

Thematic Dependencies Between External and Internal Arguments of Transitives

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Abstract

This paper argues that transitive verbs can have non-agent external arguments and non-patient internal arguments, at least in Chinese. However the apparent free thematic-mapping is subject to the following generalizations: there is neither agent internal argument nor patient external argument, and if an external argument is not an agent, the internal argument must be patient, whereas if an internal argument is not a patient, the external one must be agent. The generalizations can be accounted for by the claims that *v* is [-patient] and *V* is [+agent], that the default feature of *v* and *V* are agent and patient respectively, and that a non-default thematic feature must be checked/valued by a default one. The conclusions of this study imply that like other formal features, thematic relations have checking/valuation involved, and that *v* is not specified in UG to be related to agent and causer only.

1. Introduction

Cross-linguistically, the canonical theta-role of external arguments or thematic subjects of transitive verbs is agent and that of internal arguments or thematic direct objects of transitive verbs is patient. However, very often we see non-agent nominals take a subject position and non-patient nominals take the position of direct objects, at least in Chinese. In this paper we will, first of all, argue that the preverbal nonagent nominals in data like (1) are base-generated as thematic subjects and the post-verbal nominals in data like (2) are direct objects syntactically.¹

- (1) a. na ba dao qie-le sheng-rou. (instrument subject)
that CL knife cut-PRF raw-meat
'That knife has been used with to cut raw meat.'
- b. xinfeng-shang xie-zhe wode dizhi. (locative subject)
envelope-surface write-PRG my address
'On the envelope was written my address.'
- (2) a. Akiu yao chi (na ge) da-wan. (instrument object)
Akiu want eat that CL big-bowl
'Akiu wants to eat with {that/a} big bowl.'
- b. Akiu nian-guo na suo xuexiao (locative object)
Akiu read-EXP that CL school
'Akiu studied in that school.'

If our argumentation is plausible, we will conclude that for transitives, the theta role of external arguments is not restricted to agent, and that of internal arguments is not restricted to patient.

However, the thematic-mapping is not without constraints. First, there is no agent direct object in a simplex predication construction where the verb is transitive (see our discussion of apparent exceptions in section 4).² Second, there is no patient external argument

¹ The abbreviations used in the Chinese examples are: EXP: experience aspect, PRF: perfect aspect, PROG: progressive aspect, CL: classifier, DE: modification marker, PRT: sentence-final aspect particle.

² In this paper I do not discuss complex-predication constructions such as the resultative *de*-construction, V-V construction, and the verb-copying construction, where theta-role assignors other than the matrix *v* and *V* are contained.

related to transitive verbs either. I will argue that the preverbal patient in data like (3) is base-generated at the object position.

- (3) Yifu xi-le (san tian le).
 clothes wash-PRF three day PRT
 ‘The clothes have been washed (for three days).’
 ‘The clothes were washed (three days ago).’

Third, if a transitive verb has a non-patient object, the subject must be agent. And finally, if a transitive verb has a non-agent subject, the direct object must be patient.

Based on these constraints we make the following generalizations:

- (4) Thematic Generalizations:
 In simplex predication constructions where the verb is transitive:
 A) There is neither agent object nor patient thematic subject;
 B) Non-patient objects arise only when the thematic subject is agent, whereas non-agent thematic subjects arise only when the object is patient.

In this study I adopt the general assumption that in a simplex transitive verb construction, the theta-role of the direct object is assigned/licensed by the transitive verb in V, whereas the theta-role of the thematic subject or external argument is assigned/licensed by v (voice, Trans, or other terms) (Hale & Keyser 1993, Kratzer 1996, among others). In the current literature, it is generally assumed that v is related to either an agent or causer. The data discussed in this paper exhibit a larger range of theta-roles assigned by v. The Thematic Generalization found here, on the other hand, may reveal both the contrast and the dependency relation between v and V in the syntactic computation.

In section 2, I argue that for transitive verbs, thematic subjects can be non-agent and objects can be non-patient. I also argue that the apparent patient subject in data like (3) is base-generated at an object position. In section 3 I present the constraints on the apparent free mapping. In section 4 I account for the generalizations in (4) by a feature-checking/valuation proposal. In section 5, I argue that two flop-flop constructions are not counter-examples to our claim. I conclude the paper in section 6.

