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POSTVERBAL SECONDARY PREDICATES IN TAIWANESE

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ABSTRACT

Resultative, descriptive, and extent constructions are three postverbal secondary predicates in Taiwanese. They all involve the use of *-kah* and appear similar on the surface. However, this paper proposes that the underlying structures of each of the three types of predicate show marked differences in terms of scope of modification, passivization, and word order. Resultative constructions are proposed to be complements subcategorized for by V*-kah*, and they are predicated of either the subject or object of the main clause. Descriptive constructions are adverbial phrases attached to V', and they modify the head verb. As for extent constructions, not exactly modifying any particular element, they denote 'pure' extent reading and have the structure of a clause attached to VP.

1. INTRODUCTION

Secondary predicates including resultatives and depictives either precede or follow the head verb uniformly in most languages. For example, secondary predicates in English follow the main verb as shown in (1-2), while those in Japanese precede the main verb as shown in (3-4). (Japanese examples are taken from Koizumi (1994).)

(1)	John painted the house red.	Resultative
(2)	John ate the fish raw.	Depictive

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- (3) John-ga kuruma-o kiiroku nutta. Resultative John-NOM car-ACC yellow painted 'John painted the car yellow.'
- (4) Taroo-ga katuo-o nama-de tabeta. Depictive Taroo-NOM bonito-ACC raw ate 'Taro ate the bonito raw.'

In Taiwanese, however, resultatives follow the main verb while depictives precede the main verb as shown in (5-6).¹ ((6) is taken from Lien (2001).)²

(5)	i penn-kah khia-be-khilai.	Resultative
	he sick-KAH stand-not-up	
	'He was so sick that he could not stand up.'	
(6)	A Ong-a thiam-thiam tih chu mi.	Depictive
	A Ong-a tired TIH cook noodle	
	'Mike cooked the noodle tired.'	

In addition to resultatives, two other types of postverbal secondary predicate exist in Taiwanese: descriptive construction and extent construction as shown in (7-8).

- (7) i penn-kah ukau giamtiong e. Descriptive he sick-KAH very seriously PARTICLE 'He was seriously ill.'
- (8) thinnting kng-kah chinchan jitsi sky bright-KAH like dayti kangkhuan. Extent davtime same 'The sky is so bright that (it is) like the daytime.'

Differing from resultatives in languages such as English, in which resultatives can only be predicated of the direct object as shown in (9-10) (Simpson 1983), resultatives in Taiwanese may be predicated of the object or the subject as in (11-12).

(9) He washed his clothes clean.

¹ Romanization used in this paper is according to the TLPA (Taiwan Language Phonetic Alphabet). ² Tone markers are omitted here.

- (10) *He danced tired.
- (11) i ciong sann se-kah cin cingkhi. Object-oriented resultative he CIONG clothes wash-KAH very clean 'He washed his clothes clean.'
- (12) i thiau-kah cin thiam. he dance-KAH very tired 'He danced himself tired.'

Subject-oriented resultative

Descriptives in Taiwanese also differ from depictives in other languages in that they modify the (stative) verb rather than the subject or object as in (7), where *ukau giamtiong* 'very seriously' refers to the degree of the person's being ill rather than the state he is in. As for extent constructions, even though most resultative constructions also denote the extent reading '...to the extent that...', there are "pure" extent constructions which unlike resultatives, are not predicated of the subject or object as in (8), where the empty subject of the extent clause is not the same as that of the main clause. Also there are extent constructions in which the event described in the extent clause cannot be construed as the result, but just as the extent as in (13), where *m cai chenn* 'not knowing waking up' can not be said to be the result of sleeping but just is the extent to which the person slept.

(13) i khun-kah m cai chenn.he sleep-KAH not know wake'He slept so well that he did not wake up for a long time.'

These three types of postverbal secondary predicates in Taiwanese will now be considered in more detail, and this paper proposes that these three types all have different structures. Resultative clauses are complements subcategorized for by V-*kah*, while both descriptive and extent clauses are adjuncts adjoined to V' and VP, respectively. This categorization of the three structures can be fully supported by consideration of their differences in terms of scope of modification, passivization, and word order.

