$

$$[[\text{Voice}_1P^*]] \rightsquigarrow \lambda e_1. \lambda w'. \text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w')$$

$$\begin{aligned}
& \llbracket v_2P \rrbracket \rightsquigarrow \lambda e_2. \lambda w. [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \\
& \quad \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \\
& \quad \wedge t < t'']]]] \bullet \text{DEON}(\llbracket \text{Voice}_1P^* \rrbracket)(e_2)(w) \\
& \llbracket \text{Voice}_2' \rrbracket \rightsquigarrow \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, y)(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\
& \quad \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\
& \quad \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]] \bullet \\
& \quad \text{DEON}(\llbracket \text{Voice}_1P^* \rrbracket)(e_2)(w) \\
& \llbracket \text{Voice}_2P \rrbracket \rightsquigarrow \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\
& \quad \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\
& \quad \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]] \bullet \\
& \quad \text{DEON}(\llbracket \text{Voice}_1P^* \rrbracket)(e_2)(w)
\end{aligned}$$

The conventional implicature (cf. (334))

$$\lambda P. \lambda e_2. \lambda w. \text{DEON}(P)(e_2)(w)$$

$$= \lambda e_2. \lambda w. \text{DEON}(\llbracket \text{Voice}_1P^* \rrbracket)(e_2)(w)$$

$$= \text{DEON}(\llbracket \text{Voice}_1P^* \rrbracket)$$

- i. $\exists v. [v \in \text{DEON}(w, e_2) \wedge \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(v) \wedge \text{run}(e_1)(v) \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']]]]$ and
- ii. $\exists v'. [v' \in \text{DEON}(w, e_2) \wedge \neg \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(v') \wedge \text{run}(e_1)(v') \wedge \exists t. [t \in \tau(e_1) \wedge \forall t'. [t' \in \tau(e_2) \rightarrow t < t']]]]$

6.2.2 CONTEXTUAL CAUSEE INTERPRETATIONS

As we can see from the semantic derivations of each Teochew periphrastic causative, the initial **AGENT** interpretation of the causee will ultimately fall within the scope of **certain sublexical modalities**, as summarized below.

(380) The output of $\llbracket \text{Voice}_2\text{P} \rrbracket$ in each causatives (the underline parts are the scope of modalities):

a. The *mue*-causative:

$$\begin{aligned} \llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow & \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy}) \wedge [\forall w'. w' \in \text{META}(w, e_2) \rightarrow \\ & \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \exists t. [t \in \tau(e_1) \wedge} \\ & t \in \tau(e_2)] \wedge \forall t'. [t' \in \tau(e_1) \rightarrow \exists t'' [t'' \in \tau(e_2) \wedge t'' < t']]} \wedge e_2 \sim_{sp} e_1 \wedge \\ & \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \\ & \underline{\exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]}]]]] \end{aligned}$$

b. The *hai*-causative:

$$\begin{aligned} \llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow & \lambda e_2. \lambda w: \text{DOX}_{MAL}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w)). \\ & \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{META}(w, e_2) \\ & \rightarrow \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow} \\ & \underline{\exists t'. [t' \in \tau(e_2) \wedge t' < t]}] \wedge \forall e_3. [e_3 \subset e_2 \rightarrow \neg \exists x. [\text{Intermediary-} \\ & \text{AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \wedge z \neq x] \wedge} \\ & \underline{\exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]}]]]] \end{aligned}$$

c. The *kə*-causative:

$$\begin{aligned} \llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow & \lambda y. \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\ & \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow} \\ & \underline{\exists t'. [t' \in \tau(e_2) \wedge t' < t]}]]] \end{aligned}$$

d. The courteous *bun*-causative:

$$\begin{aligned} & \llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow \lambda e_2. \lambda w: \text{DOX}_{\text{BEN}}(\text{AGENT}(e_1, \text{Mimi})(w) \wedge \text{run}(e_1)(w'')) . \\ & \quad \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\ & \quad \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \quad \underline{\exists t'. [t' \in \tau(e_2) \wedge t' < t]}] \wedge e_2 \sim_{sp} e_1 \wedge \forall e_3. [e_3 \subseteq e_2 \rightarrow \\ & \quad \underline{\neg \exists x. [\text{Intermediary-AGENT}(x)(e_2, e_3, e_1) \wedge \exists z [\text{AGENT}(z)(e_1) \\ & \quad \wedge z \neq x] \wedge \exists y [\text{AGENT}(y)(e_2) \wedge y \neq x]}]]]]]] \end{aligned}$$

e. The permissive *bun*-causative:

$$\begin{aligned} & \llbracket \text{Voice}_2\text{P} \rrbracket \rightsquigarrow \lambda e_2. \lambda w. \text{AGENT}(e_2, \text{Nangy})(w) \wedge [\forall w'. w' \in \text{VOL}(w, e_2) \rightarrow \\ & \quad \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(w') \wedge \text{run}(e_1)(w') \wedge \forall t. [t \in \tau(e_1) \rightarrow \\ & \quad \underline{\exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']}]}}] \bullet \\ & \text{DEON}(\llbracket \text{Voice}_1\text{P}^* \rrbracket)(e_2)(w) \end{aligned}$$

$$\lambda e_2. \lambda w. \text{DEON}(\llbracket \text{Voice}_1\text{P}^* \rrbracket)(e_2)(w)$$

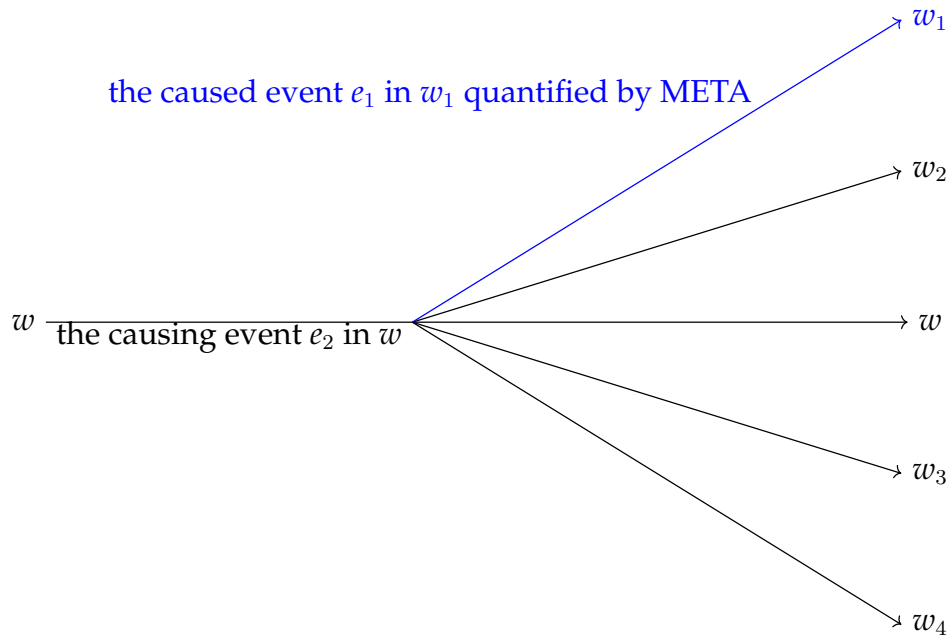
$$= \text{DEON}(\llbracket \text{Voice}_1\text{P}^* \rrbracket)$$

- i. $\exists v. [v \in \text{DEON}(w, e_2) \wedge \underline{\exists e_1. [\text{AGENT}(e_1, \text{Mimi})(v) \wedge \text{run}(e_1)(v) \wedge \forall t. [t \in \tau(e_1) \rightarrow \exists t'. [t' \in \tau(e_2) \wedge t' < t] \wedge \neg \exists t''. [t'' \in \tau(e_2) \wedge t < t'']}]}}]$ and
- ii. $\exists v'. [v' \in \text{DEON}(w, e_2) \wedge \neg \exists e_1. [\text{AGENT}(e_1, \text{Mimi})(v') \wedge \text{run}(e_1)(v') \wedge \exists t. [t \in \tau(e_1) \wedge \forall t'. [t' \in \tau(e_2) \rightarrow t < t']]]]$

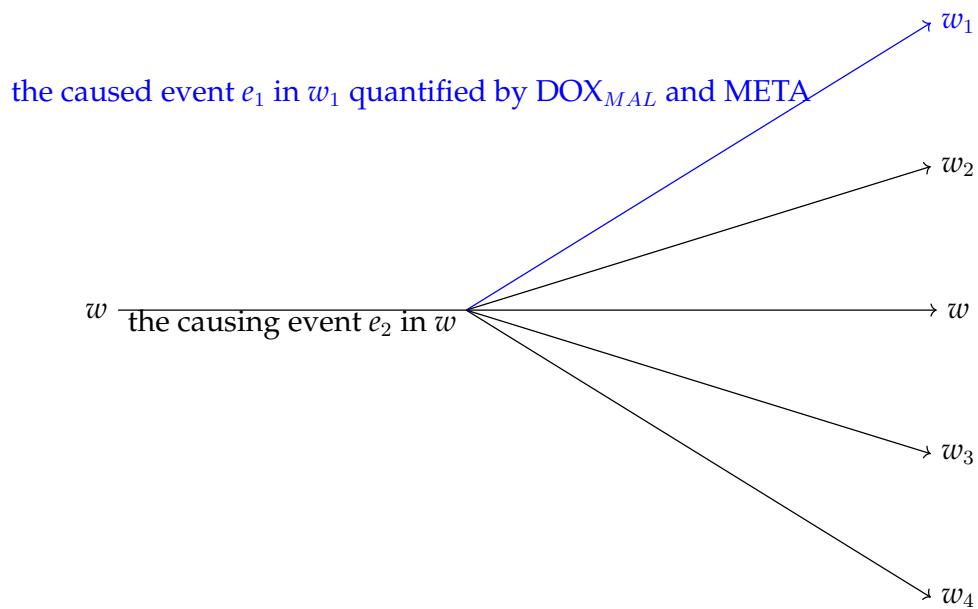
I argue that the initial AGENT interpretation of the causee will be modified under this mechanism. Basically for each causative, the caused event e_1 always occurs in the possible worlds quantified by certain sublexical modalities (381) (cf. (310)).

(381) The caused event occurs in the possible worlds quantified by modalities:

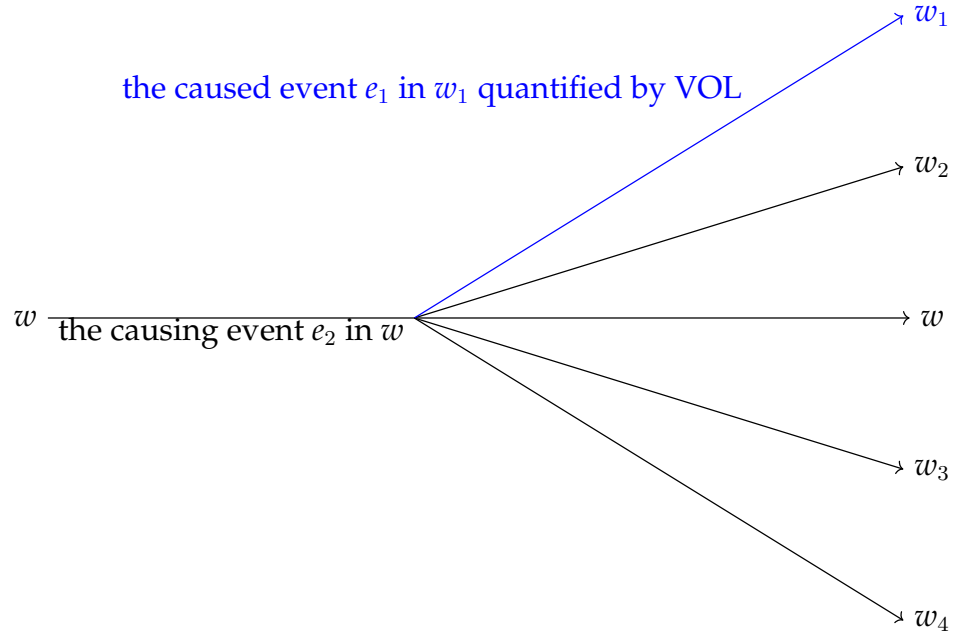
a. The *mue*-causative:



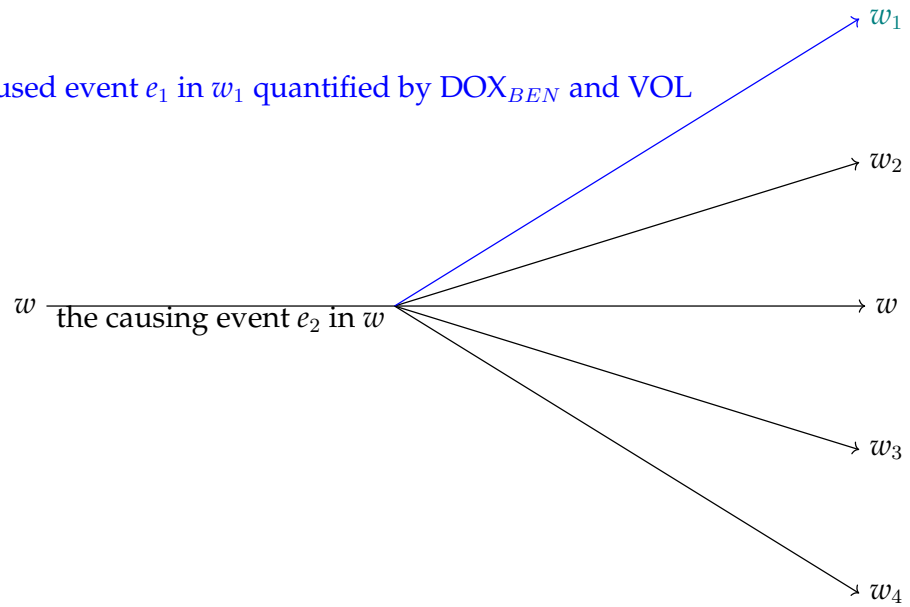
b. The *hai*-causative:



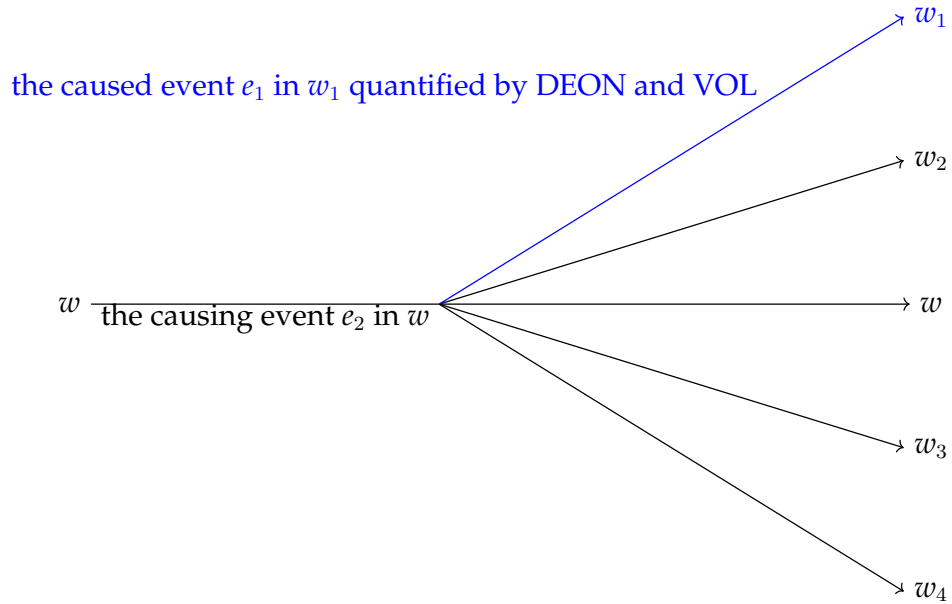
c. The $k\partial$ -causative:



d. The courteous bun -causative:



e. The permissive *bun*-causative:



Given that all the notations above are about the LF but we aim to the causee interpretation in the Semantics module in the grammar (see Figure 6.2), let me make a metaphor here to help understand the mechanism.

Imagine you are holding a fragile paper box.

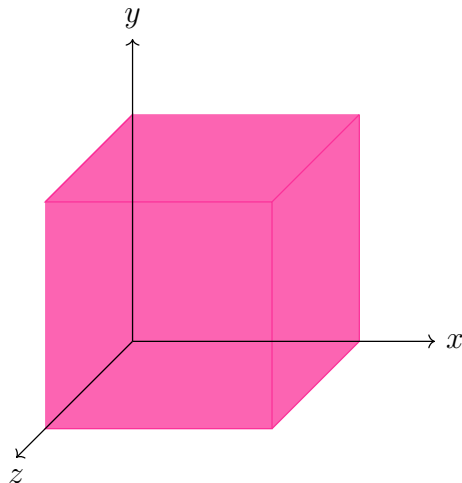


Figure 6.3: An example of box

Within this paper box, there exists a balloon.

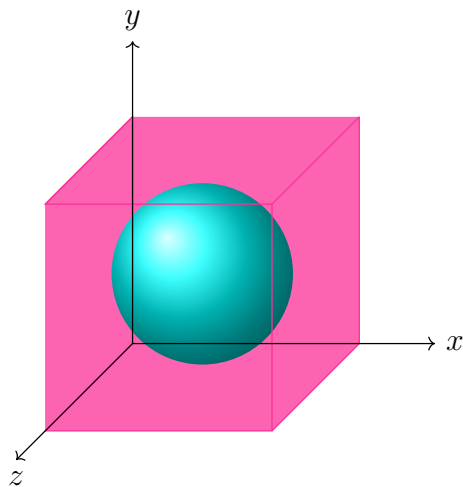


Figure 6.4: An example of box with a balloon inside

The question for the readers here: what happens if you squeeze the box? Obviously, the shape of **the box** will be changed, and so will the shape of **the green balloon** inside it.

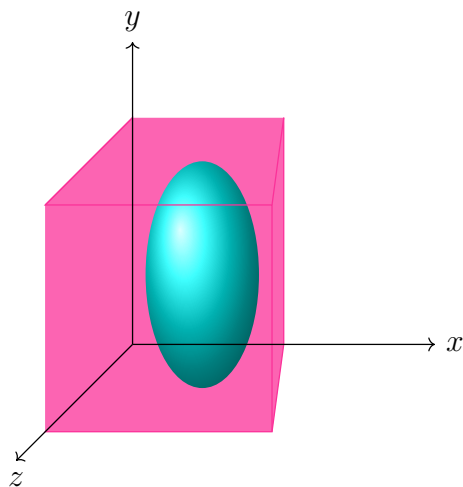


Figure 6.5: An example of a squeezed box

Now treat the pink box as **possible world** and the green balloon as **the caused event**. It follows that the interpretation of event participants (e.g., causee) will be

modified accordingly. The following question is, what properties do these modified causee interpretations have? The rest of this chapter is designated to answer this question.

6.3 THE NATURE OF DIFFERENT AGENTIVE MODIFICATIONS

The final complex causee interpretations are indirectly reflected by their compatibility with different linguistics diagnostics, and most of the diagnostics are agentive modifications. However, situations are complicated regarding these agentive modifications.

As shown in the previous discussion, in the Teochew *kə*-causative and two *bun*-causatives, causees are sometimes incompatible with many agentive modifications, but sometimes possibly compatible with some under certain contexts. In fact, such a nonuniform pattern is also observed in other languages, as reviewed in Section 2.2.2. These complex patterns are summarized in the following table⁶.

Table 6.3: Nonuniform (in)compatibility between causee and agentive modifications

| Modifications | Teochew <i>kə</i> -causative with an known result | Two Teochew <i>bun</i> -causatives with an known result | Mandarin <i>rang</i> -causative (Luo and Kang, 2023) | Icelandic 'let'-causative (Sigurðsson and Wood, 2021) |
|-----------------------------------|--|--|--|---|
| Certain agent-oriented adverbs | × | × | × | × |
| Rationale clauses | × | × | ?? | × |
| Instrumental phrases | ?? | ?? | ✓ | ✓ |
| Agent-oriented comitatives | ?? | ?? | ✓ | ✓ |

These show that despite the wide adoption of these agentive modifications as *golden* AGENT diagnostics in recent works, their nature is far from clear. Then,

⁶Sigurðsson and Wood (2021) do not talk about the incompatibility between causee and agent-oriented comitative, but my Icelandic consultant reports that the causee in the 'let'-causative can be modified by this agentive modifications.

what exactly do these agentive modifications diagnose? The rest of this section will elaborate on the nature of different agentive modifications.

6.3.1 INTUITIVE AGENT VS. GRAMMATICAL AGENT

Before diving into the exact properties that different agentive modifications target, I want to clarify two concepts first, i.e., *grammatical AGENT* and *intuitive AGENT*.

As was reviewed in Section 2.2.3, it is almost an impossible task to give a very precise formal definition of AGENT as a broad cover term, not to mention that the conceptual core of the thematic role, i.e., agency, has not been straightforwardly figured out in both linguistics and philosophy, despite the long tradition on this topic in the latter field (see Schlosser (2019) for a comprehensive review of the philosophical side of this research). To my knowledge, some recent papers by Fabienne Martin and her colleagues (e.g., Martin et al., 2022; Martin, 2023; Joo et al., 2023) are one of the few works carefully combining the linguistic and philosophical line of discussion, aiming for a clear compositional analysis (see the discussion in Chapter 2). This kind of ontological work requires a lot of work, and it is far beyond the scope of this dissertation; therefore, I will save it for future research and refer to the concept of AGENT in this line of study as *intuitive AGENT* in the latter discussion.

When it comes to *grammatical AGENT*, I claim that it is a label used to refer to the grammatical patterns regularly observed in or associated with an argument in a specific linguistic construction, e.g., the grammatical patterns regularly associated with the subject argument of an active-voice sentence with an agentive predicate. This contrasts with those associated with its object argument but is the same as the argument introduced by the *by*-phrase in an English passive sentence. In many

linguistics studies, for the sake of convenience, such patterns are labeled with the thematic role of AGENT referring to its syntactic-semantic properties.

I argue that **the set of cases where an argument is an intuitive AGENT (IA)** is in a proper superset relation to **the set of cases where an argument is a grammatical AGENT (GA)** (Figure 6.6). That is to say, an intuitive AGENT is not necessarily a grammatical AGENT. Because, as is shown below, in some cases, an argument interpreted as PATIENT, EXPERIENCER, THEME or others can also be an intuitive AGENT.

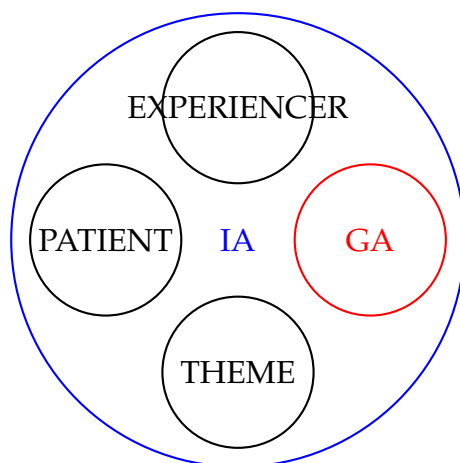


Figure 6.6: Cases of intuitive AGENT vs. cases of grammatical AGENT

In Section 6.3.2, I will argue that both instrumental phrases and agent-oriented comitatives are reliable tests for grammatical AGENT, targeting its *control* property. Section 6.3.3 will show that rationale clauses are not appropriate diagnostics for a grammatical AGENT; instead, they target an intuitive AGENT and are licensed by the event *Responsible Party*. Section 6.3.4 will turn to the nature of fifteen so-called agent-oriented adverbs widely adopted in the literature of argument structure (cf. Section 2.2). I will show that they do not target the same property of argument interpretation as each, and more importantly, not all of them are reliable diagnostics for a grammatical AGENT. Section 6.3.5 concludes this section.

6.3.2 INSTRUMENTAL PHRASES AND AGENT-ORIENTED COMITATIVES: TARGET GRAMMATICAL AGENT

6.3.2.1 INSTRUMENTAL PHRASES

As was reviewed in Section 2.2.1 and is shown in (382), instrumental phrases clearly differentiate the grammatical patterns regularly associated with the subject argument in an active-voice sentence with an agentive predicate (382a). These patterns are the same as those with the (implicit) argument introduced by the 'by'-phrase in passives (382b). However, they are different from the grammatical patterns regularly associated with the subject argument in unaccusative structures (382c), sentences with psych verbs (382d) or statives (382e), and the object argument in an active-voice sentence (382f).

- (382) a. *Ua eng t'its'ui tiaku hi goi bang.*
1.SG use hammer demolish that CL room
'I used a hammer to demolish that room.'
(grammatical AGENT subject of a transitive verb phrase: ✓)
- b. *Hi goi bang kə (ua) eng t'its'ui tiaku.*
that CL room PASS 1.SG use hammer demolish
'That room was demolished (by me) with a hammer.'
(grammatical AGENT of passive: ✓)
- c. **Hi goi bang kə yi-gagi eng t'its'ui dolo?ku.*
that CL room by 3.SG-self use hammer fall-over
Intended: 'That room falls over by itself with a hammer.'
(THEME: ×)
- d. **Mimi eng ganggu hihua gao.*
Mimi use tool like dog
Intended: 'Mimi uses tools to like dogs.'
(EXPERIENCER: ×)

- e. * *Mimi eng ganggu u uangu.*
 Mimi use tool have toy
 Intended: 'Mimi uses tools to own toys.'

(HOLDER: ×)

- f. * *Mimi po Nangy eng ts'iu.*
 Mimi hug Nangy use hand
 Intended: 'Mimi hugs Nangy who uses hands.'

(PATIENT: ×)

In almost all formal linguistic studies, the first two patterns are labeled AGENT, and the last four are called THEME, EXPERIENCER, HOLDER and PATIENT. Therefore, given the above clear contrasts between grammatical AGENT and other thematic roles diagnosed by this modifier, following early discussion in Fillmore (1968) (see a recent discussion in Biggs and Embick (2022)), **I treat instrumental phrases as reliable diagnostics for grammatical AGENT in Teochew.**

6.3.2.2 AGENT-ORIENTED COMITATIVES

I argue that agent-oriented comitatives in Teochew consistently identify a grammatical AGENT. In terms of lexical meanings, while instrumental phrases 'name the item the agent uses' (cf. Sigurðsson and Wood, 2021), the agent-oriented comitative names the companion acting along with the agent who mostly provides the help for the agents, therefore denoting roughly the same 'instrumental' property.

The contrast in terms of the compatibility between agent-oriented comitatives and arguments bearing different thematic roles in (383) also supports this. As shown below, it is incompatible with THEME, EXPERIENCER, HOLDER, and PATIENT but compatible with grammatical AGENT.

- (383) a. *Ua do mets'aʔ gai pueban e tiaku hi goi bang.*
 1.SG at burglar POSS accompaniment under demolish that CL room
 'I demolished that room with the help of a burglar inside.'
 (grammatical AGENT subject of a transitive verb phrase: ✓)
- b. *Hi goi bang kə (ua) do mets'aʔ gai pueban e*
 that CL room PASS 1.SG at burglar POSS accompaniment under
tiaku.
 demolish
 'That room was demolished (by me) with the help of a burglar inside.'
 (grammatical AGENT of passive: ✓)
- c. * *Hi goi bang kə yi-gagi do mets'aʔ gai pueban e*
 that CL room by 3.SG-self at burglar POSS accompaniment under
doloʔ ku.
 fall-over
 Intended: 'That room falls over by itself with the help of a burglar
 inside.'
 (THEME: ×)
- d. * *Mimi do Nangy gai pueban e hihua gao.*
 Mimi at Nangy POSS accompaniment under like dog
 Intended: 'Mimi likes dogs with the help of Nangy.'
 (EXPERIENCER: ×)
- e. * *Mimi do Nangy gai pueban e u uang.*
 Mimi at Nangy POSS accompaniment under have toy
 Intended: 'Mimi owns toys with the help of Nangy.'
 (HOLDER: ×)
- f. * *Mimi po Nangy do Xingy gai pueban e.*
 Mimi hug Nangy at Xingy POSS accompaniment under
 Intended: 'Mimi hugs [Nangy with the help of Xingy].'
 (PATIENT: ×)

Therefore, I conclude agent-oriented comitatives are reliable tests for a grammatical AGENT.

6.3.2.3 THE EXACT TARGETED PROPERTY OF GRAMMATICAL AGENT

However, we still need to solve a puzzle. As shown in (366-368) in the previous discussion, the compatibility between the causee and instrumental phrases, as well as agent-oriented comitatives, is affected by the actuality of the caused event.

More specifically, in the case of the Teochew *kə*-causative and both readings of the *bun*-causative, when the situation regarding the actuality of the caused event is known, the acceptability of using these two agentive modifications to modify the causee will increase slightly (from × to ??), in contrast to rationale clauses and agent-oriented adverbs, which still remain incompatible with the causees. This suggests that the event actuality is connected to some properties of a grammatical AGENT diagnosed by instrumental phrases and agent-oriented comitatives, and when the event actually happens, these properties are stronger.⁷

⁷A seemingly contrastive cross-linguistic pattern is observed in Martin (2015), Martin and Schäfer (2017) and Demirdache and Martin (2015). They show that in Mandarin and some Romance, Germanic and Salish languages, when the subject is an animate doer (AGENT in their analysis), non-culminating readings of the change-of-state verbs are felicitous; in contrast, these readings are infelicitous when the subject is inanimate (CAUSER in their analysis).

Based on previous studies, Martin (2015) argues that such a contrast results from the fact that compared with nonagentive (i.e., those with an inanimate subject) ongoing causation events, agentive/animate ones are ‘systematically indicative and ontologically independent of their potential effects’. This cross-linguistic pattern pairing AGENT with non-culmination event reading (i.e., no event actuality) seems to be contradictory to our generalizations building on patterns of Teochew periphrastic causatives, i.e., pairing strong agency of the causee (i.e., compatibility with instrumental phrases and agent-oriented comitatives) with a caused event that actually happens.

However, recall that in Chapter 5, we see causees in Teochew periphrastic causatives without actuality entailment of the caused event, i.e., the *kə*-causative and both readings of the *bun*-causative, can only be [+animate], contra the other two where the caused event must happen in the real world. Given that the distinction between AGENT and CAUSER

A similar pattern of reduced agency connected with no event actuality is observed in other languages. For example, in Chapter 5, I showed that in St'át'imcets, the actuality of the event indicated by the predicate surrounded by the *ka-...-a* circumfix is cancelable (Davis et al., 2009), as is copied in (384). Interestingly, this *ka-...-a* circumfix is traditionally called the *out-of-control* circumfix in the Salish language family (Thompson, 1979), which implies a reduced agency reading of the subject.

(384) St'át'imcets:

qwenúxw=kan i=nátcw=as,
 sick=1SG.SUBJ when.PAST=DAY=3CONJ
ka-tsunam'-cal=lhkán-a=ka, *t'u7 cw7áoy=t'u7.*
 CIRC-teach-ACT=1SG.SUBJ-CIRC=IRR but NEG=ADD

'I was sick yesterday. **I could have taught, but I didn't.**'

As is shown in the example, the subject did not have the ability to teach, therefore the normal progressing course of the teaching event is out of the control of the subject. Davis et al. (2009) provides a sublexical circumstantial-based modality analysis to account for the actuality entailment issue, which is similar to my analysis of Teochew *kə*-causative and both readings of the *bun*-causatives in Chapter 5. However, they have no explanation regarding the reduced agency issue.

Jacobs (2011), through working on the similar *control* phenomenon in Skwxwú7mesh (also a Salish language) reflected by the form of verbal suffix (385), specifically argues that an agent can have different 'degree of control over an event' in Martin (2015), Martin and Schäfer (2017) and Demirdache and Martin (2015) depends on the argument animacy, rather than the lexical entailments of these thematic roles themselves (e.g., the contributing properties for AGENT proto-role in Dowty (1991); see (35) in Chapter 2), the patterns observed in the case of Teochew are actually in accordance with the cross-linguistic pattern discussed in this line of literature: only an animate causee allows a probabilistic causative without the actuality entailment of the caused event.

(Thompson, 1979) and it is in stronger control if it has control over the process of the event and can bring the event to culminations.

(385) a. Predicate with *-nexw* suffix requires culmination:

chen kw-nexw-∅ ta míxalh, #welh na t'emt'ám te-n
 1.S.SUB shoot-LCTR-3OBJ DET bear but RL astray DET-1S.POS
skwélash.
 shot
 'I shot the bear, #but I missed.'

b. Predicate with *-t* suffix does not require culmination:

chen kw-t-∅ ta míxalh, welh na t'emt'ám te-n
 1.S.SUB shoot-TR-3OBJ DET bear but RL astray DET-1S.POS
skwélash.
 shot
 'I shot the bear, but I missed (lit. my shot went astray).'

In this way, the connections between agentivity, more specifically the **control** property, and event actuality are built. Following Davis et al. (2009), Jacobs (2011) also adopts a sublexical circumstantial modality for an analysis of the event interpretation.

Based on these previous works, I argue **instrumental phrases and agent-oriented comitatives, whose compatibility with the causee is affected by the actuality of the caused event, are sensitive to the control property.** Given that we have shown that these two diagnostics are reliable tests for a grammatical AGENT, I argue that the control property is a property belonging to a grammatical AGENT. As is defined in Martin et al. (2022), 'control' refers to 'the ability to exert control over each part of the event' (Martin et al., 2022; Joo et al., 2023). Only an entity that has this property has the ability to take advantage of instrumental help indicated by instrumental phrases and agent-oriented comitatives to carry out the event.

Besides, given the proper subset relations between cases of grammatical AGENT and those of intuitive AGENT in Figure 6.6, sometimes these two agentive modifications might diagnose an intuitive AGENT and sometimes they do not, which is dependent on whether the cases under discussion are the [overlapping](#) ones shown below. This actually echoes the recent decompositional analysis done by Fabienne Martin and her colleague on including ‘control’ as one subdimension of (intuitive) AGENT (see (40) in Chapter 2).

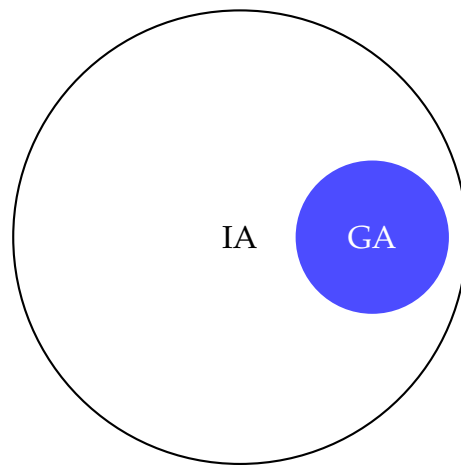


Figure 6.7: Overlapping cases of intuitive AGENT and grammatical AGENT

In conclusion, both instrumental phrases and agent-oriented comitatives are reliable diagnostics for a grammatical AGENT, sensitive to its control property.

6.3.3 RATIONALE CLAUSES: NOT A RELIABLE TEST FOR A GRAMMATICAL AGENT

Many previous works treating rationale clauses as agentive diagnostics rely on the premise that the PRO in the rationale clause can only be controlled by a (syntactically-projected) argument bearing the AGENT role. For example, the contrast in (386) seems to show that the rationale clause is only compatible with a grammatical AGENT.

- (386) a. *Ua tiaku hi goi bang kə ki sin bang.*
 1.SG demolish that CL room to build new room
 'I demolished that room to build a new room.'
 (grammatical AGENT subject of a transitive verb phrase: ✓)
- b. *Hi goi bang kə (ua) tiaku kə ki sin bang.*
 that CL room PASS 1.SG demolish to build new room
 'That room was demolished (by me) to build a new room.'
 (grammatical AGENT of passive: ✓)
- c. * *Hi goi bang kə yi-gagi doloʔku kə ki sin bang.*
 that CL room by 3.SG-self fall-over to build new room
 Intended: 'That room falls over by itself to build a new room.'
 (THEME: ×)
- d. * *Mimi hihua gao kə ga Xingy tso peng'iu.*
 Mimi like dog to with Xingy make friend
 Intended: 'Mimi likes dogs to make friends with Xingy.'
 (EXPERIENCER: ×)
- e. * *Mimi u uangu kə səng.*
 Mimi have toy to play
 Intended: 'Mimi owns toys to play.'
 (HOLDER: ×)
- f. * *Mimi po Nangy kə səng.*
 Mimi hug Nangy to play
 Intended: 'Mimi hugs [Nangy to play].'
 (PATIENT: ×)

However, other studies on the control construction (Farkas, 1988; Landau, 2000, 2013; Williams, 2015; Green, 2018; Biggs and Embick, 2022) carefully illustrates that this is not the case. As is shown in (387), in certain cases, a PATIENT can also control the PRO.