2. The existence of non-agent subjects and non-patient objects of transitive verbs

2.1 The existence of non-agent subjects of transitives

In this subsection, I argue that the non-agent nominals to the left of transitive verbs, like *na ba dao* ‘that knife’ in (1), are arguments rather than adverbials. I call such nominals NAN (non-agent nominal). I present four arguments.

First, like all preverbal subjects in Chinese, NANs must be specific.³

- (5) a. *{San ge ren/San ba dao} qie-le sheng-rou.
 three CL person/three CL knife cut-PRF raw-meat
 b. *{liang ge ren/liang ge xingfeng-shang} xie-le wode dizhi.
 two CL person/two CL envelope-surface write-PRF my address

Second, the temporal expressions such as *zuotian* ‘yesterday’ can occur to the right of a subject but not the right of a locative and instrument adverbial, as shown in (6a) and (7a), respectively. The fact that *zuotian* can occur to the right of NANs, e.g., the locative nominal

³ In order to focus on the general specificity effect on preverbal subjects, I avoid using the data where the numeral is *yi* ‘one’ in this paper. Like *ein* in German and *un* in French, *yi* has properties of an indefinite determiner. *Yi*-nominals can be specific.

heiban-shang ‘blackboard-surface’ in (6b) and the instrument nominal *na ba dao* ‘that knife’ in (7b), indicates that NANs behave like subjects rather than adverbials.

- (6) a. Akiu (zuotian) zai heiban-shang (*zuotian) xie-le nide mingzi.
Akiu yesterday at blackboard-surface yesterday write-PRF your name
'Akiu wrote your name on the blackboard yesterday.'
- b. heiban-shang (zuotian) xie-le nide mingzi.
blackboard-surface yesterday write-PRF your name
'Your name was written on the blackboard yesterday.'
- (7) a. Akiu (zuotian) yong na ba dao (*zuotian) qie-le sheng-rou.
Akiu yesterday with that CL knife yesterday cut-PRF raw-meat
'Akiu cut the raw meat with that knife yesterday.'
- b. na ba dao (zuotian) yijing qie-le sheng-rou.
that CL knife yesterday already cut-PRF raw-meat
'That knife was used with to cut the raw meat yesterday.'

Third, locative and instrument adverbials must be in the form of a PP, as shown in (8). The fact that NANs do not allow any preposition to their left, as shown in (9), indicates that they do not pattern with adverbials.

- (8) a. Akiu *(yong) na ba dao qie-le sheng-rou.
Akiu with/use that CL knife cut-PRF raw-meat
'Akiu cut the raw-meat with that knife.'
- b. Akiu *(zai) heiban-shang xie-le nide mingzi.
Akiu at blackboard-surface write-PRF your name
'Akiu wrote your name on the blackboard.'
- (9) a. (*yong) na ba dao qie-le sheng-rou. (NAN: instrument)
with that CL knife cut-PRF raw-meat
'That knife has been used with to cut raw meat.'
- b. (*zai) heiban-shang xie-zhe wode mingzi. (NAN: locative)
at blackboard-surface write-PRG my name
'On the blackboard was written my name.'

Fourth, NANs are not topics which co-occur with a null agent *pro*. On the one hand, NAN constructions are not agentive, since no agentive adverb such as *guyi* 'deliberately' is allowed:

- (10) a. *na ba dao guyi qie-le sheng-rou. (NAN: instrument)
that CL knife deliberately cut-PRF raw-meat
- b. *heiban-shang guyi xie-zhe wode mingzi. (NAN: locative)
blackboard-surface deliberately write-PRG my name

On the other hand, a doer, which should exist according to our world knowledge in such contexts, can be nonspecific. In other words, it is possible that the speaker of the construction does not know the agent. For instance, the speaker of (1a) probably does not know who cut the raw meat, and the speaker of (1b) probably does not know who wrote the name. The following sentence is natural:

- (11) Na ba dao qie-le sheng-rou, dan wo bu zhidao qie de ren shi shui.
that CL knife cut-PRF raw-meat but I not know cut DE person be who
'That knife has been used with to cut raw meat. But I don't know who cut it'

If the referent of a nominal is nonspecific, it cannot be represented by *pro*, which requires definite or specific antecedent that is a linguistically or non-linguistically explicit in the context.

We conclude that NANS in the construction represented by (1) are arguments, base-generated as thematic subjects, and accordingly like agent subjects, they are thematically licensed by *v*.

