

Chapter IV

Analysis

Having reviewed the frameworks of directness, force-dynamic and transitivity, a combined model is provided for us to examine Mandarin causatives. Typologically causatives are composed of two major types: (1) Lexical causatives: They are also called “root causatives” with morphologically irregular causative verbs, such as *open*, *melt*. Mandarin lexical causatives contain causative verbs and resultative compounds. (2) Analytic (or syntactic, periphrastic) causatives: They denote complex constructions in which two events are included—one is the cause event and the other is the result, such as resultative constructions (Shibatani, 1976; Comrie, 1981; Lien, 1999). In Mandarin, periphrastic causatives usually employ causative morpheme like 使 *shi*, 令 *ling*, 讓 *rang*, 叫 *jiao*₁, and 教 *jiao*₂ plus transitive or intransitive verbs to form periphrastic causatives. The meanings of these causative markers are investigated in Zhang (2006). 使 *shi* and 令 *ling* are the most typical causative verbs and their degrees of causation are the strongest. The difference between them is that 使 *shi* usually means ‘to command’ and 令 *ling* usually entails ‘to verbally cause somebody to do something.’ In addition, the

causativity of 叫 *jiao*₁ and 教 *jiao*₂ is less than 使 *shi* and 令 *ling* because 叫 *jiao*₁ and 教 *jiao*₂ can indicate causative and permissive meaning. The distinction between them is that 教 *jiao*₂ is used a causative in the earlier stages such as from the Tang to the Ming dynasty but 叫 *jiao*₁ appears frequently in the Qing dynasty. 叫 *jiao*₁ replaces 教 *jiao*₂ when they are both indicate the causative meaning. Furthermore, because 讓 *rang* constructions allow both causative and permissive readings, the causativity of *rang* constructions are lower than 使 *shi* or 令 *ling* constructions. The reason for there being less causativity is that they are grammaticalized not from causative verbs, but from meanings such as ‘giving orders.’ In short, Zhang suggest that the degree of causativity is related to the original meaning of these causative markers. Finally, since the resultative constructions of Mandarin are an enormous family, we leave them for further discussion.

In this chapter, Mandarin causatives will be examined according to degree of causativity. Section 4.1 demonstrates sentences with a high degree of causativity. Section 4.2 deals with causatives with a comparably lower degree of causativity than the sentences in the previous section. This part is divided into two main parts—causative verbs and causative constructions. Since the periphrastic constructions are so complex, they are further separated into three subsections

involving mental state, animate agents and patients, and other constructions. Last, Section 4.3 presents causatives with a degree of low causativity.

4.1 High causativity

High causativity is a collection of various features. Take the following sentence as an example.

(1) 小明暴力地撞倒了小新。

Xiaoming baolidi zhuangdao le Xiaoxin.

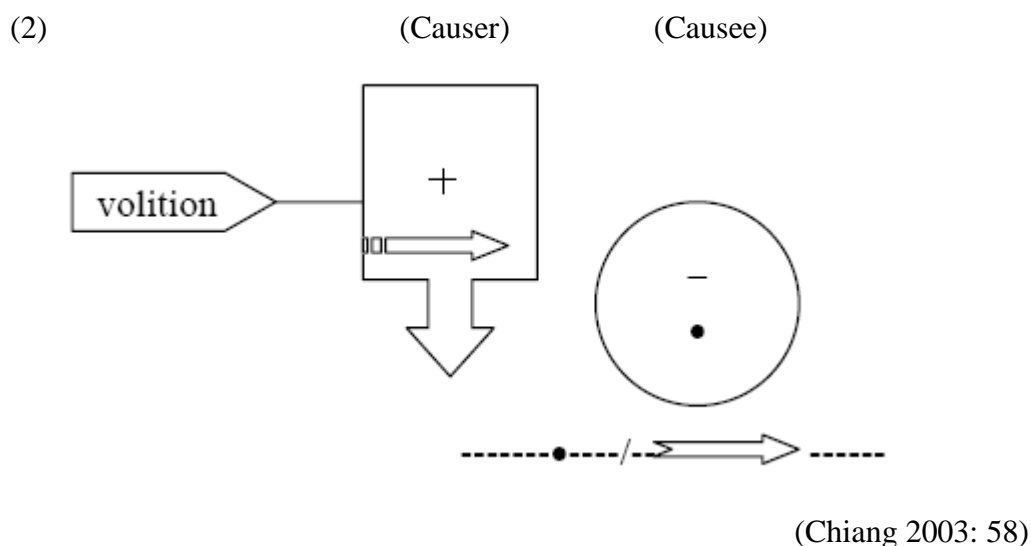
Xiaoming violently bump fall ASP Xiaoxin.

‘Xiaoming violently bumped into Xiaoxin.’

Example (1) will now be studied according to the framework respectively.

First of all, this sentence is of direct causation. Specifically, the action is accomplished at one moment so that the causing and the caused events belong to the same spatio-temporal frame. Moreover, no intervening causer performs the action. The causee fell down only because the causer bumped into him. Therefore, this sentence is a typical example of direct causation.

Next, concerning the force-dynamics dimension, this example belongs to the type in which the agonist is stronger than the antagonist, so the agonist performs the action successfully by overcoming the resistance of the antagonist. The adverb *baolidi* ‘violently’ also describes the volitional nature of the action and the force of the causer. The action can be presented by the diagram that follows.

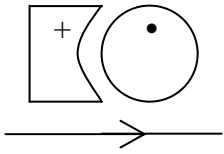


In this chart, the square stands for the causer or the antagonist with volition to hit the causee. In addition, the causer intends to move or to affect the causee with a relatively stronger force. The marker “+” in the square represents the resistance force of the causer. However, its strength is weaker (-) than the causer (+), so the causee is forced to move or to be affected. The arrow at the right hand of the slash is a symbol of the result. This situation is a prototypical onset causation pattern (Talmy 2000). Furthermore, this type of causation has the highest degree of causativity among the four kinds of force-dynamic pattern which were discussed in Chapter III.