2. LITERATURE REVIEW

In previous literature discussing resultatives and depictives, the main

concerns are (i) what type of structure they take, small clause or AP, (ii) whether they are complements or adjuncts, and (iii) at what level they are attached, V', VP, or IP, etc. For instance, Roberts (1988) takes both resultatives and depictives in English to be AP, and Mallén (1991) supports a similar view giving evidence from Spanish. Both Roberts and Mallén argue that object-oriented APs are sisters to V, while subject-oriented APs are sisters to V', as secondary predicates and the NPs they are predicated of mutually c-command each other at D-structure. However, Carrier and Randall (1992) propose that only object-oriented resultatives are sisters to V, while object-oriented depictives are adjoined to VP. Nakajima (1990) contends that while resultatives are in V', subject-oriented predicates are adjoined to IP and object-oriented depictives are in VP, and the predication relation is mutually m-command determined at S-structure. Presenting an outline based on Japanese examples, Koizumi (1994) argues that subject-oriented depictives are dominated by either I' or a higher segment of VP, while object-oriented depictives and resultatives are sisters to V, and the predication relation is c-command, rather than m-command.

Hoekstra (1988, 1992) proposes a small clause analysis for resultatives; that is, the postverbal NP together with the secondary predicate forms a small clause, which is a sister to V. Hornstein and Lightfoot (1987), however, contend that object-oriented secondary predicates adjoin to V', while Aarts (1992) argues that they adjoin to VP. More recently, Legendre (1997) provides evidence from French to support a small clause analysis, in which subject-oriented secondary predicates and object-oriented resultatives are adjoined to VP, while object-oriented depictives are sisters of V'.

None of the analyses for secondary predicates in English, Spanish, French, or Japanese can fully account for the data in Taiwanese because they are all unifying accounts in which resultative and depictive constructions are taken to be either both APs or both small clauses. Such unifying accounts are unable to completely capture the diversity of postverbal secondary predicates in Taiwanese. In addition, unlike in other languages, Taiwanese extent constructions need to be further distinguished from the other two types.

Mandarin Chinese belongs to the Han language as does Taiwanese. Much discussion on resultative and descriptive constructions has been carried out in relation to Mandarin Chinese, and accounts available vary from unifying proposals where these constructions are assigned the same structure to diverse analyses in which these constructions all have different structures. For unifying approaches, Huang (1988, 1992), Tang (1990),³ Dai (1992), among others, argue that resultative and descriptive clauses are both complements, while Tai (1973), Tang (1979), Huang & Mangione (1985), among others, argue that resultative and descriptive clauses are the main predicate. Ernst (1996) takes a quite different approach towards this problem and proposes that they are both adjuncts (semi-arguments); the difference between resultatives and descriptives being that the former is based-generated postverbally while the latter is base-generated at a preverbal position and then moves to the postverbal position. For analyses following a diverse approach, Cheng (1986) proposes that the resultative clause is a complement while the descriptive clause is the main predicate; Tang (1992) proposes that resultatives are adjuncts while descriptives are complements.⁴

Setting aside the problems these previous analyses might have for data in Mandarin, the unifying analyses are unable to fully account for Taiwanese data. It should be noted that in Taiwanese, resultative constructions do differ from descriptive constructions in several aspects such as scope of modification and other distributional behaviors as will be discussed in the following section, and thus unifying accounts are doomed to fail. In addition, extent constructions have to be further distinguished from resultative constructions for the former denote 'pure' extent reading and the two constructions demonstrate different syntactic behaviors. Even though as mentioned above, some previous analyses have taken a diverse approach and propose different structures for resultative and descriptive constructions, they do not further distinguish the nature of the difference between extent constructions and resultative constructions. Moreover, Cheng's analysis that the descriptive clause is the main predicate has already proven to be problematic by several scholars such as Huang (1988, 1992), Tang (1990), Dai (1992), Tang (1992), Ernst (1996), among others. As for Tang's (1992) diverse analysis, it is also problematic in explaining several aspects of these three types of construction as will also be discussed in the following sections. Thus a different diverse analysis is needed in order to fully

 $^{^{3}}$ To be exact, Tang (1990) takes both resultative and descriptive constructions to be adjuncts that are projected as complements.

⁴ Tang's (1992) analysis also applies to Taiwanese resultatives and descriptives.

capture the features of these three types of postverbal secondary predicate in Taiwanese.