2.2 The existence of non-patient direct objects of transitives

In this subsection, I argue that the non-patient nominals to the right of transitive verbs, like *na ge da-wan* 'that big-bowl' in (2), are objects. I call such nominals NPN (non-patient nominal). I present four arguments.

The first one is the possibility of extraction from NPNs. Elements internal to a NPN can be either topicalized, as in (12).

- (12) a. Xuexiao, Akiu nian-guo [cheng-li zuihao de].
 school Akiu read-EXP city-in best DE
 'Speaking of schools, Akiu read in the best one in the city.'
- b. Jiu-bei, Akiu yizhi zai he [cong Faguo jinkou de].
 wine-cup Akiu always PRG drink from France import DE
 'Speaking of wine-glasses, Akiu always drinks wine with those imported from France.'

Our second argument for the objecthood of NPNs is the possibility of preposing. In Chinese, direct objects can be preposed to a position between the subject and the verb, as shown in (13b) (Qu 1994, Shyu 1995, among others).

- (13) a. Akiu xi-le na jian dayi. (canonical)
 Akiu wash-PRF that CL coat
 'Akiu washed that coat.'
- b. Akiu lian na jian dayi dou xi-le. (object-preposing)
 Akiu even that CL coat also wash-PRF
 'Akiu washed even that coat.'

However, locative and instrument adverbials occurring in this position must be in the form of a PP, as already shown in §). The fact that NPNs can occur between the subject and the verb without any preposition, as shown by the following (14) and (15), indicates that they pattern with objects rather than adverbials.

- (14) a. Akiu lian na suo xuexiao dou nian-guo.
 Akiu even that CL school also read-EXP
 'Akiu even studied in that school.'
- b. Akiu lian Gao-Gan-Can-Ting dou chi-guo.
 Akiu even high-officer-dine-hall also eat-EXP
 'Akiu even ate at the High-Officer-Dining-Hall.'
- (15) a. Akiu lian gaoya-guo dou zhu-guo.
 Akiu even pressure-cooker also cook-EXP
 'Akiu even cooked with a pressure-cooker.'
- b. Mali lian mao-bi dou hui xie.
 Mary even brush-pen also can write
 'Mary even can write with a brush-pen.'

The data in (16) show that like arguments, NPNs can be directly relativized without any preposition.

- (16) a. [[Akiu nian de] na suo xuexiao] zai cheng-xi.
 Akiu read DE that CL school at city-west
 'The school where Akiu studied was in the west of the city.'
 b. [[Akiu he de] na ge jiu-bei] zhi liang-bai yuan.
 Akiu drink DE that CL wine-cup worth two-hundred yuan
 'The wine-glass with which Akiu drinks wine is worth two hundred yuan.'

Our third argument for the objecthood of NPNs is the adjacency between transitive verbs and NPNs. Like canonical objects, NPNs must be adjacent to the transitive verbs to their left (17), and the only elements that can separate both NPNs and canonical objects from the verbs are duratives and repetitives (18) (Soh 1998 argues that the nonadjacency effect arises from complement raising and verb raising, separately):

- (17) a. *Akiu xi-guo yijing pi-jiake le. (patient obj)
 Akiu wash-EXP already leather-jacket PRT
 b. *Akiu xi-guo yijing cuoban le. (NPN: instrument)
 Akiu wash-EXP already washing-board PRT
 c. *Wo qi-guo yijing zhe tiao malu le. (NPN: location)
 I ride- EXP already this CL road PRT
 (18) a. Akiu xi-le {san ci /san xiaoshi} pi-jiake le. (patient obj)
 Akiu wash-PRF three time/three hour leather-jacket PRT
 'Akiu washed a leather-jacket {three times/for three hours}.'
 b. Akiu xi-guo {san ci/san xiaoshi} cuoban. (NPN: instrument)
 Akiu wash-EXP three time/three hour washing-board
 'Akiu washed clothes with a washing-board {three times/for three hours}.'
 c. Wo yijing qi-guo {san ci/san xiaoshi} zhe tiao malu le. (NPN: location)
 I already ride- EXP three time/three hour this CL road PRT
 'Akiu washed himself in a big bathroom {three times/for three hours}.'