Finally, with regard to the dimension of transitivity, (1) is a typical sentence with a high degree of transitivity. More specifically, the sentence contains two participants—*Xiaoming* and *Xiaoxin*. Moreover, the action *zhuangdao* is punctual, and the aspect marker “*le*” indicates that it is perfective and telic. Since it is telic,

the mode of the sentence is realis. As for the features of the subject and object, the subject is volitional and high in potency while the object is totally affected and highly individuated. The adverb 暴力地 *baolidi* ‘violently’ can be interpreted as the manner of the action and the will of the subject. Therefore, the adverb here is evidence of volitionality. As a result, this sentence satisfies all of the conditions of a high degree of transitivity.

(2) The causativity of (1) ‘*Xiaoming baolidi zhuangdao le Xiaoxin.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	√
		Agency	√
		Affectedness of O	√
		Individuation of O	√

(1) exemplifies causation with a high degree of causativity because of its directness, strong force and a high degree of transitivity. Moreover, it is a lexical causative. A question may arise as to if any Mandarin causative constructions achieve high causativity. Some constructions indeed appear to be high in transitivity because of the presence of animate agents, animate patients or transitive verbs. A detailed analysis will be presented in Section 4.2.2.

4.2 Intermediate causativity

This section deals with the sentences with a relatively lower degree of causativity than those in Section 4.1. The examples will be discussed depending on the nature of the causative forms with a check as to if all causatives can appear in this phase and also an outline of what their features are.

4.2.1 Lexical causatives in Mandarin

First of all, (3) is a related example of (1), and the investigation of the causativity of (3) is provided here to see if the causativity of the two examples is different or not.

(3) 小明不小心撞倒了小新。

Xiaoming buxiaoxin zhuangdao le Xiaoxin.

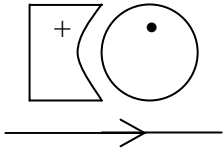
Xiaoming unintentionally trip over ASP Xiaoxin

‘*Xiaoming tripped over Xiaoxin unintentionally.*’

Example (3) still demonstrates a high degree of force-dynamics and directness.

The sentence includes the transitivity features such as that there are participants, kinesis, aspect, punctuality, affirmation, relis, agency, and total affectedness of O and high individuation of O. However, compared to (1), the adverb 不小心 *buxiaoxin* ‘unintentionally’ replaced the adverb 暴力地 *baolidi* ‘violently.’ Therefore, the feature of volitionality is erased in this sentence and this weakens the degree of the causativity of the sentence.

(4) The causativity of (3) ‘*Xiaoming buxiaoxin zhuangdao le Xiaoxin.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	√
		Affectedness of O	√
		Individuation of O	√

A point that may be noted is that these directness and force-dynamics are highly correlated to the verb. Since the semantic features of 撞倒 “*zhuangdao*” ‘trip over’ is telic and punctual, the verb is designated as direct and force dynamic.

The following are more examples with a comparatively lower degree of causativity.

(5) 小明撞到了花盆

Xiaoming zhuangdao le huapen.

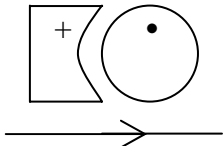
Xiaoming bump arrive ASP flowerpot

‘*Xiaoming* bump against a flowerpot.’

The features of force-dynamics and directness are the same as with (1) and (4). In the same way, the verb decides two features of causativity—directness and force-dynamics. However, in (5), the object is a flowerpot, and it is not animate or referential, so it is not highly individuated. Furthermore, (5) can be interpreted as an accident, so the agent is non-volitional. There is a linguistic test to check this feature—by interrogatives. For example, (5) should be the answer to the question

of “What happened to *Xiaoming*?” rather than “What did *Xiaoming* do?” The former question entails the unwillingness of the agent while the later one implies the volition of the doer. (6) presents the whole information of example (5) and it displays a lower degree of causativity than previous examples.

(6) The causativity of (5) ‘*Xiaoming zhuangdao le huapen.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	√
		Affectedness of O	√
		Individuation of O	X

(7) 小明累壞了自己的身體。

Xiaoming leihuai le ziji de shenti

Xiaoming exhaust ASP self POSS body

‘*Xiaoming* burned himself out.’

In (7), the object is *Xiaoming*’s body, but it indicates *Xiaoming* himself. According to Hopper and Thompson (1980), the reflexive is a form of intermediate individuation. In other words, there is less individuation for the reflexive than for an independent animate object, but more individuation than for an inanimate object. Moreover, *Xiaoming* as an agent are with agency and volitionality to control the event. That *Xiaoming* is working hard may be the direct cause of the exhaustion. However, the verb 累壞 *leihuai* ‘exhaust’ is durative because to

achieve the result of exhaustion requires an accumulation of tiredness. Therefore, the directness of (7) is less than the punctual action, but the spatial frame of the causing and caused event are still the same. In addition, the aspect marker 了 “le” indicates the telic state of the verb. In short, (7) is still a sentence with a high degree of transitivity, and the detailed analysis of causativity is presented as in (8).

(8) The causativity of (7) ‘*Xiaoming leihuai le ziji de shenti.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	√
		Affectedness of O	√
		Individuation of O	X

(9) 老師縮小考試的範圍

Laoshi suoxiao kaoshi de fanwei.

Teacher narrow test POSS scope

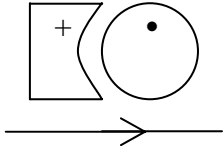
‘The teacher narrowed down the scope of the test.’