- (387) a. *Mary_i was arrested (by the police) [PRO_i to impress her_i radical friends].*
 b. *Mary_i was vaccinated (by the doctor) [PRO_i to protect herself/her_i against rabies].*

(Biggs and Embick, 2022)

In addition, (388) shows the PRO controller needs not even be syntactically represented. Instead, a rationale clause can be controlled by the fact expressed by the main clause or by a party responsible for bringing the relevant state of affairs.

- (388) a. *The shop window has a big sale sign in it [PRO to attract customers.]*
 b. *Grass is green [PRO to promote photosynthesis].*
 c. *Flamingoes are pink [PRO to attract the opposite sex].*
 d. *Badgers have long claws [PRO to allow for rapid digging].*
 e. *The thermostat is on low [PRO to save money].*

(Biggs and Embick, 2022)

Neither of the cases in (387-388) corresponds to a grammatical AGENT. The rationale clauses in Teochew illustrate the same properties. (389) shows that the rationale controller can be a PATIENT.

- (389) a. *Qiu_izai kə (giengts'aʔ) liaʔku kə kiu yi kun duhiagaodi*
 Qiu_izai PASS police arrest to pursue 3.SG CL morally.bad.friend
gai guantsu.
 POSS attention
 'Qiu_izai_i is arrested (by the police) [PRO_i to gain attention from his_i radical friends].'
- b. *Qiu_izai kə (uiseng) paʔ yeʔmiaotsam kə bohu yi-gagi mai sebe.*
 Qiu_izai PASS doctor hit vaccine to protect 3.SG-self NOT be.sick
 'Qiu_izai_i was vaccinated (by the doctor) [PRO_i protect himself_i against being sick].'

(390) shows that the controller can be a relevant fact or party, which is not syntactically-projected.

- (390) a. *Siamdiam tengkao u gai dua paʔtsiʔ gai bai kə keʔyin*
shop window have CL big discount N.MOD sign to attract
gukeʔ.
customer
‘The shop window has a big discount sign [PRO to attract customers.]’
- b. *Tsao dai leʔseʔ gai kə guanghaʔtsaʔyeng.*
grass COP green PART to photosynthesize
‘Grass is green [PRO to photosynthesize].’
- c. *Hueliaʔtsiao dai angseʔ gai kə kiu’o.*
Flamingoes COP pink PART to attract.the.opposite.sex
‘Flamingoes are pink [PRO to attract the opposite sex].’
- d. *Huan tsua dun kə/lai me diʔ dang.*
badger claw long to quickly dig hole
‘Badgers have long claws [PRO to allow for rapid digging].’
- e. *K’ongtiao wendou gui-e kə se dian.*
AC temperature high-more to save electricity
‘The AC is on high [PRO to save electricity].’

All of the discussion above shows that the rationale clause is not a reliable diagnostic for a grammatical AGENT (at least in the case of English and Teochew), contra an assumption that is widely adopted in the literature. Then what exactly are the properties of an argument targeted by rationale clauses? According to Biggs and Embick (2022), **the controller of rationale clause PRO should be a *Responsible Party***, which refers to an individual, fact or property explanatorily responsible for bringing about a situation (cf. Farkas, 1988; Landau, 2000, 2013; Green, 2018).

They argue that **such an interpretation is pragmatic (cf. intuitive AGENT in this dissertation), rather than thematic (cf. grammatical AGENT in this dissertation)**. Through carefully examining the properties of English *be*-passive and *get*-passive, they show the AGENT intuition people usually have about the subject of the *get*-passive, in fact, arises from its Responsible Party interpretation, which licenses the rationale clause. However, thematically, the surface subjects of the *be*-passive and the *get*-passive may not have any differences, i.e., they are both interpreted as PATIENT. In other words, the case of the subject of English *get*-passive is one of **those cases where the intuitive AGENT is not the grammatical one** (Figure 6.8); therefore we see a split pairing between rationale clauses, targeting the intuitive one, and the grammatical one

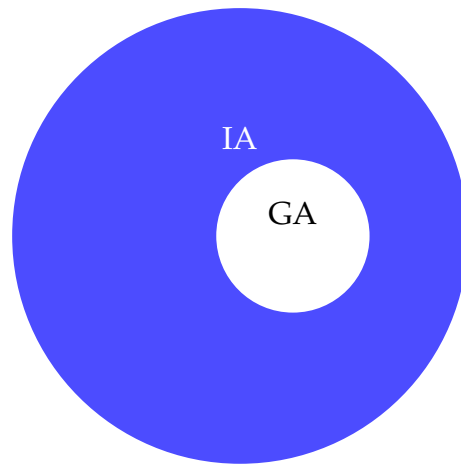


Figure 6.8: Non-overlapping cases of intuitive AGENT and grammatical AGENT

However, we still need to explain the contrast diagnosed by rationale clauses in (386), because it seems to diagnose patterns associated with a grammatical AGENT. As initially pointed out in Williams (2015) and later extended in Biggs and Embick (2022), in typical active transitive and passive with rationale clauses,

the Responsible Party may coincide with the grammatical AGENT of the target clause of rationale clauses (391), though this is not always the case (392).⁸

(391) a. *Mary arrested John.*

(By default, *Mary* = grammatical AGENT = Responsible Party)

b. *John was arrested by Mary.*

(By default, *Mary* = grammatical AGENT = Responsible Party)

(392) a. *John sank the ship in Episode 2 [PRO to motivate the confrontation in Episode 8].*

(*John* = grammatical AGENT,
writer of the series = Responsible Party)

b. *John_i was arrested by Mary [PRO_i to impress his_i radical friends].*

(*Mary* = grammatical AGENT,
John = Responsible Party)

Recall the subset relation discussed in Figure 6.6. The contrast we observed in (386), I argue, is very likely due to the fact that the notion of intuitive AGENT coincides with grammatical AGENT in those cases (cf. Figure 6.7), in contrast to examples like (389-390) where the intuitive AGENT is not equivalent to the grammatical one (cf. Figure 6.8), as is illustrated in Figure 6.9.

Therefore, the contrast in (386) can still be properly explained.

⁸According to Biggs and Embick (2022), the identification of a Responsible Party requires interactions with concepts like agentivity and subjecthood, verb meaning, and world knowledge.

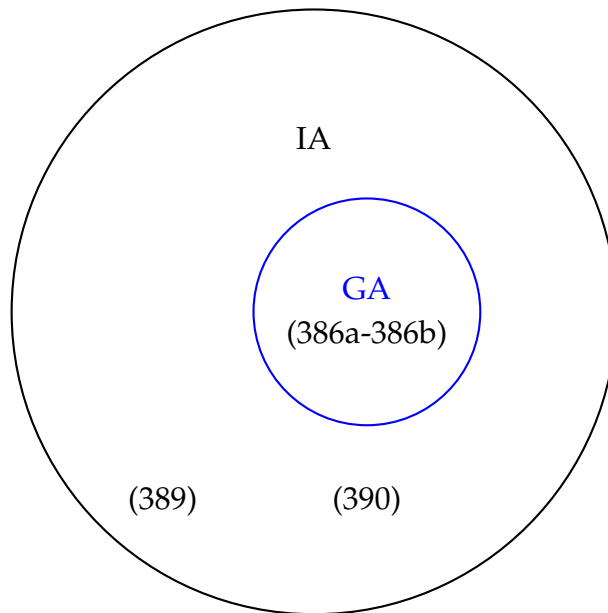


Figure 6.9: Specific cases where intuitive AGENT and grammatical AGENT differ (part I)

6.3.4 AGENT-ORIENTED ADVERBS: DO NOT TARGET THE SAME PROPERTY AS EACH OTHER

6.3.4.1 ‘INTENTIONALLY / DELIBERATELY / ON PURPOSE / CONSCIOUSLY’

6.3.4.1.1 Not a reliable test for a grammatical AGENT. Agent-oriented adverbs are probably the most widely adopted agentive tests in the literature (see citations in Chapter 2). Among them, adverbs like ‘intentionally’, ‘deliberately’, ‘on purpose’ and ‘consciously’ are most often discussed⁹.

⁹Though ‘on purpose’ in English is a PP adverbial rather than an adverb in the sense of syntactic category, in many other languages including Teochew, the lexical item with the same meaning is an adverb rather a PP. The term ‘adverb’ here, however, is used here as a general one mainly because in most literature, these adverbials/adverbs are usually referred to as ‘agent-oriented adverbs’ or ‘agentive adverbs’.

As is seen below, these four adverbs are compatible with grammatical AGENT (393a-393b) but not THEME (393c), EXPERIENCER (393d), HOLDER (393e) and PATIENT (393f). This leads to the assumption adopted by many linguists that they are reliable diagnostics for grammatical AGENT. However, as I will show in the following, this is not quite the correct generalization.

- (393) a. *Ua uyiseʔgai / guyigai / tsuanmun / uyeʔseʔgai tiaku*
 1.SG intentionally / deliberately / on.purpose / consciously demolish
hi goi bang.
 that CL room
 'I intentionally/deliberately/consciously demolished that room.'

(grammatical AGENT subject of a transitive verb phrase: ✓)

- b. *Hi goi bang kə (ua) uyiseʔgai / guyigai / tsuanmun /*
 that CL room PASS 1.SG intentionally / deliberately / on.purpose /
uyeʔseʔgai tiaku.
 consciously demolish
 'That room was intentionally/deliberately/consciously demolished (by
 me) (on purpose).'

(grammatical AGENT of passive: ✓)

- c. **Hi goi bang kə yi-gagi uyiseʔgai / guyigai / tsuanmun /*
 that CL room by 3.SG-self intentionally / deliberately / on.purpose /
uyeʔseʔgai doloʔku.
 consciously fall-over
 Intended: 'That room falls over by itself intentionally/deliberately/on
 purpose/consciously.'

(THEME: ✕)

- d. * *Mimi uyiseʔgai / guyigai / tsuanmun / uyeʔseʔgai hihua*
 Mimi intentionally / deliberately / on.purpose / consciously like
gao.
 dog
 Intended: ‘Mimi intentionally/deliberately/consciously like dogs (on
 purpose).’
 (EXPERIENCER: ×)
- e. * *Mimi uyiseʔgai / guyigai / tsuanmun / uyeʔseʔgai u*
 Mimi intentionally / deliberately / on.purpose / consciously have
uangu.
 toy
 Intended: ‘Mimi intentionally/deliberately/consciously owns toys (on
 purpose).’
 (HOLDER: ×)
- f. * *Mimi po Nangy uyiseʔgai / guyigai / tsuanmun /*
 Mimi hug Nangy intentionally / deliberately / on.purpose /
uyeʔseʔgai.
 consciously
 Intended: ‘Mimi hugs [Nangy intentionally/deliberately/on pur-
 pose/consciously].’
 (PATIENT: ×)

One of the early studies adopting these agent-oriented adverbs as AGENT test is Gruber (1965). Since then, these adverb diagnostics have been widely adopted, and in many recent literature on argument structure, they are somehow treated as a ‘golden’ diagnostics for AGENT or the existence of AGENT-pairing VoiceP (e.g., Legate, 2014; Wood, 2015; Alexiadou et al., 2015; Šereikaitė, 2021; Akkuş, 2021a; Myler and Mali, 2021; Paparounas, 2023). However, despite some accounts of the distributions of adverbs that have been given in some studies (e.g., Cinque,

1999; Ernst, 2002) (see Ernst (2020) for a review), the nature of these agent-oriented adverbs is actually far from clear.

There are two reasons for this: first, it is unclear what properties these adverbs systematically access; second, there are many adverbs that fall under this umbrella label, but these adverbs, intuitively, seem to target different (sub)properties of the argument. For example, Biggs and Embick (2022) argue that, like rationale clause, some agent-oriented adverbs are ‘not restricted to hosts that have an AGENT thematic relation’. Farkas (1988) and Williams (2015) also point out that adverbs like ‘deliberately’, ‘intentionally’ and ‘on purpose’ can show up in sentences without a grammatical AGENT (394a). In addition, these adverbs can even modify the PATIENT subject (394b).

- (394) a. *The shop window_i has a big sale sign in it deliberately_j/ intentionally_j/ consciously_j/ on purpose_j.*
 b. *MLK_i was (deliberately_i/ intentionally_i) arrested last night (on purpose_i).*

In fact, similar patterns can also be observed in Teochew (395).

- (395) a. *Siamdiam tengkao uyiseʔgai/ guyigai/ tsuanmun/
 shop window intentionally/ deliberately/ on.purpose/
 uyeʔseʔgai u gai dua paʔtsiʔ gai bai.
 consciously have CL big discount N.MOD sign
 ‘The shop window_i deliberately_j/intentionally_j/consciously_j has a big
 discount sign (on purpose_j).’*

(no grammatical AGENT)

- b. *Qiuzai tsame uyiseʔgai/ guyigai/ tsuanmun/*
Qiuzai last.night intentionally/ deliberately/ on.purpose/
uyeʔseʔgai kə liaʔku.
 consciously PASS arrest
 ‘*Qiuzai_i was deliberately_i/intentionally_i/consciously_i to be arrested*
 (on purpose_i).’

(modify a PATIENT)

These suggest that at least in the case of agent-oriented adverbs ‘intentionally/deliberately/on purpose/consciously’, they are not proper diagnostics for a grammatical AGENT, similar to what we have shown for rationale clauses.

6.3.4.1.2 ‘Intention/volition’ property as a linguistically salient property. Then the next question is, what are the exact properties diagnosed by these four adverbs?

In this dissertation, I argue that, based on the lexical semantics meaning of these adverbs, the targeting property is *intention/volition*, which is also discussed as a property of ‘(intuitive) AGENT’ in some earlier literature (e.g., Davidson, 1967; Cruse, 1973; DeLancey, 1984; Dowty, 1991; Van Valin and Wilkins, 1996) (see Section 2.2.3) and equals to the notion of ‘prior intention’ in Martin et al. (2022), i.e., ‘the cognitive state that prompts the agent to perform an event of type *P*’.

Such a property is, in fact, linguistically salient (Martin et al., 2022). For example, as is discussed in Shibatani (2006), ‘in Japanese, the spontaneous construction expresses a situation where the agent does not intend to bring about an action, but where there is a circumstantial factor external to the agent that induces an action (such as eating ‘dancing-mushrooms’ as in (396b) below)’.

(396) Classical Japanese:

- a. *Kikori-domo mo mai-keri.*
wood.cutter-PL also dance-PAST
'Wood cutters also danced.'

(intentional/volitional)

- b. *Kikori-domo mo mawa-re-keri.*
wood.cutter-PL also dance-SPON-PAST
'Wood cutters also danced willy-nilly'.

(spontaneous)

Some other cross-linguistic evidence also supports the salience of this property. Three different patterns are observed in Shibatani (2006) (all data below are cited from there). First, in some languages, the not-entailment of 'intention/volition' can be linguistically marked, and such examples include but are not limited to the above-mentioned classic Japanese example and the *ter-* prefix in Indonesian (397).

(397) Indonesian:

- a. *Ali memukul anak-nya.*
Ali AF.hit child-3.SG.POSS
'Ali hit his child.'

(intentional/volitional)

- b. *Ali ter-pukul oleh anak-nya.*
Ali SPON-hit PREP child-3.SG.POSS
'Ali accidentally hit his child.'

(spontaneous)

Rivero et al. (2010) also discuss the same unvolitional/unintentional property linguistically marked by the Polish involuntary-state construction (398) and interestingly, like Davis et al. (2009) and my analysis in Chapter 5, they propose a sublexical circumstantial-based modal analysis to account for relevant properties.

(398) Polish:

Marta chciała zjeść ciastko, a jej siz(e) kichbz(e)ł.
Marta wanted eat cookies but she.DAT REFL sneezed.NEU

‘Marta wanted to eat a cookie; but she could not help sneezing.’

(spontaneous/involuntary)

The second pattern is that in some languages, it is the spontaneous action that bears the unmarked form, in contrast to the above-mentioned languages. Such languages include but are not limited to Marathi (399) and Lhasa Tibetan (400).

(399) Marathi:

- a. *Sitaa-ne raD-un ghet-l-a.*
Sita-ERG cry-CONJ take-PERF-N
‘Sita cried (so as to relieve herself).’

(intentional/volitional)

- b. *Sitaa raD-l-i.*
Sita.NOM cry-PERF-F
‘Sita cried.’

(spontaneous)

(400) Lhasa Tibetan:

- a. *Nggas. yi.ge. klog.ba.yin.*
1-SMP letter read-LINK-AUX.(self-centered)
‘I read the letter (on purpose).’

(intentional/volitional)

- b. *Ngas. yi.ge. klog.song.*
1-SMP letter read-AUX.(other-centered)
‘I read the letter (without meaning to).’

(spontaneous)

The final pattern is that in some other languages like Newar (401) and Tsova-Tush (Batsbi) (402), the intentional/volitional and spontaneous properties are both marked, but in different marked forms.

(401) Newar:

- a. *Ji-n kayo tachyâ-nâ.*
1.SG-ERG cup break-PC
'I broke the cup (deliberately).'

(intentional/volitional)

- b. *Ji-n kayo tachyâ-ta.*
1.SG-ERG cup break-PD
'I broke the cup (accidentally).'

(spontaneous)

(402) Tsova-Tush (Batsbi):

- a. (*As*) *vuiž-n-as.*
1.SG-ERG fall-AOR-1.SG-ERG
'I fell down, on purpose.'

(intentional/volitional)

- b. (*So*) *vož-en-sO.*
1.SG.NOM fell-AOR-1.SG.NOM
'I fell down, by accident.'

(spontaneous)

As should be clearly demonstrated so far, the intention/volition property associated with the event participant interpretation is linguistically salient. Also, as shown above, an event participant with this property licensing adverbs 'intentionally', 'deliberately', 'on purpose' and 'consciously' is not necessarily a grammatical AGENT. In the same spirit as Biggs and Embick (2022), I argue these adverbs target an intuitive AGENT, which is not necessarily a grammatical one. Besides, same as

we have seen for rationale clauses (Figure 6.9), sometimes, a grammatical AGENT can coincide with an intuitive AGENT (Figure 6.10), e.g., the case of (393a-393b), but sometimes not, e.g., the case of (395).

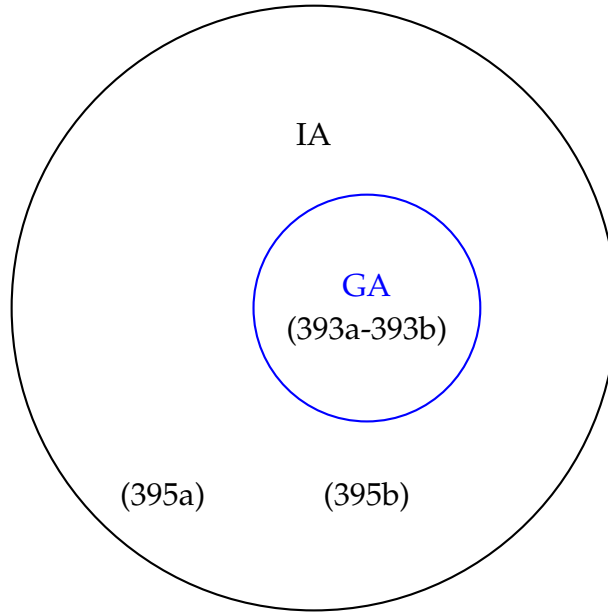


Figure 6.10: Specific cases where intuitive AGENT and grammatical AGENT differ (part II)

In this case, the compatibility between these four adverbs and grammatical AGENT in examples in (393) is expected.

6.3.4.2 OTHER SO-CALLED AGENT-ORIENTED ADVERBS

In addition to ‘intentionally’, ‘deliberately’, ‘on purpose’ and ‘consciously’, I collect eleven more so-called agent-oriented adverbs from the literature where they are used as agentive diagnostics, and test their compatibility or incompatibility with the Teochew causees under discussion in this dissertation. These adverbs include ‘quietly’, ‘gently’, ‘enthusiastically’, ‘with pleasure’, ‘carefully’, ‘patiently’, ‘knowingly’, ‘willingly’, ‘readily’, ‘without hesitation’ and ‘reluctantly’.

Table 6.4 shows the compatibility between causee in different causatives and these adverbs when the embedded predicate is the activity verb *ts'iang* 'sing' (detailed data is given in Appendix F).¹⁰ The c(ontext) in the table refers to the actual happening of the caused event. As is shown, all these so-called agent-oriented adverbs do not retrieve a uniform result.

Table 6.4: Compatibility between causee and different so-called agent-oriented adverbs

| Adverbs | <i>mue</i> | <i>hai</i> | <i>kə</i> | | courteous <i>bun</i> | | permissive <i>bun</i> | |
|--|------------|------------|-----------|-------|----------------------|-------|-----------------------|-------|
| | | | w/o c. | w/ c. | w/o c. | w/ c. | w/o c. | w/ c. |
| <i>uyiseʔgai</i> 'intentionally' | ✓ | ✓ | × | × | × | × | × | × |
| <i>tsuanmun</i> 'on purpose' | ✓ | ✓ | × | × | × | × | × | × |
| <i>guyigai</i> 'deliberately' | ✓ | ✓ | × | × | × | × | × | × |
| <i>uyeʔseʔgai</i> 'consciously' | ✓ | ✓ | × | × | × | × | × | × |
| <i>uatsegai</i> 'quietly' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dziudziugai</i> 'gently' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dziaʔts'enggai</i> 'enthusiastically' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>huahigai</i> 'with pleasure' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>tsəsoigai</i> 'carefully' | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| <i>simsimgai</i> 'patiently' | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| <i>tsaits'enggai</i> 'knowingly' | ✓ | ✓ | ? | ✓ | ? | ✓ | ? | ✓ |
| <i>ts'eng'uan</i> 'willingly' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>goigoi</i> 'readily' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>boyiueʔgai</i> 'without hesitation' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>mts'eng'uan</i> 'reluctantly' | ✓ | ✓ | × | ?? | × | × | × | × |

The above table, where different agentive adverb tests yield heterogeneous results, actually echoes the observation made in Martin (2023). According to her, different so-called agent-oriented adverbs track different agentive dimensions (cf. (40) in Chapter 2), which I will elaborate more in the following discussion based on data from Teochew. Note that the concept of (intuitive) AGENT/agentivity/agentive

¹⁰Ruth once suggested to me that it would be nice to test the compatibility between causees in these causatives and some corresponding linguistics diagnostics in the case of non-activity embedded predicates, an idea I really like. However, due to the limitation of time and research scope, I leave this to future research.

in her line of works is broader than what I call grammatical AGENT in this dissertation, which, as I mentioned before, is a concept used to capture regularly observed grammatical patterns.

The next question is, what are the properties these adverbs actually target, and, building on the answer to this question, what can they tell us about the interpretations of the causees in our Teochew case? As is shown in Table 6.4, I divide these fifteen adverbs into several groups based on their patterns. We have seen in the previous discussion that the first four adverbs in the table target the intention/volition property of an argument, which is not necessarily a grammatical AGENT. The following will go through the rest of the groups one by one.

6.3.4.2.1 ‘Quietly / gently’. When it comes to the second pattern of compatibility or incompatibility in Table 6.4, adverbs *uatsegai* ‘quietly’, *dziudziugai* ‘gently’, *dziaʔts’enggai* ‘enthusiastically’ and *huahigai* ‘with pleasure’ are compatible with causees in all causatives in different contexts, which is quite different from the others. Given that the causees, which we have shown have reduced grammatical agency (i.e., less control) through exploring the nature of instrumental phrases and agent-oriented comitatives, are also compatible with them, this seems to contradict the assumption in some literature, i.e., treating them are agent-oriented adverbs.

A closer look at their distributions further confirms that they are not reliable grammatical AGENT diagnostics, just like what we show for rationale clauses and the four adverbs in the first group. As is shown in (403), adverbs *uatsegai* ‘quietly’ and *dziudziugai* ‘gently’ can also modify a PATIENT.

- (403) a. *T’ia’uegai* *Qiuzai uatsegai kə* *p’a ts’iam*.
 well-behaving Qiuzai quietly PASS hit needle
 ‘Well-behaving Qiuzai_i was quietly_i vaccinated.’

- b. *Hi gai diseʔhuntsə dziudziugai kə giamts'eʔ.*
 that CL intellectual gently PASS examine
 'That intellectual_i was gently_i examined.'

As is shown in (404), they are even compatible with the inanimate THEME subject of an unaccusative predicate.

- (404) a. *Ts'iuhoʔ uatsegai galaoʔ.*
 leave quietly fall.down
 'Leaves fall down quietly.'
- b. *Hou dziudziugai loʔ.*
 rain gently fall
 'Rain falls gently.'

Therefore, I argue these two adverbs, though used as agent-oriented adverbs in some literature, are better classified as *manner* adverbs, modifying how an event happens (Cinque, 1999; Ernst, 2020), rather than targeting a grammatical AGENT. Then their compatibility with the PATIENT subjects in (403), the inanimate THEME subjects in (404), and the causees in all causatives in all contexts (Table 6.4) is expected.

Basically, like rationale clauses and the adverbs in the first group, they can target an intuitive AGENT, which is not necessarily a grammatical AGENT (cf. Figure 6.8). I assume that the very reason why some previous studies use these two adverbs as diagnostics for grammatical AGENT is because, in certain cases, an intuitive AGENT collides with a grammatical AGENT (cf. Figure 6.7).

6.3.4.2.2 'Enthusiastically / with pleasure'. For the other two adverbs in the second group in Table 6.4, *dziaʔts'enggai* 'enthusiastically' and *huahigai* 'with pleasure', as is shown in (405), they can easily modify an EXPERIENCER subject of a psych verb.

- (405) a. *Nangy dziaʔts'enggai dzaʔai Beʔgy.*
 Nangy enthusiastically deep.love Beʔgy
 'Nangy_i enthusiastically_i loves Beʔgy.'
- b. *Nangy huahigai hengsiu niaots'ao.*
 Nangy with.pleasure enjoy catnip
 'Nangy_i enjoys_i the catnip with pleasure.'

In addition, they are also compatible with PATIENT (406).

- (406) *Qiuzai dziaʔts'enggai/ huahigai kə p'o.*
 Qiuzai quietly/ with.pleasure PASS hug
 'Qiuzai_i was enthusiastically_i hugged (with pleasure_i).'

Therefore, I argue that though these two adverbs target the mental state, more specifically the *mood*, of an animate entity, this property is not required by a grammatical AGENT, but it can be connected to an intuitive AGENT if given appropriate contexts.

Then, the compatibility between them and the causees in all Teochew causatives in all contexts is expected, given the subject of an activity verb 'sing' in Teochew is always animate and, therefore, in a certain mood towards the 'singing' event. Some previous literature adopts these two adverbs as diagnostics for grammatical AGENT. However, I argue that this is because, in certain cases, an intuitive AGENT coincides with a grammatical one (cf. Figure 6.7).

6.3.4.2.3 'Carefully / patiently'. When it comes to the third pattern in Table 6.4, the adverbs *tsəsoigai* 'carefully' and *simsimgai* 'patiently' have the same patterns as instrumental phrases and agent-oriented comitatives. More specifically, they can modify the causees in deterministic causatives, but not in probabilistic causatives. However, when the actuality of the caused event is known in the latter, their acceptability will increase slightly.

In addition, as is shown in (407), they are always compatible with a grammatical AGENT (407a-407b), but never with PATIENT (407c), contrasting to (395b), THEME (407d), EXPERIENCER (407e) or HOLDER (407f).

- (407) a. *Qiuzai tsəsoigai/simsimgai liaʔ siaotao.*
 Qiuzai carefully/patiently arrest thief
 'Qiuzai carefully/patiently arrests the thief.'
 (grammatical AGENT subject of a transitive verb phrase: ✓)
- b. *Qiuzai tsame kə tsəsoigai/simsimgai liaʔku.*
 Qiuzai last.night PASS carefully/patiently arrest
 'Qiuzai_i was arrested carefully_j/patiently_j.'
 (grammatical AGENT of passive: ✓)
- c. * *Qiuzai tsame tsəsoigai/simsimgai kə liaʔku.*
 Qiuzai last.night carefully/patiently PASS arrest
 Intended: 'Qiuzai_i was carefully_i/patiently_i arrested.'
 (PATIENT: ×)
- d. * *Qiuzai tsəsoigai/simsimgai buaʔloʔku.*
 Qiuzai carefully/patiently fall.over
 Intended: 'Qiuzai carefully/patiently falls over.'
 (THEME: ×)
- e. * *Qiuzai tsəsoigai/simsimgai hihua gao.*
 Qiuzai carefully/patiently like dog
 Intended: 'Qiuzai carefully/patiently like dogs.'
 (EXPERIENCER: ×)
- f. * *Qiuzai tsəsoigai/simsimgai u uang.*
 Qiuzai carefully/patiently have toy
 Intended: 'Qiuzai carefully/patiently own toys.'
 (HOLDER: ×)

Therefore, I conclude that they are reliable grammatical AGENT diagnostics targeting the same *control* property instrumental phrases and agent-oriented comitatives are sensitive too. These also echo the observation in Martin (2023) that the adverb ‘carefully’ requires a control property of the argument. As for the adverb ‘patiently’, based on its lexical meaning, the participant exerts control over their response to the event, which is an ability indirectly ‘to exert control over each part of the event’ (Martin et al., 2022; Joo et al., 2023).

6.3.4.2.4 ‘Knowingly’. The fourth group in Table 6.4, i.e., the adverb *tsaits’enggai* ‘knowingly’ can modify the causees in deterministic causatives and in probabilistic causatives with a known result, but barely those in probabilistic causatives without any context. Such a pattern is very similar to instrumental phrases, agent-oriented comitatives and adverbs *tsəsoigai* ‘carefully’ and *simsimgai* ‘patiently’ discussed above in terms of degraded acceptability in probabilistic causatives without a result.

However, given this group of adverbs is grammatical in probabilistic causatives with an actual caused event, it clearly does not target the same control property of a grammatical AGENT. Then, is it possible that these adverbs are still reliable grammatical AGENT diagnostics, but they target a different property? The answer is no. As is shown in (408), though *tsaits’enggai* ‘knowingly’ can easily modify a HOLDER.

- (408) *Qiuzai tsaits’enggai k’iau yi bebo mai yi k’io gai muegia.*
 Qiuzai knowingly own 3.SG parent disallow 3.SG have POSS stuff
 ‘Qiuzai knowingly owns something his parents disallow him to have.’

Following Martin (2023), I treat the argument property ‘knowingly’ targets is *awareness/foreknowledge*, i.e., ‘the knowledge or doxastic ability to foresee at the

beginning of an action *a* that *e* leads to an event of type *P*.’ She argues that such a property is not entailed in the first reading in the involuntary agent construction in Agul (409) discussed in Ganenkov et al. (2009), i.e., ‘the participant affects the Patient accidentally, without noticing what s/he is doing’.

(409) Agul:

- a. *Ruš.a-f-as rāk̄ daqu-ne.*
 girl-AD-ELAT door.ABS open-PST

Meaning 1: ‘The girl accidentally opened the door (because she pushes it with her elbow while playing with her toys on the door).’

Meaning 2: ‘(Father told the girl to hold the door so that the wind could not open it, but her efforts were not enough) The girl accidentally opened the door/let the door open.’

Meaning 3: ‘(All the children tried but no one could open the tightly closed door, however it so happened that) The girl managed to open the door.’

I claim this property belongs to an intuitive AGENT which is not necessarily a grammatical AGENT. Then its compatibility or incompatibility with Teochew causees or with a HOLDER subject in (408) is expected. Similarly, when these two notions collide in some cases, it will lead to the illusion that this adverb targets a grammatical AGENT (cf. Figure 6.7).

6.3.4.2.5 ‘Willingly / readily / without hesitation / reluctantly’. I group the final two groups together, which include adverbs *ts’eng’uan* ‘willingly’, *goigoi* ‘readily’, *boyiue?gai* ‘without hesitation’ and *mts’eng’uan* ‘reluctantly’. This is due to the consideration that semantically, they all, directly or indirectly, target the

desire property of an argument, i.e., ‘positive attitude towards the event characterizing the agent *within* the event time (\approx the intention-in-action)’ (Martin et al., 2022).

This argument property is salient in the verbal domain cross-linguistically. For example, as is noted in Martin et al. (2022), such a property is not entailed in one variation of the *Undesirable Action Construction* in Agul (Ganenkov et al., 2009) (410).

- (410) *Za-f-as ušu-b xu-ne ge-wur.i-n χul.a-s.*
 I-AD-ELAT go-MSD become-PST that-PL-GEN house-DAT
 ‘I went to their place.’ (I knew that I should not visit them, but it so happened that I had to do this) (= From me going to their house happened.)

As always, the question is whether these adverbs are appropriate diagnostics for a grammatical AGENT. As is shown in (411), a PATIENT can also be modified by these adverbs, suggesting the answer is NO.

- (411) *Qiuzai ts'eng'uan/goigoi/oyiue?gai/mts'eng'uan lia?ku.*
 Qiuzai willingly/readily/without.hesitation/reluctantly PASS arrest
 ‘Qiuzai_i was willingly_i/readily_i/reluctantly_i arrested (without hesitation_i).’

Then we could treat the *desire* property as a property of an intuitive AGENT, which is not necessarily a grammatical AGENT. Similar to other intuitive-AGENT-oriented adverbs, when in some cases where the intuitive AGENT collides with the grammatical AGENT, these adverbs will be wrongly treated as diagnostics for a grammatical AGENT (cf. Figure 6.7).

6.3.4.3 INTERIM SUMMARY

Based on what we have discussed so far, I summarize the targeted property of each adverb below.

Table 6.5: Compatibility between causee and different so-called agent-oriented adverbs targeting distinctive properties

| Adverbs | Targeting property | AGENT type | <i>mue</i> | <i>hai</i> | <i>kə</i> | | courteous <i>bun</i> | | permissive <i>bun</i> | |
|--|------------------------|-------------|------------|------------|-----------|-------|----------------------|-------|-----------------------|-------|
| | | | | | w/o c. | w/ c. | w/o c. | w/ c. | w/o c. | w/ c. |
| <i>uyiscʔgai</i> 'intentionally' | intention/ volition | intuitive | ✓ | ✓ | × | × | × | × | × | × |
| <i>tsuanmun</i> 'on purpose' | | | | | | | | | | |
| <i>guyigai</i> 'deliberately' | | | | | | | | | | |
| <i>uyɛʔseʔgai</i> 'consciously' | | | | | | | | | | |
| <i>uatsegai</i> 'quietly' | manner | intuitive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dziudziugai</i> 'gently' | | | | | | | | | | |
| <i>dziaʔtsʔenggai</i> 'enthusiastically' | mood | intuitive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>huahigai</i> 'with pleasure' | | | | | | | | | | |
| <i>tsəsoigai</i> 'carefully' | control | grammatical | ✓ | ✓ | × | × | ?? | × | ?? | ?? |
| <i>simsingai</i> 'patiently' | | | | | | | | | | |
| <i>tsaitsʔenggai</i> 'knowingly' | awareness | intuitive | ✓ | ✓ | ? | ? | ? | ? | ? | ✓ |
| <i>tsʔengʔuan</i> 'willingly' | desire | intuitive | ✓ | ✓ | ?? | ?? | ?? | ?? | ?? | ✓ |
| <i>goigoi</i> 'readily' | | | | | | | | | | |
| <i>boyiueʔgai</i> 'without hesitation' | | | | | | | | | | |
| <i>mtsʔengʔuan</i> 'reluctantly' | | | | | × | ?? | × | × | × | × |

Note that all the data under discussion so far is largely from Teochew, and I assume that cross-linguistically, some nuanced lexical semantic differences might exist with these adverbs. However, the main takeaway here is that not all so-called agent-oriented adverbs target the same argument property as each other, and not all of them can be treated as appropriate diagnostics for a grammatical AGENT unless a detailed exploration of their nature is given.

6.3.5 INTERIM SUMMARY

Based on the above discussion in this section, we can summarize the nature of different agentive modifications and their compatibility or incompatibility in Table 6.6. Now we are all set to discuss the exact causee interpretations finally.