Our fourth argument for the objecthood of NPNs is the selectional restrictions. As in the case of canonical objects, not any type of nominal can be selected by any verb. It is not true that all transitives can have instrument NPNs. For instance, *chi* 'eat' can (19a), but *wei* 'feed' cannot (19b). Similarly, it is not true that all transitives can have locative NPNs. For instance, *nian* 'read' can (20a), but *tan* 'play (a musical instrument)' cannot (20b).

- (19) a. chi {ji/da-wan/kuizi}
 eat chicken/big-bowl/chopstick
 b. wei {ji/*da-wan/*kuaizi}
 feed chicken/big-bowl/chopstick
 (20) a. nian {shi/xiao-xue}
 read poem/primary-school
 b. tan {gangqin/*wutai}
 play piano/stage

We conclude that NPNs in the construction represented by (2) are base-generated as direct objects of the transitive verbs, and like patient objects, they are thematically licensed by V.

2.3 On the preverbal patient “subjects” of transitives

In this subsection I argue that no vP is projected in the construction represented by (3), where the unique preverbal nominal is patient.⁴

- (21) a. Yifu xi-le (san tian le). (= (3))
 clothes wash-PRF three day PRT
 ‘The clothes have been washed (for three days).’
 ‘The clothes were washed (three days ago).’
 b. xin yijing ji-le.
 letter already mail-PRF
 ‘The letter has been mailed.’

I claim that the preverbal patient “subjects” are not base-generated at Spec, vP, for the following reasons.

First, like adverbials, the postverbal nominals in such constructions are optional. The acceptability is not affected if *san tian le* ‘three day PRT’ is cut from (21a).

Second, the postverbal nominals in such constructions cannot be preposed, unlike direct objects:

- (22) *Yifu lian (na) san tian dou xi-le.
 clothes even that three day also wash-PRF
 intended: the clothes were washed even (those) three days ago

These two points tell us that the postverbal nominals in the construction are not objects. This in turn suggests that the object position is a gap position in the construction. I propose that the preverbal patient “subjects” are base-generated as direct objects, and like all direct objects, they get their theta-role from V.

Third, no agentive adverbs such as *guyi* ‘deliberately’ is allowed in the construction:

- (23) a. yifu (*guyi) xi-le.
 clothes deliberately wash-PRF
 ‘The clothes have been washed.’
 b. Xin (yijing) (*guyi) ji-le.
 letter already deliberately mail-PRF
 ‘The letter has been mailed.’

⁴ Based on the following contrast, Cheng (1988) claims that there is an affectedness constraint on the patient-“subject” construction:

- (i) a. na feng xin si-le.
 that CL letter tear-PRF
 ‘That letter was torn.’
 b. *Akiu hen xihuan. (state)
 Akiu very like
 c. *na liang che tui-le. (activity)
 that CL car push-PRF

Note that the patient-“subject” construction is compatible with irrealis contexts (ii). In addition, no affectedness constraint is seen in the non-patient object construction. In (2b), for instance, we see no direct affectedness effect on the school.

- (ii) na feng xin yinggai zao dianr ji.
 that CL letter should early mail
 ‘That letter should be mailed early.’

Fourth, a doer, which should exist according to our world knowledge in such contexts, can be nonspecific. In other words, it is possible that the speaker of the construction does not know the agent.

The last two points indicate that there is no agent pro in the construction. Since there is no other argument can be related to v, I claim that vP is not projected in the construction, and the preverbal patient nominals are moved from VP to SpecIP to check EPP of I directly.⁵ In this case, the transitive verbs behave like unaccusatives in that their theta-licensed nominals are Case-licensed by I. The absence of an agent, or any argument related to v, is compatible with Burzio's (1986) Generalization:

- (24) Burzio's (1986) Generalization:
A verb (with an object) Case-marks its object if and only if it theta-marks its subject.

This generalization states that the raising of the internal argument to get its Case-licensed is correlated with the absence of an external argument or thematic subject.

I conclude that in the construction represented by (3), no vP is projected and the unique preverbal nominal gets the patient role from the transitive verb and then moves to IP to get its Case-licensed.

3. Constraints on the non-canonical argument structures and Thematic Generalizations

We have argued that for transitives, the theta role of an external argument is not restricted to agent, and that of internal argument is not restricted to patient. However, there are four constraints.