Based on (9), firstly, the agent of this sentence is volitional and high in potency.

Next, the patient is partially affected but not totally affected since the teacher just narrowed down rather than changed the scope. Moreover, the scope of the test is abstract, inanimate, and mass, so it is non-individuated. Third, the features of the verb 縮小 *suoxiao* ‘narrow down’ in (9) are non-active, atelic and punctual and

this verb cannot transmit action onto the object, in fact it just changes the state of the object. Furthermore, once the teacher decides the scope of the test, then the action is accomplished, and it may happen within one moment. As for the directness and force-dynamic patterns, since the teacher can perform the act directly, immediately, and without obstacles, the event exemplifies the features of directness and onset causation pattern. The causativity of (9) is presented in (10).

(10) The causativity of (9) ‘*Laoshi suoxiao kaoshi de fanwei.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	X
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	√
		Agency	√
		Affectedness of O	X
		Individuation of O	X

Previous examples demonstrate how to calculate the causativity when the subject is animate and the verb is punctual and telic. The following are examples of inanimate subject and object. Dowty (1991) proposes a famous model—subject hierarchy. The theory demonstrates the preferable semantic roles to the subject position. The priority role is agent, and it is followed by instrument/ experiencer, patient, source/goal. The importance of the study shows that it is common for subject positions to be occupied by roles other than agents. In addition, Teng

(1981) indicates that two widespread categories of nouns may appear in the subject position of Mandarin. They are natural force and instrument.

(11) 強風吹倒了花盆。

Qiangfeng chuedao le huapen.

Strong wind blow-fall ASP flowerpot.

‘A strong wind made a flowerpot fall over.’

In (11), the causer, a strong wind, is a natural force. Based on Teng’s analysis

(1981), a natural force such as the wind, the flood, or the earthquakes is viewed as

an agent and entails potency. Moreover, according to Hopper and Thompson

(1980), potency is an important element for an agent, but not the only defining

feature. Specifically, they regard that a human agent is higher in potency than a

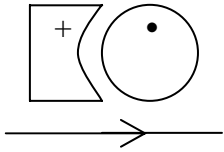
nonhuman agent. Here “the wind” is adopted as an agent, which is unquestionable

but its potency is lower than that of an animate agent. As a result, the agent and

the patient are non-volitional and inanimate. After the features of the subject and

the object are examined, the result of the causativity of (11) is presented as (12).

(12) The causativity of (11) ‘*Qiangfeng chuedao le huapen.*’

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

The examples listed above demonstrate regular argument-function mapping. In other words, the agent occupies the subject position and the patient role is in the object position. Consequently, it is easier and less problematic to examine them based on the transitivity framework. Based on Dowty (1991) and Teng (1981), instruments are common subjects. However, usually an instrument is not a required argument for a verb and it cannot play the agent role.

(13) 炸彈炸開了門。

Zhadan zhakai le men.

Bomb explode-open ASP door.

‘A bomb blasted the door open.’

(13) is a causative because it contains two events. The causing event is that a bomb exploded and the caused event is the door opened. The subject, a bomb, is rather an instrument than an agent of (13). In addition, the instrument is an external argument, so this is an unergative sentence. The actor of this sentence should be an indefinite person with volition to set the bomb, so as to cause the explosion to make the door open. Firstly, this sentence should be direct causation if the agent volitionally set the bomb. Moreover, there is no intervening causer between the causing and the caused event. Additionally, the force-dynamics of (13) is identical with previous examples.

Concerning transitivity, although Hopper and Thompson (1980) did not deal with the problem of implicit agent, we can analogize from the similar

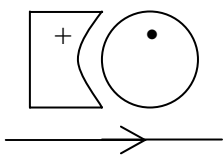
constructions. Many linguists have paid attention to the transitivity of agent demoting constructions such as passives, impersonal constructions, and ergative/unergative sentences. Kalinina et al. (2006) illustrate that in Mari, a special suffix is used to mark that unergative is semantically high in transitivity, but that it does not show up at the surface syntactic structure. In the similar way, Levin and Rappaport (1994) examine English causative verbs and discuss the causative/ergative alternation such as *The vase broke./Antonia broke the vase*. They propose that such examples undergo a process of de-transitivization since the agent is depressed. The difference between “The vase broke” and “A bomb made the door explode” is that “the vase” is an internal argument but “a bomb” is an external argument. On the contrary, the similarity of the two sentences is that both agents are animate and depressed. As for Mandarin, there is no morphological marker as in Mari to identify the transitivity. Moreover, it is also grammatical for Mandarin to express the agent overtly. Compared with (13), (14) is more transitive for expressing the agent overtly.

- (14) 我用炸彈炸開了門。
Wo yong zhadan zhakai le men.
 I use bomb explode-open ASP door.
 ‘I used a bomb to explode the door’

Therefore, in the situation that speakers choose (13) instead of (14), representing the syntactical detransitivization. Finally, the transitivity features of (13) include

kinesis, aspect, affirmation, mode, punctuality, and affectedness of O.

(15) The causativity of (13) ‘*Zhadan zhakai le men.*’

Directness		Transitivity	
Direct	√	Participants	X
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

(16) 飢荒造成了大批人南遷。

Jihuang zaocheng le dapiren nanqian.

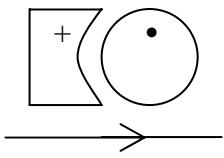
Famine cause ASP great number of people southward migrate

‘The famine caused a great number of people to migrate southward.’