3. DIFFERENCES AMONG POSTVERBAL SECONDARY PREDICATES IN TAIWANESE

As discussed in Section 2, most proposals for postverbal secondary predicates are unifying accounts in which both resultative and descriptive constructions are taken to have the same structure. However, although these constructions may appear to be similar on the surface, they are each different in their underlying structure and therefore, they demonstrate different syntactic behaviors as shown in the following.

3.1 Scope of Modification

One of the reasons why Tang (1992) proposes that the descriptive construction is a complement is that its main predicate is restricted to actional verbs such as *cau* 'run' in (14). Since no such restrictions exist between the resultative construction and its main predicate, resultative constructions are considered adjuncts. However, as shown in (7) (repeated here as (15a) for ease of reference), the descriptive construction can co-occur with the stative verb *penn* 'sick'.

(14)	a.	i cau-kah cin kin.	Descriptive
		he run-KAH very fast	-
		'He ran very fast.'	
	b.	i cau-kah cin thiam.	Resultative
		he run-KAH very tired.	
		'He got tired as a result of running.'	
(15)	a.	i penn-kah ukau giamtiong e.	Descriptive
		he sick-KAH very seriously PARTICLE	
		'He was seriously ill.'	
	b.	i penn-kah khia-be-khilai.	Resultative
		he sick-KAH stand-not-up	
		'He was so sick that he could not stand up.	,

Both the resultative and descriptive constructions can co-occur with an

active verb such as *cau* 'run' in $(14)^5$ and also both of them can co-occur with a stative verb such as *penn* 'sick' in (15). In addition, extent constructions also can co-occur with either active or stative verbs. For instance, the extent construction in (8) co-occurs with the stative verb *kng* 'bright', while that in (13) co-occurs with the active verb *khun* 'sleep'. Therefore, in terms of selectional restrictions, these three types of secondary predicate are not very different.

The consideration which does result in their differences in terms of co-occurrence restrictions is that the resultative, descriptive, and extent constructions have differing scopes of modification. That is, most of the resultative clauses predicate on the subject or object of the main predicate,⁶ while the descriptive clause modifies the main predicate. As such, the resultative clause and descriptive clause must be composed of something that can serve their individual function. For instance, *cin cingkhi* 'very clean' is not a verb-modifying adverb and only has the function of an adjective; thus in (16), *cin cingkhi* 'very clean' can only

- (i) i thiau-kah cin thiam.
 he dance-KAH very tired
 'He danced himself tired.'
- (ii) i thiau-kah cin kin. he dance-KAH very fast
 'He danced very fast.'
 - *'He danced and as a result he became fast.'

⁶ As one reviewer points out, the resultative clause does not always predicate on the subject or object of the main predicate. For instance, the resultative clause in (i) does not predicate on the subject i 'he'.

⁵ One reviewer points out that in some cases it may not be so clear whether a given construction is resultative or descriptive. For instance, how does one decide whether (i) and (ii) should be resultative or descriptive? However, following the discussion presented in this paper, it should be possible to make a distinction between the two. In (i) *cin thiam* 'very tired' predicates on the subject of the main clause and denotes the result of the person's dancing; therefore, (i) contains a resultative construction. As for (ii), *cin kin* 'very fast' refers to the way the person dances. As the English translation indicates, *cin kin* 'very fast' does not denote the result of his dancing. As such, (ii) is clearly a case of descriptive construction.

⁽i) i sia-kah pit long bo cui a. he write-KAH pen all not-have ink PARTICLE 'He wrote so much that the pen ran out of ink.'

refer to the object *sann* 'clothes', but not to the way the clothes are being washed.

(16) i ciong sann se-kah cin cingkhi. he CIONG clothes wash-KAH very clean 'He washed his clothes clean.'
*'He washed his clothes cleanly.'

Even though kin 'fast' can have the function of an adjective as in (17), the state of being fast can not be said to be the result caused by some event. Thus kin 'fast' in (18) can only modify the main verb *thiaubu* 'dance' and refer to the way the person dances rather than the state he is in.

(17) i cin kin. he very fast 'He is very fast.'
(18) i thiaubu thiau-kah cin kin. he dance dance-KAH very fast 'He danced very fast.' *'He danced and as a result he became fast.'