Table 6.6: The nature of agentive modifications and their compatibility or incompatibility with Teochew causees

| | Targeting property | AGENT type | <i>mue</i> | <i>hai</i> | <i>kə</i> | | courteous <i>bun</i> | | permissive <i>bun</i> | |
|--|--------------------|-------------|------------|------------|-----------|-------|----------------------|-------|-----------------------|-------|
| | | | | | w/o c. | w/ c. | w/o c. | w/ c. | w/o c. | w/ c. |
| Instrumental phrases | control | grammatical | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| Agent-oriented comitatives | control | grammatical | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| Rationale clauses | RP | intuitive | ✓ | ✓ | × | × | × | × | × | × |
| Adverb | intention | intuitive | ✓ | ✓ | × | × | × | × | × | × |
| <i>uyise?gai</i> 'intentionally' | | | | | | | | | | |
| <i>tsuanmun</i> 'on purpose' | | | | | | | | | | |
| <i>guyigai</i> 'deliberately' | | | | | | | | | | |
| <i>uyise?gai</i> 'consciously' | | | | | | | | | | |
| <i>uatsegai</i> 'quietly' | | | | | | | | | | |
| <i>dziudziugai</i> 'gently' | | | | | | | | | | |
| <i>dzia?ts'enggai</i> 'enthusiastically' | | | | | | | | | | |
| <i>huahigai</i> 'with pleasure' | | | | | | | | | | |
| <i>tsosoigai</i> 'carefully' | manner | intuitive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>simsingai</i> 'patiently' | mood | intuitive | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>tsaits'enggai</i> 'knowingly' | control | grammatical | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| <i>ts'eng'uan</i> 'willingly' | awareness | intuitive | ✓ | ✓ | ? | ✓ | ? | ? | ? | ✓ |
| <i>goigoi</i> 'readily' | desire | intuitive | ✓ | ✓ | ?? | ✓ | ?? | ?? | ?? | ✓ |
| <i>boyjue?gai</i> 'without hesitation' | | | | | | | | | | |
| <i>mts'eng'uan</i> 'reluctantly' | | | | | × | ?? | × | × | × | × |

6.4 SOLVING THE PUZZLE

6.4.1 A SUMMARY OF THE CAUSEE INTERPRETATION PATTERNS IN TEOCHEW

The distinctive patterns of the causee interpretations diagnosed by different linguistics tests in this dissertation are summarized in Table 6.7 (these are cases where the embedded predicate is an activity verb).

Table 6.7: Compatibility patterns of causee interpretations diagnosed by linguistic tests across Teochew causatives

| Test | Target property | <i>mue</i> | <i>hai</i> | <i>kə</i> | | <i>c. bun</i> | | <i>p. bun</i> | |
|--|---|------------|------------|-----------|--------|---------------|--------|---------------|------|
| | | | | w/o c. | w/c. | w/o c. | w/c. | w/o c. | w/c. |
| Instrumental phrases | control | ✓ | ✓ | x | ?? | x | ?? | x | ?? |
| Agent-oriented comitatives | | | | | | | | | |
| <i>tsəsoigai</i> 'carefully' | | | | | | | | | |
| <i>simsingai</i> 'patiently' | properties of Responsible Party | ✓ | ✓ | x | x | x | x | x | x |
| Rationale clauses | | | | | | | | | |
| <i>uyise?gai</i> 'intentionally' | | | | | | | | | |
| <i>tsuanmun</i> 'on purpose' | intention | ✓ | ✓ | x | x | x | x | x | x |
| <i>guyigai</i> 'deliberately' | | | | | | | | | |
| <i>uye?se?gai</i> 'consciously' | | | | | | | | | |
| <i>uatsegai</i> 'quietly' | manner | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dziudziugai</i> 'gently' | | | | | | | | | |
| <i>dzia?ts'enggai</i> 'enthusiastically' | mood | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>huahigai</i> 'with pleasure' | | | | | | | | | |
| <i>tsaits'enggai</i> 'knowingly' | awareness | ✓ | ✓ | ? | ✓ | ? | ✓ | ? | ✓ |
| <i>ts'eng uan</i> 'willingly' | | | | | | | | | |
| <i>goigoi</i> 'readily' | desire | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>boyiue?gai</i> 'without hesitation' | | | | | | | | | |
| <i>mts'eng uan</i> 'reluctantly' | | | | | | | | | |
| SFP <i>meh</i> | a higher social status | ✓ w/ c. | ✓ w/c. | ✓ w/ c. | ✓ w/c. | ✓ w/c. | ✓ w/c. | x | x |
| Asp marker <i>o</i> | neutral/positive speaker attitude | ✓ | x | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| SFP <i>ho</i> | neutral/positive speaker attitude | ✓ | x | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Interjective <i>aodai!</i> | positive speaker attitude (BENEFICIARY) | ?? | x | ?? | ?? | ✓ | ✓ | ?? | ?? |
| Asp marker <i>ku</i> | negative speaker attitude (MALEFICIARY) | ?? | ✓ | ?? | ?? | x | x | ?? | ?? |

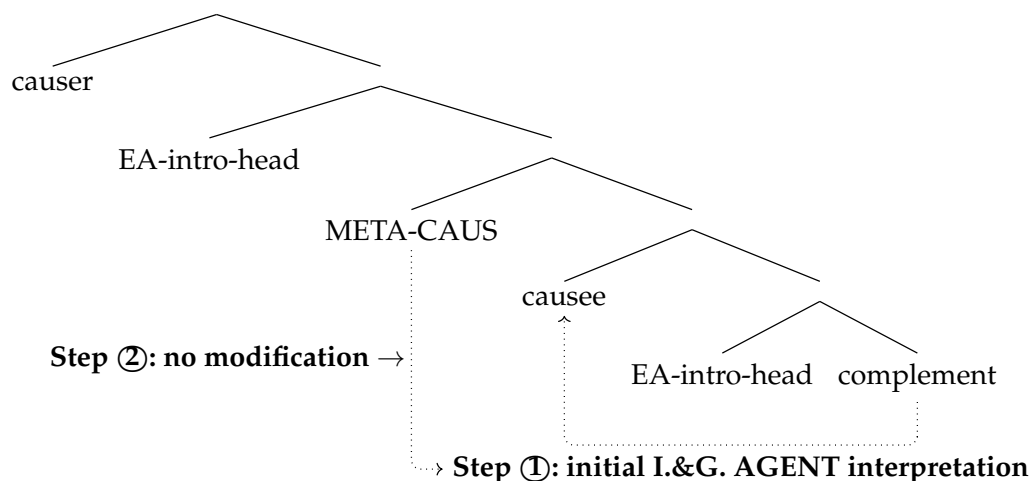
The rest of this section aims to explain these patterns based on the discussion early this chapter. Given that the causees in all these Teochew demonstrate no distinction in terms of their compatibility with adverbs targeting the manner/mood property, therefore not directly relevant to our discussion of different contextual causee interpretations, I set these two properties aside.

6.4.2 THE CAUSEE IN THE *mue*-CAUSATIVE

Table 6.7 shows that the causee in the *mue*-causative is compatible with instrumental phrases, agent-oriented comitatives and the adverbs ‘carefully’ and ‘patiently’ targeting the control property of a grammatical AGENT. In addition, it is an event Responsible Party (tested by rational clauses), with full intention (tested by adverbs ‘intentionally’, ‘on purpose’, ‘deliberately’ and ‘consciously’), awareness (tested by the adverb ‘knowingly’), desire (tested by the adverb ‘willingly’, ‘readily’, ‘without hesitation’ and ‘reluctantly’), demonstrating properties of an intuitive AGENT. Besides, depending on the context, it can be interpreted as a participant with a higher social status, but this is not obligatory. Finally, it does not reflect any speaker’s attitude.

(412) demonstrates the two-step contextualization condition of the causee in this causative. As we have already seen from (380a), at the end of derivations of the thematic domain, i.e., the Voice₂P, the AGENT interpretation of the causee *Mimi* falls in the scope of the metaphysical modality META. I argue that at Step ①, the causee is interpreted as an intuitive AGENT that is also a grammatical AGENT (abbreviated as I.&G. AGENT below) (cf. Figure 6.7), which equals to what has been marked as AGENT in (380).

(412) The *mue* 'make'-causative:



As shown in (310), the normal continuation of the causing event e_2 in w can be changed into different ones in accordance with the modal flavor encoded in each causative verb.

In the case of the *mue*-causative (381a), the continuation pass is influenced by the metaphysical modality and changed to w_1 . However, given that the existence of metaphysically insensible conditions is very rare, the possible worlds quantified by the metaphysical modality are, in fact, very close to those that start out like w . Given that the causee in w is interpreted as I.&G. AGENT fed by the eventuality of the embedded agentive predicate (Step ①), then, in w_1 which is very similar to w , the initial interpretation of the causee remains almost unchanged (Step ②).

These explain all its properties summarized in Table 6.7.

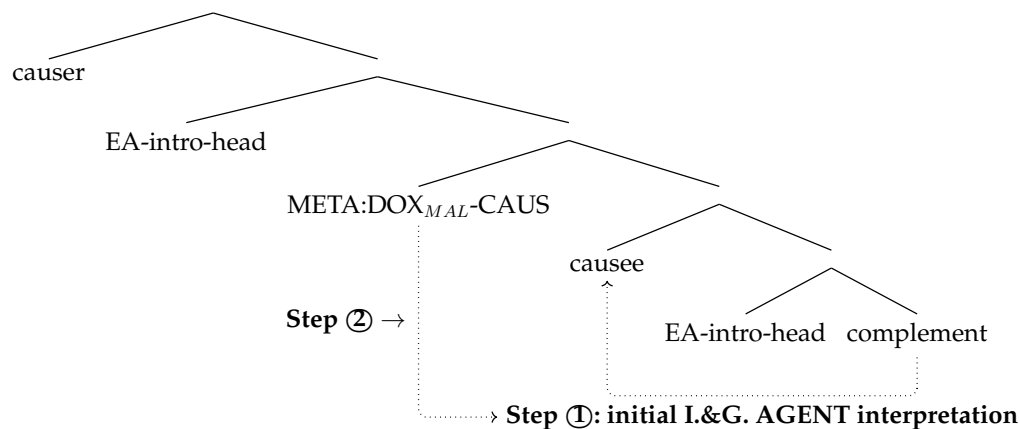
6.4.3 THE CAUSEE IN THE *hai*-CAUSATIVE

In Table 6.7, I showed the causee in the *hai*-causative patterns exactly as that in the *mue*-causative in terms of many properties diagnosed by different linguistics

diagnostics, except that it has an additional MALEFICIARY interpretation affected by the expressed speaker's attitude.

(413) demonstrates the two-step contextualization condition of the causee in this causative. As shown in (380b), in the at-issue meaning of $[[\text{Voice}_2\text{P}]]$, the initial AGENT interpretation of causee is in the scope of the metaphysical modality META, just like what I have shown for the *mue* 'make'-causative (380a). Its compatibility with tests for grammatical AGENT and/or intuitive AGENT follows from the step ① in (413), since the metaphysical modality does almost no modification to the initial AGENT interpretation of the causee at step ②.

(413) The *hai*-causative :



Step ②: modify it into I.&G. AGENT plus MALEFICIARY

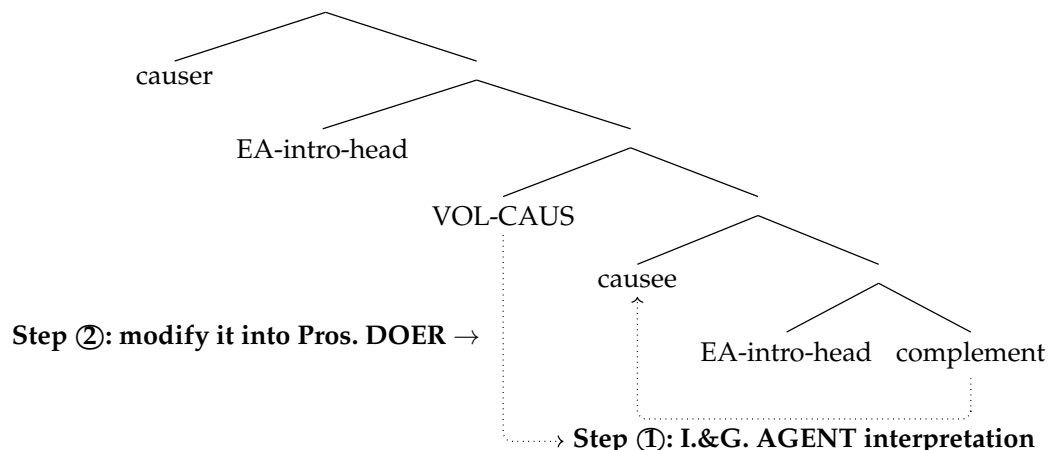
In the presupposition part of (380b), the initial AGENT interpretation of causee is also in the scope of the doxastic modality DOX_{MAL} with a priority ordering source pertaining to malefaction. As shown in (381b), the world w_1 where the caused event happens is also modified by this doxastic modality (step ②), which adds the negative attitude of the speaker towards the caused event where the causee is a participant. This explains why Teochew consultants report that the causee in this causative is additionally interpreted as a MALEFICIARY.

6.4.4 THE CAUSEE IN THE k_{θ} -CAUSATIVE

Table 6.7 showed that the causee in the k_{θ} -causative demonstrate a complex pattern of formal properties. More specifically, without any context about the actuality of the caused event, the causee is (to a certain degree) incompatible with those tests targeting the control property of a grammatical AGENT, including instrumental phrases, agent-oriented comitatives and adverbs ‘carefully’ and ‘patiently’, and those tests targeting some specific properties of an intuitive AGENT, including the adverb ‘knowingly’ (the awareness property), the adverbs ‘willingly’, ‘readily’, ‘without hesitation’ and ‘reluctantly’ (the desire property) as well as the adverbs ‘intentionally’, ‘on purpose’ ‘deliberately’ and ‘consciously’ (the intention property). However, when the consultants know the caused event did happen, the acceptability of those diagnostics targeting the ‘control’, ‘awareness’ and ‘desire’ properties upgrades.

(414) demonstrates the two-step contextualization condition of the causee in this causative. As we can see from (380c), the initial AGENT interpretation of causee is within the scope of the volitional modality VOL. I claim that the causee is finally interpreted as a *Prospective DOER* at the end.

(414) The *kə* 'give'-causative :



When it comes to the notion of *prospectiveness*, Gropen et al. (1989) and Beavers and Koontz-Garboden (2020) discuss it in terms of possession in the context of the double object and dative construction, which is connected to the classic discussion of the *HAVE* vs. *GOAL* distinction (cf. Richards, 2001; Harley, 2002; Krifka, 2004). More specifically, while the double object construction indicates the possessive (Have) relation between the objects (415a), the dative construction expresses a metaphoric motion towards a Goal (415b).

(415) a. *Mary gave John the book.*

‘Mary causes John to have the book by sending it to him.’

b. *Mary gave the book to John.*

‘Mary causes the book to go to John by sending it to him.’

Beavers and Koontz-Garboden (2020) further discuss that different ditransitive verbs in the same surface structure can have different possession relationships. For example, in (416), even though both sentences are double object constructions, they still demonstrate a *HAVE* vs. *GOAL* contrast.

- (416) a. #*Mary gave John a ring, but he never got it.*
 b. *Mary sent John a ring, but it got lost in the mail and he never got it.*

The possession relationship in the case of the dative construction in (415b) and the case of *send* in (416b) is labeled as *prospective possession* in Beavers and Koontz-Garboden (2020): ‘the possibility of possession even if possession does not actually come about’ (Gropen et al., 1989).

Interestingly, the literal translation of the *kə*-causative is that ‘the causer gives the causee the causing event’. And the causative verb, *kə* ‘give’, is syncretic with a ditransitive verb in the double object and dative constructions in Teochew as well (417).

- (417) a. *Nangy kə Mimi loimue.*
 Nangy give Mimi gift
 ‘Nangy gives Mimi a gift.’
 b. *Nangy kə loimue ku Mimi.*
 Nangy give gift to Mimi
 ‘Nangy gives a gift to Mimi.’

However, unlike English *give* demonstrating different patterns (415), the Teochew *kə* ‘give’ behaves like English *send* (416b) in that no matter whether it shows up in the double object construction or the dative construction, the transfer relationship is always GOAL or prospective possession (418). This further shows that the prospective reading is connected with the lexical semantics of the verb *kə*.

- (418) a. *Nangy kə Mimi loimue, dansi m-tsai tsoni yi bo siudio?*
 Nangy give Mimi gift but NEG-know how 3.SG NEG receive
 ‘Nangy gives Mimi some gifts, but due to some unknown reason, Mimi does not receive them.’

- b. *Nangy kə loimue ku Mimi, dansi m-tsai tsoni yi bo siudio?*
 Nangy give gift to Mimi but NEG-know how 3.SG NEG receive
 ‘Nangy gives some gifts to Mimi, but due to some unknown reason,
 Mimi does not receive them.’

When it comes to the interpretation of the causee in the Teochew *kə*-causative, given the world w_1 where the caused event happens is quantified by the volitional modality (381c), the interpretation of the causee as an event participant will be modified accordingly. I argued the causee in Teochew *kə*-causative, which is a probabilistic causative, bears some kind of prospectiveness. This corresponds to its formal properties diagnosed by different linguistics diagnostics in Table 6.7. As shown in the table, the control, awareness and desire properties of the causee are sensitive to the actuality of the caused event.

In the case of the control property, the causee is incompatible with instrumental phrases, agent-oriented comitatives and the adverb ‘carefully/patiently’ when no context is given. But when the caused event is known to happen, the compatibility increases (from \times to $??$). This makes sense because, based on Jacobs (2011), a causee that actually does the caused event will have stronger control over the event than a causee that does not do it.

In the case of the awareness property, once the actuality of the caused event is provided by the context (i.e., \checkmark), the adverb ‘knowingly’ can modify the causee. Because a causee that actually does the caused event will have a better sense of the developmental path of the caused event than a causee that does not do it. This also explains why, in the case of no context, its acceptability is relatively degraded (i.e., $??$).

When it comes to the desire property, the adverbs ‘willingly’, ‘readily’ and ‘without hesitation’ can modify the causee where the caused event is known to

happen (i.e., ✓), but their compatibility with causee when no context is given is degraded (i.e., ??). Given that these adverbs directly target the desire property, i.e., the positive attitude the event participant hosts towards initiating the event, it intuitively makes sense that it is easier to target the positive attitude of the causee if the causee actually does the caused event. This intuitively explains why these adverbs become compatible with the causee, once the actuality of the caused event is entailed or provided by the context. As for the adverb ‘reluctantly’, the pattern is similar: it is in a certain degree compatible with causees only in a context where the caused event is known to happen (i.e., ??); otherwise, it is always incompatible (i.e., ×). Given that this adverb indirectly targets the desire property, i.e., the negative attitude of the event participant towards initiating the caused event, it follows that, in the case of probabilistic causatives, it is also hard to detect such an attitude of the causee, the event participant of the caused event of which the actuality is unknown.

So far, we have solved the compatibility issue between the causee in the *kə*-causative and most agentive modifications. We still have two types of agentive modifications left unexplained. One is the rationale clauses targeting the properties of an event Responsible Party, and the other is the adverbs ‘intentionally/on purpose/deliberately/consciously’ targeting the intention/volition property of an argument. As is shown in Table 6.7, the causee in Teochew *kə* is never compatible with these two modifications, even when the context regarding the actuality of the caused event is given.

When it comes to the exact interpretation of the causee, Sigurðsson and Wood (2021) analyze the similar pattern of the causee in Icelandic ‘let’-causative (i.e., incompatible with agent-oriented adverbs ‘intentionally/on purpose’ and rationale clauses, but compatible with instrumental phrases) in the same spirit as the

agent splitting approach in Lundin (2003). They argue that in a causative structure with two adjacent VoiceP, a canonical agent is split into two components. One is an *INITIATOR* responsible for the agentive, sentient aspects of bringing the event about, which is born by the causer, and the other is a *DOER* responsible for performing the physical actions bringing the event about, which is born by the causee. While this splitting agency analysis looks intuitively plausible, there is no detailed semantics explanation as to why it is so, especially given that cross-linguistically, not all the causees in recursive VoiceP causative structures demonstrate patterns of the reduced agency.

In the case of the Teochew *kə*-causative, I argue that it is the circumstantial modal base of the sublexical volitional modality encoded in the causative verb *kə* that causes this splitting agency effect. More specifically, this volitional modality, in addition to restricting the animacy of the causee, also encodes the fact that the causee is coerced to do the caused event in its circumstantial modal base. In other words, this modality constrains the specific conditions under which the caused event will happen, and one of the conditions is the existence of coercion, which makes this causative a coercive one.

When it comes to the final interpretation of the causee, we can see in (381c), the caused event w_1 is quantified by the volitional modality, which will lead to the modification of the causee interpretation. Then it follows that the causee's agency is reduced under the influence of this modality. Following Sigurðsson and Wood (2021), I call the causee in the Teochew *kə*-causative, which is compatible with the adverbs 'intentionally/on purpose/deliberately/consciously' but compatible with instrumental phrases, *DOER* rather than *AGENT*, explaining its reduced agency.

This analysis predicts that the causer, compared to such a causee, will have a stronger intention/volition and will be more likely counted as the responsible

party for the caused event. This prediction is borne out. As shown in (419), in the Teochew *kə*-causative, contrasting to the causee (see many examples in the previous discussion), the causer is compatible with rationale clauses targeting an event Responsible Party and adverbs diagnosing the intention/volition property.

- (419) a. *Ui səng, Nangy kə Mimi tsao.*
 for play Nangy give Mimi run
 ‘For playing, Nangy causes Mimi to run.’
- b. *Nangy uyiseʔgai/ guyigai/ tsuanmun/ uyeʔseʔgai kə*
 Nangy intentionally/ deliberately/ on.purpose/ consciously give
Mimi tsao.
 Mimi run
 ‘Nangy intentionally/deliberately/consciously causes Mimi to run (on purpose).’

Then, it follows that the causees in non-coercive causatives (i.e., the *mue*-causative and the *kə*-causative) are compatible with two types of modifications, which was reflected in Table 6.7. Given the causers in both types of causatives (coercive or non-coercive) are always compatible with these modifications, I assume that no matter what causal event structure is encoded, the (animate) causer, in contrast to the causee, is always of the strong agency.

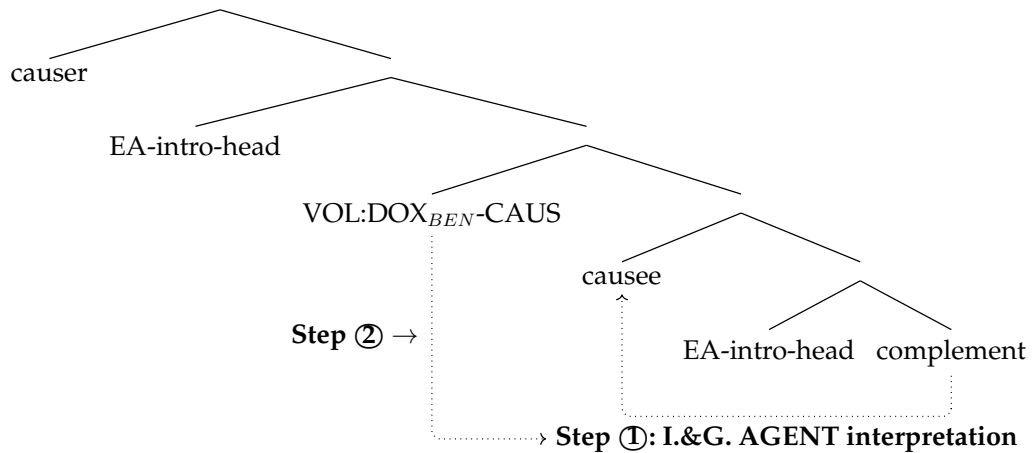
To summarize, the causee in the Teochew *kə*-causative has the properties of a Prospective DOER. One thing I would like to point out here is that I did not propose a new thematic role or label. Instead, in the same spirit as Dowty (1991) and many others, I am showing an argument interpretation is contextualized by the syntactically-oriented event structural interpretation where this argument is an event participant (cf. Borer, 2005; Ramchand, 2008; Schäfer, 2008, 2012; Alexiadou et al., 2015; Wood, 2015; Myler, 2016; Wood and Marantz, 2017; Marantz, 2022; Biggs and Embick, 2022).

6.4.5 THE CAUSEE IN THE COURTEOUS *bun*-CAUSATIVE

Table 6.7 showed the causee in the courteous *bun*-causative demonstrates the same properties as that in the *kə*-causative, except that it is never compatible with the adverb ‘reluctantly’ and has an additional BENEFICIARY interpretation.

(420) demonstrates the two-step contextualization condition of the causee in this causative. As shown in (380d), like the causee in the *kə*-causative, its initial AGENT interpretation contextualized by the embedded agentive predicate is within the scope of the volitional modality VOL in the at-issue meaning. In the presupposition, similar to the causee in the *hai*-causative, the initial AGENT interpretation of the causee is within the scope of a doxastic modality DOX_{BEN} but with a priority ordering source pertaining to benefaction in this case.

(420) The courtesy’ *bun*-causative :



Step ②: modify it into Pros. DOER plus BENEFICIARY

Given the very similar properties of the causees in the *kə*-causative and the courteous *bun*-causative, most of the discussion of the causee interpretation in the former (Section 6.4.4) can also be applied here, given that these two causatives share a sublexical VOL modality. However, we have observed that these two

causees differ from each other in the following two aspects: (i) the causee in the courteous *bun*-causative is interpreted as a BENEFICIARY, and (ii) the adverb ‘reluctantly’ is always incompatible with the causee in the courteous *bun*-causative, no matter whether a context regarding the actual happening of the caused event happens or not.

For (i), following the same logic I use to argue for the MALEFICIARY interpretation of the causee in the *hai*-causative (Section 6.4.3), the BENEFICIARY interpretation of the causee follows from the fact that, as shown in (381d), the world w_1 where the caused event happens is also modified by the doxastic modality with a priority ordering source pertaining to benefaction, which will in turns modify the causee interpretation in w_1 by adding the speaker’s positive attitude.

For (ii), When it comes to the incompatibility between the causee and the adverb ‘reluctantly’, this, in fact, makes sense in this causative. Because in ‘courteous/benefactive’ causative, based on its semantics meaning, it is implied that the causee is willing to do the caused event (or will be at the end even though she/he/they/it might be reluctant at the beginning¹¹), and what a causee needs is a courteous action from the causer. Therefore, an adverb like ‘reluctantly’ will always be incompatible with the causee in such a causative. Such an additional restriction of the courteous causative can also be easily encoded in the circumstantial modal base of VOL.

To summarize, the causee in the Teochew courteous *bun*-causative is interpreted as Prospective DOER and BENEFICIARY at the same time, which is contextualized by the causal event structural interpretation influenced by two sublexical modalities.

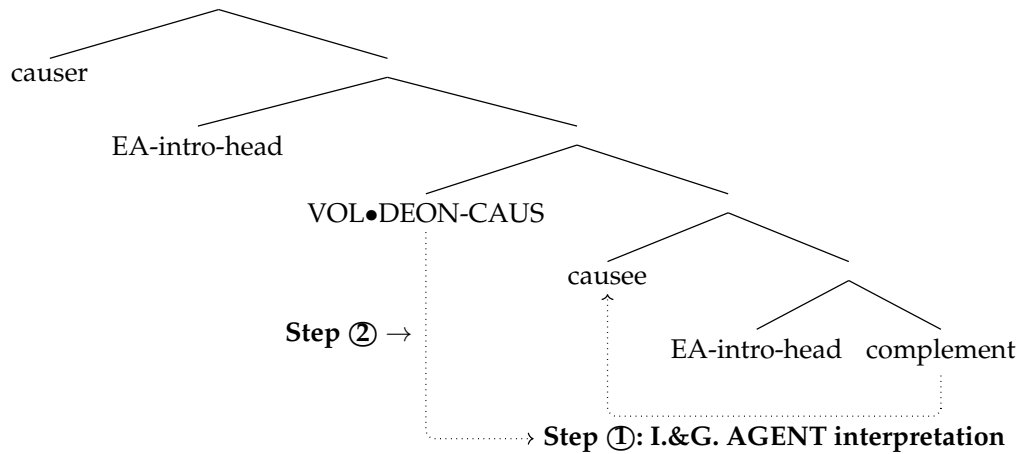
¹¹It seems to me that in Teochew, the adverb ‘reluctantly’ does not mark this kind of ‘initial reluctance’.

6.4.6 THE CAUSEE IN THE PERMISSIVE *bun*-CAUSATIVE

Table 6.7 that the causee in the permissive *bun*-causative shares the same properties as that in the *kə*-causative, except that it is never compatible with the adverb ‘reluctantly’ and has an additional pragmatics interpretation related to social hierarchical relations.

(421) demonstrates the two-step contextualization condition of the causee in this causative.

(421) The permissive *bun*-causative :



Step ②: modify it into Pros. DOER of lower social status

As we can see, in the at-issue meaning of $[[\text{Voice}_2\text{P}]]$ (380e), the initial **AGENT** interpretation of the causee is within the scope of the volitional modality **VOL**, same as the causees in the *kə*-causative and the courteous *bun*-causative. Therefore, everything we see in Section 6.4.4 and Section 6.4.5 on the *Prospective DOER* interpretation of the causee applies here. When it comes to the compatibility between the causee and the adverb ‘reluctantly’, similar to the courteous *bun*-causative, it is because the lexical meaning of the permissive somehow implies that the causee is willing to do the caused event, and what the causee needs is the ‘permission’ from

the causer. Therefore, the causee is never compatible with an adverb indicating the ‘desireless’ property. Such an additional restriction can also be easily encoded in the circumstantial modal base of VOL.

In addition, in the conventional implicature of $[[\text{Voice}_2\text{P}]]$ (380e), the initial AGENT interpretation of the causee is also scoped over by a deontic modality DEON. As shown in (381e), the world w_1 where the caused event happens is also modified by the deontic modality. Recall in Chapter 5, I argue that the deontic ordering source of this modality encodes the social hierarchical relation between the cause and the causee serving as the premise of the permission action, then it follows that the interpretation of causee as an event participant of the caused event occurring in w_1 will be modified accordingly.

To summarize, under the influence of two sublexical modalities, the initial AGENT interpretation of the causee is modified into *Prospective DOER of a lower social status*.

6.4.7 INTERIM SUMMARY

At this stage, the causee interpretation puzzle shown in Chapter 1 is all solved.

CHAPTER 7

CONCLUSION

7.1 SUMMARY

This dissertation starts from a puzzle: the animate causees in five Teochew periphrastic causatives demonstrate different patterns when tested by the same set of linguistics diagnostics, but these causatives have the same ‘causer+causative verb+causee+embedded predicate’ surface structure and the same embedded agentive predicate ‘run’ (Chapter 1).

Given that the causee is one type of external argument, this puzzle naturally leads to the question of how to interpret external arguments. In Chapter 2, I showed that the nonagentive interpretation of causees is not unique in Teochew but cross-linguistically observed and is a research gap in the field. I further illustrated the elusive nature of AGENT and CAUSEE as thematic roles, showing the former is too narrow a label and the latter too broad to capture the causee interpretation patterns in Teochew. Two possible solutions, i.e., the *listing* approach and the *contextual* approach, to the causee interpretation puzzle were discussed. The listing approach lists the argument interpretation as syntactic primitives, either (i) with individual verbs or (ii) with specific syntactic positions. The contextual approach (iii) argues that the argument interpretation is contextualized by the syntactically-oriented event structure as post-syntactic derivatives.

I argued that (i) cannot solve the Teochew causee interpretation puzzle given the embedded predicates in all causatives can be the same activity verb. (ii) requires a detailed, comprehensive analysis of the syntactic structure of each causative, which in Chapter 3 I showed also cannot solve the puzzle. (iii) has both theoretical support from the Fregean Principle of Compositionality and empirical support from a rich literature on syntactically-oriented interpretations of external and internal arguments. Given that the causee is also an external argument, (iii) should work.

All previous studies on contextual external argument interpretations exclusively look at the eventuality of the syntactic complement of the argument-introducing head. However, the causee is an intermediate/shared argument surrounded by a syntactically higher causative verb and a syntactically lower embedded predicate. One question to ask is whether such a *complement-oriented* approach works for causee. This leads to our **General Research Question (422)** of this study.

(422) **General Research Question:**

What are the *contextualization conditions* for the interpretations of the external arguments including the understudied causee?

In order to answer this question, I provided the following four supporting analyses. I showed that, though each is a big research topic on its own, they intersect with each other when it comes to answering the **General Research Question**.

(423) **Supporting analyses:**

- a. *Syntactic argument structure*: where is the intermediate causee syntactically located in each periphrastic causative construction? (Chapter 3)

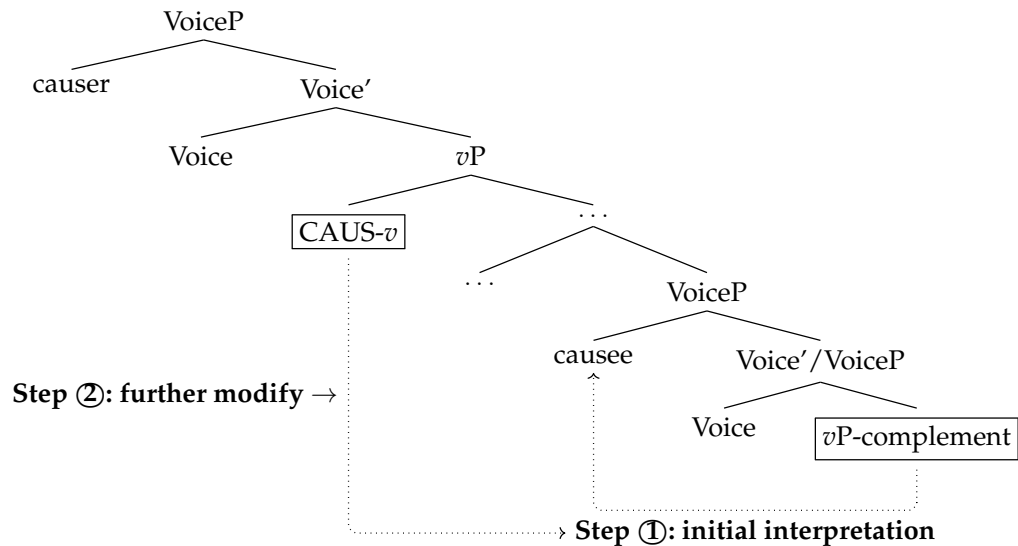
- b. *Causal event structure*: what is the event structure of each periphrastic causative construction? (Chapter 4 and 5)
- c. *Pragmatics*: how do pragmatic factors influence the eventuality and argument interpretation? (Chapter 5 and 6)
- d. *Technical issue*: how are AGENT/CAUSEE diagnosed? (Chapter 6)

For the syntactic argument structure of each Teochew periphrastic causative, in Chapter 3, I argued that they all share a recursive *v*P and VoiceP structure. In addition, none of them embed a CP layer and a TP layer, though they differ in whether an AspP layer (and even a NegP) is embedded and whether the causee is an argument or an adjunct. Most importantly, I show all the causees in these Teochew periphrastic causatives are introduced by or adjoined to VoiceP. This serves as strong evidence that (ii) (i.e., listing argument interpretations with specific syntactic positions) cannot help solve our causee interpretation puzzle, since all of the causees connected to the same syntactic layer are interpreted differently.

Therefore, this study turns to the contextual approach as the alternative. In Chapter 4, I explicitly explored the different causality notions encoded in the Teochew periphrastic causatives. I showed that these Teochew causatives can distinguish from each other in at least four dimensions, i.e., (i) *(in)direct* (*temporal* and *spatial* relation, as well as whether *an intermediary agent* is allowed, (ii) *deterministic vs. probabilistic*, (iii) *attitude-neutral vs. expressing the speaker's attitude*, and (iv) *permissive vs. non-permissive*. A sublexical modal analysis paired with event semantics of these different dimensions of causal differences was made in Chapter 5, showing that these causality contrasts mainly result from their event structures being influenced by different modal flavors of the sublexical modality encoded in each causative verb.

Building on the comprehensive syntactic and semantic analysis of each Teochew causative, in Chapter 6, I first gave a fine-grained implementation of the complement-oriented approach to the contextual causer interpretation, which has never been shown in previous studies. Then, I show the complement-oriented approach is too simplified for causee interpretation, which calls for a *two-step* contextual approach (424). At Step ①, the causee, just like other external arguments, has its interpretation contextualized by the eventuality of the embedded predicate located in the syntactic complement position of the causee-connecting functional head. Then, at Step ②, the initial causee interpretation is further modified by the lexical semantics of the syntactically-higher causative verb during semantic composition.

(424)



When it comes to the implementation of this mechanism, I assume the parallelism between LF and the well-studied PF side in terms of post-syntactic Late Insertion. When it comes to the causee interpretation on the LF side, Figure 7.1 illustrates how it is achieved in a post-syntactic way.