The subject 飢荒 “*jihuang*” ‘the famine’ is a natural disaster, and it is the direct cause to force the second event “a great number of people migrated southward” to happen. Without the famine, the people would not have moved. Therefore, this sentence is a typical causative sentence. However, the famine may have caused people to move within a short time span or after a long time. If the people moved right away after the famine, then the effect is more one of direct causation. If they did not move immediately, then the relationship between the cause and the effect will be looser and become one of indirect causation. Additionally, the famine, as a subject or an agent, is non-volitional and low in

potency. The action “migrate” may take a long time to complete, so it is durative and atelic. Moreover, the patient is “a great number of people” with the features of common, animate, plural, mass and non-referential. Although human is a key feature of individuated, the patient, without other supportive features, leans toward the end of non-individuated. Therefore, the features of the patient are non-individuated but affected.

(17) The causativity of (16) ‘*Jihuang zaocheng le dapiren nanqian.*’

Directness		Transitivity	
Direct		Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	X
Supervision		Affirmation	√
Indirect	√	Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

In conclusion, this section has provided an analysis of Mandarin causative verbs. In the example (3), (5) and (7), we changed different subjects and objects to observe the degree of their change in causativity. The results display that causative verbs also allow the indirect causation and less transitivity. Nevertheless, they share a lot of common points, such as action, telic, punctual, and perfective. Moreover, the force-dynamic pattern is restricted to onset causation, the prototypical strong force. These characteristics may be helpful to differentiate

lexical causatives from periphrastic causatives.

4.2.2 Periphrastic Causatives in Mandarin

The study of Mandarin periphrastic causatives is complicated because of their variety of semantics and constructions (Jiang, 2003; Chang, 2006). For example, most of these constructions show a correlation with passives. However, passives are excluded from this study and the focus of this section will be mainly causative constructions.

4.2.2.1 Causative constructions involving mental states

Causative constructions involving mental states are productive and commonly exist in all causative constructions. They are discussed as a group because many features of this type look similar to high causativity such as directness, force-dynamics, punctuality and aspect. The reason of the similarity is the property of instant responses of psychological reactions or feelings. In other words, the cause event and the caused event are within the same temporal frame, conforming to one of the conditions of directness. However, some features are still can be identified to distinguish these constructions from sentences with a of high degree of causativity

(18) a. 張三令我羨慕。

Zhangsan ling wo xianmu.

Zhangsan make me admire

'Zhangsan makes me admire him.'

b. 李四讓我嚇了一跳。

Lisi rang wo xia le yitao.

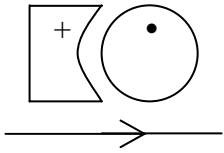
Lisi make me scare ASP one-jump

‘*Lisi* made me scared.’

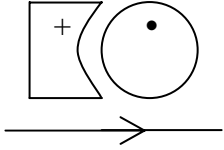
Examples in (18) are ambiguous. One interpretation is that the agents themselves arouse the psychological reactions. And the other interpretation is that the actions of the agents scared the experiencers. For example, in (18b) *Lisi* scared me because of his ugly or haggard look. Another situation is that *Lisi* scared me because he made faces or performed some very unusual behavior. In other words, one is “*Lisi* himself scared me” and the other is “*Lisi* did something, which scared me.” The differences between the two readings are that the former one is a state and the agents are unintentional and the second one is an event and the agents intend to affect the experiencers. Huang (1982) proposes different categories for the distinctions between causatives. The former one is factive causatives and the latter one is event causatives. Although their surface structures are the same, they have different syntactic structures because of their different meanings. Moreover, intention is also an important variable to distinguish a factive causative from an event causative. Specifically speaking, if the intentional adverb 故意 *guyi* ‘intentionally’ is inserted into (18b) as in 李四故意讓我嚇了一跳 *Lisi guyi rang wo xia le yitao* ‘*Lisi* intentionally made me scared’ then this sentence is just an event causative. Moreover, based on Cheng and Huang (1994), the volitional

agent conforms to the causative theta role assignment in which 李四 *Lisi* is a causer or an agent, so this sentence is a causative, which takes a causer as its external argument. However, another example contains a non-volitional agent 李四 *Lisi* such as in 李四讓我嚇了一跳 “*Lisi* made me scared” in the context of “*Lisi* walked out of the dark and this scared me.” The subject of this sentence is not a real agent, but the event that *Lisi* evoked is. According to thematic role theory, a non-volitional event is not an agent. Therefore, this sentence is an unergative which can only take an external argument at its subject position. Their transitivity and causativity are different. Then the With respect to their causativity, they may be analyzed as in the following:

(19) The causativity of “*Lisi* himself scared me.”

Directness		Transitivity	
Direct	√	Participants	√
Joint-action		Kinesis	X
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	√
		Affectedness of O	√
		Individuation of O	√

(20) The causativity of “*Lisi* did something, which scared me.”

Directness		Transitivity	
Direct	√	Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	√
		Agency	√
		Affectedness of O	√
		Individuation of O	√

(19) and (20) are direct causatives because the change in the mental state is immediate and the cause event and the caused event belong to the same spatio-temporal frame. But according to Wolff (2003), (20) is more typical for direct causation for the intention of the causer. Next, as for the force-dynamics, (20) is stronger because the causer is volitional, but (19) is not. Nevertheless, the patterns for both sentences are the same since the causer changed the causee’s state which was originally calm. Last, in regard to the transitivity, the two sentences are basically high in transitivity except for kinesis and volitionality. Specifically, the change of mental state is punctual and telic, but with no physical movement and it is abstract.

In addition to humans as agents to arouse feelings, objects or themes can also serve as triggers for mental activities. It is clear that the degree of transitivity will decrease with loss of the features of participants, kinesis, volitionality and agency.

Moreover, the patient generally refers to a great number of people, as in (16).

Unlike (18), the following examples describe facts or general situations.

(21) a. 高大的樓群使人們感到窒息，壓抑。

Gaoda de louqun shi renmen gandao zhixi, yayi.

High big POSS buildings make people feel suffocate, depressive.