There are cases where the secondary predicate has both the function of an adjective and adverb and can be construed as either a resultative or descriptive construction. Ambiguity thus arises in such cases as shown in (19), where *huannhi* 'happi(ly)' may predicate on the subject i 'he' or modify the verb *chiong* 'sing'.

- (19) i chiong-kah cin huannhi.
 - he sing-KAH very happi(ly)
 - (i) 'He sang so much that he became very happy.'
 - (ii) 'He sang happily.'

As for extent constructions, they cannot be said to be modifying any particular element; they simply refer to the extent of the event denoted by the main predicate. For example, *chinchan jitsi kangkhuan* 'it is like the daytime' in (8) refers to the extent of the brightness of the sky and m *cai chenn* 'not knowing waking up' in (13) talks about how well the person was sleeping. Therefore, as long as semantically the extent clause

can be construed as the extent of the event denoted by the main predicate, there is no particular co-occurrence restriction between the main predicate and the extent clause. It should be noted that resultative constructions often have an extent reading, too. However, the opposite does not hold; that, is, extent constructions do not necessarily have a result reading.

To recapitulate, co-occurrence restrictions do exist between the main predicate and the three types of postverbal secondary predicate. However, the restrictions do not result from the verb types of the main predicate; rather, the secondary predicates are restricted according to the role they play, resultative, descriptive, or extent. Resultative clauses modify the subject or object of the main predicate, while descriptive clauses modify the event denoted by the main predicate. Another feature differentiating these three constructions from one another is that both resultative and extent clause, respectively, while descriptive constructions are adverbial phrases modifying the main predicate, which do not take subjects as shown in (22), where the adverbial phrase *cin kin* 'very fast' does not allow a subject.⁷

- (20) i sia-kah pit long bo cui a. he write-KAH pen all not-have ink PARTICLE 'He wrote so much that the pen ran out of ink.'
- (21) i san-kah guan long jin-be-chutlai.he thin-KAH we all recognize-not-out'He has become so thin that we could not recognize him.'
- (22) *i thiaubu thiau-kah yi/guan cin kin. (cf. (18)) he dance dance-KAH he/we very fast 'He danced very fast.'

(i) *i thiau-kah i cin thiam. (cf. (12)) he dance-KAH he very tired 'He danced so much that he got tired.'

⁷ It is true that not all resultative and extent constructions take overt subjects, especially when the empty subject is co-referential with the main clause subject, as in (i). However, the case with descriptive constructions is that they never take subjects, co-referential with the main subject or not.

3.2 Passivization

Descriptive constructions do not have passive counterparts as shown in (23), where the descriptive *cin kin* 'very fast' modifies the head verb *sia* 'write'. As for extent constructions, only the object of the main verb can undergo passivization, but not the subject of the extent clause as shown in (24), where *lian chupinn long chutlai khuann* 'even the neighbors came out to have a look' refers to the extent that the person was hitting his child. Only *in kiann* 'his child' can undergo passivization as in (24b), but not *chupinn* 'neighbor' as in (24c).

- (23) a. i ji sia-kah cin kin. he word write-KAH very fast 'He writes very fast.'
 - b. *ji hoo i sia-kah cin kin. word HOO he write-KAH very fast 'Words are written very fast.'
- (24) a. i ka in kiann phah-kah lian chupinn long chutlai khuann. he KA his child hit-KAH even neighbor all out see 'He hit his child so much that even the neighbors came out to have a look.'
 - b. in kiann hoo i phah-kah lian chupinn long chutlai khuann. his child HOO he hit-KAH even neighbor all out see 'His child was hit so much that even the neighbors came out to have a look.'
 - c. *chupinn hoo i ka in kiann phah-kah long chutlai khuann. neighbor HOO he KA his child hit-KAH all out see 'The neighbors came out to have a look because he hit his child so much.'

On the other hand, resultatives allow passivization, whether the main verb is transitive or intransitive. In (25) the object of the transitive main verb *phah* 'hit' undergoes passivization. In (26) even though *pit* 'pen' is not the object of the transitive main verb *sia* 'write', but the subject of the resultative clause, it can still undergo passivization. An intransitive verb also allows passivization as in (27), where the main verb *chio* 'laugh' is intransitive.