First, there is no agent direct object in a simplex predication construction where the verb is transitive (see our discussion of apparent exceptions in section 4). In the following, regardless of the preverbal nominal (instrument, patient, location), *Akiu* cannot be an agent object:

- (25) * {na ba dao /sheng-rou/chufang-li qie-le Akiu.
that CL knife/raw-meat/kitchen-inside cut-PRF Akiu

Second, there is no patient external argument related to transitive verbs either. We have argued that the preverbal patient in data like (3) is base-generated at the object position.

Third, if a transitive verb has a non-patient object, the subject must be agent. In the unacceptable (26), the instrument object occurs with a patient or locative subject, and in the unacceptable (27), the locative object occurs with a patient subject.

- (26) *{Mifan/zhuo-shang} chi-le (na ge) da-wan. (instrument object)
rice/table-surface eat-PRF that CL big-bowl
- (27) a. *Yuyanxue xue-le na suo xuexiao. (locative object)
linguistics learn-PRF that CL school
- b. *Jiu he-le cangan.
wine drink-PRF restaurant
- c. *Miantiao zhu-le da-guo.
noodle cook-PRF big-pot

Fourth, if a transitive verb has a non-agent subject, the direct object must be patient. In the unacceptable (28a), the instrument subject occurs with a locative object, and in the unacceptable (28b), the locative subject occurs with an instrument object.

⁵ A similar analysis of English middles is seen in den Dikken & Sybesma (1998).

- (28) a. *na ba dao qie-le na ge chufang. (instrument subject)
 that CL knife cut-PRF that CL kitchen
 b. *xinfeng-shang xie-zhe mao-bi. (locative subject)
 envelope-surface write-PRG brush-pen

Based on the above observed constraints and the argumentation in section 2, we make the following generalizations:

(29) Thematic Generalizations:

In simplex predication constructions where the verb is transitive:

- A) There is neither agent object nor patient thematic subject;
 B) Non-patient objects arise only when the thematic subject is agent, whereas non-agent thematic subjects arise only when the object is patient.

I will call the first and the second item of the generalization GA and GB, respectively.

4. Accounting for the Thematic Generalizations

From the viewpoint of theta-roles, descriptively, we have seen the following points:

- (30) a) agent can only be assigned/licensed by v, whereas patient by V;
 b) other theta-roles are assigned/licensed by either v or V.

From the viewpoint of v and V, our generalization in (29) can be restated as follows:

- (31) a. The distinctive features of V and v:
 The thematic feature of V is [- agent] and that of v is [- patient]. (GA)
 b. The default theta role assigned/licensed by v is agent and the default theta role assigned/licensed by V is patient; and if one of them does not assign/license its default theta-role, the other must. (GB)

In order to account for the generalization, I make the following proposal:

- (32) In the merger of v with VP, a non-default thematic feature of one side must be checked/valued by the default thematic feature of the other side.

Accordingly, GA is captured by the distinctive thematic features of V and v, whereas GB is captured by the assumed valuation of a non-default thematic feature by a default one, between v and V. Thus both the contrast and the dependency are covered syntactically.

Note that in the construction where a preverbal patient “subject” occurs, which is discussed in section 2.3, the unique argument has a patient role, which is assigned by V. Since the role is the default thematic role assigned by V, no valuation is required, and thus no vP is required to project. Our analysis also captures the effect of Burzio’s Generalization in this case, as discussed in section 2.3.

The conceptual background of my proposal is that non-default thematic features related to v and V are like non-interpretable features in that they must be checked/valued/licensed by default thematic features. Default thematic features related to v and V, however, are always fully interpretable, and thus do not need to be checked/valued/licensed.

On the other hand, since vP is projected later than VP, it is possible that if VP has a default thematic feature, patient, there is no vP projected to host an external argument (section

2.3); however, it is impossible that if vP had a default feature, agent, there be no VP projected. The asymmetry is decided by the derivational nature of our computation system. This naturally captures Nishiyama's (1998: 199) statement: "it is *not* that 'a transitive verb must have the external argument', but it is the *other way around*: the external argument must have a transitive verb."

One implication of this study is that the range of the theta-role assigned by v needs enlarging. Hale & Keyser (1993), among others, claim that v is related to agent and causer only. I have shown that instruments and locatives can also be external arguments licensed by v.