‘Lots of high buildings all crowded together make people feel suffocated and depressed.’

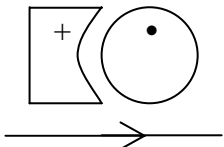
b. 作弊實在是教人心不平

Zuobi bi shizai shi jiao₂ ren xin bu ping

Cheat actually is teach people heart not fair

‘Cheating is a matter that makes people feel uneasy.’

(22) The causativity of (20a) and (20b)

Directness		Transitivity	
Direct	√	Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	√
Supervision		Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	√
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

To sum up, a change of mental state is ubiquitous in Mandarin causative constructions, regardless of whether in 使 *shi*, 令 *ling*, 讓 *rang*, 叫 *jiao₁* or 教 *jiao₂* constructions. Specifically, the majority of the data for 令 *ling* constructions involves mental states or feelings, and this observation can be demonstrated by Academia Sinica Balanced Corpus of Mandarin Chinese. At first glance, these types of causative construction are similar to the high causativity group. Even

though directness and force-dynamics do not show much divergence in high causativity, the nature of the transitivity tells the differences.

4.2.2.2 Causative constructions involving human agents and patients

In this section, some constructions which are likely in a high degree of causativity are examined. From the previous analysis, a temporary conclusion may be drawn that animate agents, animate patients, and punctual verbs contribute greatly to causativity.

- (23) a. 張三絆倒了李四。
Zhangsan bandao le Lisi
 Zhangsan stumble ASP Lisi
 ‘Zhangsan tripped Lisi by banging into him.’
- b. 張三使李四絆倒了。
Zhangsan shi Lisi bandao le
 Zhangsan make Lisi stumble ASP
 ‘Zhang made Lisi trip by bang into him.’

(23a) and (23b) are used in different contexts. Firstly, the verb 絆倒 *bandao* “stumble” refers to a specific way of falling down. The typical context is that the agent intends to act in such a way, and it is volitional. If *Zhangsan* does not intend to make *Lisi* trip over, the general term 跌倒 *deidao* “fall down” will be used by a native speaker in the sentences such as “抱歉,我害你跌倒了” *Baoqian, wo hai ni deidao le*. ‘Sorry, it’s my fault for making you trip over.’ By contrasting the scenarios of the two verbs, we can distinguish the nature of the volition feature in (23a) and (23b). Moreover, the scenario for (23a) must be that *Zhangsan* stretched

his leg or other body part to make *Lisi* stumble over him. Therefore (23a) demonstrates a typical degree of high causativity in fulfilling the features of direct, strong force, and a high degree of transitivity. However, if *Zhangsan* sets a trap or utilizes other things to make *Lisi* stumble, then the scenario will be more compatible with (23b). Setting up the trap and *Lisi*'s tripping cannot occur at the same time so this sentence is less direct. In other words, the causative constructions allow the indirect interpretation whereas causative verbs cannot. As a result, (23b) has an intermediate degree of causativity but (23a) has a high degree of causativity.

(24) 爸爸叫妹妹洗碗

Baba jiao₁ meimei xiwan.

Father call young sister wash the dishes

'Father made younger sister wash the dishes.'

(25) 老師教同學每天抄一句好話。

Laoshi jiao₂ tongxie meitian chao yiju haohua

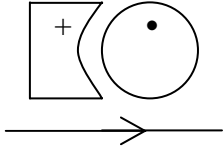
Teacher teach classmates everyday copy one good phrase

'The teacher makes the students copy a maxim every day.'

The analytic causatives of (24) and (25) include both human agent and human patient. Similar to the previous data, they can be checked as to whether they are high in causativity according to three parameters. First, in regard to the nature of their transitivity, the features of participant, kinesis, aspect, affirmation, mode, agency, volitionality, affectedness of O and individuation of O are positive. However, to accomplish the work costs a little time so both sentences are durative.

Furthermore, in regard to the force-dynamic pattern, neither of the causees intended to move originally, but the causers forced them to carry out the action. Based on the framework, these causatives belong to the onset causation pattern. Last, relating to directness, they show differences in degrees. In (24), the father made the younger sister wash the dishes, and the causer must check if the causee has finished the work or not. Moreover, the father might have given the order in the living room, and the younger sister might have performed the action ten minutes later. It is clear that the cause and caused event do not necessarily belong to the same spatio-temporal frame and the semantics of the sentence is a supervision sociative situation. (26) presents the complete causativity information of Example (24).

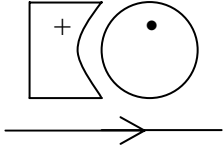
(26) The causativity of (24) ‘*Baba jiao₁ meimei xiwan.*’

Directness		Transitivity	
Direct		Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision	√	Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	X
		Volitionality	√
		Agency	√
		Affectedness of O	√
		Individuation of O	√

In contrast to the use of directness in (24), the directness of (25) follows a different pattern and two interpretations are workable for this sentence: The

teacher makes the students copy a maxim in class or the teacher makes the students copy a maxim as homework. The causative morpheme 教 *jiao*₂ 'teach' is originally a ditransitive verb, and this construction is similar to causatives. As a result, to identify the causative *jiao*₂ needs the help of another verb. For example, in (25), that the students copy phrases is not a special ability, so one of the scenarios should be the teacher writes down a sentence and makes the students copy it. While the teacher writes the sentences, the students can copy them down to learn them. Therefore, the spatio-temporal frame is overlapping. To accomplish the caused event, the teacher needs to act with the students. The causative pertains to joint-action. As for the second reading in which the teacher makes students find a maxim every day as homework, the spatio-temporal frames of the cause and caused event are different. If the teacher checks the homework everyday, then it is like a supervision sociative situation. Otherwise, this sentence is an indirect sociative situation if the teacher does not check and supervise. The table following shows the complete information of (25).