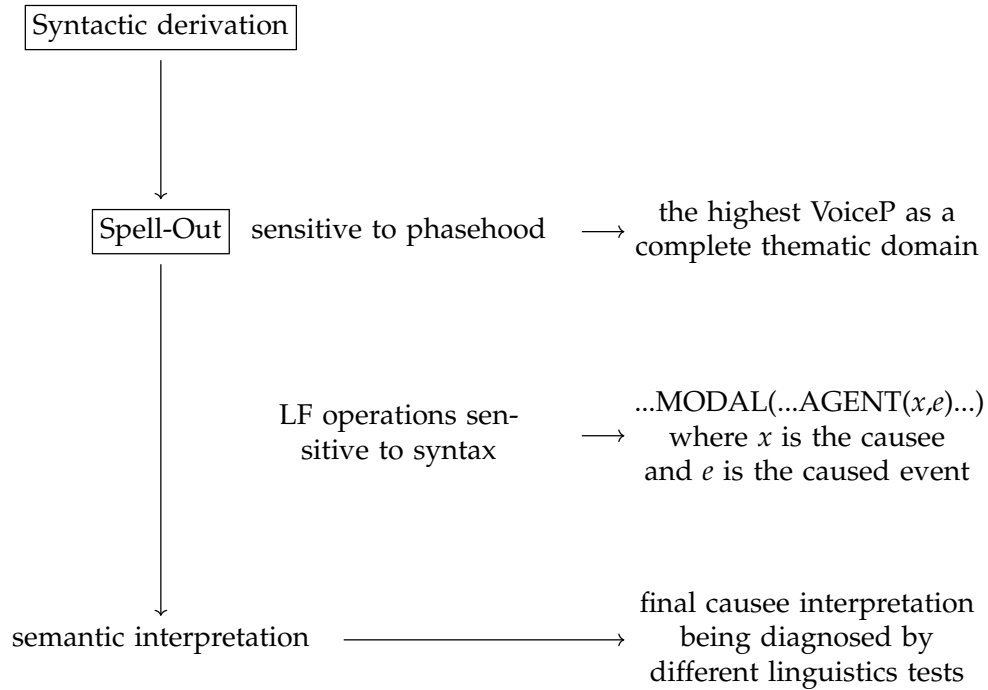
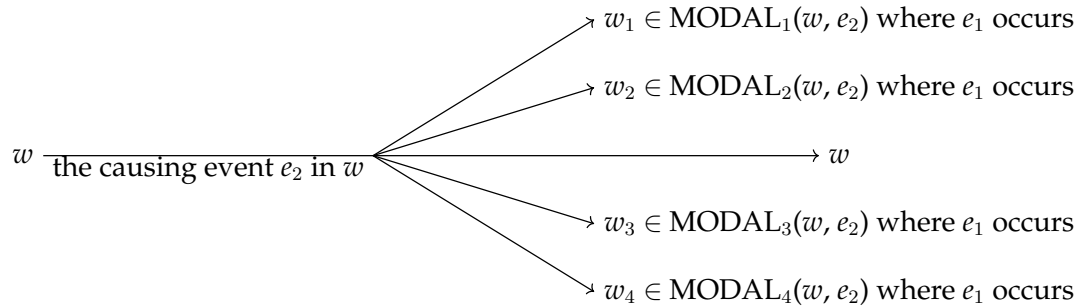


Figure 7.1: Causee interpretation at the LF (repeated)

The detailed semantic composition for each Teochew periphrastic causative was carefully illustrated in Chapter 6. Basically, when it comes to the output of the highest VoiceP, the initial AGENT interpretation of the causee will fall within the scope of certain sublexical modalities encoded in the causative verb. The causee, as an event participant of the caused event e_1 quantified by certain sublexical modalities (425), will have its interpretation modified accordingly.

(425)



Before digging into the final causee interpretations, I carefully explored the nature of different agentive modifications. I showed that not all the widely adopted agentive diagnostics are reliable tests for a *grammatical AGENT*. Some of them, in fact, target an *intuitive AGENT*, which might bear other thematic roles. I argued that **the set of cases where an argument is an intuitive AGENT (IA)** is in a proper superset relation to **the set of cases where an argument is a grammatical AGENT (GA)** (Figure 7.2).

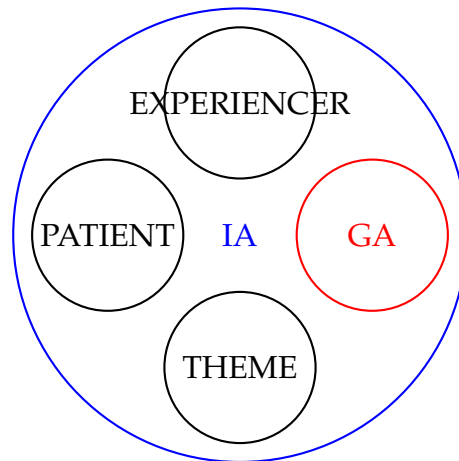


Figure 7.2: Cases of intuitive AGENT vs. cases of grammatical AGENT (repeated)

If the cases under discussion are the **overlapping** ones shown in (Figure 7.3), the illusion arises that those intuitive-AGENT diagnostics target a grammatical AGENT.

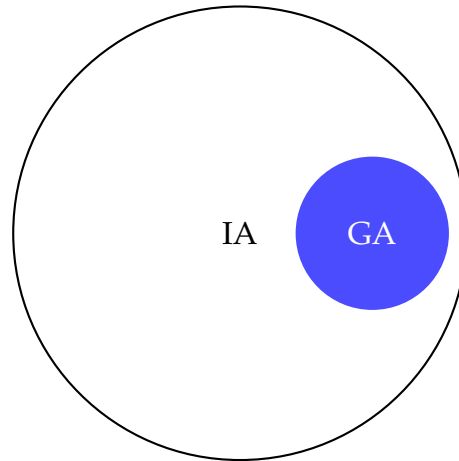


Figure 7.3: Overlapping cases of intuitive AGENT and grammatical AGENT (repeated)

Based on the different properties of each type of AGENT, I showed how the final causee interpretation in each causative maps to their (in)compatibilities with different linguistics diagnostics, which solves the causee interpretation puzzle in Chapter 1.

Taken together, the results of this study answer the **General Research Question** in (422): *the interpretations of external argument are contextualized by syntactically-oriented event structure*. For those highest external arguments in the thematic domain, say the causer, a fine-grained implementation of the complement-oriented approach is needed. In contrast, when it comes to those intermediate/shared external arguments, a two-step contextualization mechanism is required where the complement-oriented one serves as the first step.

7.2 IMPLICATIONS AND FUTURE RESEARCH

Given that this dissertation explores the nature of argument interpretation, two other important topics in the field of argument structure, i.e., *the introduction of arguments* and *argument licensing*, are closely relevant. In the following, I will lay out the implications of this study for these two topics, together with some discussion of LF phasehood at the end.

7.2.1 IMPLICATIONS FOR THE INTRODUCTION OF ARGUMENTS

One topic this dissertation focusing on *argument interpretation* can contribute to is *the introduction of arguments*.

Pylkkänen (2008) is a touchstone for current work. She differentiates core arguments (e.g., internal argument) from noncore ones (e.g., applied arguments and external arguments; the latter is in the same spirit as Kratzer (1996)). Aiming to solve the *linking* problem, i.e., the mapping between syntactic arguments and the representations of the predicates and arguments in the lexical semantics, she postulates several syntactic heads to introduce those noncore arguments and these introducers of arguments are paired with a unique thematic meaning. Pylkkänen argues that this way of combining different basic grammar building blocks can help explain argument realization while at the same time eliminating the need for a linking theory. However, as she noticed, this relies heavily on two assumptions. First, these building blocks must be well-defined so that their combinations can derive grammatical structure. Second, each argument-introducing head cannot introduce more than one argument.

The first assumption, in fact, requires a very tight connection between syntactic pieces and thematic meanings. However, this dissertation has argued in detail that

argument interpretations are NOT listed as syntactic primitives, either with individual verbs or with specific syntactic layers; rather, they are post-syntactic derivatives, which can only be derived once a specific chunk of syntactic structure is sent to the Spell-Out. As for the second assumption, as was also pointed out by Pylkkänen herself, the analysis of low applicative has this head be able to introduce two arguments, i.e., RECIPIENT and SOURCE. In fact, the very reason for the restrictions postulated in the second assumption is, again, due to the fact that such a piece-building approach to argument structure requires a very tight connection between syntactic head and thematic meanings. Therefore, once there exists a head that is able to introduce arguments with different thematic meanings, it will make this analysis much weaker in a nontrivial way. Pylkkänen seems to shift the labor solving this issue to semantics in her discussion at the end (Pylkkänen, 2008, Chapter 4) without giving a satisfying answer.

In fact, all of these indirectly support the analysis in this dissertation which loosens the connection between syntactic pieces and thematic relations and disassociates the introduction of arguments with argument interpretation. After all, this dissertation is a case study where the arguments connected to the same syntactic layers have different argument interpretations. Then, what has this dissertation featuring the complex contextual argument interpretation told us about the introduction of arguments?

On the one hand, it has shown that the connections between specific argument-introducing syntactic heads and argument thematic relations CANNOT be as tight as what was proposed in Pylkkänen (2008) and many subsequent works, which is a very syntax-heavy approach inevitably largely ignoring the works of semantics. Such a view is also explicitly illustrated in Schäfer (2012), which, in the case of causers, argues for the disassociation of *thematic licensing* (i.e., the causer inter-

pretation results from the causative-resultative event structure) and *formal licensing* (i.e., the syntactic layers introducing external argument). This dissertation echoes Schäfer's conclusion that some version of a configurational θ -theory is required, and the two-step contextualization conditions of Teochew causee interpretation is one kind of implementation of this view. By doing so, this study also echoes the recent *constructivist* approach featuring the derivative nature of argument interpretation after syntactic computations (e.g., Marantz, 2013; Wood, 2015; Myler, 2016; Wood and Marantz, 2017; Marantz, 2022).

On the other hand, the connections between the specific syntactic heads introducing arguments and the argument thematic relations CANNOT be too loose or completely eliminated. Otherwise, we cannot explain cases like why a sentence with one simplex predicate normally disallows the occurrence of two arguments with the same interpretation. For example, there is no case where a grammatical sentence with one simplex predicate can have two AGENT arguments. Traditional grammar relies heavily on the concept of transitivity to account for the number limit of arguments, which, later in formal linguistics, is implemented by the θ -grid in the Government and Binding Theory (GB).

Further explanations on the restrictions on connections are needed when it comes to argument structure alternations, especially considering that the term *alternation* is mainly due to the same interpretation of arguments located in different syntactic locations in these alternating structures. (426) lists several mostly-discussed alternations. Although all the examples are given in English, there is also a lot of research on language-specific properties in different languages. An ideal analysis needs to be flexible to capture both the syntactic differences and the thematic connections at the same time.

- (426) a. Active-passive-middle (e.g., Perlmutter, 1978; Burzio, 1981; Bresnan, 1982; Baker et al., 1989; Embick, 2004; Collins, 2005; Bruening, 2013; Legate, 2014; Williams, 2015; Biggs and Embick, 2022):
- i. *Mimi cuts the bread.*
 - ii. *The bread is/gets cut (by Mimi).*
 - iii. *This bread cuts easily.*
- b. (Lexical) causative-anticausative/inchoative (e.g., Parsons, 1990; Levin, 1993; Pietroski, 2005; Schäfer, 2008; Alexiadou et al., 2015):
- i. *Mimi grows the flowers.*
 - ii. *The flowers grow.*
- c. Instrumental adjunct vs. instrumental subject (e.g., Fillmore, 1968; Thomson, 1977; DeLancey, 1984; Schlesinger, 1989, 1995; Williams, 2015):
- i. *Mimi opens the door with the key.*
 - ii. *The key opens the door.*
- d. Double object vs. dative construction (e.g., Chomsky, 1975; Oehrle, 1976; Larson, 1988; Jackendoff, 1990; Dowty, 1991; Pesetsky, 1995; Baker, 1997; Harley, 2002; Pylkkänen, 2008):
- i. *Mimi gives the toy to Nangy.*
 - ii. *Mimi gives Nangy the toy.*
- e. 'Spray'-'load' alternation (e.g., Hall, 1965; Anderson, 1971; Fillmore, 1971; Chomsky, 1971; Dowty, 1991; Tenny, 1994; Arad, 2006):
- i. *Mimi loads the box with the toys.*
 - ii. *Mimi loads the toys into the box.*

f. Unaccusative (e.g., Hall, 1965; Perlmutter, 1978; Burzio, 1981):

Mimi_i fell t_i.

Proposing a syntactic structure to introduce arguments with an appropriate division of labor between syntax and semantics (and also morphology if taking Distributed Morphology as one of the theoretical frameworks) and with elegant explanations to account for the above issues discussed in this section will be a huge project on its own, and will require the work of many linguists. To me, an ideal solution to the linking problem requires works at least from fine-grained analyses of (i) simplex/complex predicate constructions where no structural alternations are involved, (ii) cases where structural alternations are involved, and (iii) cross-linguistic discussions.

This dissertation only contributes a case study on the complex contextual argument interpretations in the Teochew periphrastic causatives, which I hope can serve as a starting point for future research along these lines.

7.2.2 IMPLICATIONS FOR ARGUMENT LICENSING

The other topic this dissertation can contribute to is *argument licensing*.

Sigurðsson (2012) summarizes three types of nominal licensing discussed in the literature. They are (i) *thematic licensing*, (ii) *φ-licensing* and (iii) *Case assignment*. Nie (2020) recently argues that (i) and (ii) are cross-linguistic universals, while (iii) is language-specific. For (iii), she argues that not only the lack of Case assignment to a nominal does not usually lead to a crash, but also restrictions on arguments still exist when Case is assigned. In addition, not all the languages in the world have morphological cases and the need for abstract Cases in these languages is controversial (Sheehan and van der Wal, 2018).

When it comes to (i) and (ii), Nie (2020) assumes that all (finite) clauses have Voice as one obligatory nominal licenser, which also defines the licensing domain (Legate, 2014). However, this licensing capability is not inherent to this head, but only arises when Voice is the thematic head closest to T. In this way, the inventory of nominal licensing heads can only be a subset of the inventory of thematic heads (e.g., Voice, HighAppl, LowAppl, *v*) in one language, given the former heads must be those merged within the VoiceP under T. While most nominal licensing heads can only license one nominal, the Voice head under T is able to license two, i.e., its external argument and the highest C-commanded argument that is not licensed. In addition, she also assumes that events (which in her analysis are introduced by lexical roots) also define thematic domains, and the number of events corresponds to the number of the thematic domain. The interaction between Voice and events can capture the fact that causatives across languages are formed in two ways: by adding either an external argument or a causing event. Nie's approach relies heavily on the abstract ϕ -licensing capability of thematic heads, which is neither the focus of this dissertation nor an issue that Teochew, as a morphologically poor language without any morphological agreement (and case), can clearly contribute to. Therefore, I will focus on thematic licensing in the following discussion.

In the literature, one classic way to implement this type of licensing was through the *Theta Criterion* which was first proposed in Chomsky (1981)¹. More specifically, it postulates a strict one-to-one pairing between theta roles and arguments, which is usually demonstrated by a θ -grid. However, it requires treating argument interpretations as syntactic primitives ready to be paired, not to mention that θ -grid is basically an implementation of the listing approach listing argument interpretation with individual verbs, which clearly cannot work for the Teochew

¹But see Fillmore (1968) for a similar claim on such kind of 'thematic uniqueness'.

causees. Therefore, the Theta Criterion is definitely not an ideal candidate to implement the thematic licensing of arguments.

I agree with Nie (2020) in a broad sense that events play an important role when it comes to thematically licensing arguments. Event interpretations, no matter whether they are simplex (though at this stage, I doubt there is any simplex one given that even a simplex predicate construction can have a complex event structure if we do detailed lexical decomposition) or a complex one, serve to feed the interpretations of arguments as event participants, identifying what kind of role or party these arguments play in those event scenarios.

In addition, pragmatics might also play a role, given that the language users might do their own interpretations based on their world knowledge. The BENE-FICIARY/BENEFACTOR, MALEFICIARY/MALEFACTOR, and/or the social-status-related interpretations of causees/causers in the Teochew periphrastic causatives are clear cases of how pragmatics are involved in argument interpretations. Another relevant case is really well-known in the tradition of Chinese/Mandarin philology: people can find an extra argument in examples like *Wangmian si-le fuqin* (lit. 'Wangmian die-PERF father') 'Wangmian's father dies'² where *si* 'die' is clearly an unaccusative verb normally requiring one argument. In the past decades, countless studies have been devoted to this sentence, and there is more and more consensus that we need an analysis featuring a combination of syntax, semantics and pragmatics to explain how this type of sentence demonstrates an irregular argument linking pattern.

So far, I do not have a mature analysis for the thematic licensing of arguments, no matter whether it is a theory treating only thematic factors as the core expla-

²This sentence is from a Chinese novel *Rulinwaishi* 'The Scholars' written by Jingzi Wu in the 16th century. It has become one of the most famous linguistics examples in Chinese linguistics.

nations for licensing arguments in a no Case/ ϕ -involved way, or it only concerns thematic/semantics issues and chooses to set pragmatics factor aside. However, one thing I am sure about is that no discussion of the nature of thematic heads is fine-grained and comprehensive, if we are still far from having a solid implementation of the thematic licensing of arguments. I have explicitly argued in this dissertation that listing argument interpretations with specific syntactic positions cannot work to solve the Teochew interpretation puzzle. The next question is, 'Do we really need thematic heads?'

The boldest proposal would be eliminating any thematic meaning of those heads and letting the event structure interpretation tell us how the argument introduced by a syntactic head is interpreted. I feel like this is the direction the *i* head proposed in Wood and Marantz (2017) is heading to. This is somehow an attractive approach, since now we have a uniform argument-introducing head, and the argument interpretation is captured by other mechanisms like allosemy. But a lot of fine-grained work is needed to fill in the details, and this will require careful research on the interface between syntax, morphology, semantics and pragmatics where the division of labor is clearly demonstrated.

7.2.3 IMPLICATIONS FOR LF PHASEHOOD

It is standardly assumed that in the Y-model of Grammar (12), Spell-Out is sensitive to phasehood (Chomsky, 2000, 2001). However, compared to the widely-studied phasehood on the PF side (e.g., Kramer, 2009; Embick, 2010; Sande et al., 2020; Felice, 2022), there are few discussion of the LF side (Embick, 2024). Essen-

tially, this important piece is lacking in our current module of grammar, and this is an area where I feel this dissertation makes a contribution.³

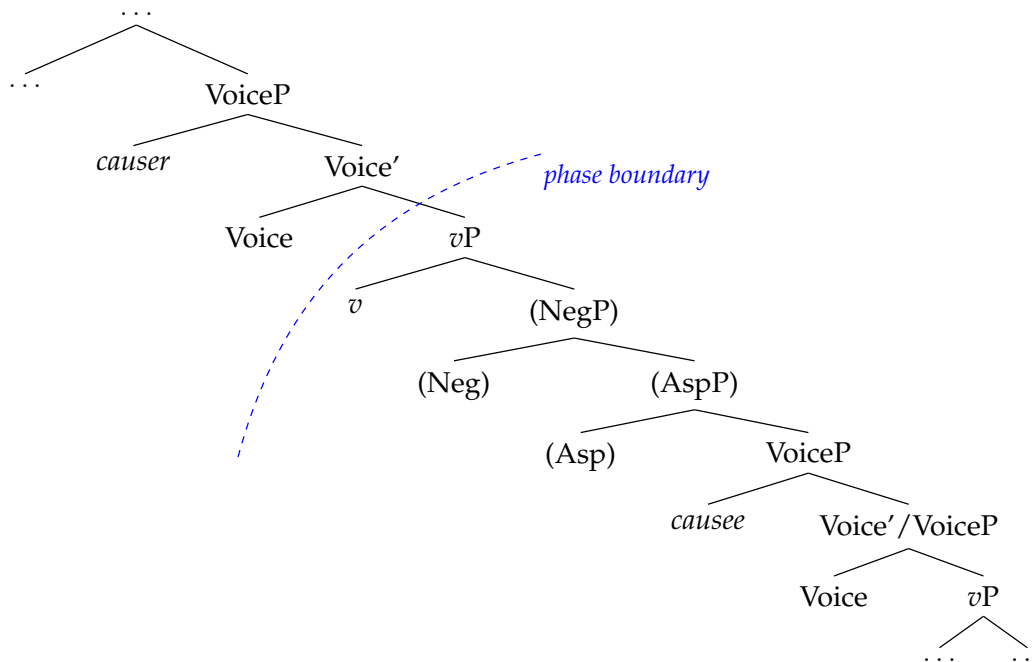
The verbal domain (VoiceP, *v*P or VP, depending on what type of analysis is adopted) is always considered a strong phase, together with CP and DP, in the literature. The origin can be traced back to Chomsky (2000), where the major argument comes from theta-role assignment, i.e., argument interpretation. This dissertation contributes another empirical case.

I have shown in this study that in the case of argument interpretation, LF demonstrates similar parallelism in terms of post-syntactic work, echoing some recent discussion along the lines of the alloosemy approach (e.g., Wood, 2015; Myler, 2016; Wood and Marantz, 2017; Marantz, 2022).

However, the most crucial takeaway from the contextual argument interpretations in the Teochew periphrastic causatives is the following. It is the highest VoiceP rather than the lowest one that is the thematic domain where both the causer and the causee retrieve their interpretation. In other words, if the Y-model of Grammar is adopted, then, according to the standard assumption of phase (Chomsky, 2000, 2001), when it comes to shifting the syntactic derivations to Spell-Out, at least the complement of the highest Voice needs to be sent to the LF as a whole syntactic chunk or ‘phase’, even though an AspP and perhaps even a NegP is embedded (427).

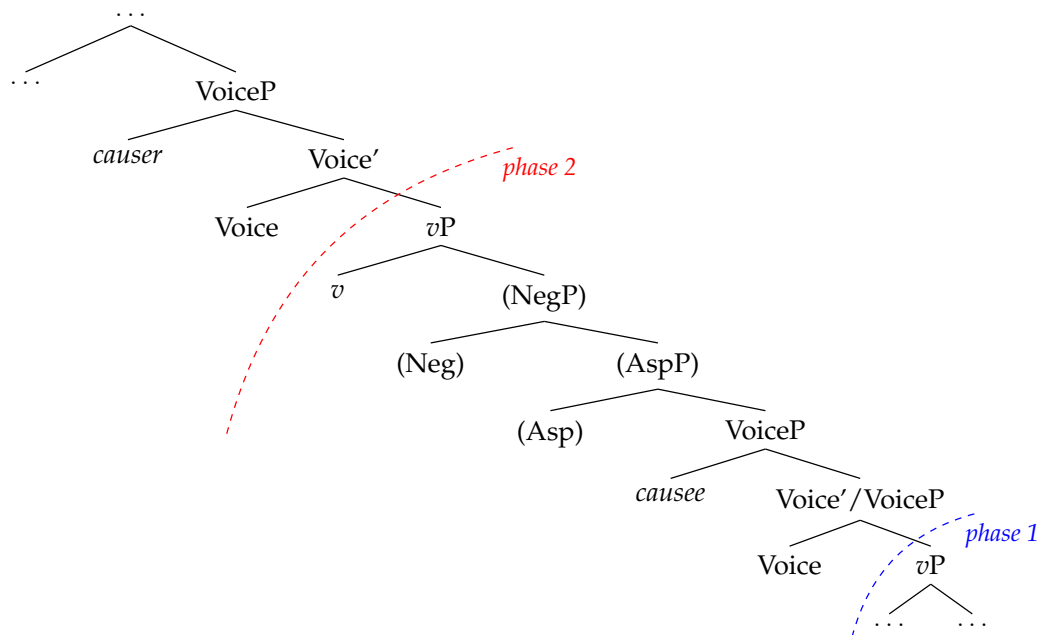
³The discussion in this section greatly benefited from the presentations and discussions on the *Workshop on Verbal Domains* with a theme on the phasehood in the verbal phrases (Newcastle University, June, 2023). I thank the organizing committee, the abstract reviewers and the presenters for making it a very provoking venue. I also thank Matthew Hewett for those very helpful discussions on the domain sensitivity issue.

(427)



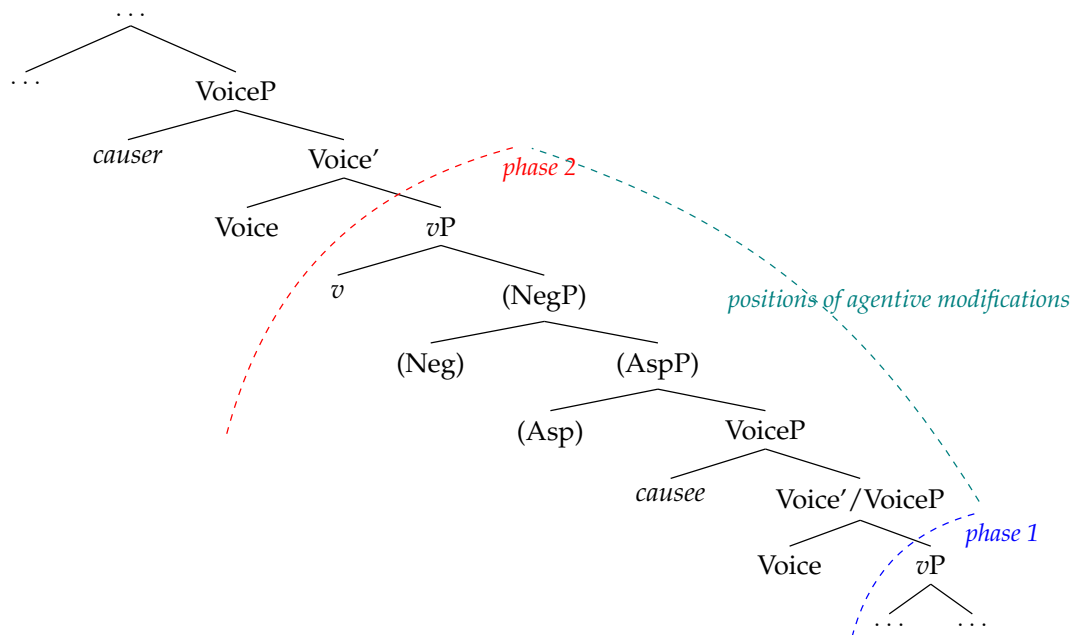
If only the complement of the lowest VoiceP is sent to the LF as the first phase (428), it would be difficult to explain the inconsistency between the initial AGENT interpretation of the causee fed by the agentive complement of the causee-connecting VoiceP layer, and those agentive modifications.

(428)



One way out is to exclude those agentive modifications in the first phase, when the agentive complement of the embedded Voice head is interpreted. One can argue that those agentive modifications are syntactically located in positions between the boundary of the first and second phases in (429). Then, when the first phase, i.e., the complement of the embedded Voice is sent to the LF, there is no need to explain the inconsistency issue, since, in this case, both the *causee* and these modifications need to wait to be sent to the LF when the computation reaches the second phase, which also includes the causative verb located at the highest *v* head triggering those complex *causee* interpretations due to its sublexical modal properties.

(429)



This explanation seems very attractive. However, there are two remaining issues, and none of them is trivial.

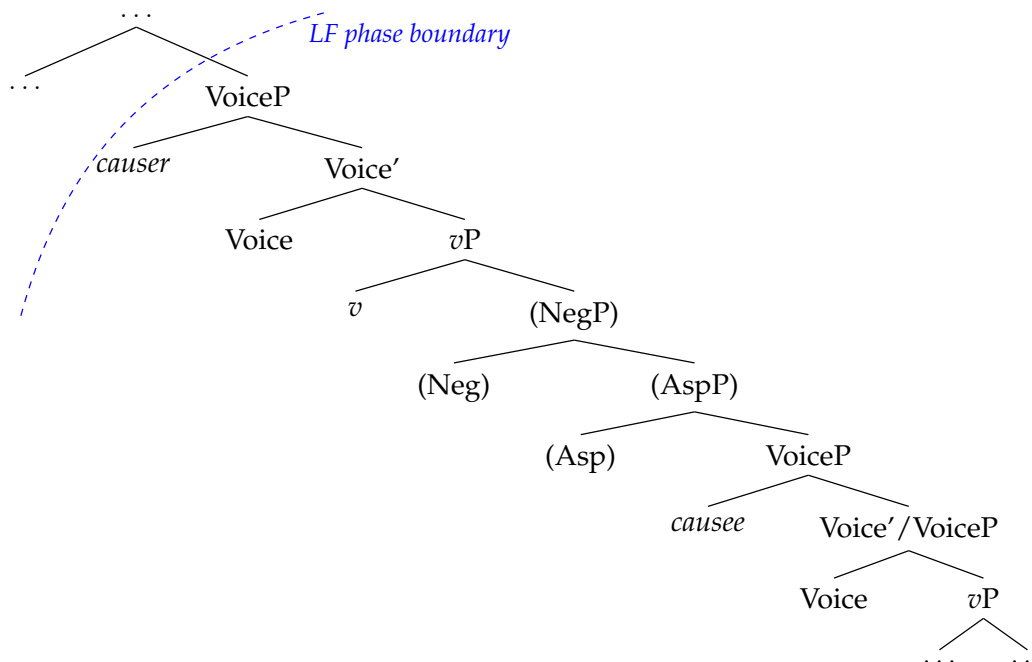
On the one hand, even if we adopt (429), there is no way that those agentive modifications can be syntactically higher than the causative verb. Following the bottom-up derivational process standardly assumed in generative grammar, these modifications will still be computed with the causee first before with the causative verb. Then it is still impossible to explain the incompatibility between the initial AGENT interpretation of the causee before being modified by the causative verb, and these modifications.⁴

⁴Relevantly, the proposal in (429) requires the complement of the embedded Voice to be sent to the LF first, which is in accordance with the standard assumption in the field. However, the agentive event structure of this complement needs to stay at some certain stage of LF rather than going directly to the Semantics module so as to wait for further modifications of the causative verb. Only in this way can the comprehensive causal event structure interpretation be formed to contextualize the causee interpretation. However, to my knowledge, there is no semantics technique to capture this kind of model (a 'holding pen' for previous materials, rather than immediately sending them to the next step), though this dissertation provides evidence that some version of it is needed.

On the other hand, in the field of argument structure, there are a lot of assumptions about the nature of the Voice head. As is summarized in Wood and Tyler (2023), the properties of this head have been used as a cover term for the following three empirical domains: (i) the interpretations of external arguments, and alternations in those interpretations, (ii) the linking or licensing of arguments, and alternations in those mechanisms, and (iii) the morphological forms taken by verbal heads, and alternations in those forms. The proposal in (429) basically excludes the embedded Voice head when sending the first phase to LF, and excludes the highest Voice head when sending the second phase to LF (though this time, the embedded Voice head is included) (a similar issue also exists in (427)). A detailed discussion of the consequences of this Voice-excluding approach should be conducted in order to check whether this is the appropriate direction to proceed.

So far, I have no fine-grained analysis of the LF phasehood. However, intuitively, I am with Nie (2020) in that a complete thematic domain (in our case, it is the highest VoiceP), where the arguments (e.g., the causer and the causee) retrieve their interpretations (i.e., being assigned theta-role assignment in (Chomsky, 2000)), is of great importance when it comes to thematically licensing an argument. Accordingly, from the perspective of argument interpretation, the highest VoiceP domain as a complete thematic domain, *including both the highest Voice and its specifier where the causer is located*, should be shifted to the LF together as a phase (430).

(430)



This is also in the same spirit as some recent discussions in Ramchand (2018): it is *the event structure composition* rather than *any specific syntactic head* that helps define the syntactic and semantic zones within the verb phrase. Of course, the consequences of proposing such an LF phasehood on the syntax, the PF side and other semantics concerns need to be carefully explored. Given that there are a lot of discussions on the (mis)matching issue between syntactic phases and phonological domains (see Felice (2022) for one example), it would be interesting if we could also find some (mis)matching phenomena between syntactic phases and semantic domains. I leave these for future studies.

Now, let me end the discussion in this section with the following I keep telling myself when writing this dissertation:

Linguists have been working a lot on the introduction of arguments, argument licensing and the PF phasehood in the past decades; now, it is time to devote more effort to argument interpretation and to the nature of phasehood at LF.

APPENDIX A

PREVIOUS LINGUISTICS STUDIES ON TEOCHEW

Teochew is considered to be an understudied language, even in the field of Chinese linguistics (compared to Mandarin) or Southern Min linguistics (compared to Taiwanese Southern Min).

This section will give a relatively comprehensive list of previous linguistics studies on Teochew. However, I will only provide the name list of the scholars working on this language, and do some classifications based on the disciplines they work on and the languages they use for academic writing, rather than listing references for the previous literature. This is mainly out of the concern that a large portion of the literature in the last century was not published in academic publications with online access. Also, unfortunately, many of them were lost due to different unexpected accidents in the past years. In addition, some of them were published in other informal publications like newspapers, which were only distributed in the Teochew region at the publication time and nowadays can only be found in the local research center ¹. I will also not differentiate the subvarieties of Teochew these scholars work on. This is because some of the Teochew varieties they documented in the last century have changed the spoken area, after which this variety is originally named, due to the administrative replanning of many towns and colleges in the region in the past decades.

¹I thank the local Teochew History and Culture Center for suggesting this style of writing this section. That center is also the go-to place if you want to archive most Teochew linguistics literature.

Most of the previous studies on the Teochew linguistics are written in Mandarin, and focus on phonetics and phonology. From a philology perspective, representative scholars² including Bohui Zhan (詹伯慧), Lunlun Lin (林伦伦), Rulong Li (李如龙) and Yongming Liu (李永明). There are also some other scholars working on phonology dictionaries, including Huazhong Wu (吴华重), Jiajiao Huang (黄家教), Japanese scholar Jiangxiamaotingshi (江夏懋亭氏), Lingqian Chen(陈凌千), Shengyi Liu (刘声绎), Shizhen Zhang (张世珍) and Xinkui Li (李新魁). From the perspective of formal phonology, Matthew Y. Chen and Zhiming Bao are two representative scholars who work on the tonal system including the tone sandhi patterns of Teochew. Besides, Qing Lin works on the formal phonetics analysis of the diachrony system of Teochew tone sandhi. The final three scholars have their research published in English³.

There are also some works on the Teochew vocabulary and grammar, most of which are from a philology perspective. Representative scholars on the vocabularies⁴ side include Huidong Weng (翁辉东), Junming Cai (蔡俊明), Lunlun Lin (林伦伦) and Xinkui Li (李新魁). Researchers working on the grammar side include Qisheng Shi (施其生), Xiaoshan Zhang (张晓山), Xinkui Li (李新魁) and Yanxuan Huang (黄燕旋). In terms of formal syntactic analysis, Jia Jin is the only other person, to my knowledge, working on the formal syntactic and semantics analysis of Teochew and publishing in English than me and my collaborator Alison Biggs, though she works on a different variety from the Shantou one (the downtown city version) we mainly focus on.

²For the convenience of future researchers working on Teochew, the Chinese characters of these people's names are also provided.

³Therefore, I do not give the Chinese characters of their names.

⁴i.e., lexical semantics in a very descriptive way

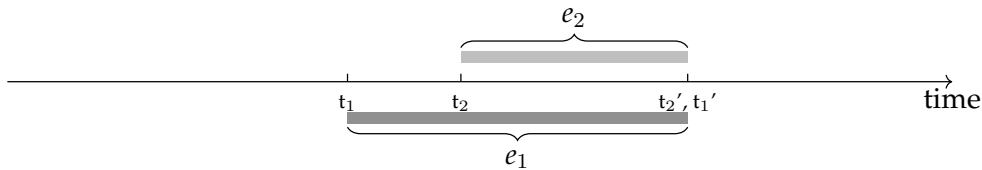
There are two other comprehensive books documenting different linguistic perspectives of specific Teochew varieties. One is written in English by Huilin Xu; the other one is written by Shengyu Zhang (张盛裕) and in Mandarin. Both of them follow the philology tradition. As I mentioned in Chapter 1, Teochew is also spoken in many South Eastern Asian countries due to migration. There are also some studies working on the language contact issue between Teochew and the local languages spoken in those countries. Many of them are from a sociolinguistics or applied linguistics perspective, therefore I omit the literature here and interested readers can easily find this research online and most of them are published in English.

The above is definitely not a comprehensive list. However, with the help from the research center, I think I have provided most of the names for future researchers who would like to work on Teochew and learn the literature. As readers might have already noticed, there is not much formal linguistics research on this language. But I am optimistic about the future and look forward to seeing more formal research on Teochew in the next decades.

APPENDIX B

EVIDENCE FOR INFELICITOUS ANTERIOR CAUSAL RELATIONS (ACTIVITY VERBS AS THE EMBEDDED PREDICATES)

First, embedding anteriority with the same ending.



The data in (431-434) shows that such a temporal relation is impossible between the causing event and the caused event.

(431) Context: *Xing is brushing Mimi's fur. But before he touches Mimi, Mimi has already been purring. As soon as Xing stops brushing, Mimi also stops purring.*

- a. # *Xing mue Mimi pahu.*
Xing make Mimi purr

Intended: 'Xing makes Mimi purr.'