The feature-valuation analysis of the dependency between v and V implies that thematic relations are formal features of V and v, as argued by Hornstein (1999) and Lasnik (1998), among others. Like Case features of nominals and phi-features of verbs, such features need checking/valuation if they are uninterpretable, i.e., non-default in this case.

So far we have presented the thematic contrast and the dependency between v and V, and also accounted for them by the feature-valuation proposal. In next section we discuss two flip-flop constructions.

5. On Two Flip-Flop Constructions

5.1 The verb *zhuang* 'load'

The verb *zhuang* 'load, pack' allows an apparent patient-goal alternation between subject and object positions. In (33), for instance, *pingguo* 'apple' might be regarded as the patient and *shu-bao* 'book-bag' as the goal of *zhuang*, and either one can occur in the subject or object position.

- (33) a. Pingguo zhuang-le zhengzheng yi shu-bao.
 apple load-PRF whole one book-bag
 'The apples were packed into the whole book-bag.'
- b. Shu-bao zhuang-le pingguo.
 book-bag load-PRF apple
 'The book-bag were packed with (the) apples.'

In (33b), the patient object occurs with a non-agent subject. This is compatible to what we have seen and discussed so far, i.e., the non-default theta role of the subject is licensed by the default theta-role of the object. Data like (33a), however, contain a seemingly non-patient object and a non-agent subject. The acceptability of (33a) is in contrast to that of the data in (27), which show the similar thematic configuration.

Our data in (27) show that the example in (33a) is not productive.

I claim that the verb *zhuang*, like *load* in English, c-selects a nominal and s-selects either a goal or a patient (theme) (cf. Speas 2000). As shown in the acceptability contrast between (34)/(35) and (36), a nominal is obligatory in the object position of *load*. On the other hand, as shown in (35), either the patient *hay* or the goal *the wagon* can satisfy the s-selection of *load*.

- (34) a. We loaded hay onto the wagon.
 b. We loaded the wagon with hay.
- (35) a. We loaded hay all day.
 b. We loaded the wagon.
- (36) a. *We loaded onto the wagon.
 b. *We loaded with hay.
 c. *We loaded onto the wagon with hay.

Not many verbs have this freedom. I claim that *zhuang* in Chinese behaves like *load* in that its selected nominals do not show a contrast between patient and non-patient, with respect to a thematic-licensing relation. Consequently, we do not give a value (plus or minus) to the patienthood of the selected nominal of *zhuang*. In (33a), *zhengzheng yi shu-pao* 'one whole book-bag' is neither a patient nor a non-patient. Although there is no agent subject, (33a) does not cause any problem to GB, which states that non-patient objects arise only when the subject is agent, whereas non-agent subjects arise only when the object is patient. The reason is that neither can we claim that *zhengzheng yi shu-pao* is a patient, nor can we claim that it is a non-patient, in this case. The feature of [patient] is simply not presupposed for the verb *zhuang*.

Similarly, I do not regard *pingguo* 'apple' as either a patient or non-patient of *zhuang*, and thus it can perfectly occur as a subject in (33a), without affecting GA, which states that there is no base-generated patient subject.

Now I need to update our claim on (33b) above also. The notion "patient" is not involved. The grammaticality of (33b) simply comes from the fact that the sentence does not violate any constraint, and that it does not run against our GA and GB, either.

Summarizing, the flip-flop constructions in (33) arise from the special s-selection of the verb *zhuang*. The thematic pattern exhibited there is not general.

One might claim that the thematic pattern in (35b), repeated here as (37a), is kind of similar to our (2b), repeated here as (37b), even though the former has a goal locative whereas the latter has a non-goal locative.

- (37) a. We loaded the wagon. (= (35b))
 b. Akiu nian-guo na suo xuexiao. (= (2b))
 Akiu read-EXP that CL school
 'Akiu studied in that school.'

However, the thematic pattern in (37a) is not productive in English, whereas that in (37b) is productive in Chinese. Neither the counterpart of (37b), nor the counterparts of the following in English are acceptable (for more data see Lin 2001):

- (38) a. Akiu kai-guo Deguo de gaosu-gonglu.
 Akiu drive-EXP German DE express-way
 'Akiu drove on German express ways.'
 b. Akiu jiao-guo you'eryuan.
 Akiu teach-EXP kindergarten.
 'Akiu taught in a kindergarten.'