(27) The causativity of (25) ‘*Laoshi jiao₂ tongxie meitian chao yiju haohua.*’

Directness		Transitivity	
Direct		Participants	√
Joint-action	√ (reading 1)	Kinesis	√
Assistive		Aspect	√
Supervision	√ (reading 2)	Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	X
		Volitionality	√
		Agency	√
		Affectedness of O	√
		Individuation of O	√

Next *rang* constructions are introduced. *Rang* is unique because its meanings are so diverse. Its general meaning can be translated into “let,” but it also can be interpreted as a causative “make” or used in passive sentences (Chen, 1996). Chen proposes that the causative *rang* and passive *rang* constructions are control sentences but with different syntactic structures. In addition, Teng (1989) further divided the causative *rang* constructions into *rang₁* and *rang₂*, which are exemplified as follows, in the case of (28) Teng also identified that *rang₁* is similar to ‘make’ or ‘cause’ and *rang₂* is like ‘let.’

(28) 老師讓學生說明事發的經過。

Laoshi rang xiasheng shuoming shifa de jinguo

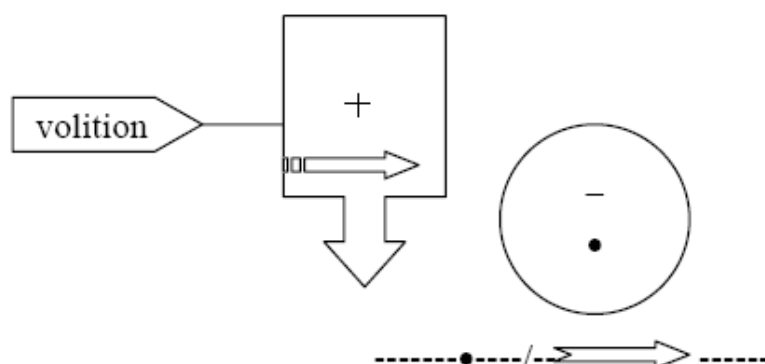
Teacher make/ let student explain things happened POSS process

- a. *rang₁*: ‘The teacher made the student explain what happened.’
- b. *rang₂*: ‘The teacher let the student explain what happened.’

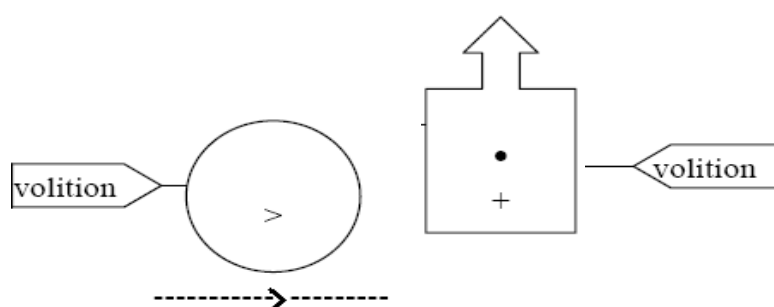
(28) displays the ambiguity of *rang*, even though the sentence structures are the same, our framework should tell the differences. First of all, transitivity does not

play an important role here to distinguish *rang₁* and *rang₂* because all the syntactic elements or verbal semantics are the same. Second, (28a) and (28b) belong to a supervision sociative situation as the teacher is the person to command the talk to be completed. And last but not least, force-dynamics is a key factor to differentiate the two meanings. *Rang₁* occurs in a situation where the agonist tends to rest, but the antagonist forces it to move. On the contrary, the situation of *rang₂* is that agonist tends to move, and the antagonist serves to remove the obstacle. Therefore, in regard to the force of causativity, *rang₁* is stronger than *rang₂*. The diagrams are shown as (29).

(29) a. antagonist/ causer agonist/ causee

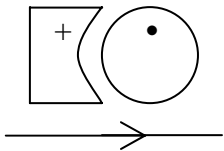


b. agonist antagonist

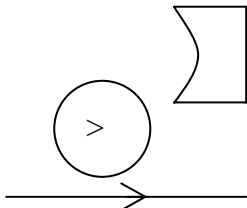


Therefore, based on the frameworks, the degree of causativity of (28a) is higher than that of (28b) and the tables for both are as follows.

(30) The causativity of (28a)

Directness		Transitivity	
Direct		Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision	√	Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	X
		Volitionality	√
		Agency	√
		Affectedness of O	√
		Individuation of O	√

(31) The causativity of (28b)

Directness		Transitivity	
Direct		Participants	√
Joint-action		Kinesis	√
Assistive		Aspect	√
Supervision	√	Affirmation	√
Indirect		Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	√

Moreover, some *rang* constructions indicate ‘permit’ and the force type for them is similar to that in (29b) so they are similar to *rang*₂. Although the meaning of ‘let’ is similar to ‘allow or permit,’ a small distinction is proposed here. Teng suggested that the causer in *rang*₁ is more powerful than the causee, but such a

relationship is not necessary in a *rang*₂ construction. However, a power relationship becomes obvious in the ‘permit’ type of causation. For example, *rang*₂ in (28b) can be interpreted as ‘permit’ but if the causer and the causee are friends then it would not be appropriate for there to be a permissive reading. In addition, a permissive reading needs an animate causee. For example, 妳(不關門)會讓水跑進來 *Ni (bu guanmen) hui rang*₂ *shui paojinlai* ‘You will let the water come in (if you don’t close the door)’ is not compatible with a permissive reading because the inanimate causee will not ask for the permission. Therefore, even though the permissive reading is also a weak force, it needs a higher degree of transitivity than a “let” reading.

4.2.2.3 Other causative constructions

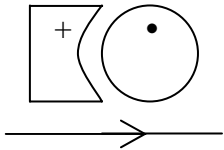
The previous two sections explored the causativity of human agent and patient. In this section, a variety of causative constructions are examined to show different degrees of causativity.