(*mue*-causative)

- b. # *Xing kə Mimi pahu.*
Xing give Mimi purr

Intended: 'Xing causes Mimi to purr.'

(*kə*-causative)

(432) Context: *Xing is mopping the floor. Before he does it, Mimi has already been playing with the mop, which the speaker views as a 'bad' action because this will*

make Mimi dirty and wet. Mimi stops playing with the mop as soon as Xing stops mopping the floor.

Xing hai Mimi sɔŋ tuaba.
Xing hurt Mimi play mop

Intended: 'Nangy causes Mimi to play with the mop.'

(*hai*-causative)

(433) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. But before Nangy starts stepping back, Mimi already walks to the food bowl and eats. Mimi stops eating as soon as Nangy stops stepping back to show his courtesy.*

Nangy bun Mimi tsia muegia.
Nangy separate Mimi eat foodstuffs

Intended: 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(*courteous bun*-causative)

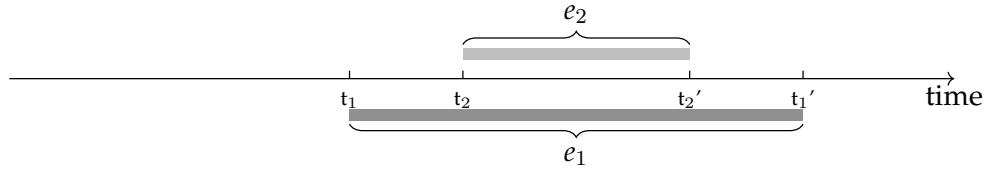
(434) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it jumps up to the bed and walks towards Xing before Xing gives his permission by patting the bedding near him. As soon as Mimi reaches the position, Xing stops patting the bedding.*

Xing bun Mimi kaogən.
Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close.'

(*permissive bun*-causative)

Tenth, embedding anteriority with an e_2 late ending.



The data in (435-438) shows that such a temporal relation is impossible between the causing event and the caused event.

(435) Context: *Xing is brushing Mimi's fur. But before he touches Mimi, Mimi has already been purring. Mimi keeps purring even after Xing stops brushing it.*

- a. # *Xing mue Mimi pahu.*
Xing make Mimi purr

Intended: 'Xing makes Mimi purr.'

(*mue*-causative)

- b. # *Xing kə Mimi pahu.*
Xing give Mimi purr

Intended: 'Xing causes Mimi to purr.'

(*kə*-causative)

(436) Context: *Xing is mopping the floor. Before he does it, Mimi has already been playing with the mop, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. Mimi keeps playing with the mop even after Xing stops mopping the floor.*

- # *Xing hai Mimi səng tuaba.*
Xing hurt Mimi play mop

Intended: 'Xing causes Mimi to play with the mop (adversative).'

(*hai*-causative)

(437) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. But before Nangy starts stepping back, Mimi already walks to the food bowl and eats. Mimi keeps eating as soon as Nangy stops stepping back to show his courtesy.*

Nangy bun *Mimi tsia muegia.*
 Nangy separate Mimi eat foodstuffs

Intended: 'Nangy causes Mimi to eat some foodstuffs by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

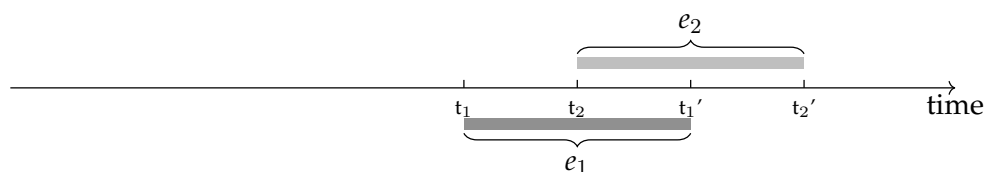
(438) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it jumps up to the bed and walks towards Xing before Xing gives his permission by patting the bedding near him. Mimi keeps getting closer to Xing, and continues even after Xing stops patting the bedding.*

Xing bun *Mimi kaogən.*
 Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close (the permissive readings).'

(permissive *bun*-causative)

Eleventh, non-embedding anteriority overlapping.



The data in (439-442) shows that in a context with such kind of temporal partial overlapping, all Teochew causatives are infelicitous.

(439) Context: *Xing is brushing Mimi's fur. But before he touches Mimi, Mimi has already been purring. Later, Mimi stops purring even though Xing is still brushing it.*

- a. # *Xing mue Mimi pahu.*
Xing make Mimi purr

Intended: 'Xing makes Mimi purr.'

(mue-causative)

- b. # *Xing kə Mimi pahu.*
Xing give Mimi purr

Intended: 'Xing causes Mimi to purr.'

(kə-causative)

(440) Context: *Xing is mopping the floor. Before he does it, Mimi has already been playing with the mop, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. Later, Mimi stops playing with the mop because it gets tired, even though Xing is still mopping the floor.*

- # *Xing hai Mimi səng tuaba.*
Xing hurt Mimi play mop

Intended: 'Xing causes Mimi to play with the mop (adversative).'

(hai-causative)

(441) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. But before Nangy starts stepping back, Mimi already walks to the food bowl and eats. Mimi stops eating even though Nangy keeps stepping back to show his courtesy.*

Nangy bun Mimi tsao.
 Nangy separate Mimi run

Intended: 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

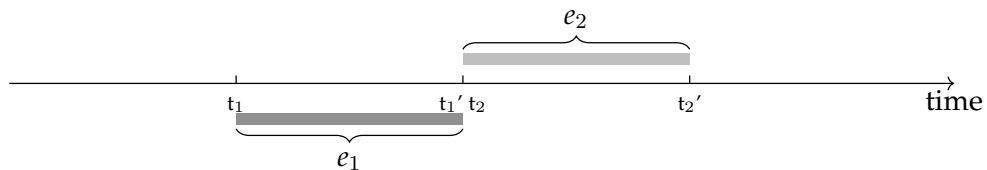
- (442) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it jumps up to the bed and walks towards Xing before Xing gives his permission by patting the bedding near him. Mimi stops getting closer to Xing before stops patting the bedding.*

Xing bun Mimi kaogən.
 Xing separate Mimi get.close

Intended: 'Xing lets Mimi get close.'

(permissive *bun*-causative)

Twelfth, non-overlapping anteriority with an immediate adjacency.



The data in (443-446) shows that none of the Teochew causatives allows such a temporal relation.

- (443) Context: *Mimi is purring. As soon as Mimi stops purring, Xing starts brushing its fur.*

a. # *Nangy mue Mimi tsao.*
 Nangy make Mimi run

Intended: 'Nangy makes Mimi run.'

(*mue*-causative)

b. # *Nangy kə Mimi tsao.*
Nangy give Mimi run
Intended: 'Nangy causes Mimi to run.'

(*kə*-causative)

(444) Context: *Mimi is playing with the mop, which the speaker views as a 'bad' action because this will make Mimi dirty and wet. As soon as Mimi stops playing with the mop because it gets tired, Xing starts to mop the floor.*

Xing hai Mimi səng tuaba.
Xing hurt Mimi play mop

Intended: 'Nangy causes Mimi to play with the mop.'

(*hai*-causative)

(445) Context: *Nangy wants to eat the wet food in the food bowl. He notices Mimi is also coming towards the food bowl. Out of courtesy, Nangy stops walking to the food bowl and steps back in order to let Mimi eat first. But before Nangy starts stepping back, Mimi already walks to the food bowl and finishes eating.*

Nangy bun Mimi tsao.
Nangy separate Mimi run

Intended: 'Nangy causes Mimi to run by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

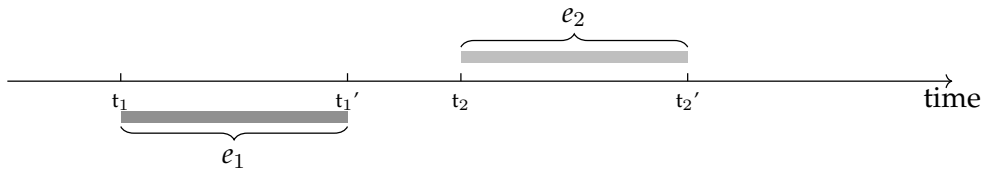
(446) Context: *Mimi, the cat, wants to get close to Xing lying on the bed and it jumps up to the bed and walks towards Xing before Xing gives his permission by patting the bedding near him. As soon as Mimi reaches the position, Xing starts patting the bedding to give his permission.*

Xing bun Mimi kaogən.
 Xing separate Mimi get.close

Intended: 'Xing lets Mimi to get close.'

(permissive *bun*-causative)

Thirteenth, non-overlapping anteriority with a time gap.



As is shown below, none of the Teochew causatives allows such a temporal relation. This is shown by the infelicity when using *e-tsek-miao* 'one second later' / *gimdzi?* 'today' to modify the causing event and using *tsio-tsek-miao* 'one second ago' / *tsadzi?* 'yesterday' to modify the caused event (447-448).

(447) a. # *Nangy e-tsek-miao mue Mimi tsio-tsek-miao tsao.*
 Nangy under-one-second make Mimi above-one-second run
 Intended: 'One second later, Nangy makes Mimi run one second ago.'
 (*mue*-causative)

b. # *Nangy e-tsek-miao kə Mimi tsio-tsek-miao tsao.*
 Nangy under-one-second give Mimi above-one-second run
 Intended: 'One second later, Nangy causes Mimi to run one second ago.'
 (Lit. 'Nangy gives the one-second-ago running event to Mimi.')

(*kə*-causative)

- c. # *Nangy e-tsek-miao hai Mimi tsio-tsek-miao tsao.*
 Nangy under-one-second hurt Mimi above-one-second run
 Intended: 'One second later, Nangy causes Mimi to run one second ago
 (adversative).'
- (*hai*-causative)
- d. # *Nangy e-tsek-miao bun Mimi tsio-tsek-miao tsao.*
 Nangy under-one-second separate Mimi above-one-second run
 Intended: 'One second later, Nangy causes Mimi to run one second ago
 by giving precedence to Mimi out of courtesy.'
- (courteous *bun*-causative)
- e. # *Nangy e-tsek-miao bun Mimi tsio-tsek-miao tsao.*
 Nangy under-one-second separate Mimi above-one-second run
 Intended: 'One second later, Nangy lets Mimi run one second ago.'
- (permissive *bun*-causative)
- (448) a. # *Nangy gimdzi? mue Mimi tsadzi? tsao.*
 Nangy today make Mimi yesterday run
 Intended: 'Today, Nangy makes Mimi run yesterday.'
- (*mue*-causative)
- b. # *Nangy gimdzi? kə Mimi tsadzi? tsao.*
 Nangy today give Mimi yesterday run
 Intended: 'Today, Nangy causes Mimi to run yesterday.'
 (Lit. 'Nangy gives the one-day-before running event to Mimi.')
- (*kə*-causative)
- c. # *Nangy gimdzi? hai Mimi tsadzi? tsao.*
 Nangy today hurt Mimi yesterday run
 Intended: 'Today, Nangy causes Mimi to run yesterday (adversative).'
- (*hai*-causative)

- d. # *Nangy gimdzi? bun Mimi tsadzi? tsao.*
Nangy today separate Mimi today run
Intended: 'Today, Nangy causes Mimi to run yesterday by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

- e. # *Nangy gimdzi? bun Mimi tsadzi? tsao.*
Nangy today separate Mimi today run
Intended: 'Today, Nangy lets Mimi run yesterday.'

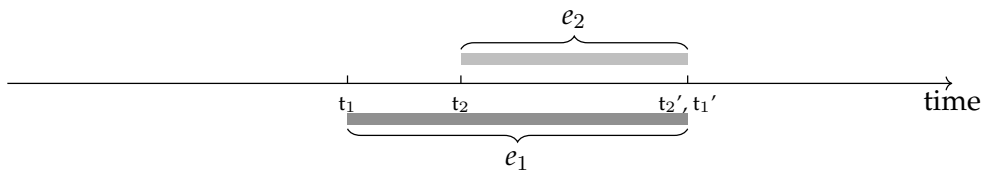
(permissive *bun*-causative)

Therefore, I conclude none of the Teochew periphrastic causatives allow the anteriority causal relations.

APPENDIX C

EVIDENCE FOR INFELICITOUS ANTERIOR CAUSAL RELATIONS (STATIVES AND PSYCH VERBS AS THE EMBEDDED PREDICATES)

Ninth, embedding anteriority with the same ending.



(449-450) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(449) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Mimi imitates Nangy's bad behavior before Nangy starts doing something bad. However, Mimi stops the imitative action at the same moment as Nangy stops his behaviors.*

a. # *Nangy mue Mimi u ts'igui sio.*

Nangy make Mimi own bad action.look

Intended: 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

b. # *Nangy hai Mimi u ts'igui sio.*

Nangy hurt Mimi own bad action.look

Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'

(*hai*-causative with an embedded stative verb)

(450) Context: *Nangy and Mimi are playing together. Mimi becomes sad before Nangy accidentally bites him. However, Mimi stops being sad at the same moment as Nangy stops biting him.*

- a. # *Nangy mue Mimi geʔsim.*
 Nangy make Mimi sad

Intended: 'Nangy makes Mimi be sad.'

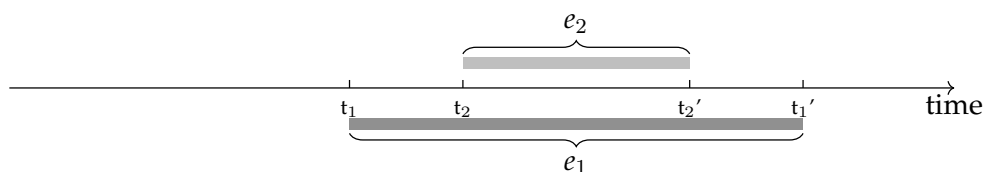
(*mue*-causative with an embedded psych verb)

- b. # *Nangy hai Mimi geʔsim.*
 Nangy hurt Mimi sad

Intended: 'Nangy causes Mimi to be sad (adversative).'

(*hai*-causative with an embedded psych verb)

Tenth, embedding anteriority with an e_1 late ending.



(451-452) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(451) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Mimi imitates Nangy's bad behavior before Nangy starts doing something bad. Mimi keeps doing the imitative action and continues even after Nangy stops his behaviors.*

- a. # *Nangy mue Mimi u ts'igui sio.*
 Nangy make Mimi own bad action.look

Intended: 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

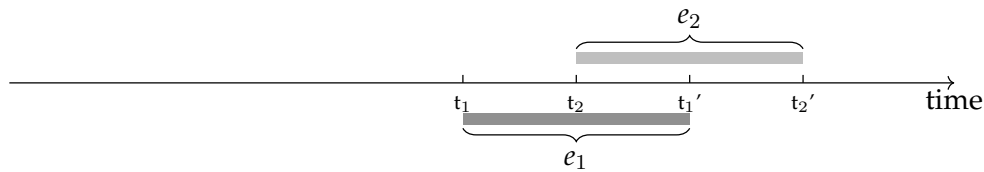
- b. # *Nangy hai Mimi u ts'igui sio.*
 Nangy hurt Mimi own bad action.look
 Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'
- (*hai*-causative with an embedded stative verb)

(452) Context: *Nangy and Mimi are playing together. Mimi becomes sad before Nangy accidentally bites him. Mimi keeps being sad and continues even after Nangy stops biting him.*

- a. # *Nangy mue Mimi geʔsim.*
 Nangy make Mimi sad
 Intended: 'Nangy makes Mimi be sad.'
- (*mue*-causative with an embedded psych verb)

- b. # *Nangy hai Mimi geʔsim.*
 Nangy hurt Mimi sad
 Intended: 'Nangy causes Mimi to be sad (adversative).'
- (*hai*-causative with an embedded psych verb)

Eleventh, non-embedding anteriority overlapping.



(453-454) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(453) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Mimi imitates Nangy's bad behavior before Nangy starts doing something bad. However, Mimi stops the imitative action before Nangy stops his behaviors.*

a. # *Nangy mue Mimi u ts'igui sio.*
 Nangy make Mimi own bad action.look
 Intended: 'Nangy makes Mimi have a bad-action look.'
 (*mue*-causative with an embedded stative verb)

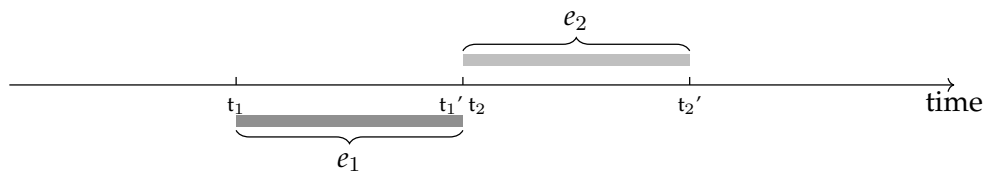
b. # *Nangy hai Mimi u ts'igui sio.*
 Nangy hurt Mimi own bad action.look
 Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'
 (*hai*-causative with an embedded stative verb)

(454) Context: *Nangy and Mimi are playing together. Mimi becomes sad before Nangy accidentally bites him. However, Mimi stops being sad before Nangy stops biting him.*

a. # *Nangy mue Mimi ge?sim.*
 Nangy make Mimi sad
 Intended: 'Nangy makes Mimi be sad.'
 (*mue*-causative with an embedded psych verb)

b. # *Nangy hai Mimi ge?sim.*
 Nangy hurt Mimi sad
 Intended: 'Nangy causes Mimi to be sad (adversative).'
 (*hai*-causative with an embedded psych verb)

Twelfth, non-overlapping anteriority with an immediate adjacency.



(455-456) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

(455) Context: *Mimi likes imitating whatever things Nangy is doing and Nangy is a cat with some bad habits. Mimi imitates Nangy's bad behavior before Nangy starts doing something bad. However, Mimi stops the imitative action before Nangy starts his bad behavior.*

a. # *Nangy mue Mimi u ts'igui sio.*

Nangy make Mimi own bad action.look

Intended: 'Nangy makes Mimi have a bad-action look.'

(*mue*-causative with an embedded stative verb)

b. # *Nangy hai Mimi u ts'igui sio.*

Nangy hurt Mimi own bad action.look

Intended: 'Nangy causes Mimi to have a bad-action look (adversative).'

(*hai*-causative with an embedded stative verb)

(456) Context: *Nangy and Mimi are playing together. Mimi becomes sad before Nangy accidentally bites him. However, Mimi stops being sad before Nangy starts biting him.*

a. # *Nangy mue Mimi geʔsim.*

Nangy make Mimi sad

Intended: 'Nangy makes Mimi be sad.'

(*mue*-causative with an embedded psych verb)

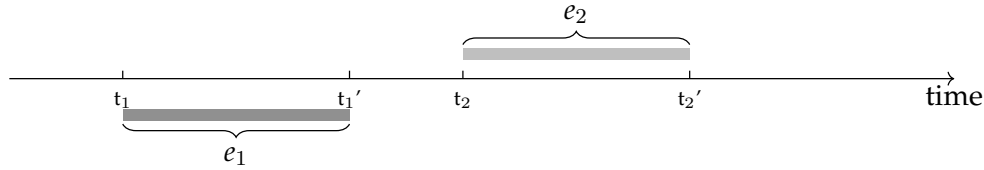
b. # *Nangy hai Mimi geʔsim.*

Nangy hurt Mimi sad

Intended: 'Nangy causes Mimi to be sad (adversative).'

(*hai*-causative with an embedded psych verb)

Thirteenth, non-overlapping anteriority with a time gap.



(457-458) shows that same as the case with an embedded activity verb, both the *mue*-causative and the *hai*-causative disallow it.

- (457) a. # *Nangy e-tsek-miao mue Mimi tsio-tsek-miao u*
Nangy under-one-second make Mimi above-one-second own
siokao.
 wound
 Intended: 'One second later, Nangy makes Mimi have wounds one second ago.'

(*mue*-causative with an embedded stative verb)

- b. # *Nangy e-tsek-miao hai Mimi tsio-tsek-miao u siokao.*
Nangy under-one-second hurt Mimi above-one-second own wound
 Intended: 'One second later, Nangy causes Mimi to have wounds one second ago (adversative).'

(*hai*-causative with an embedded stative verb)

- (458) a. # *Nangy gimdzi? mue Mimi tsadzi? ge?sim.*
Nangy today make Mimi yesterday sad
 Intended: 'Today, Nangy makes Mimi be sad yesterday.'

(*mue*-causative)

- b. # *Nangy gimdzi? hai Mimi tsadzi? ge?sim.*
Nangy today hurt Mimi yesterday sad
 Intended: 'Today, Nangy causes Mimi to be sad yesterday (adversative).'

(*hai*-causative)

Therefore, I conclude none of the Teochew periphrastic causatives allow the anteriority causal relations with an embedded stative/psych verb.

APPENDIX D

POSSIBLE COMBINATORY POSSIBILITIES OF CAUSAL RELATIONS

Based on Teochew, (459) summarizes a total number of 224 combinatory possibilities of causal relations, which is illustrated in Figure D.1-D.7 (P means ‘permissive encoding hierarchical social relations between the causer and the causee’ while - means ‘no such a reading are encoded’.).

(459) Four major conceptual differences of causal relations ($28*2*2*2=224$ possibilities)

a. (In)directness ($7*2*2=28$ possibilities)

i. Temporal relation ($5+2=7$ possibilities)

- Posterity (5 possibilities)
 - Non-overlapping posteriority with a time gap
 - Overlapping posteriority with an immediate adjacency
 - Non-embedding posteriority overlapping
 - Embedding posteriority with the same ending
 - Embedding posteriority without the same ending
- Simultaneity (2 possibilities)
 - Complete overlapping
 - Embedding simultaneity with e_1 late ending

- ii. Spatial relation (*2 possibilities*)
 - Distal
 - Proximal
- iii. Mediation (*2 possibilities*)
 - Allow an intermediary agent
 - Disallow an intermediary agent
- b. With an actual result? (*2 possibilities*)
 - Deterministic
 - Probabilistic
- c. Express the speaker's attitude? (*2 possibilities*)
 - Yes
 - No
- d. Permissive encoding social relations between event participants (causer and causee) (*2 possibilities*)
 - Yes
 - No

One might ask whether it is possible that some of the above causal dimensions are complementary to each other or whether some of them entail the others, which leads to a smaller number of causal relation possibilities here. Answers to this question will be beyond the scope of this dissertation since it is not directly connected to the contextualization conditions of causee interpretations under exploration here, and I leave it for future studies, but see Section 5.7 in Chapter 5 for an informal discussion, as well as Lauer (2010), Martin (2018) and Baglini and Bar-Asher Siegal (2020) for possible connections between (temporal) (in)directness and

the deterministic vs. probabilistic contrast. I hope the taxonomy here can lay a foundation for future (and cross-linguistic) studies.

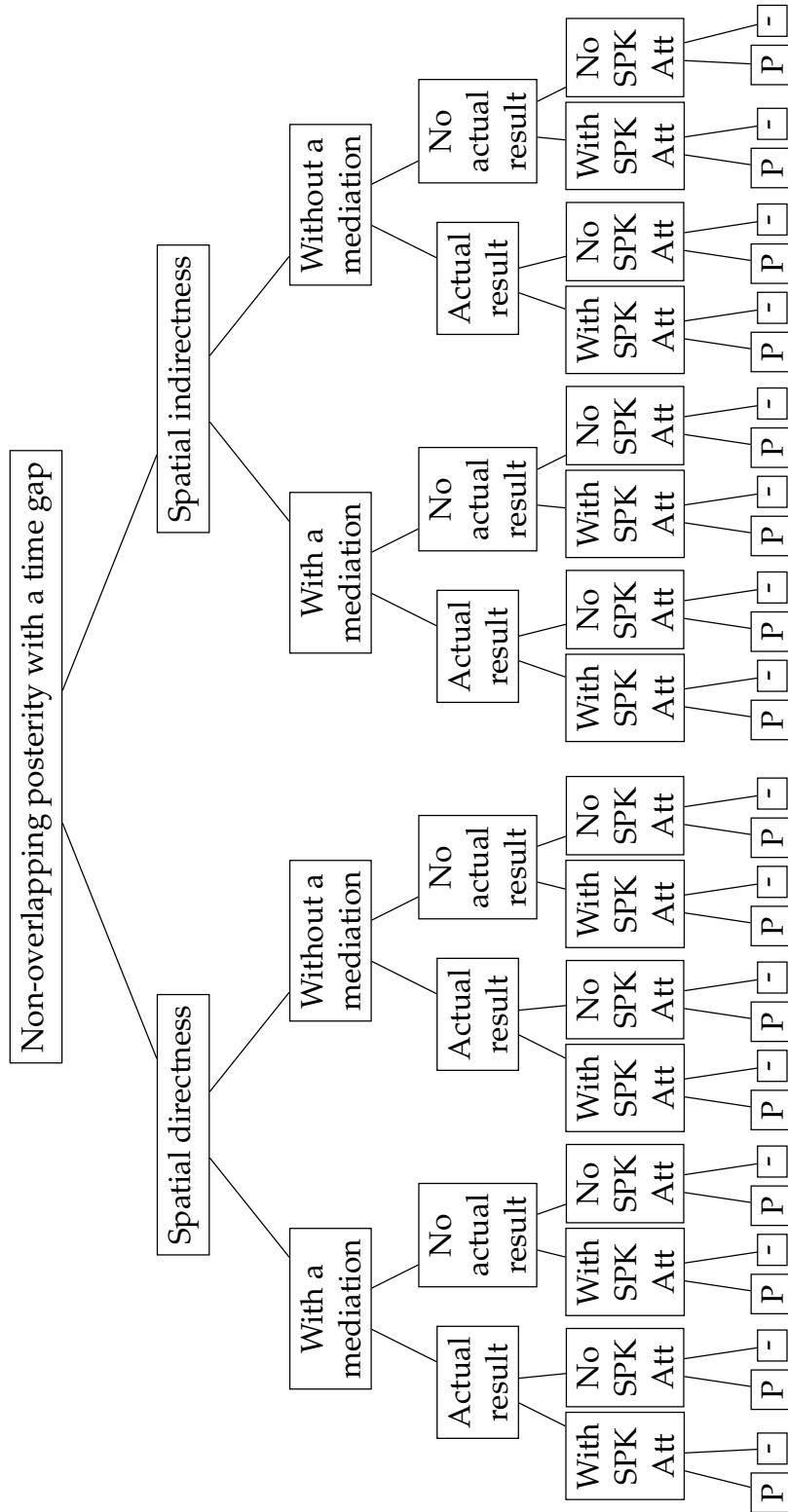


Figure D.1: Possible combinatory possibilities of causal relations (part I: 32 possibilities)

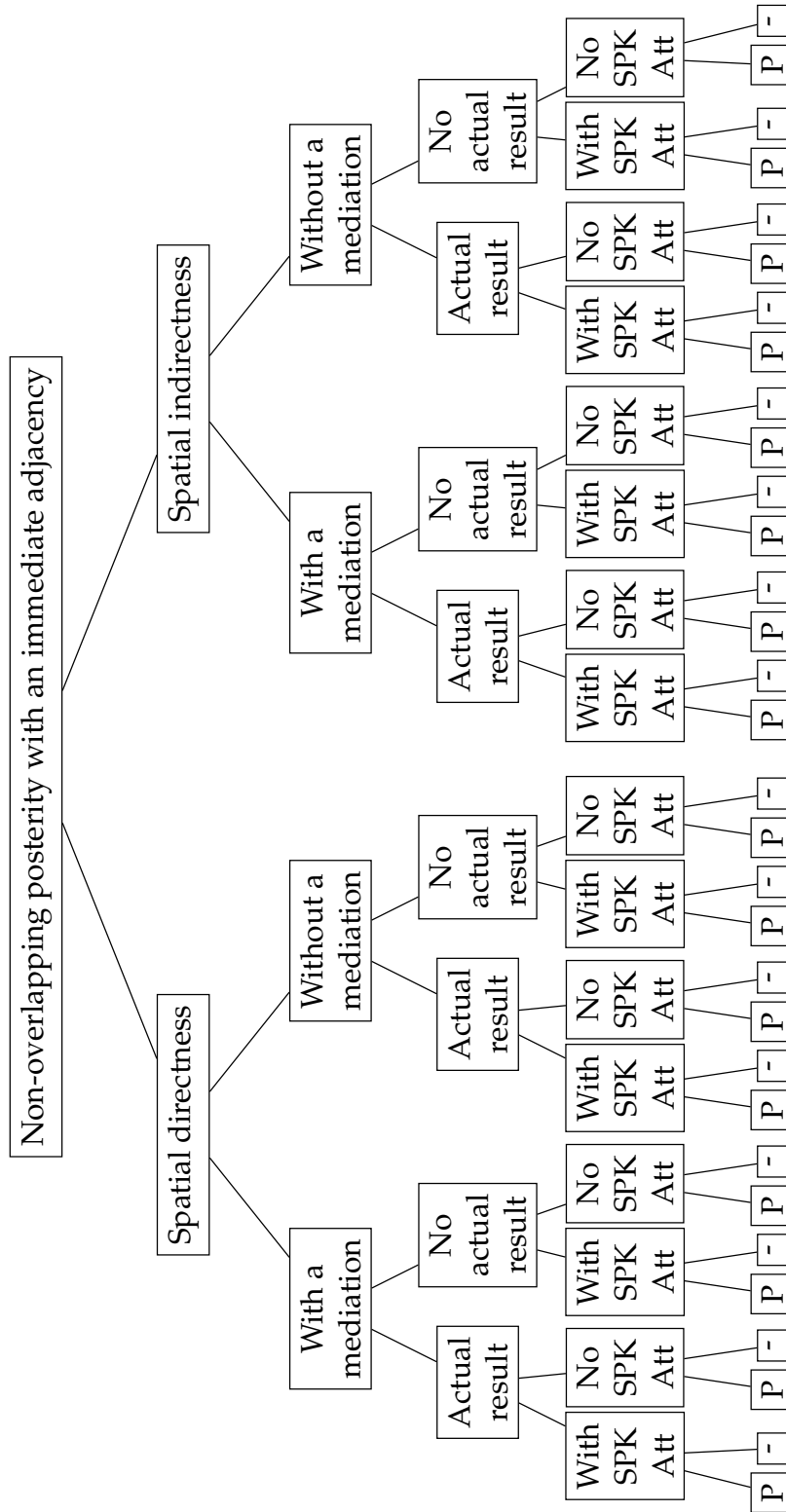


Figure D.2: Possible combinatory possibilities of causal relations (part II: 32 possibilities)

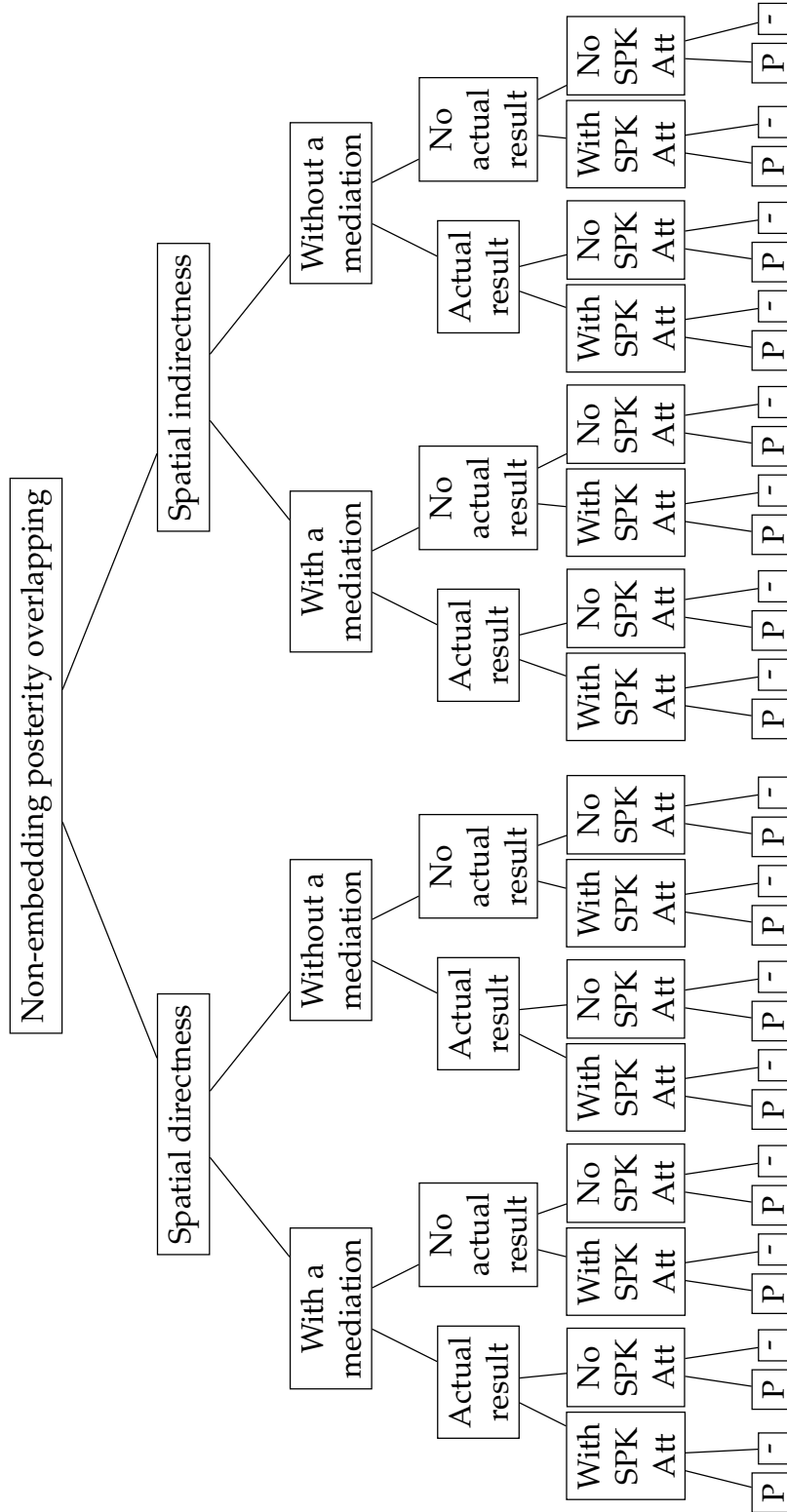


Figure D.3: Possible combinatorial possibilities of causal relations (part III: 32 possibilities)

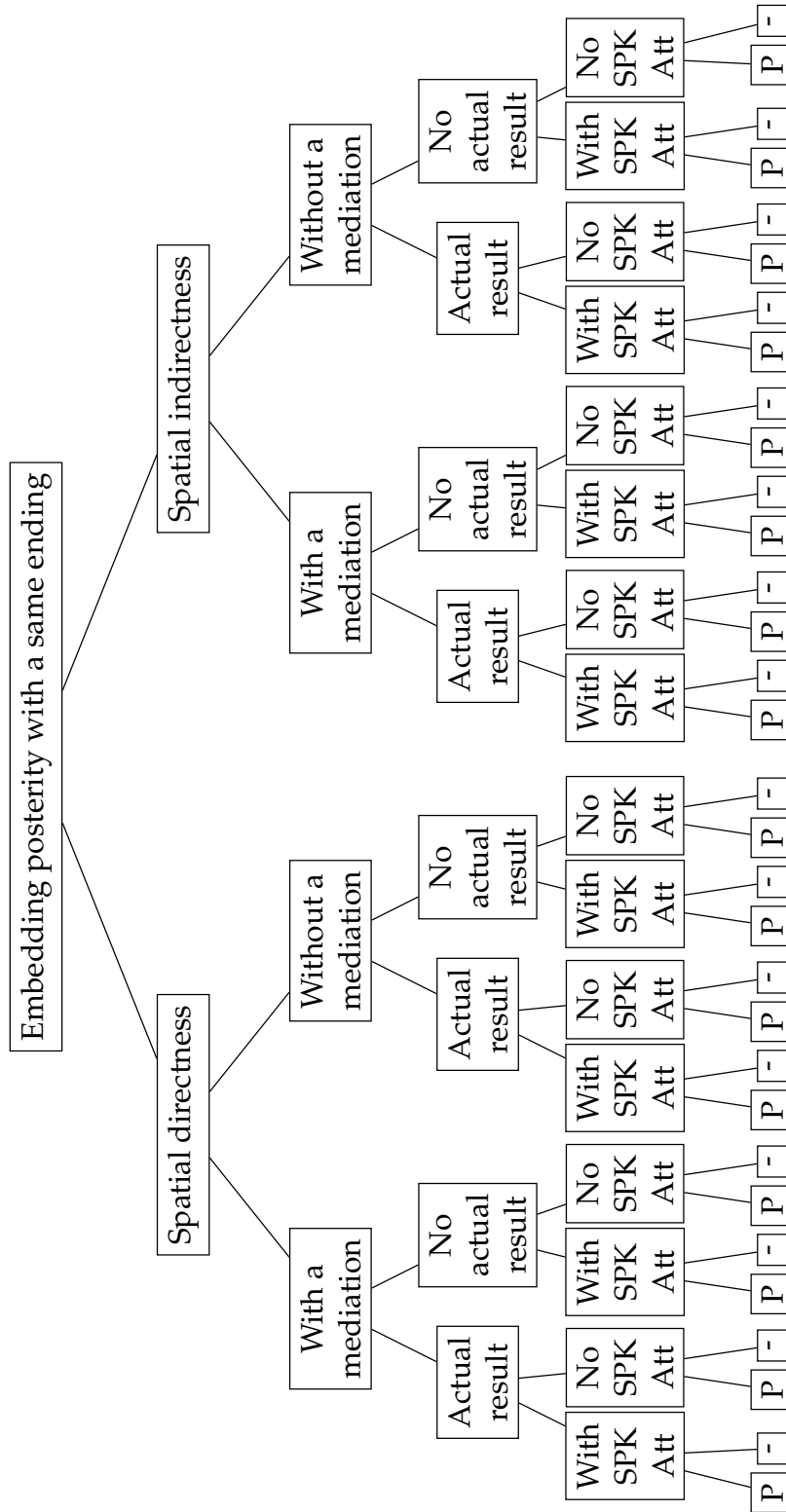


Figure D.4: Possible combinatory possibilities of causal relations (part IV: 32 possibilities)