The thematic pattern in (37a) is related to the special s-selection of the verb *load* in English. In contrast, the thematic pattern in (37b) is not related to any special s-selection of the verb. Instead, it is related to the comparatively less rigid thematic mapping in Chinese.

5.2 The "Consumption"-Style Flip-Flop Construction

Another flip-flop construction expresses the meaning of consumption of a certain period of time or quantity of money. First of all, let us look at the canonical construction in (39):

- (39) a. Lao Wang he-le na ping jiu.
 Lao Wang drink-PRF that bottle wine
 'Lao Wang drank that bottle of wine.'

- b. na ge shiren xie-le na shou shi.
that CL poet write-PRF that CL poem
'That poet wrote that poem.'

The “consumption”-style flip-flop construction is illustrated in the following (40), where the preverbal nominal looks like a patient and the nominal immediately following the verb looks like an agent:

- (40) a. na ping jiu he-le Lao Wang {yi shangwu/si-bai yuan}.
that bottle wine drink-PRF Lao Wang one morning/four-hundred yuan
Paraphrase: Lao Wang drank that bottle of wine, and the event {lasted for one morning/costs four-hundred yuan}.
- b. na shou shi zuzu xie-le na ge shiren san ge yue.
that CL poem as.much.as write-PRF that CL poet three CL month
Paraphrase: that poet wrote that poem, and the event lasted for three months.

The flip-flop construction is in contrast to the canonical transitive construction represented by (39) in the following ways:

First, unlike the canonical construction, the flip-flop construction is not agentive, since no agentive adverb such as *guyi* 'deliberately' is allowed. Compare:

- (41) a. Lao Wang guyi he-le na ping jiu.
Lao Wang deliberately drink-PRF that bottle wine
'Lao Wang drank that bottle of wine deliberately.'
- b. na ge shiren guyi xie-le na shou shi.
that CL poet deliberately write-PRF that CL poem
'That poet wrote that poem deliberately.'
- (42) a. na ping jiu (*guyi) he-le Lao Wang {yi shangwu/si-bai yuan}.
that bottle wine deliberately drink-PRF L W one morning/four-hundred yuan
- b. na shou shi (*guyi) zuzu xie-le na ge shiren san ge yue.
that CL poem deliberately as.much.as write-PRF that CL poet three CL month

Second, unlike in a regular transitive construction, the temporal-quantity or money-quantity denoting expression in the flip-flop construction is obligatory:

- (43) a. na ping jiu he-le Lao Wang *({yi shangwu/si-bai yuan}).
that bottle wine drink-PRF Lao Wang one morning/four-hundred yuan
- b. na shou shi (zuzu) xie-le na ge shiren *(san ge yue).
that CL poem as.much.as write-PRF that CL poet three CL month

Third, unlike a regular direct object, the agent-like nominal following the verb in this construction must be definite or specific. An indefinite nominal with a nonspecific reading is ruled out in this position of the construction:

- (44) *na ping jiu he-le liang ge ren {yi shangwu/si-bai yuan}.
that bottle wine drink-PRF two CL person one morning/four-hundred yuan

Fourth, unlike a regular transitive construction, the postverbal nominal in the flip-flop construction cannot be topicalized. Compare:

- (45) a. na ping jiu, Lao Wang yijing he-le.
that bottle wine Lao Wang already drink-PRF
'That bottle of wine, Lao Wang already drank.'
b. na jian dayi, Akiu zuotian xi-le.
that CL coat Akiu yesterday wash-PRF
'That coat, Akiu washed yesterday.'
- (46) a. *Lao Wang, na ping jiu he-le {yi shangwu/si-bai yuan}.
Lao Wang that bottle wine drink-PRF one morning/four-hundred yuan
b. *na ge shiren, na shou shi zuzu xie-le san ge yue.
that CL poem that CL poet as.much.as write-PRF three CL month

The last two contrasts indicate that in such constructions the nominal immediately following the verb, such as *Lao Wang* in (40), does not behave like a direct object.

Zhang (1994) proposes that the flip-flop construction is a ditransitive construction (See Larson 1988, Collins & Thráinsson 1993: 140, and Breuning 2001 for the syntactic structures of the construction). Following Collins & Thráinsson (1993) we assume that ditransitive constructions are akin to causative construction. In the flip-flop construction, specifically, the preverbal nominal is a causer subject, the nominal to the immediate right of the verb is an indirect object, and the construction-final temporal- or money-quantity-denoting expression is the direct object.