(25) a.	i ciong in kiann phah-kah hunkhi. he CIONG his child hit-KAH faint
_	'He hit his child so much that he/she fainted.'
b.	in kiann hoo i phah-kah hunkhi.
	his child HOO he hit-KAH faint
	'His child was hit so much that he/she fainted.'
(26) a.	i sia-kah pit long bo cui a.
	he write-KAH pen all not-have ink PARTICLE
	'He wrote so much that the pen ran out of ink.'
b.	pit hoo i sai-kah long bo cui a.
	pen HOO he write-KAH all not-have ink PARTICLE
	'The pen ran out of ink because he wrote so much.'
(27) a.	i chio-kah ehai long lauhkhi a.
	he laugh-KAH jaw all drop PARTICLE
	'He laughed so much that his jaw dropped.'
h	ehai hoo i chio-kah long lauhkhi a

b. ehai hoo i chio-kah long lauhkhi a. jaw HOO he laugh-KAH all drop PARTICLE 'His jaw dropped because he laughed so much.'

3.3 Word Order

As shown in (14) (repeated here as (28)), descriptive and resultative constructions have the same surface structure when the main verb is intransitive, *cau* 'run' in this case. These two constructions, however, demonstrate different word orders when the head verb is transitive, as shown in (29) and (30). In the descriptive construction (29), the semantic object of the main verb must precede it, while in the resultative construction (30), the semantic object of the main verb may precede or follow it.

- (28) a. i cau-kah cin kin. he run-KAH very fast 'He ran very fast.'
 - b. i cau-kah cin thiam. he run-KAH very tired. 'He got tired as a result of running.'
 a. i ji sia-kah cin kin.
- (29) a. i ji sia-kah cin kin. he word write-KAH very fast 'He writes very fast.'

	b.	*i sia-kah ji cin kin.
		he write-KAH word very fast
(30)	a.	i gin-a phah-kah hunkhi.
		he child hit-KAH faint
		'He hit the child so much that he/she fainted.'
	b.	i phah-kah gin-a hunkhi.
		he hit-KAH child faint

In the aspect of word order, extent constructions are much like descriptive constructions in that the semantic object of the main verb must precede it, as in (31), where *in kiann* 'his child', the object of *phah* 'hit', must precede *phah*.

- (31) a. i ka in kiann phah-kah lian chupinn long chutlai khuann. he KA his child hit-KAH even neighbor all out see 'He hit his child so much that even the neighbors came out to have a look.'
 - b. *i phah-kah in kiann lian chupinn long chutlai khuann. he hit-KAH his child even neighbor all out see

4. THE ANALYSIS

As discussed in Section 3, descriptive, resultative, and extent constructions all have features that distinguish them from one another. To capture their individual distributional behaviors, this paper proposes a different structure for each of them.

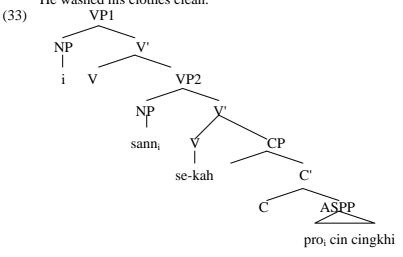
4.1 Resultative Constructions

Adopting Larson's (1991) structure for *persuade*-type sentences, this paper proposes a control analysis for resultatives in Taiwanese. Resultatives in Taiwanese are proposed to be clausal complements subcategorized for by V-*kah* and the subject of the clausal resultative may be occupied by a lexical NP or pro. In the case of pro, according to the Principle of Minimal Distance (Rosenbaum 1970, Chomsky 1980), it is controlled by the closest potential antecedent which c-commands it.

I will commence with the D-structure for a resultative construction headed by a transitive verb such as (11) (repeated here as (32)). (33) is

proposed to be the D-structure for (32). Se-kah in (33) is subcategorized for both an NP object, which takes the SPEC of VP2 position, and a resultative clause, which occupies the inner complement position. The resultative clause is simply represented as RC in the structure tree in Huang (1992), while in this paper the resultative clause is taken to be a full clause (CP). Also, the empty subject in the resultative clause is filled by Pro in Huang (1992), but taken to be pro in this paper, for it is possible that the subject of the resultative clause is occupied by a lexical NP as in (20), where *pit* 'pen' takes the position of the subject of the resultative clause. (32) is derived from the D-structure (33) after the case marker ciong is inserted to assign Case to the object sann 'clothes', since sann is not in a Case-marked position, if we assume that Case is assigned from left to right in Chinese (Travis 1984, Li 1990).⁸ The pro in the resultative clause is controlled by the closest c-commanding NP, which is sann in this case. Cin cingkhi 'very clean' predicates on the pro subject, which, in turn, is controlled by the object of *se-kah*, and thus (32) is a case of object-oriented resultative.