- (32) 張三努力工作 使/令/讓 孩子衣食無缺。
Zhangsan nuli gongzou shi/ ling/rang haizi yishi wuque .
Zhangsan hard work make children cloth-and-food sufficient
 ‘Zhangsan works hard to enable the children have adequate clothing and food’

(32) is a general structure of Mandarin causative constructions where the cause event comprises subject and action. In spite of it being a human agent in the causing event, the causer is not *Zhangsan* but the whole event of *Zhangsan*’s

working hard. Compared to previous examples in Section 4.2.2.2, the agency of (32) is lost. Most importantly, this point can be treated as a common feature for the causative constructions of [NP₁+ VP₁] +causative marker + NP₂ +VP₂. In addition, the sentence is also insufficient for kinesis, punctuality, and aspect. Moreover, because the causing event does not belong to the same spatio-temporal frame, this sentence is an example of indirect causation.

(33) The causativity of (32) ‘*Zhangsan nuli gongzou shi/ ling/rang haizi yishi wuque .*’

Directness		Transitivity	
Direct		Participants	√
Joint-action		Kinesis	X
Assistive		Aspect	X
Supervision		Affirmation	√
Indirect	√	Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	√

(34) a. 新藥使病人增加存活的機率。

Xinyao shi bingren zengjia cunhuo de jilv.

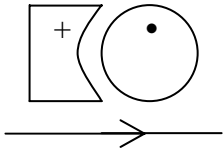
New medicine make patient increase survival POSS rate

‘New medicine enables the patients to have more chance to keep alive.’

In (32), the causer “new medicine” is inanimate, and it should be the abbreviated form of “using new medicine” so in fact the causer is an event. In other words, the appearance of new medicine only cannot have any medical effect until the patient takes it. As for its causativity, firstly, the transitivity in the

example is low since it lacks the features of participants, kinesis, aspect, punctuality, volitionality, agency, and individuation of O. Moreover, the *shi* construction can be used in the indirect causation. Specifically speaking, the patient has to take the medicine continuously until he or she gets better. Although the temporal frame is overlapping between the causer event and the caused event, based on Shibatani and Pardeshi (2001), progressive form is interpreted as the generic sense if it is without physical involvement. Furthermore, the force-dynamic pattern for the *shi* construction is unchanged, and it could be viewed as a typical pattern for this construction.

(35) The causativity of (34) ‘*Xinyao shi bingren zengjia cunhuo de jilu.*’

Directness		Transitivity	
Direct		Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	X
Supervision		Affirmation	√
Indirect	√	Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

4.3 Low causativity

From the previous sections, an increase in the degree of causativity may result from the presence of animate agents, animate patients, and punctual

actions. One thing that needs to be noted is that causative constructions are basically transitive. Specifically speaking, if the sentences are affirmative and realis, causatives should at least contain the feature of affectedness of O, either partially or totally. Therefore, a typical example of low causativity should be indirect and weak force or letting. Since negative sentences are derived from positive sentences, this section provides affirmative examples.

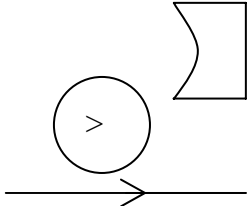
(36) 這間溫室可以讓植物的花期變長。

Zhejiang wenshi keyi rang zhiwu de huaqi bian chang.

This green house can let plants POSS florescence become long
'This greenhouse enables the period of florescence to be lengthened.'

In (34), the causing event is a spatial frame, indicating "to be in the greenhouse." Moreover, this is a condition which allows the plants to grow, so the force-dynamic pattern is letting. Meanwhile, the example does not show any physical involvement, thus (34) is an indirect causatives. Last, because both the causing and the caused events include inanimate participants, the transitivity features of participants, agency, volitionality and individuation of O are lacking. Moreover, the verb is atelic, durative and non-active. In short, the degree of the causativity of this example is low, and the entire information can be demonstrated as follows.

(37) The causativity of (36) ‘*Zhejiang wenshi keyi rang zhiwu de huaqi bian chang.*’

Directness		Transitivity	
Direct		Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	X
Supervision		Affirmation	√
Indirect	√	Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

Whether causative verbs entail low causativity or not comes into question.

Similarly, a causative sentence comprising an inanimate causer, inanimate causee, and durative verb are examined. The results display that even directness and transitivity are equal to (37), where the force-dynamic pattern is of onset causation.

Accordingly, causative verbs are not in the group indicating low transitivity.

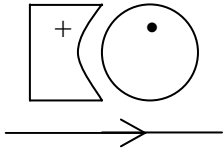
(38) 大量的行道樹可以綠化環境。

Daliang POSS xingdaoshu keyi luhua huanjin.

Plenty of shade trees can green surroundings

‘Plenty of shade can make the surroundings green.’

(39) The causativity of (38) ‘*Daliang POSS xingdaoshu keyi luhua huanjin.*’

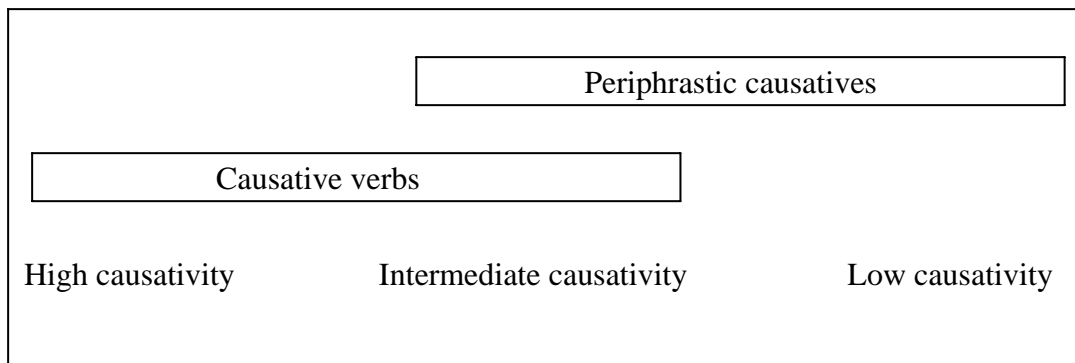
Directness		Transitivity	
Direct		Participants	X
Joint-action		Kinesis	X
Assistive		Aspect	X
Supervision		Affirmation	√
Indirect	√	Mode	√
Force-dynamics		Punctuality	X
		Volitionality	X
		Agency	X
		Affectedness of O	√
		Individuation of O	X