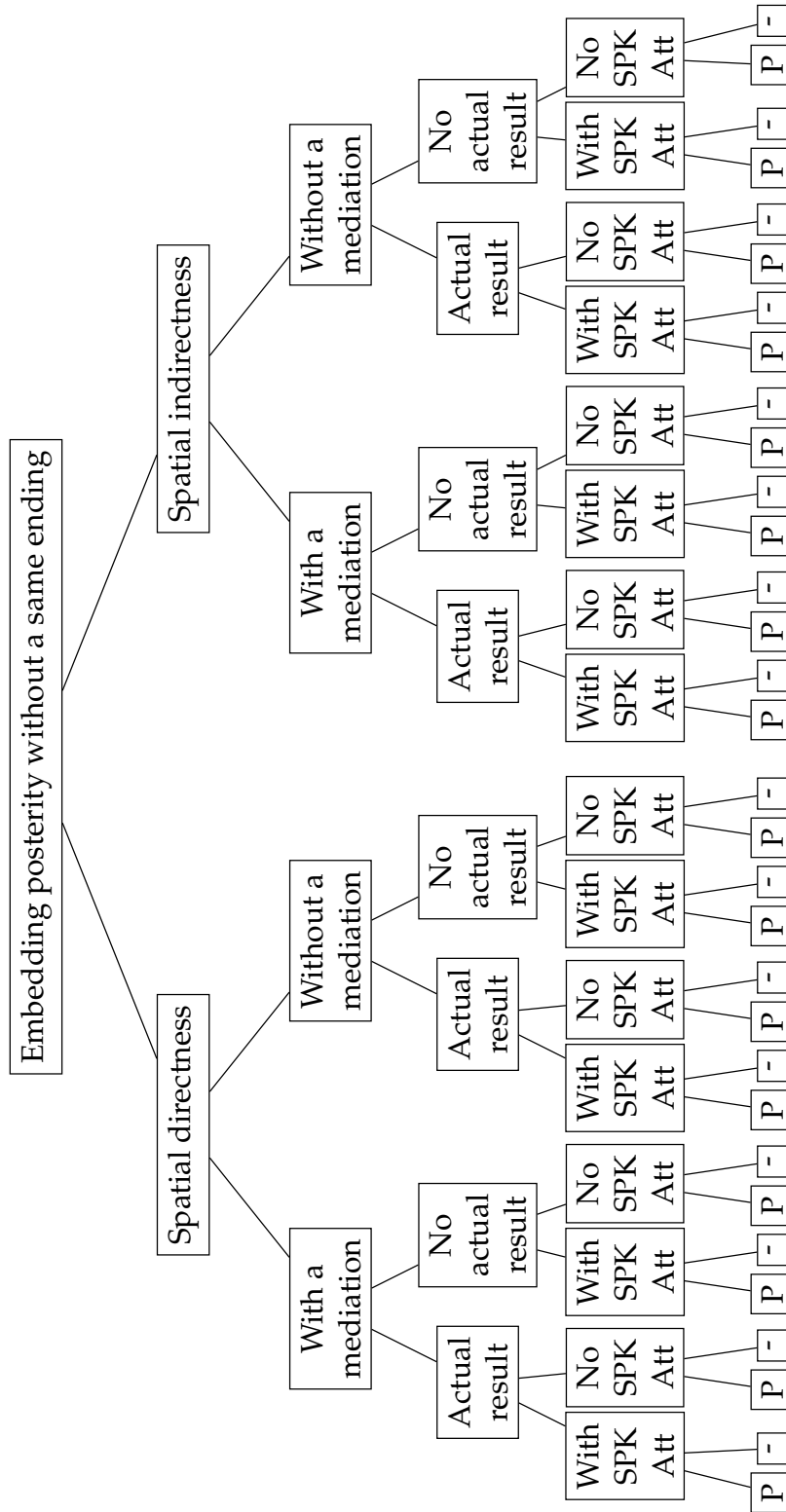


Figure D.5: Possible combinatory possibilities of causal relations (part V: 32 possibilities)

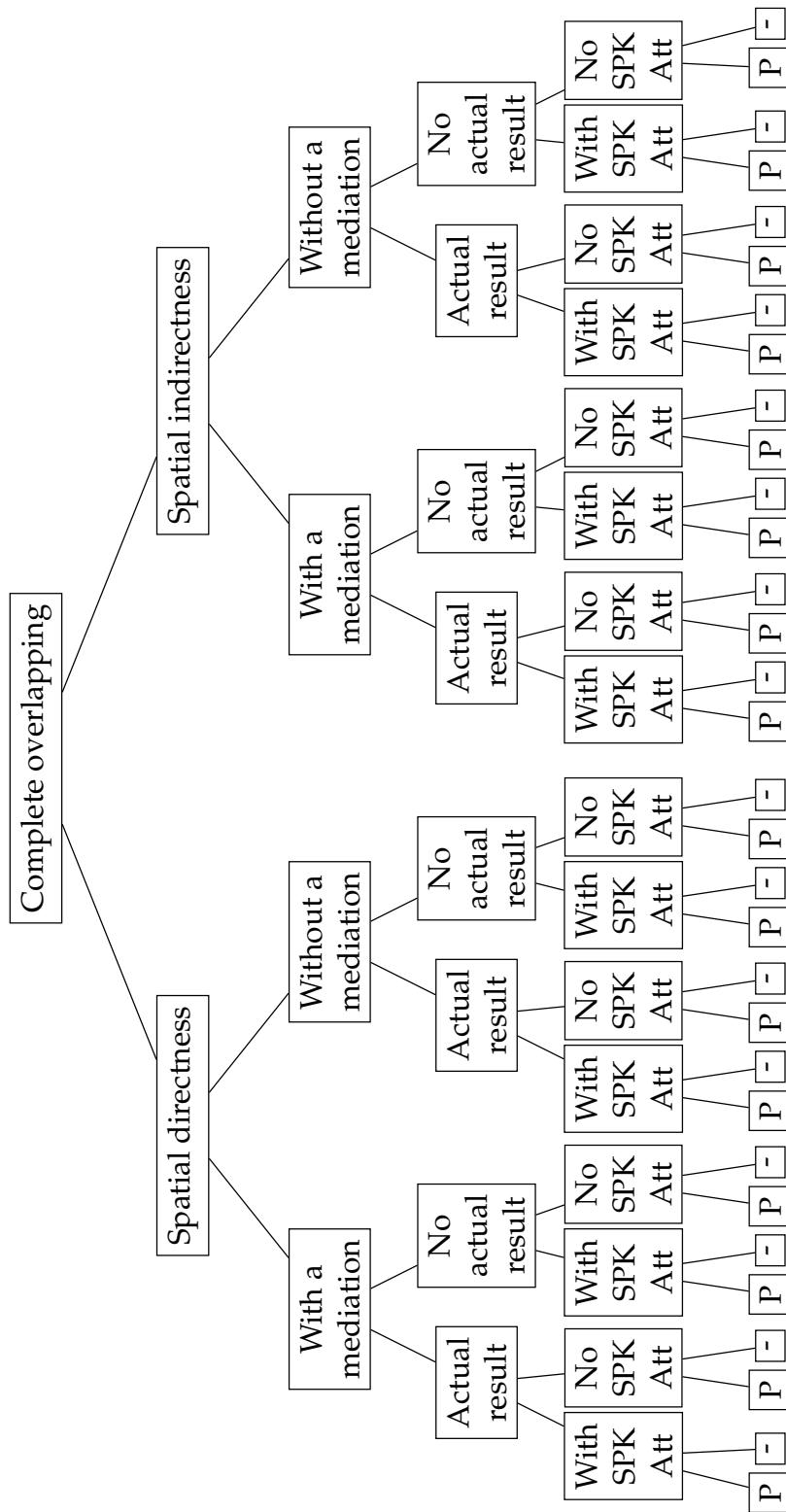


Figure D.6: Possible combinatorial possibilities of causal relations (part VI: 32 possibilities)

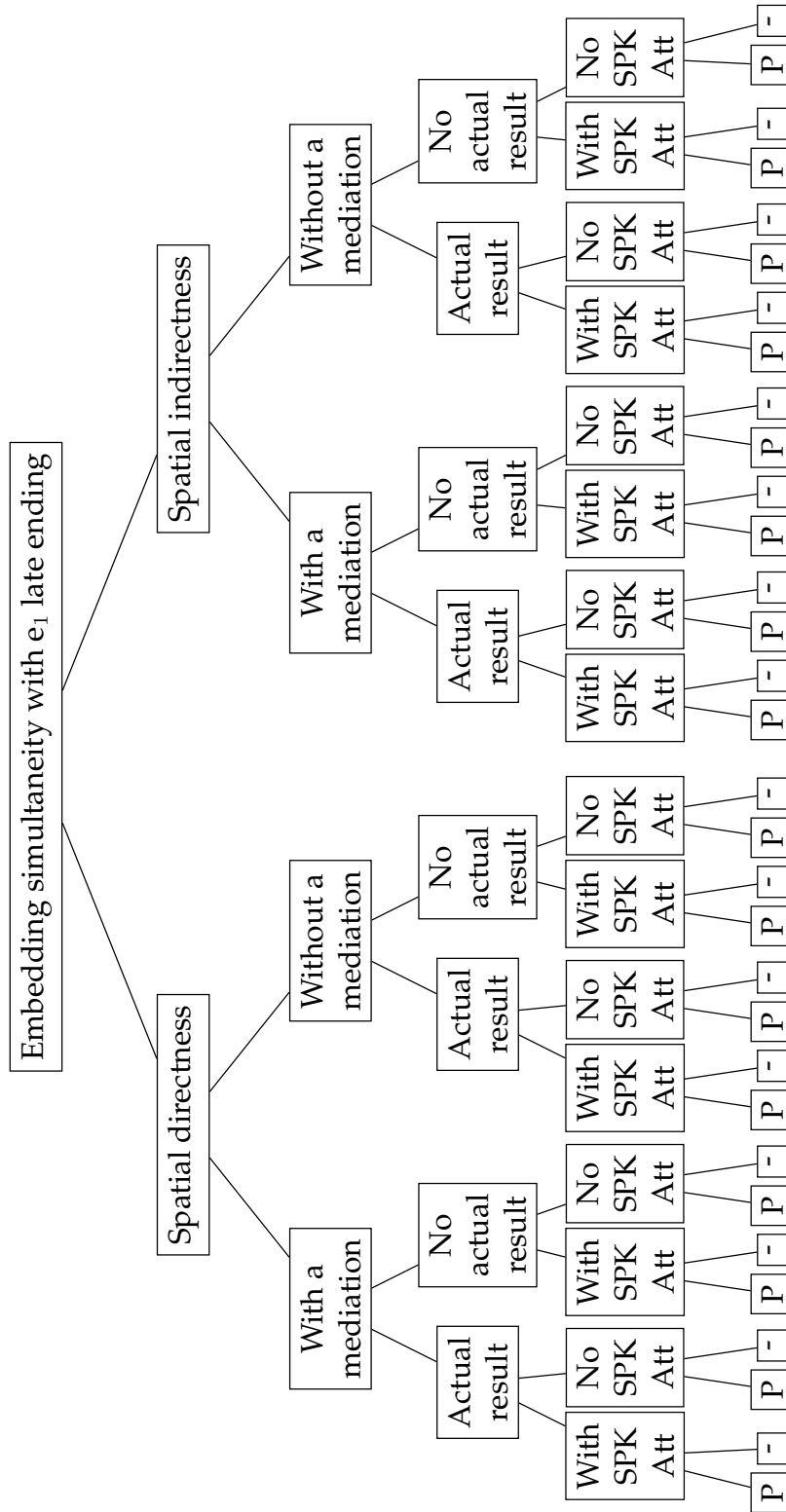


Figure D.7: Possible combinatory possibilities of causal relations (part VII: 32 possibilities)

APPENDIX E

TAXONOMY OF CAUSAL RELATION ENCODED IN TEOCHEW PERIPHRASTIC CAUSATIVES

The 4 possible causal relations of the Teochew *mue* ‘make’-causative are shown in Figure E.1-E.4.

The 40 possible causal relations of the Teochew *kə* ‘give’-causative are shown in Figure E.5-E.9, which includes the four possible causal relations of the *mue* ‘make’-causative.

The 10 possible causal relations of the Teochew *hai* ‘hurt’-causative are shown in Figure E.10-E.14.

The 10 possible causal relations of the Teochew courteous *bun* ‘separate’-causative are shown in Figure E.15-E.19.

The 32 possible causal relations of the Teochew permissive *bun* ‘separate’-causative are shown in Figure E.20-E.23.

That is to say, out of the 224 combinatory possibilities of the causal relations (see Appendix D), Teochew periphrastic causatives under explorations in this dissertation encode $40+10+10+10+32=92$ combinatory possibilities. As was mentioned in the previous Appendix, this dissertation sets aside the issue of contradictory/entailment of different causal dimensions aside (but see Section 5.7 in Chapter 5).

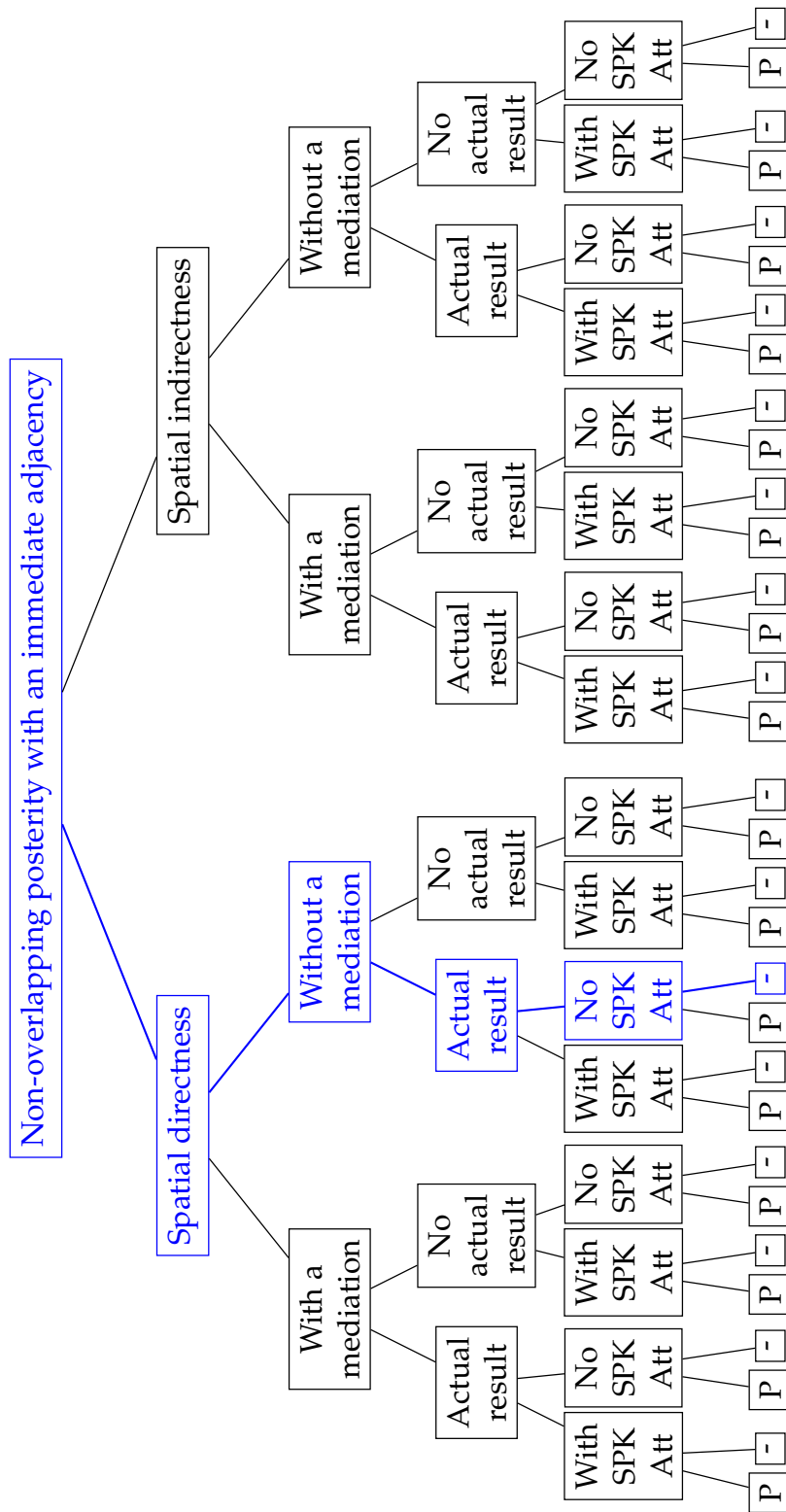


Figure E.1: Possible combinatory possibilities of the *mue*-causative (part I: 1 possibility)

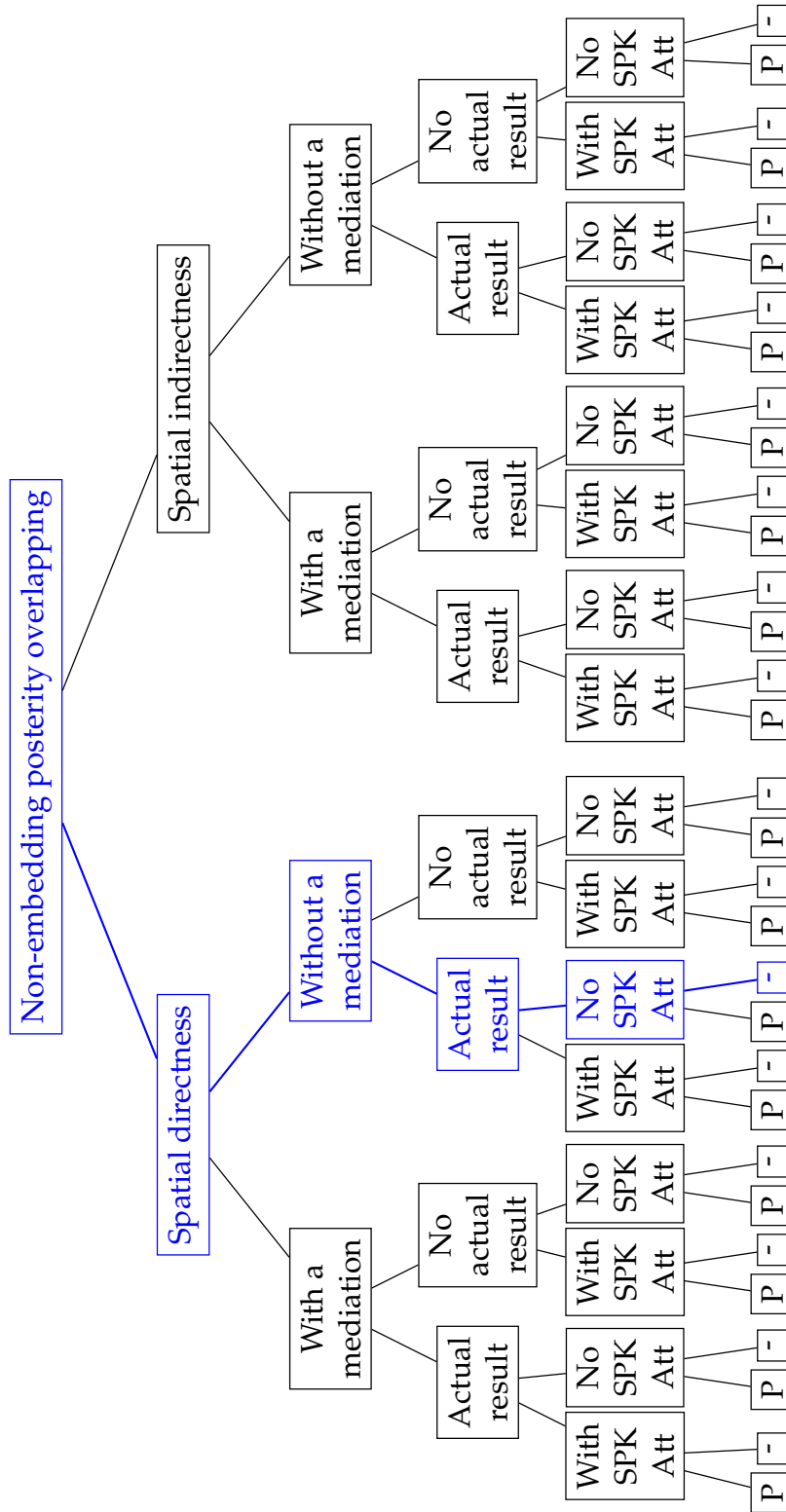


Figure E.2: Possible combinatory possibilities of the *mue*-causative (part II: 1 possibility)

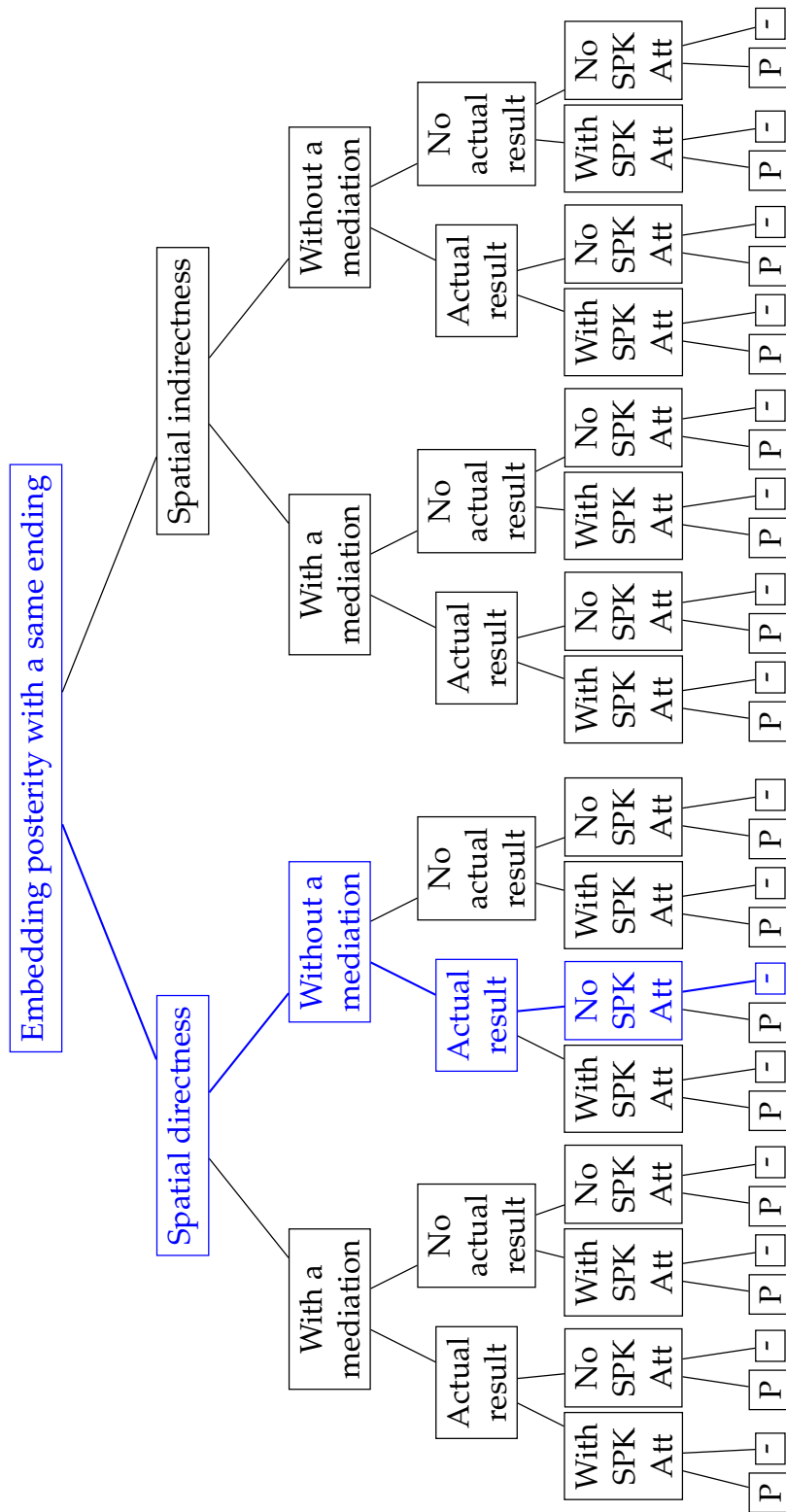


Figure E.3: Possible combinatory possibilities of the *mue*-causative (part III: 1 possibility)

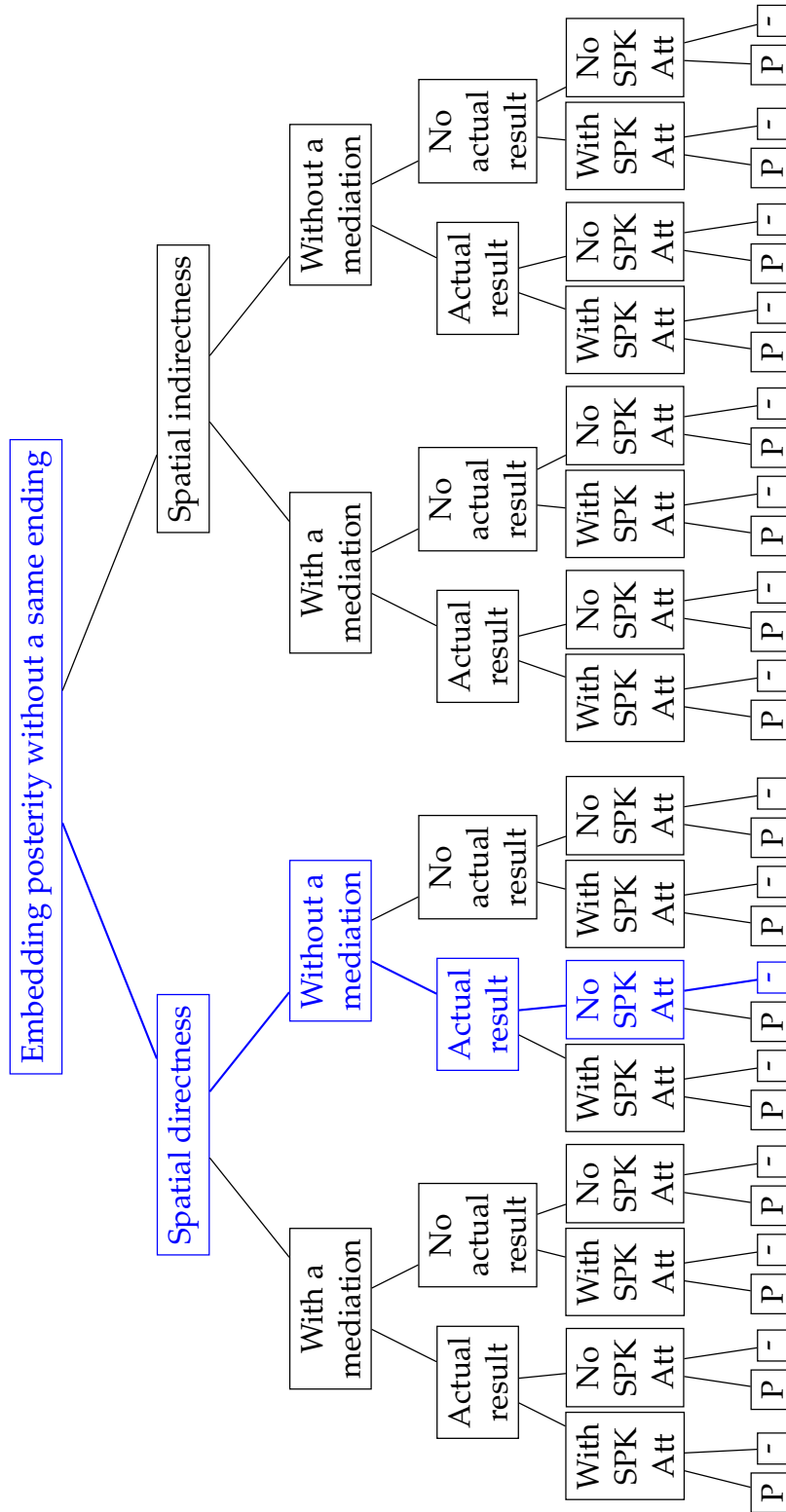


Figure E.4: Possible combinatory possibilities of the *mue-causative* (part IV: 1 possibility)

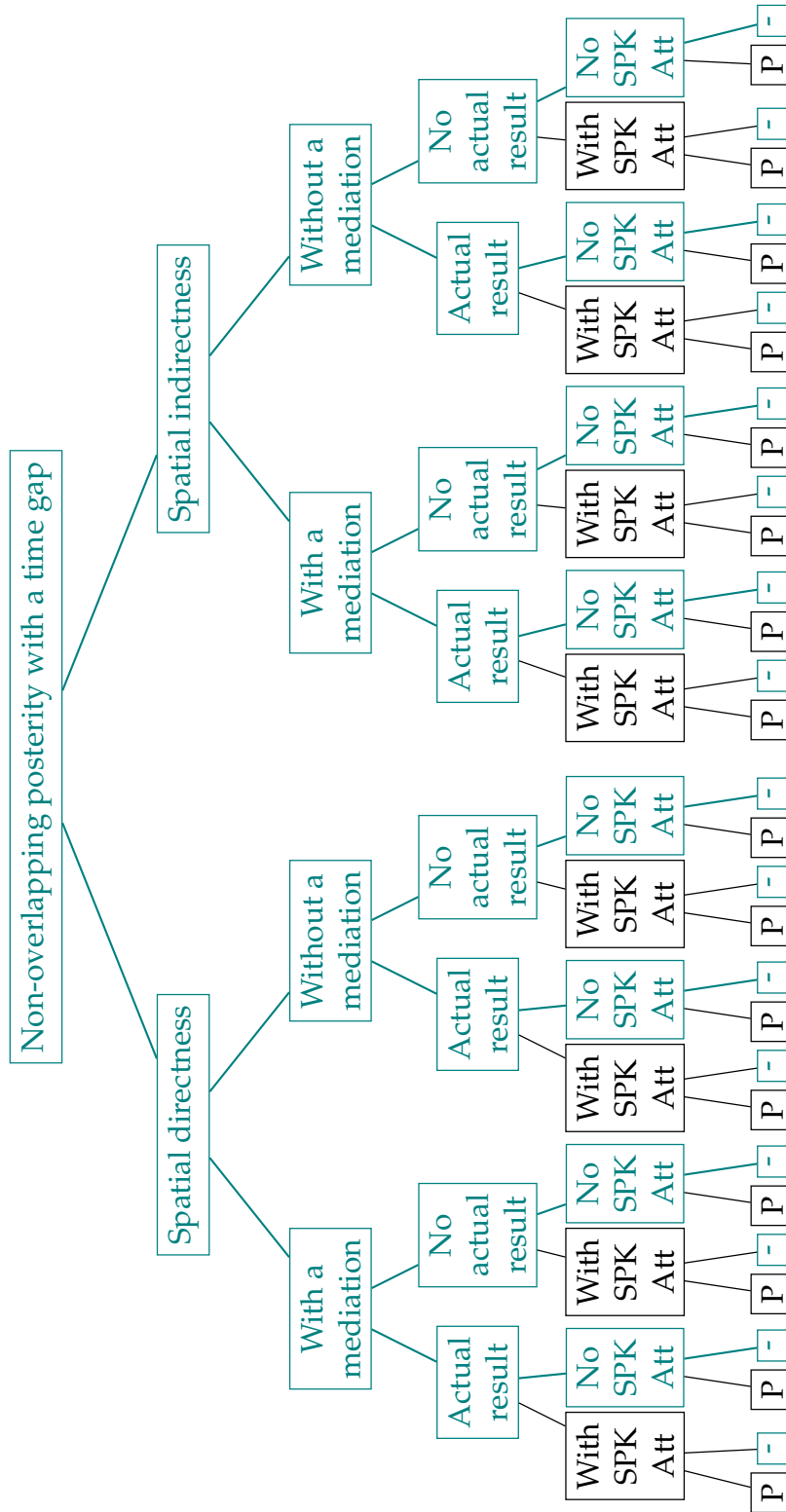


Figure E.5: Possible combinatory possibilities of the k_{\ominus} -causative (part I: 8 possibilities)

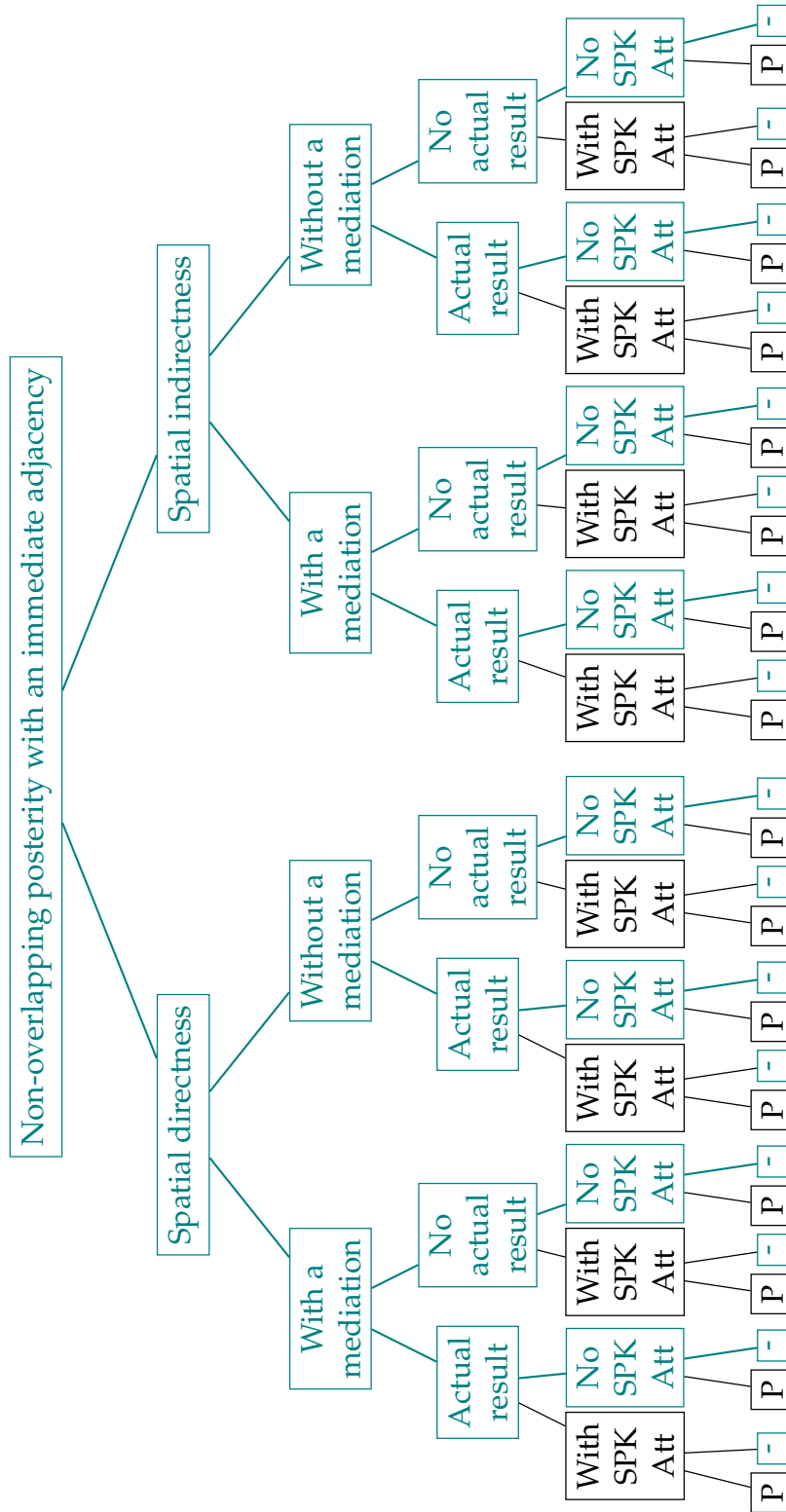


Figure E.6: Possible combinatory possibilities of the k -cause (part II: 8 possibilities)