(32) i ciong sann se-kah cin cingkhi. he CIONG clothes wash-KAH very clean 'He washed his clothes clean.'



⁸ Another option for the object *sann* to receive Case is to move the verb *se-kah* up to the higher VP shell to assign Case to it, as is the case discussed below for (58).

This proposal is further different from Huang's (1992) in the cases of resultative clauses subcategorized for by intransitive head verbs, such as (34) below, to which Huang assigns (35) as its D-structure.⁹ Huang argues that ku-de together with dou shi le forms a complex predicate which assigns a theta-role to the NP shoupa. (34) is derived from (35) after ku-de moves up to assign Case to shoupa, and the resulting sequence gives the wrong impression that shoupa is the subject of the resultative clause. However, as discussed in Gu & Pan (2001), the sequence [lian NP dou] 'even...all' has to be positioned preverbally. As shown in (36), shoupa in (34) can occur in the focus position introduced by *lian...dou*. With respect to *ku-de*, *shoupa* takes a postverbal position, rather than the required preverbal position, and the grammaticality of (36) is unexpected. On the other hand, if *shoupa* is taken to be the subject of the resultative clause, the grammaticality of (36) then follows, since within the resultative clause, shoupa indeed takes a preverbal position, the position before the stative verb shi. The fact that the sequence lian shoupa dou occurs between ku-de and shi le thus indicates that shoupa must be occupying the position before the stative verb shi; that is, shoupa is the subject of the resultative clause. Otherwise, the grammaticality of (36) will be unaccounted for.

(34) Zhangsan ku-de shoupa dou shi le. Zhangsan cry-DE handkerchief all wet ASP 'Zhangsan cried so much that the handkerchief was all wet.'
(35) IP NP VP Zhangsan NP V' shoupa V' ku-de NP VP Pro dou shi le

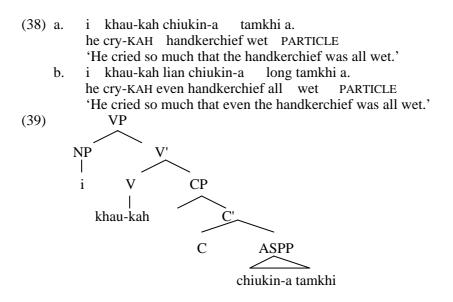
⁹ Even though Huang (1992) only talks about the data in Mandarin Chinese, not in Taiwanese, it is shown here that this analysis is problematic even when accounting for the data in Mandarin Chinese.

(36) Zhangsan ku-de lian shoupa dou shi le.Zhangsan cry-DE even handkerchief all wet ASP'Zhangsan cried so much that even the handkerchief was all wet.'

The case with Taiwanese is the same. As we can see from (37) the focus sequence involving *lian...long* 'even...all' in Taiwanese also has to be placed in a preverbal position. *Lian in kiann long* 'even his child all' in both (37b) and (37c) occurs before the verb *ma* 'scold' and both sentences are grammatical, while the same sequence takes a postverbal position in (37d) and results in the ungrammaticality of that sentence.

(37)	a.	i m kann ma in kiann.
		he not dare scold his child
		'He does not dare to scold his child.'
	b.	i lian in kiann long m kann ma.
		he even his child all not dare scold
		'He does not even dare to scold his child.'
	c.	lian in kiann i long m kann ma.
		even his child he all not dare scold
		'He does not dare to scold even his child.'
	d	*i m kann ma lian in kiann long.
	u.	C C
		he not dare scold even his child all

Having the preverbal requirement for the focus sequence in mind, I will now consider the resultative clause subcategorized for by an intransitive verb in Taiwanese as shown in (38a). The resultative construction in (38) is proposed to have something like (39) as its D-structure, which differs from Huang's analysis in that *chiukin-a* 'handkerchief' is projected as the subject of the resultative clause at D-structure rather than as the object of the head verb *khau* 'cry'. This proposal is supported by the fact that *chiukin-a* can occur in the *lian...long* 'even...all' preverbal focus position as shown in (38b). Along the same line of argument presented above for the Mandarin focus sequence, the occurrence of *lian chiukin-a long* between *khau-kah* and *tamkhi* indicates that *lian chiukin-a long* must be taken to be the subject of the resultative clause so that the grammaticality of (38b) can be accounted for.