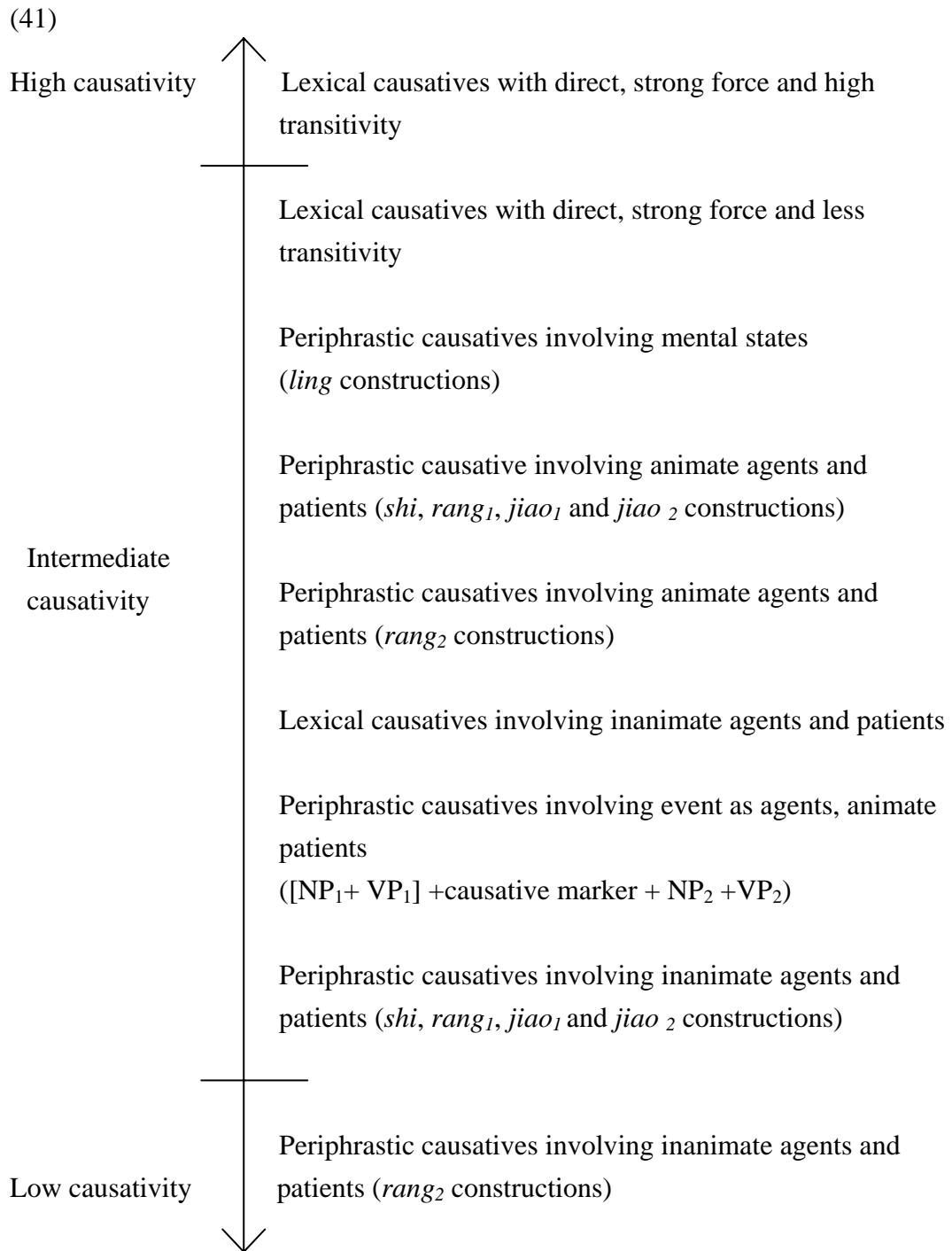
4.4 Remarks

In this chapter, the examples of causative verbs and constructions were examined to check their causativity. They were analyzed according to three parameters—directness, transitivity and force-dynamics. The results demonstrate that lexical causatives permit either high or low degrees of directness and transitivity. However, they always entail a strong force. Therefore, lexical causatives appear to range from those with a high degree of causativity to intermediate degree of causativity. Periphrastic causatives, on the other hand, show a complicated combination of the three parameters. Specifically, when they are direct and strong in force, the degree of transitivity is less. If the degree of transitivity is high, then the degree of directness or force will be low. In short, when the two parts of the frameworks fail to tell the differences, another framework will exhibit the opposition. Last but not least, the periphrastic *rang* constructions display features of low causativity. This causativity framework therefore works successfully to distinguish lexical and periphrastic causatives. In this study, causative forms with high and low degrees of causativity are identified without difficulty. However, the causatives of intermediate level are too complicated for their hierarchy to be arranged in this present study. This issue remains to be further investigated in the future. The crude and detailed distribution

of the causativity is summarized as in the following diagrams.

(40)





Based on this result, more detailed discussion is presented in the next section.