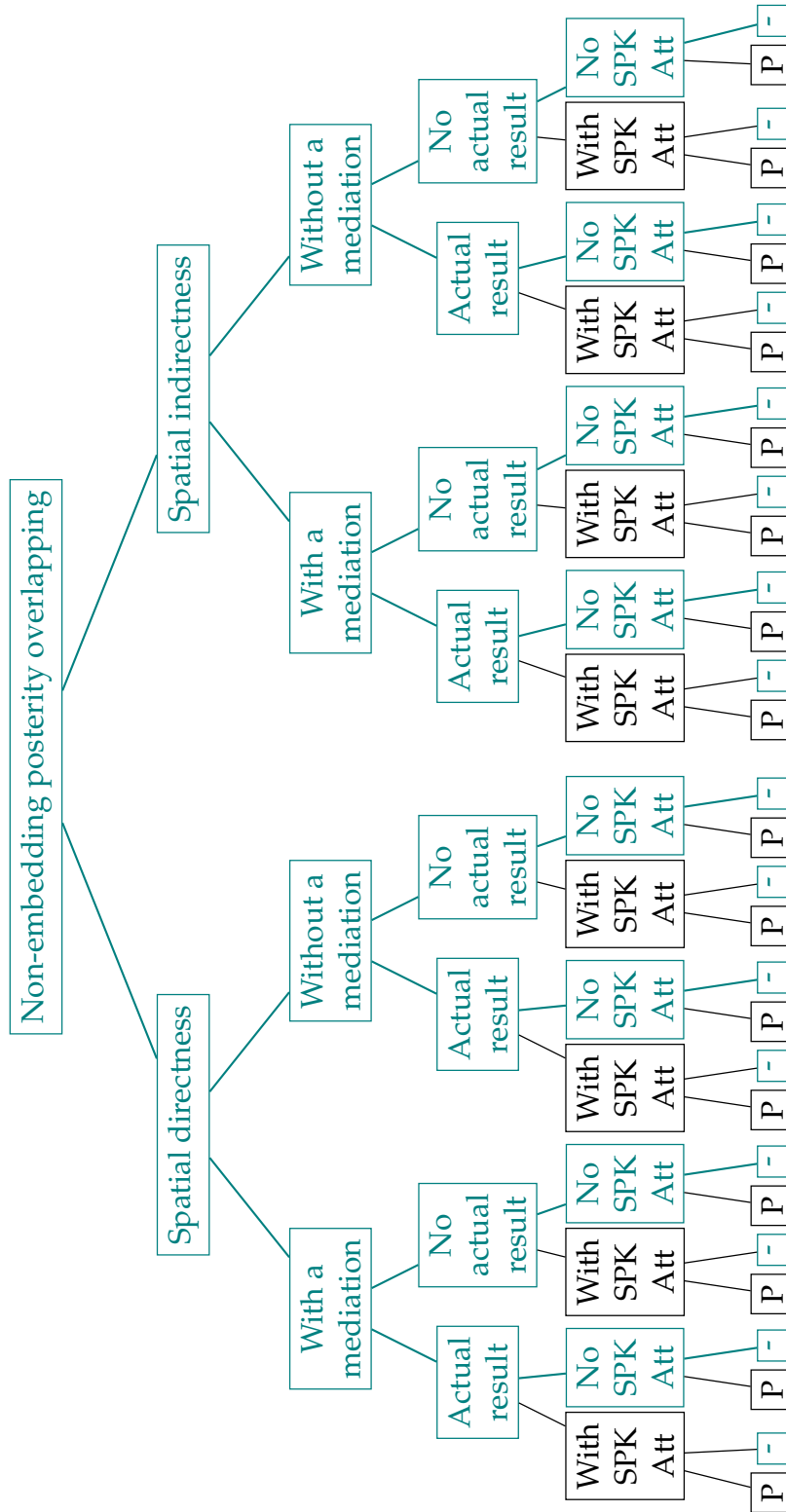


Figure E.7: Possible combinatory possibilities of the $kə$ -causative (part III: 8 possibilities)

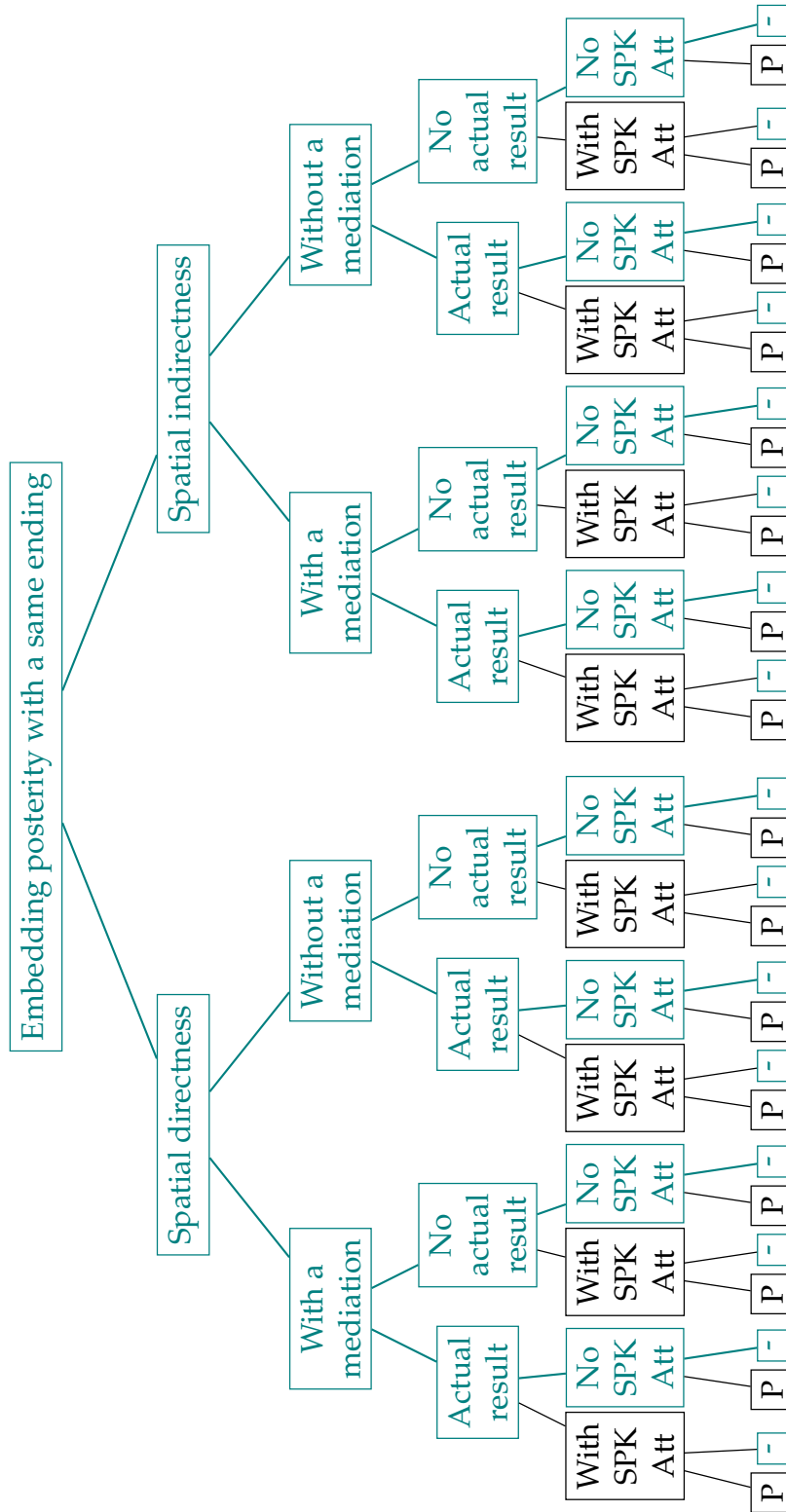


Figure E.8: Possible combinatory possibilities of the $kə$ -causative (part IV: 8 possibilities)

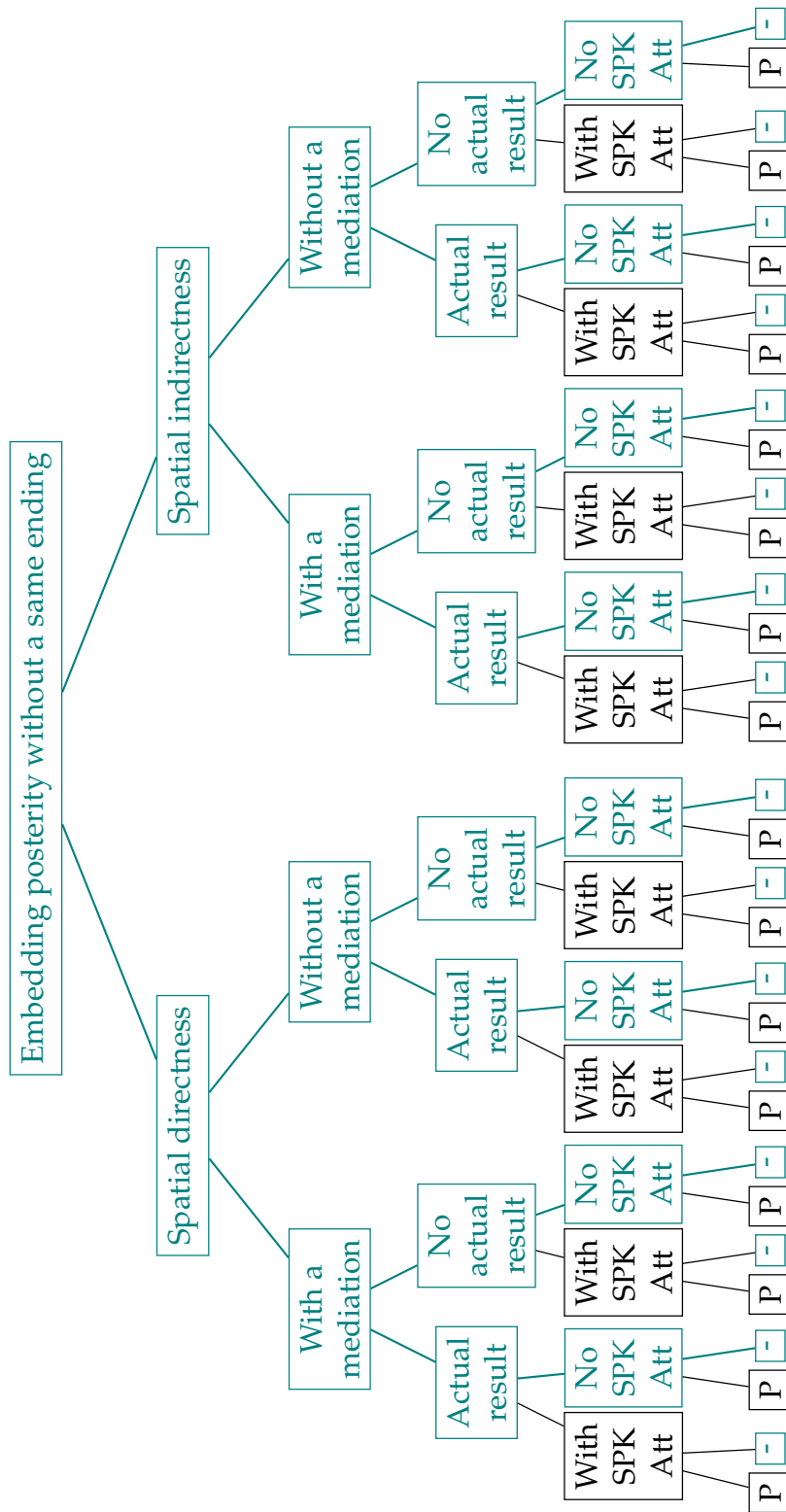


Figure E.9: Possible combinatory possibilities of the $k\epsilon$ -causative (part V: 8 possibilities)

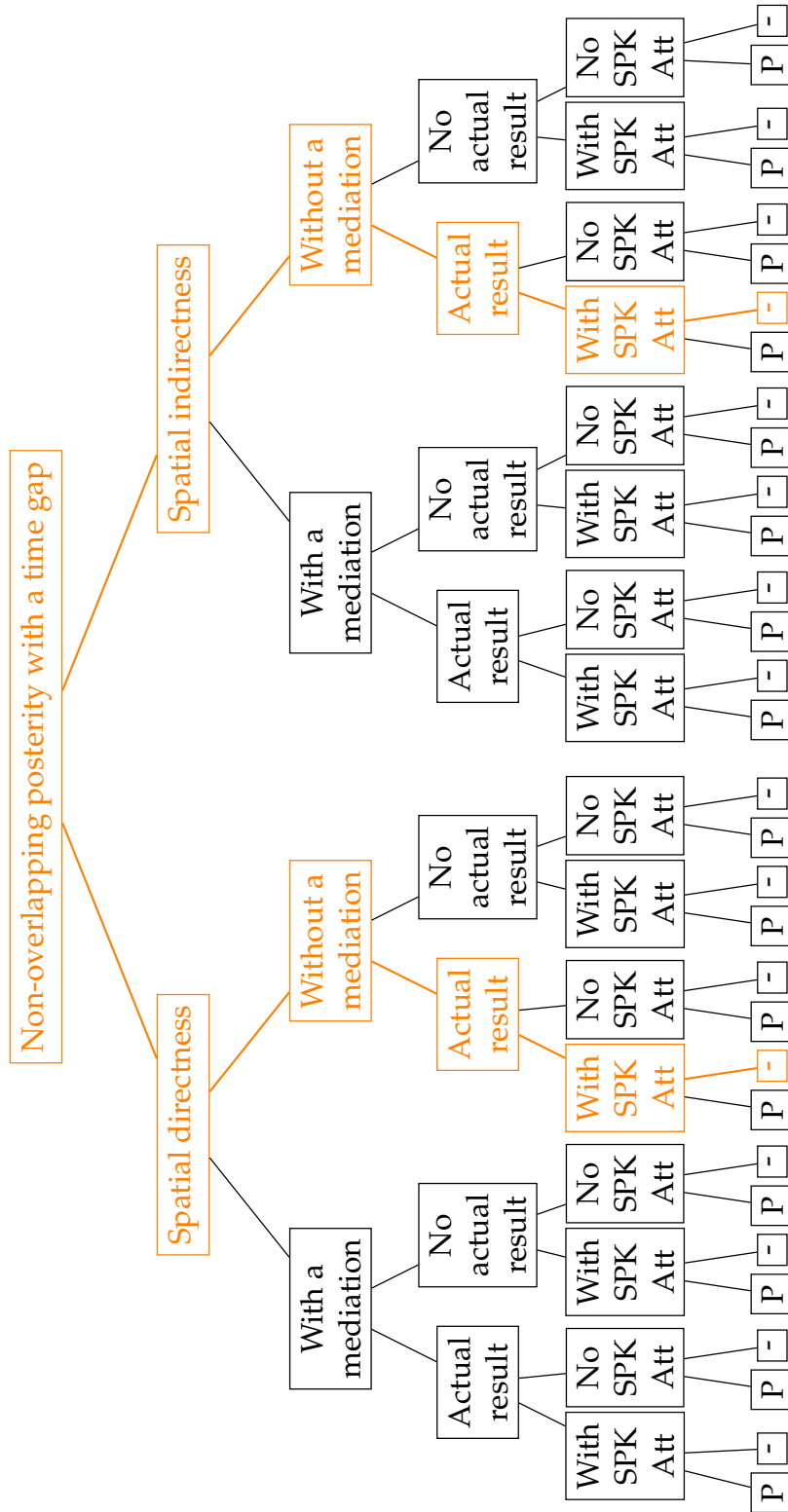


Figure E.10: Possible combinatory possibilities of the *hai*-causative (part I: 2 possibilities)

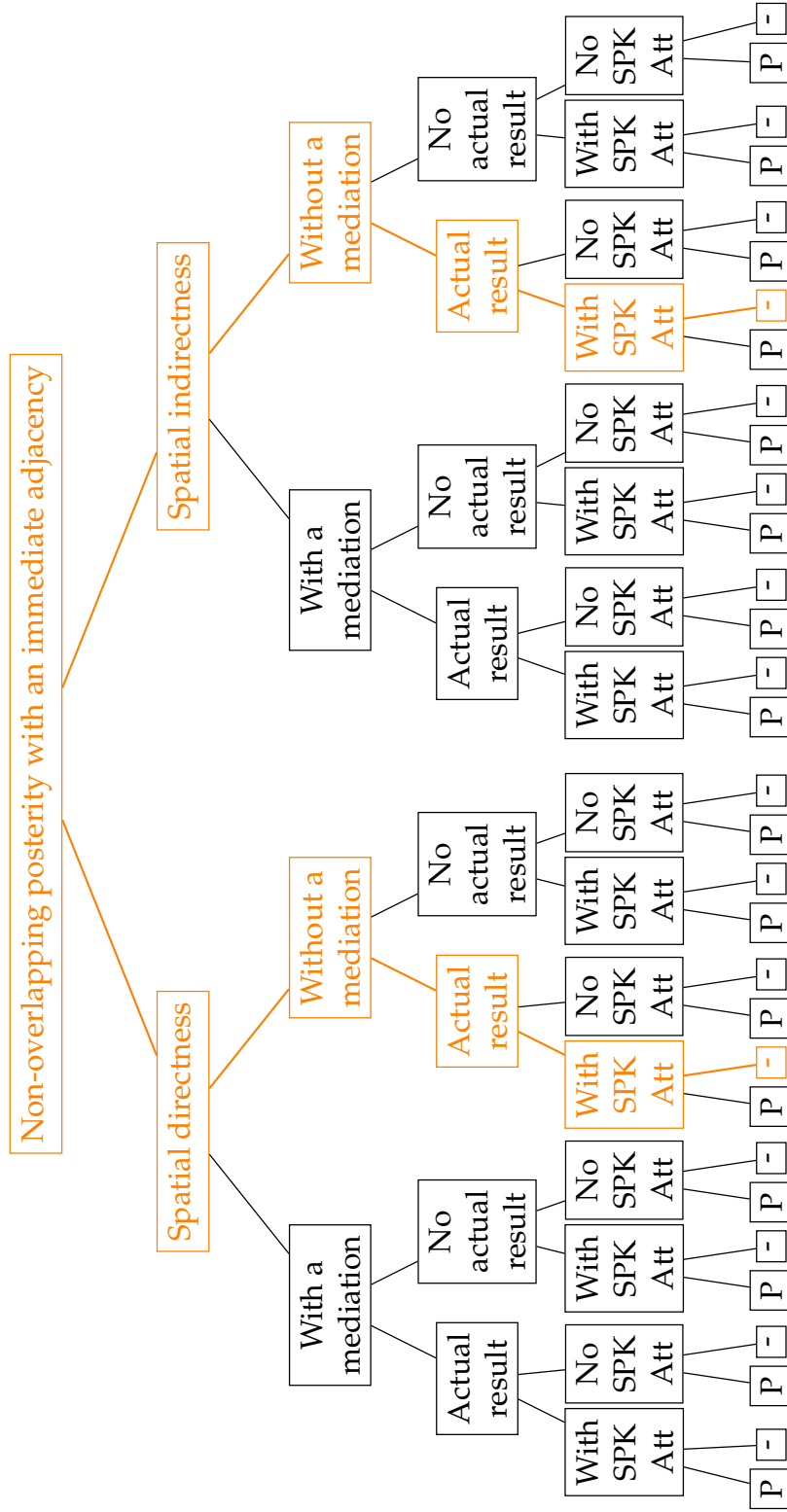


Figure E.11: Possible combinatory possibilities of the *hai*-causative (part II: 2 possibilities)

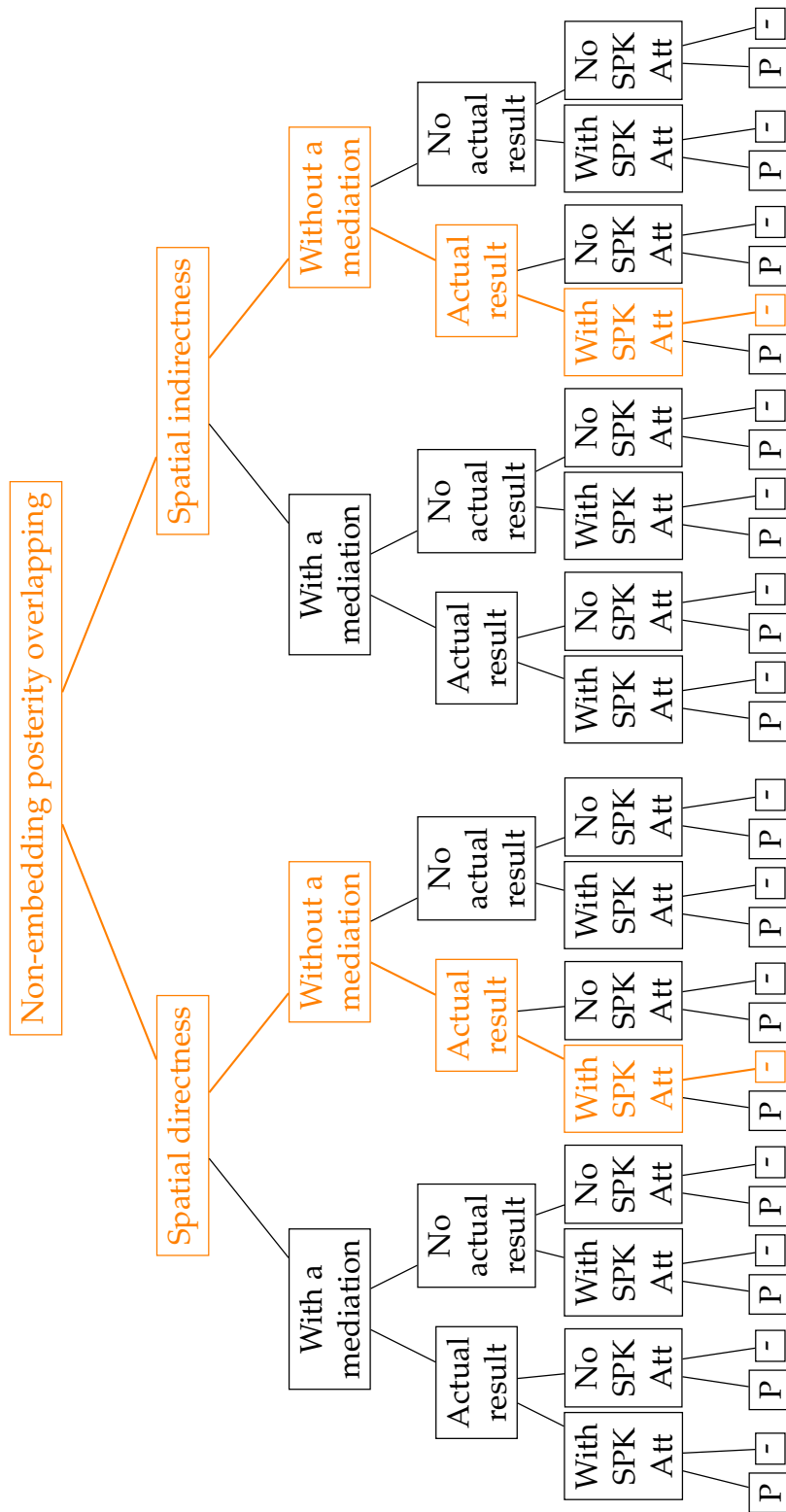


Figure E.12: Possible combinatory possibilities of the hai-causative (part III: 2 possibilities)

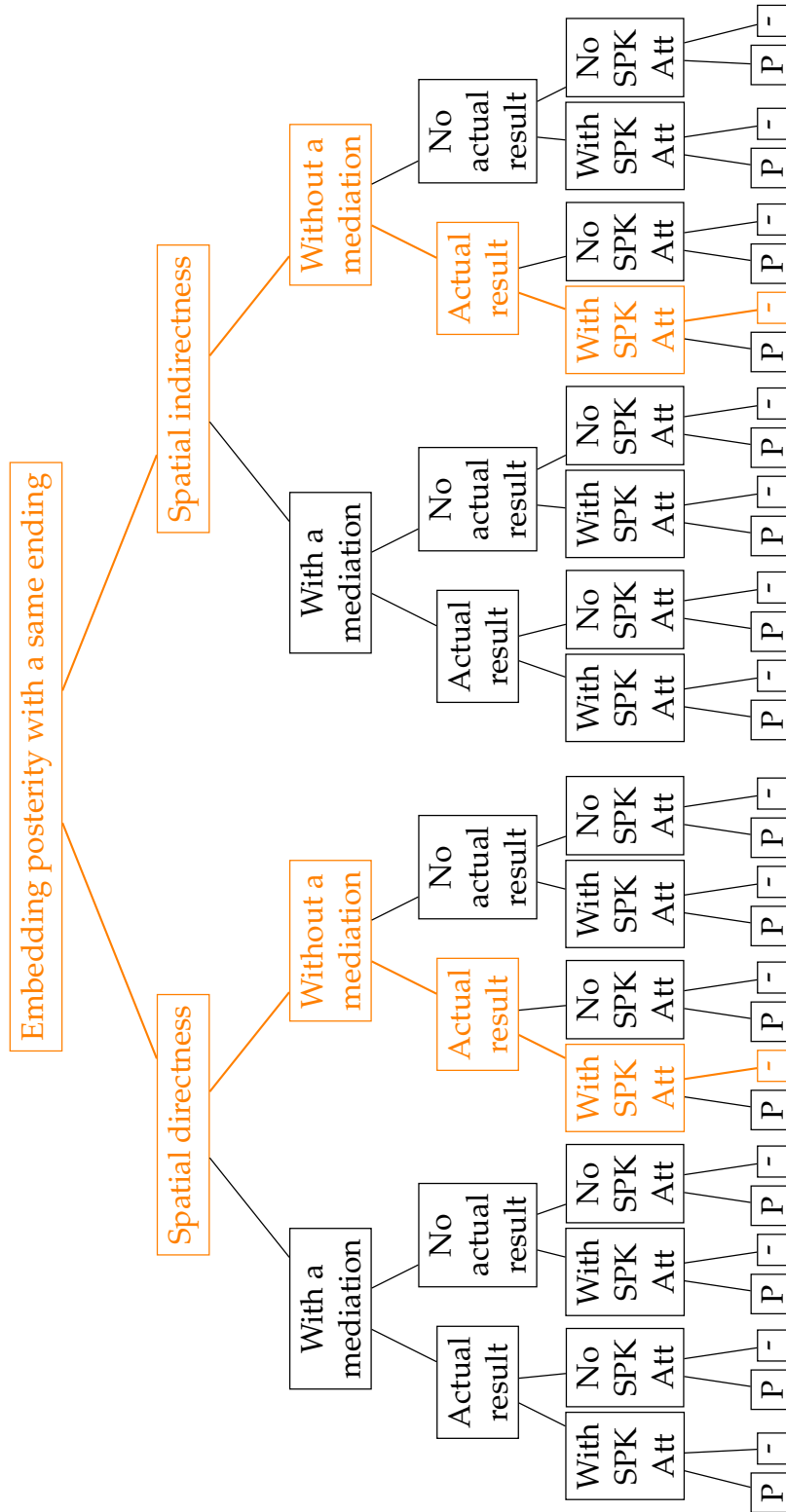


Figure E.13: Possible combinatory possibilities of the hai-causative (part IV: 2 possibilities)

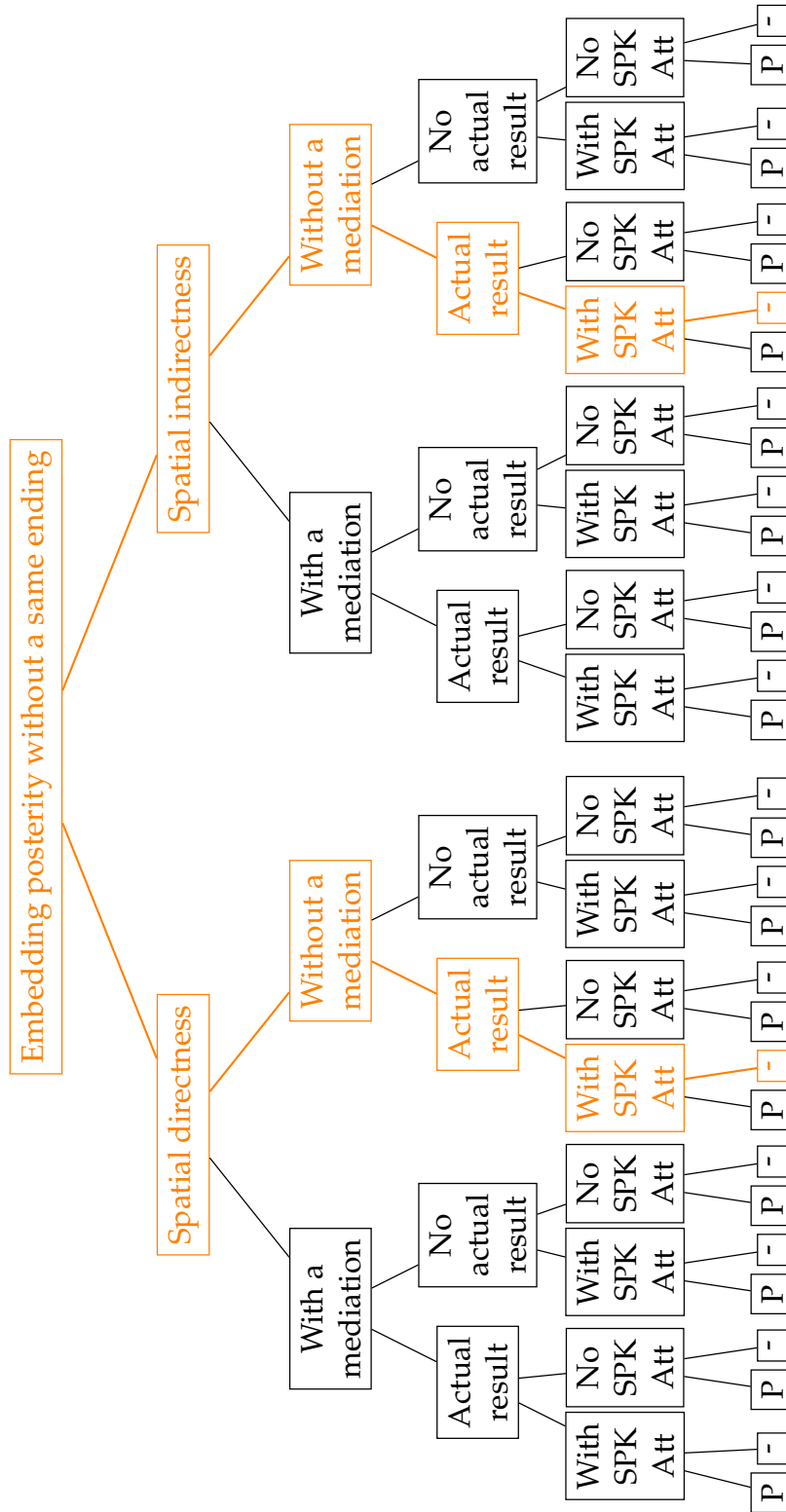


Figure E.14: Possible combinatory possibilities of the hai-causative (part V: 2 possibilities)

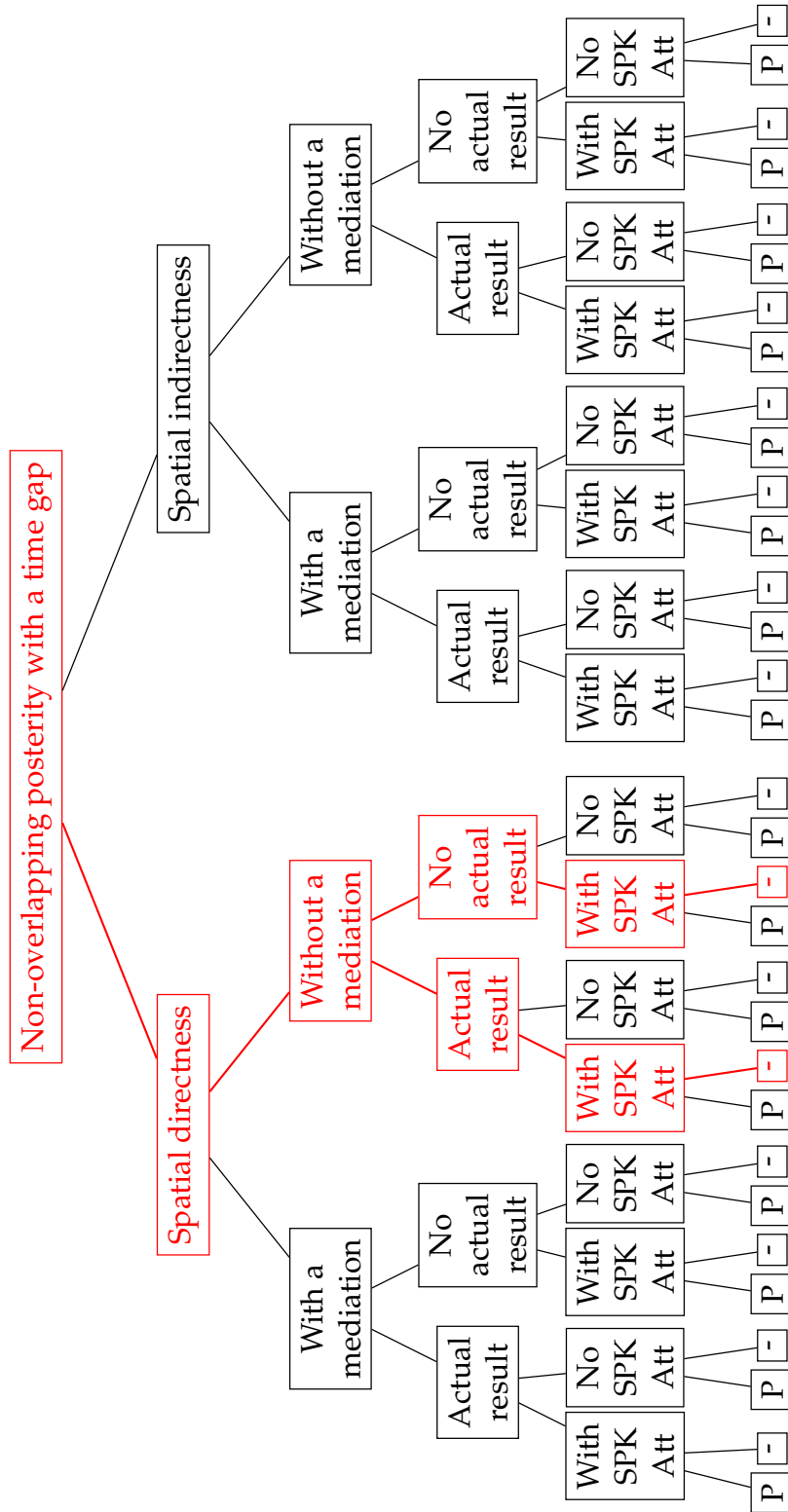


Figure E.15: Possible combinatory possibilities of the courteous *bun*-causative (part I: 2 possibilities)