Still different from an analysis which takes the resultative clause as an adjunct such as Tang's (1992), this paper proposes that the resultative clause is a complement. If the resultative clause were an adjunct, the clause itself would serve as a barrier in Chomsky's (1986) barrier framework as shown in (40-41) since it would not be L-marked by the verb, as defined in (42-43).

- (40) γ is a BC for β iff γ is not L-marked and γ dominates β .
- (41) γ is a barrier for β iff (a) or (b):
 - a. γ immediately dominates δ , δ a BC for β ;
 - b. γ is a BC for β , $\gamma \neq$ IP.
- (42) α L-marks β iff α is a lexical category and θ -governs β .
- (43) $\alpha \theta$ -governs β iff α is a zero-level category that θ -marks β , and α , β are sisters.

As such, the subject of the resultative clause would not be allowed to move across the barrier since its trace would not be antecedent-governed, and a sentence such as (26b), where the subject of the resultative clause moves across the clause, would be predicted to be ungrammatical. However, since (26b) is as well-formed as it can be, an adjunct analysis simply cannot be supported. On the other hand, if the resultative clause is taken to be a complement as proposed here in this paper, the resultative clause is L-marked by the head verb, hence not a barrier, and the extraction of the NP subject from the resultative clause is thus legitimate as the grammaticality of (26b) shows.

One more point about the structures in (33) and (39) that needs to be clarified is the status of *-kah*. Some scholars take the counterpart of *-kah* in Mandarin, i.e. *-de*, as a suffix which is attached to V in the lexicon and V*-de* is considered a complex verb. For instance, Tang (1992) proves that V*-de* works as a single unit by citing examples such as (44),¹⁰ where the whole complement clause after *-de* is omitted. The same type of examples can also be found in Taiwanese as shown in (45-47),^{11,12} where the whole complement clause after *-kah* can also be omitted. Therefore, it is plausible to take *-kah* as a suffix attached to V in the lexicon.

(44) haier, kan ni na xie lan-de, ba zhe shuang xie child look you that shoe worn-out-DE BA this pair shoe chuan-shang. wear-on

'Child, look, your shoes are all worn out. Put on this pair.'

- (45) khuann ni kong-kah! look you talk-KAH 'Look at how you say it!'
- (46) cau-kah gua thiam-kah. run-KAH I tired-KAH 'I got so tired from running.'
- (47) ...than kehue than-kah o. earn money earn-KAH PARTICLE '...earned so much money.'

In addition, further evidence can be found in Taiwanese data to further

¹⁰ (44) is taken from Li (1963:400).

¹¹ Example (45) is taken from Cheng et al. (1989:102), Example (46) is from Lien, Cheng, & Wang (1996:45), and Example (47) is from Hu (1995:8).

¹² Tang (1992), however, does not propose that *-kah* in Taiwanese forms a complex verb with the preceding verb. Instead, he posits that *-kah* in the resultative construction, a preposition-like element, heads the PP adjunct at D-structure and then only after reanalysis is *-kah* attached to V.

strengthen this argument. That is, V-*kah* can take not only a clausal complement but also an NP complement as shown in (48). To give a unifying account of the two sequences [V *kah* Clause] and [V *kah* NP], it is more plausible to say that V-*kah* takes as its complement either a clause or NP, rather than that V takes as its complement either a clause following *kah* or an NP following *kah*.

(48) i cu-kah hiah ce chai. he cook-KAH that many dish 'He cooked so many dishes.'

Also V-kah has the same argument structure as V except for one extra theta-role, i.e. Result, which is assigned to the resultative clause. For instance, khau 'cry' is unergative and khau-kah is also unergative as in (49); se 'wash' is transitive and se-kah is also transitive as in (50). Khau-kah differs from khau (and se-kah differs from se) in that the former assigns an extra theta-role, Result. In addition, both khau/khau-kah and se/se-kah are activity-denoting verbs, but they differ in that the former lacks an internal argument. Huan 'feel annoyed' is ergative and huan-kah is clausative also as in (52). Huan/huan-kah in (51) and that in (52) are both state-denoting verbs but they differ in that the former lacks the argument Causer.