The parallelism between the flip-flop construction and a ditransitive construction is seen in the following aspects. The default interpretation related to both constructions is [DEPOSSESSION] (Zhang 1998), regardless of which part of the construction is responsible for the meaning.⁶ Moreover, neither the direct object can be null in (47b), as in all types of ditransitive constructions, nor the temporal expression can be deleted in (40), as shown in (43). Furthermore, both the indirect object of a ditransitive construction and the agent-like nominal following the verb in the flip-flop construction must be definite or specific, as shown in the unacceptability of both (44) and (47c). This specificity requirement is usually seen in preverbal subjects in Chinese. It is possible that indirect objects function as subjects of a non-primary predication relation in the ditransitive construction. Finally, neither the indirect object can be topicalized, as in all types of ditransitive constructions in Chinese, nor can the nominal immediately following the verb in the flip-flop construction can be topicalized, as shown in the unacceptability of both (46) and (47d).

- (47) a. Akiu tou-le na ge ren san ben shu.
Akiu steal-PRF that CL person three CL book
'Akiu stole three books from that person.'
b. Akiu tou-le na ge ren *(san ben shu).
c. *Akiu tou-le liang ge ren san ben shu.
Akiu steal-PRF two CL person three CL book
d. *na ge ren, Akiu tou-le san ben shu.

The fact that the temporal- or money-quantity-denoting expression, which I claim to be a direct object, cannot be topicalized either is independently accounted for by the

⁶ Zhang (1998) assumes that a null verb occurs in the ditransitive construction, and the possession or deposal meaning of the null verb gives the apparent "construction-meaning." The overt counterpart of the null verb is *gei* 'give,' for the possession meaning, and *zou* 'be-away,' for the deposal meaning. This can be seen in the contrast between (i) and (ii):

- | | | | |
|-----|---|------|---|
| (i) | Akiu zu- <u>gei</u> -le wo yi jian fang.
Akiu rent -give-PRF I one CL room
'Akiu rented a room for me.' | (ii) | Akiu zu- <u>zou</u> -le wo yi jian fang.
Akiu rent -be.away-PRF I one CL room
'Akiu rented out a room from me.' |
|-----|---|------|---|

specificity constraint: the expression must be indefinite and thus is not able to undergo topicalization.

Based on the above parallelism, we claim that any possible analysis of (47) should be applied to the flip-flop construction (40). The latter is not a simplex transitive construction considered in this paper.

6. Concluding Remarks

In this paper I have presented both a contrast and a dependency of the thematic relation between little *v* and *V* of transitives. I have shown that the thematic mapping in *v* and *V* is relatively free in Chinese, but is subject to two rigid requirements that *v* is not related to a patient and *V* is not related to an agent, and that a non-default theta-feature on one side must be checked/valued by the default theta-feature on the other.

One might wonder why the mapping is relatively free in Chinese. Alternatively, why non-default thematic roles related to *v* and *V* are allowed in Chinese. The same type of question can be asked with respect to lexical case: why some languages allow subjects in quirky case whereas other languages do not. Mahajan (2002) presents a dependencies in the distribution of quirky case subjects: non-nominative subjects in Hindi arise only in non-accusative contexts. Both Mahajan's research on non-canonical cases of subjects and our research here on non-canonical theta-roles of arguments show that, on the one hand, the computations of formal features vary cross-linguistically, and the variation, like some other instances of observable variation, "follows not from a property of the system, but actually from the lack of a property. The system would then be unspecified," and the parameter-like variation presents "an underspecification that gets realized in one among several logical options, as a function of this-and-that" (Uriagereka 1994: 249, 250). On the other hand, our researches conclude that the variation is by no means random.

The scope of this research is the argument patterns of transitives. We look forward to seeing studies of non-canonical thematic patterns of other types of verbs. Massam (1990) convincingly argues that cognate objects are thematic objects. It seems that the occurrence of such non-canonical objects also requires the default argument of the relevant verb. In (48a), the theme *John* is the canonical argument of the unaccusative *die*, and it must be present; in (48b), the agent *John* is the canonical argument of the unergative *smile*, and it must also show up.

- (48) a. {John/*There/*In the room} died a gruesome death.
b. {John/*On the stage} smiled a silly smile.

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