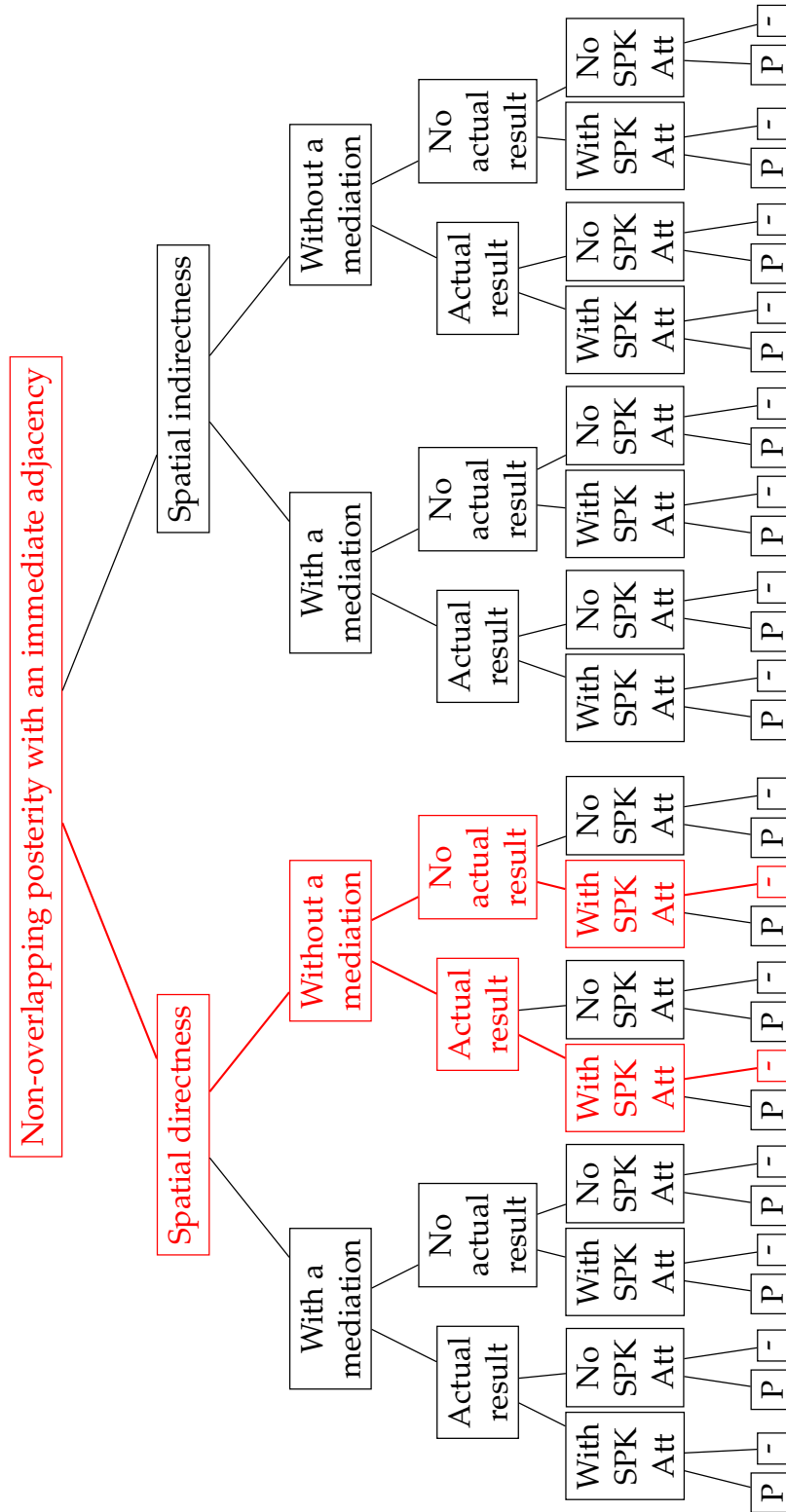


Figure E.16: Possible combinatory possibilities of the courteous *bun*-causative (part II: 2 possibilities)

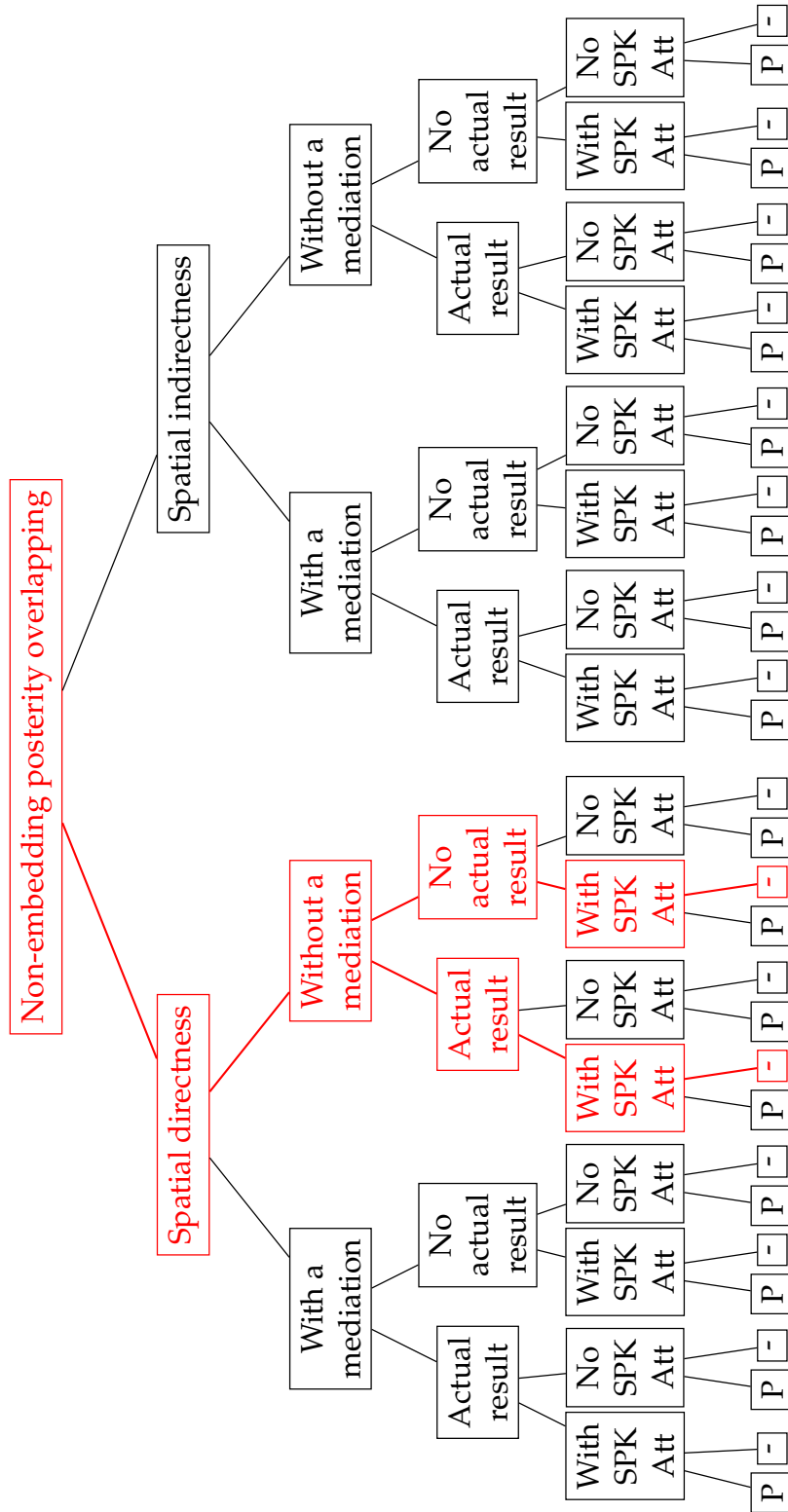


Figure E.17: Possible combinatory possibilities of the courteous *bun*-causative (part III: 2 possibilities)

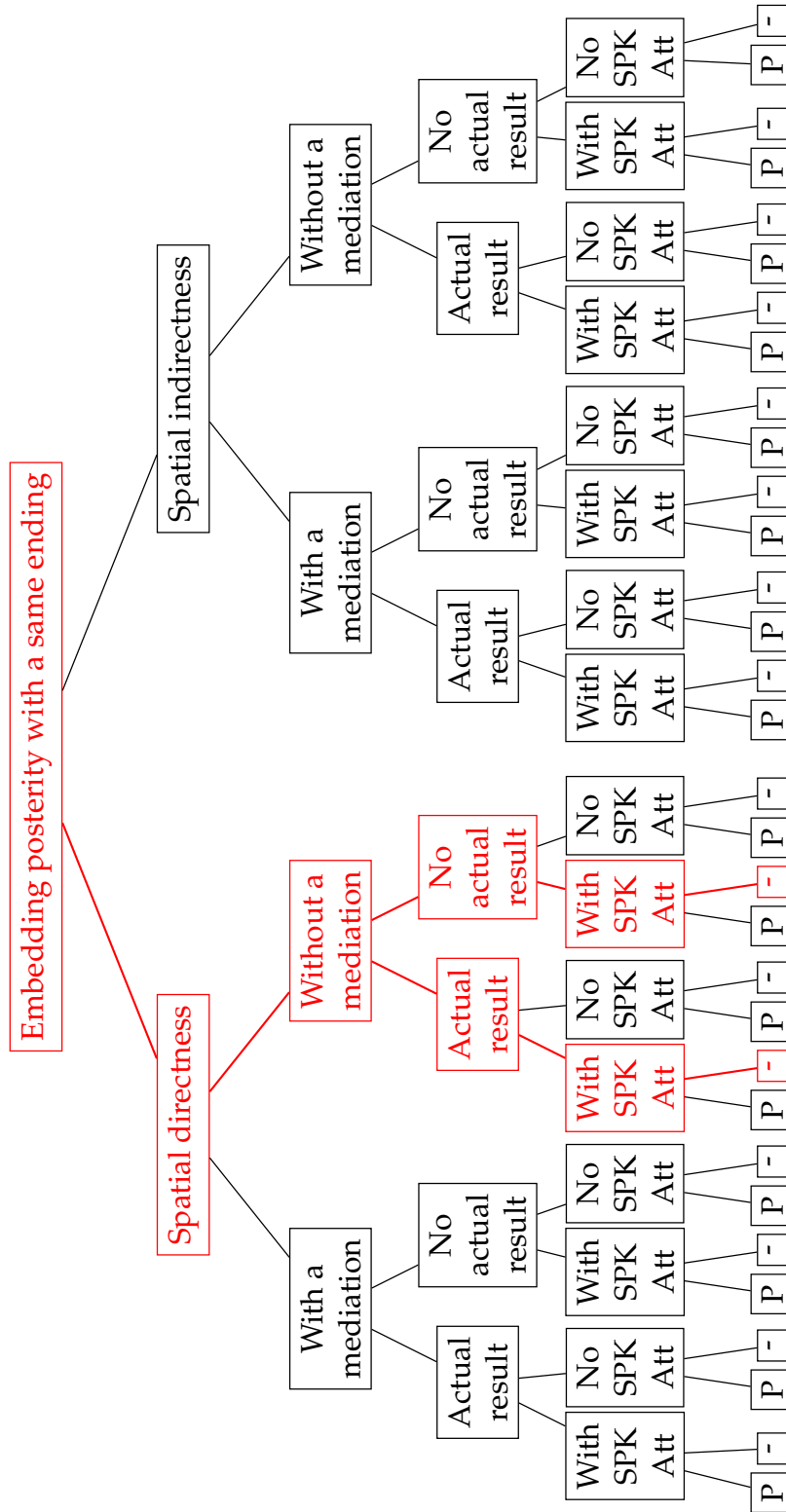


Figure E.18: Possible combinatory possibilities of the courteous *bun*-causative (part IV: 2 possibilities)

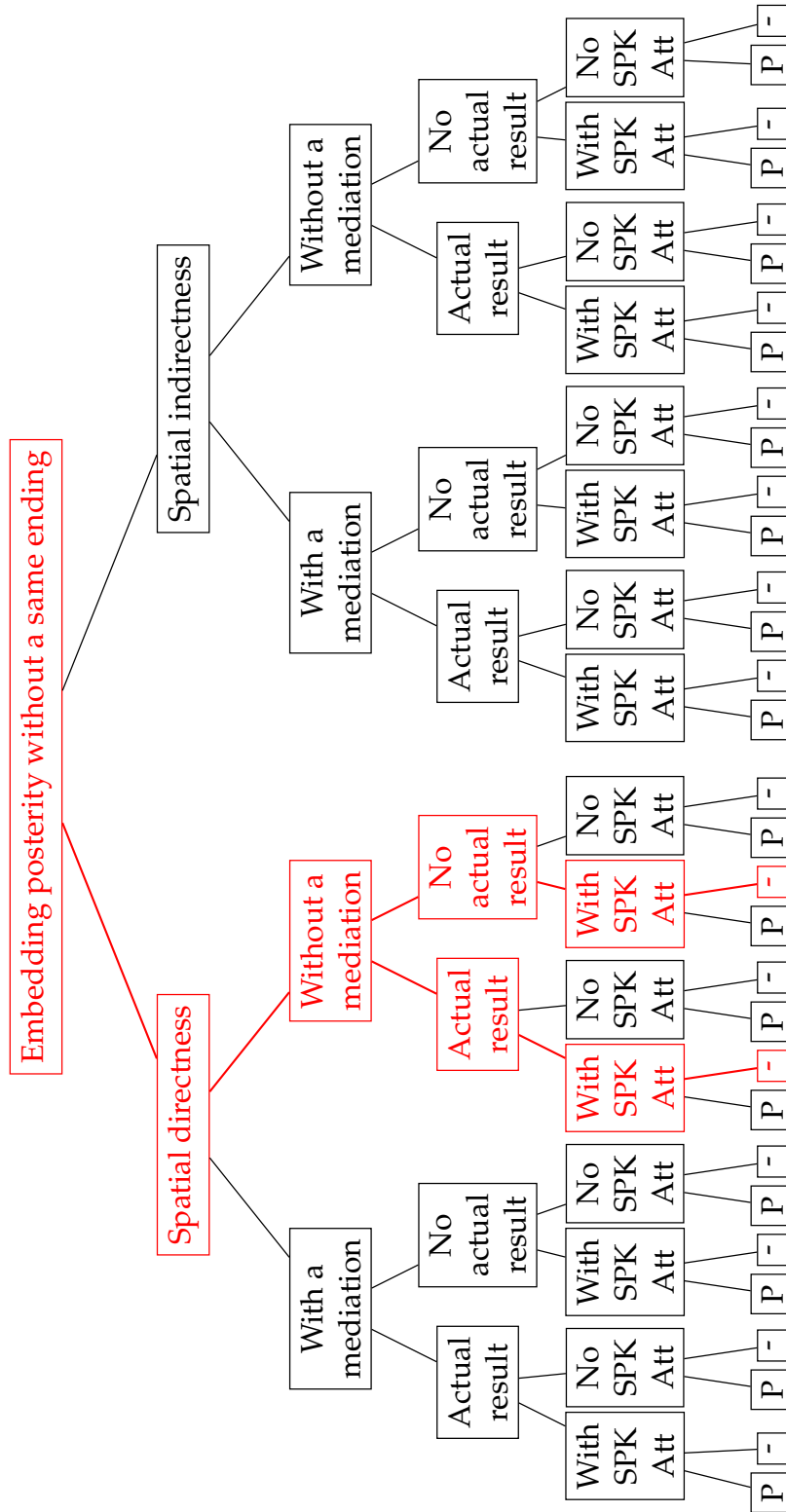


Figure E.19: Possible combinatory possibilities of the courteous *bun*-causative (part V: 2 possibilities)

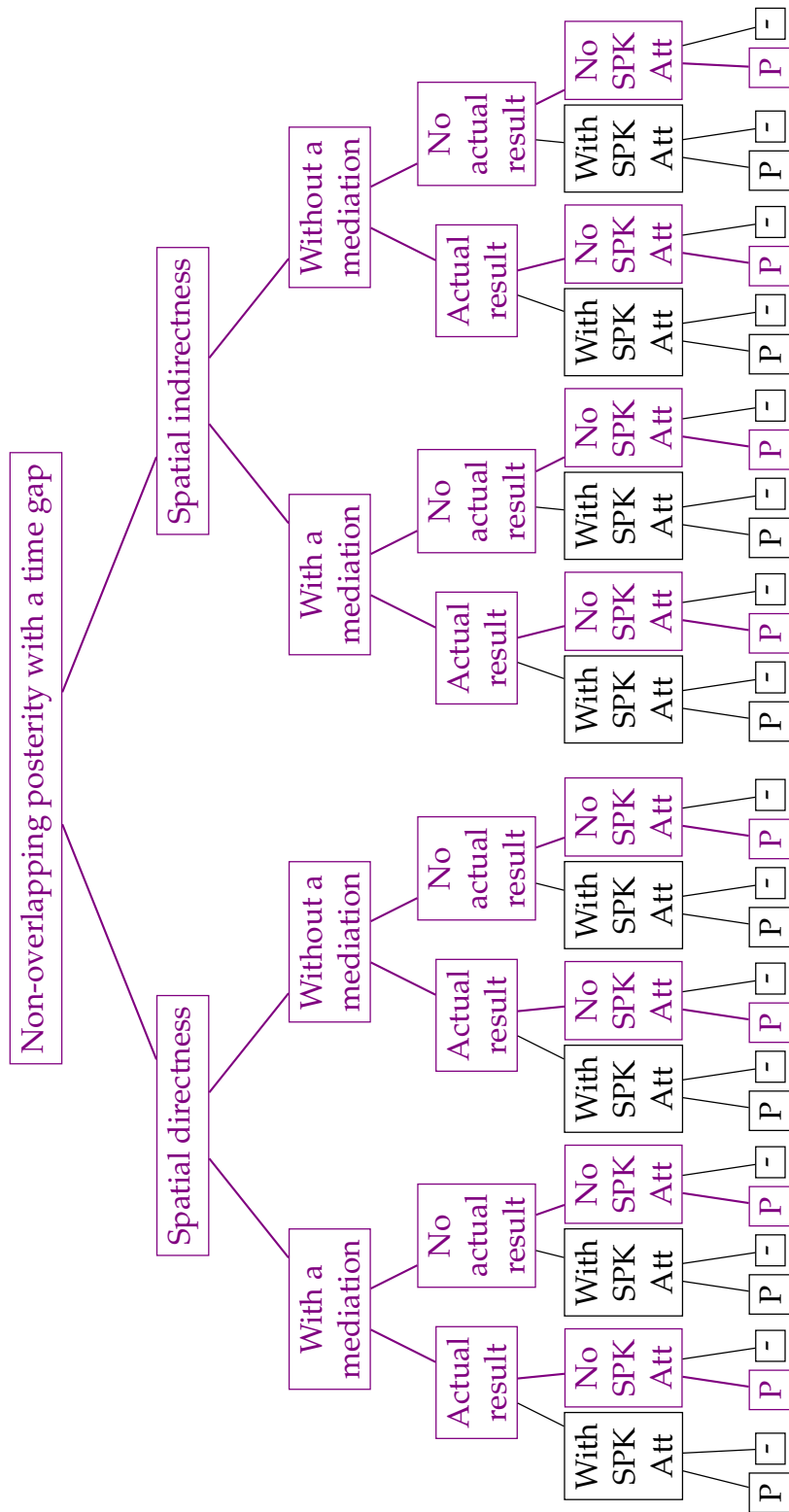


Figure E.20: Possible combinatory possibilities of the permissive *bun*-causatives (part I: 8 possibilities)

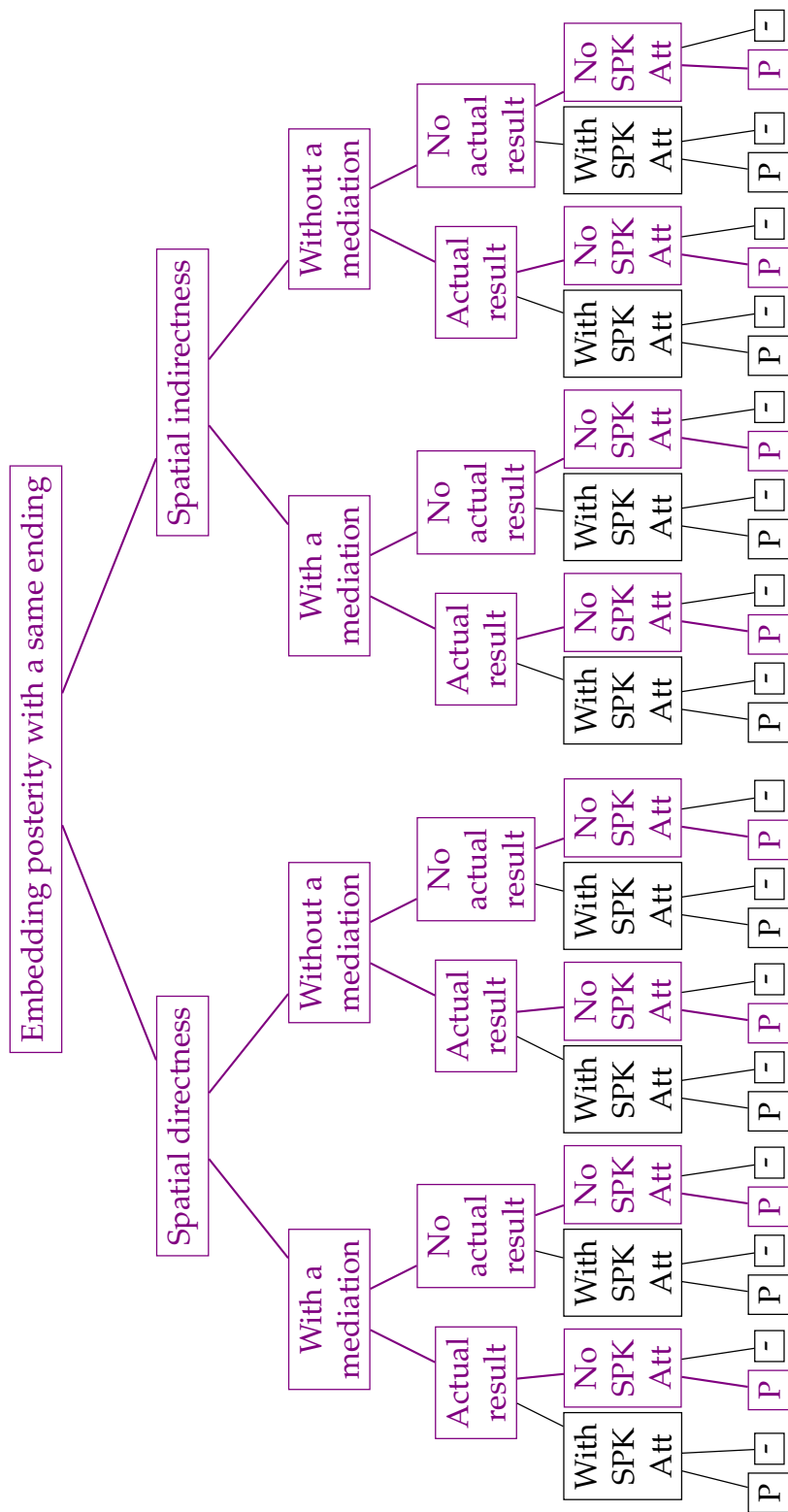


Figure E.23: Possible combinatory possibilities of the permissive *bun*-causatives (part IV: 8 possibilities)

APPENDIX F

COMPATIBILITY BETWEEN TEOCHEW CAUSEES AND ELEVEN MORE SO-CALLED AGENT-ORIENTED ADVERBS

As is shown in Table 6.4 (copied below), the compatibility between causees and different so-called agent-oriented adverbs varies across different periphrastic causatives.

Table F.1: Compatibility between causee and different so-called agent-oriented adverbs (repeated)

| Adverbs | <i>mue</i> | <i>hai</i> | <i>kə</i> | | courteous <i>bun</i> | | permissive <i>bun</i> | |
|--|------------|------------|-----------|-------|----------------------|-------|-----------------------|-------|
| | | | w/o c. | w/ c. | w/o c. | w/ c. | w/o c. | w/ c. |
| <i>uyise?gai</i> 'intentionally' | ✓ | ✓ | × | × | × | × | × | × |
| <i>tsuanmun</i> 'on purpose' | ✓ | ✓ | × | × | × | × | × | × |
| <i>guyigai</i> 'deliberately' | ✓ | ✓ | × | × | × | × | × | × |
| <i>uye?se?gai</i> 'consciously' | ✓ | ✓ | × | × | × | × | × | × |
| <i>uatsegai</i> 'quietly' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dziudziugai</i> 'gently' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>dzia?ts'enggai</i> 'enthusiastically' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>huahigai</i> 'with pleasure' | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| <i>tsəsoigai</i> 'carefully' | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| <i>simsimgai</i> 'patiently' | ✓ | ✓ | × | ?? | × | ?? | × | ?? |
| <i>tsaits'enggai</i> 'knowingly' | ✓ | ✓ | ? | ✓ | ? | ✓ | ? | ✓ |
| <i>ts'eng'uan</i> 'willingly' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>goigoi</i> 'readily' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>boyiue?gai</i> 'without hesitation' | ✓ | ✓ | ?? | ✓ | ?? | ✓ | ?? | ✓ |
| <i>mts'eng'uan</i> 'reluctantly' | ✓ | ✓ | × | ?? | × | × | × | × |

The rest of this section will illustrate all of the data collected from Teochew consultants.

Group 1: Adverbs *uyiseʔgai* ‘intentionally’, *tsuanmun* ‘on purpose’, *guyigai* ‘deliberately’ and *uyeʔseʔgai* ‘consciously’.

(460) (Context: the consultants know the singing event happens.)

- a. *Nangy mue Mimi uyiseʔgai/ tsuanmun/ guyigai/*
 Nangy make Mimi intentionally/ on.purpose/ deliberately/
uyeʔseʔgai ts'iang.
 consciously sing
 ‘Nangy causes Mimi to intentionally/deliberately/consciously sing (on purpose).’

(*mue*-causative)

- b. *Nangy hai Mimi uyiseʔgai/ tsuanmun/ guyigai/*
 Nangy hurt Mimi intentionally/ on.purpose/ deliberately/
uyeʔseʔgai ts'iang.
 consciously sing
 ‘Nangy causes Mimi to intentionally/deliberately/consciously sing (on purpose) (adversative).’

(*hai*-causative)

- c. * *Nangy kə Mimi uyiseʔgai/ tsuanmun/ guyigai/*
 Nangy give Mimi intentionally/ on.purpose/ deliberately/
uyeʔseʔgai ts'iang.
 consciously sing
 Intended: ‘Nangy causes Mimi to intentionally/deliberately/consciously sing (on purpose).’

(*kə*-causative)

- d. * *Nangy bun Mimi uyiseʔgai/ tsuanmun/ guyigai/*
 Nangy separate Mimi intentionally/ on.purpose/ deliberately/
uyeʔseʔgai ts'iang.
 consciously sing
 Intended: ‘Nangy causes Mimi to intentionally/deliberately/consciously sing (on purpose) by giving precedence to Mimi out of courtesy.’

(courteous *bun*-causative)

- e. * *Nangy bun Mimi uyiseʔgai/ tsuanmun/ guyigai/*
Nangy separate Mimi intentionally/ on.purpose/ deliberately/
uyeʔseʔgai ts'iang.
 consciously sing
 Intended: 'Nangy lets Mimi intentionally/deliberately/consciously
 sing (on purpose).'
- (permissive *bun*-causative)

Group 2: Adverbs *uatsegai* 'quietly', *dziudziugai* 'gently', *dziaʔts'enggai* 'enthusiastically' and *huahigai* 'with pleasure'.

(461) (Context: the consultants know the singing event happens.)

- a. *Nangy mue Mimi uatsegai/ dziudziugai/ dziaʔts'enggai/*
Nangy make Mimi quietly/ gently/ enthusiastically/
huahigai ts'iang.
 with.pleasure sing
 'Nangy causes Mimi to quietly/gently/enthusiastically sing (with pleasure).'
- (*mue*-causative)

- b. *Nangy hai Mimi uatsegai/ dziudziugai/ dziaʔts'enggai/*
Nangy hurt Mimi quietly/ gently/ enthusiastically/
huahigai ts'iang.
 with.pleasure sing
 'Nangy causes Mimi to quietly/gently/enthusiastically sing (with pleasure).'
- (*hai*-causative)

c. *Nangy kə Mimi uatsegai/ dziudziugai/ dziaʔts'enggai/*
 Nangy give Mimi quietly/ gently/ enthusiastically/
huahigai ts'iang.
 with.pleasure sing
 'Nangy causes Mimi to quietly/gently/enthusiastically sing (with pleasure) (adversative).'

(*kə*-causative)

d. *Nangy bun Mimi uatsegai/ dziudziugai/ dziaʔts'enggai/*
 Nangy separate Mimi quietly/ gently/
huahigai ts'iang.
 enthusiastically/ with.pleasure sing
 'Nangy causes Mimi to quietly/gently/enthusiastically sing (with pleasure) by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

e. *Nangy bun Mimi uatsegai/ dziudziugai/ dziaʔts'enggai/*
 Nangy separate Mimi quietly/ gently/ enthusiastically/
huahigai ts'iang.
 with.pleasure sing
 'Nangy lets Mimi quietly/gently/enthusiastically sing (with pleasure).'

(permissive *bun*-causative)

Group 3: Adverbs *tsəsoigai* 'carefully' and *simsimgai* 'patiently'.

(462) No context

a. *Nangy mue Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy make Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing.'

(*mue*-causative)

b. *Nangy hai Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy hurt Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing (adversative).'

(*hai*-causative)

- c. * *Nangy kə Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy give Mimi carefully/ patiently sing
 Intended: 'Nangy causes Mimi to carefully/patiently sing.'
 (kə-causative)
- d. * *Nangy bun Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy separate Mimi carefully/ patiently sing
 Intended: 'Nangy causes Mimi to carefully/patiently sing by giving
 precedence to Mimi out of courtesy.'
 (courteous *bun*-causative)
- e. * *Nangy bun Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy separate Mimi carefully/ patiently sing
 Intended: 'Nangy lets Mimi carefully/patiently sing.'
 (permissive *bun*-causative)

(463) Context: the consultants know the singing event happens.

- a. *Nangy mue Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy make Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing.'
 (*mue*-causative)
- b. *Nangy hai Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy hurt Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing (adversative).'
 (*hai*-causative)
- c. ?? *Nangy kə Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy give Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing.'
 (kə-causative)

d. ?? *Nangy bun Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy separate Mimi carefully/ patiently sing
 'Nangy causes Mimi to carefully/patiently sing by giving precedence
 to Mimi out of courtesy.'
 (courteous *bun*-causative)

e. ?? *Nangy bun Mimi tsəsoigai/ simsimgai ts'iang.*
 Nangy separate Mimi carefully/ patiently sing
 'Nangy lets Mimi carefully/patiently sing.'
 (permissive *bun*-causative)

Group 4: Adverb *tsaits'enggai* 'knowingly'

(464) No context

a. *Nangy mue Mimi tsaits'enggai ts'iang.*
 Nangy make Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing.'
 (*mue*-causative)

b. *Nangy hai Mimi tsaits'enggai ts'iang.*
 Nangy hurt Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing (adversative).'
 (*hai*-causative)

c. ? *Nangy kə Mimi tsaits'enggai ts'iang.*
 Nangy give Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing.'
 (*kə*-causative)

d. ? *Nangy bun Mimi tsaits'enggai ts'iang.*
 Nangy separate Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing by giving precedence to Mimi
 out of courtesy.'
 (courteous *bun*-causative)

- e. ? *Nangy bun Mimi tsaits'enggai ts'iang.*
 Nangy separate Mimi knowingly sing
 'Nangy lets Mimi knowingly sing.'

(permissive *bun*-causative)

(465) Context: the consultants know the singing event happens.

- a. *Nangy mue Mimi tsaits'enggai ts'iang.*
 Nangy make Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing.'

(*mue*-causative)

- b. *Nangy hai Mimi tsaits'enggai ts'iang.*
 Nangy hurt Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing (adversative).'

(*hai*-causative)

- c. *Nangy kə Mimi tsaits'enggai ts'iang.*
 Nangy give Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing.'

(*kə*-causative)

- d. *Nangy bun Mimi tsaits'enggai ts'iang.*
 Nangy separate Mimi knowingly sing
 'Nangy causes Mimi to knowingly sing by giving precedence to Mimi
 out of courtesy.'

(courteous *bun*-causative)

- e. *Nangy bun Mimi tsaits'enggai ts'iang.*
 Nangy separate Mimi knowingly sing
 'Nangy lets Mimi knowingly sing.'

(permissive *bun*-causative)

Group 5: Adverbs *ts'eng'uan* 'willingly', *goigoi* 'readily' and *boyiueʔgai* 'without hesitation'

(466) No context

- a. *Nangy mue Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
 Nangy make Mimi willingly/ readily/ without.hesitation sing
 'Nangy causes Mimi to willingly/readily sing (without hesitation).'
- (*mue*-causative)
- b. *Nangy hai Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
 Nangy hurt Mimi willingly/ readily/ without.hesitation sing
 'Nangy causes Mimi to willingly/readily sing (without hesitation)
 (adversative).'
- (*hai*-causative)
- c. ?? *Nangy kə Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
 Nangy give Mimi willingly/ readily/ without.hesitation sing
 'Nangy causes Mimi to willingly/readily sing (without hesitation).'
- (*kə*-causative)
- d. ?? *Nangy bun Mimi ts'eng'uan/ goigoi/ boyiueʔgai*
 Nangy separate Mimi willingly/ readily/ without.hesitation
ts'iang.
 sing
 'Nangy causes Mimi to willingly/readily sing (without hesitation) by
 giving precedence to Mimi out of courtesy.'
- (courteous *bun*-causative)
- e. ?? *Nangy bun Mimi ts'eng'uan/ goigoi/ boyiueʔgai*
 Nangy separate Mimi willingly/ readily/ without.hesitation
ts'iang.
 sing
 'Nangy lets Mimi willingly/readily sing (without hesitation).'
- (permissive *bun*-causative)

(467) Context: the consultants know the singing event happens.

- a. *Nangy mue Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
Nangy make Mimi willingly/ readily/ without.hesitation sing
'Nangy causes Mimi to willingly/readily sing (without hesitation).'
- (*mue*-causative)
- b. *Nangy hai Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
Nangy hurt Mimi willingly/ readily/ without.hesitation sing
'Nangy causes Mimi to willingly/readily sing (without hesitation)
(adversative).'
- (*hai*-causative)
- c. *Nangy kə Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
Nangy give Mimi willingly/ readily/ without.hesitation sing
'Nangy causes Mimi to willingly/readily sing (without hesitation).'
- (*kə*-causative)
- d. *Nangy bun Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
Nangy separate Mimi willingly/ readily/ without.hesitation sing
'Nangy causes Mimi to willingly/readily sing (without hesitation) by
giving precedence to Mimi out of courtesy.'
- (courteous *bun*-causative)
- e. *Nangy bun Mimi ts'eng'uan/ goigoi/ boyiueʔgai ts'iang.*
Nangy separate Mimi willingly/ readily/ without.hesitation sing
'Nangy lets Mimi willingly/readily sing (without hesitation).'
- (permissive *bun*-causative)

Group 6: Adverb *mts'eng'uan* 'reluctantly'

(468) No context

- a. *Nangy mue Mimi mts'eng'uan ts'iang.*
Nangy make Mimi reluctantly sing
'Nangy causes Mimi to reluctantly sing.'

(*mue*-causative)

- b. *Nangy hai Mimi mts'eng'uan ts'iang.*
Nangy hurt Mimi reluctantly sing
'Nangy causes Mimi to reluctantly sing (adversative).'

(*hai*-causative)

- c. * *Nangy kə Mimi mts'eng'uan ts'iang.*
Nangy give Mimi reluctantly sing
Intended: 'Nangy causes Mimi to reluctantly sing.'

(*kə*-causative)

- d. * *Nangy bun Mimi mts'eng'uan ts'iang.*
Nangy separate Mimi reluctantly sing
Intended: 'Nangy causes Mimi to reluctantly sing by giving precedence to Mimi out of courtesy.'

(courteous *bun*-causative)

- e. * *Nangy bun Mimi mts'eng'uan ts'iang.*
Nangy separate Mimi reluctantly sing
Intended: 'Nangy lets Mimi reluctantly sing.'

(permissive *bun*-causative)

(469) Context: the consultants know the singing event happens.

- a. *Nangy mue Mimi mts'eng'uan ts'iang.*
Nangy make Mimi reluctantly sing
'Nangy causes Mimi to reluctantly sing.'

(*mue*-causative)

- b. *Nangy hai Mimi mts'eng'uan ts'iang.*
 Nangy hurt Mimi reluctantly sing
 'Nangy causes Mimi to reluctantly sing (adversative).'
- (*hai*-causative)
- c. ?? *Nangy kə Mimi mts'eng'uan ts'iang.*
 Nangy give Mimi reluctantly sing
 'Nangy causes Mimi to reluctantly sing.'
- (*kə*-causative)
- d. * *Nangy bun Mimi mts'eng'uan ts'iang.*
 Nangy separate Mimi reluctantly sing
 Intended: 'Nangy causes Mimi to reluctantly sing by giving precedence
 to Mimi out of courtesy.'
- (courteous *bun*-causative)
- e. * *Nangy bun Mimi mts'eng'uan ts'iang.*
 Nangy separate Mimi reluctantly sing
 Intended: 'Nangy lets Mimi reluctantly sing.'
- (permissive *bun*-causative)

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