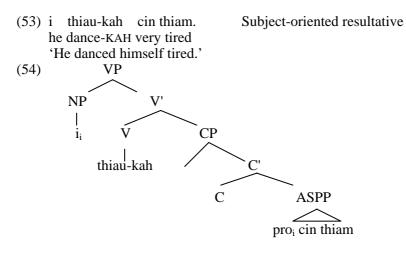
(49) a.	i khau cin ku.
. ,	he cry very long
	'He cried for very long.'
b.	i khau-kah chiukina tamkhi a.
	he cry-KAH handkerchief wet PARTICLE
	'He cried so much that the handkerchief was all wet.'
(50) a.	i leh se sann.
	he DUR ¹³ wash clothes
	'He is washing clothes.'
b.	i ciong sann se-kah cin cingkhi.
	he CIONG clothes wash-KAH very clean
	'He washed his clothes clean.'

¹³ DUR stands for durative aspect.

Postverbal Secondary Predicates

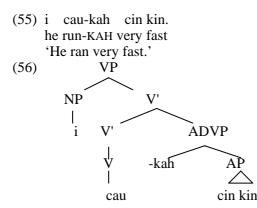
(51) a.	i iking huan cin ku a.
	he already feel-annoyed very long PARTICLE
	'He has felt annoyed for a while.'
b.	i huan-kah beh si.
	he feel-annoyed-KAH almost die
	'He feels extremely annoyed.'
(52) a.	i takkang long leh huan in laope.
	he every-day all DUR annoy his father
	'He annoys his father every day.'
b.	i ciong in laope huan-kah beh si.
	he CIONG his father annoy-KAH almost die
	'His father was extremely annoyed by him.'

One great difference between Taiwanese resultatives and English resultatives is that the former can be subject-oriented as shown in (12) (repeated here as (53)), while the latter cannot as shown in (10). The subject-oriented resultative in (53) is proposed to have a D-structure as in (54). The unergative *thiau-kah* in (54) is subcategorized for a result clause. *Cin thiam* predicates on the pro subject, which is controlled by the main subject; (53) is thus a case of subject-oriented resultative.



4.2 Descriptive Constructions

As for descriptive constructions, they are adverbial adjuncts composed of *-kah* and AP and they are adjoined to V', thus modifying the head verb. The descriptive phrase headed by *-kah* such as *-kah cin kin* 'very fast' in (14a) (repeated here as (55)) modifies the head verb and has the status of an ADVP, while the phrase following *-kah*, i.e. *cin kin* in (55), is an AP. Therefore, *-kah* in descriptive constructions is like an adverbial marker that changes AP into ADVP. The D-structure of a descriptive construction such as (55) is proposed to be (56). Moreover, *-kah* in descriptive constructions.¹⁴ *-Kah* in resultative constructions attaches to V in the lexicon and V*-kah* as a whole is inserted under an appropriate V node in syntax, while that in descriptive constructions attaches to V only at PF level because it is a clitic-like element which cannot stand alone and must attach to the preceding verbal element.



This phenomenon explains the differences between these two constructions in terms of word order. As discussed in the subsection of

¹⁴ Tang (1992) does not discuss *-kah* in descriptive constructions. In his outline, *-kah* only occurs in resultative constructions. However, *-kah* quite often occurs in both constructions. Many examples can be seen in Hu (1995) and Lien, Cheng, & Wang (1996). The fact that Tang fails to discuss *-kah* in descriptive constructions could indicate that *-kah* does function differently in descriptive and resultative constructions and for Tang, *-kah* cannot occur in descriptive constructions.

3.3, when the main verb is transitive, these two constructions demonstrate different word orders. In the descriptive construction (29) (repeated here as (57)), the semantic object of the main verb must precede it, while in the resultative construction (30) (repeated here as (58)), the semantic object of the main verb may follow it.¹⁵

(57)	a.	i j	i	sia-k	ah	cin	kin.
		he v	vord	l writ	е-КАН	I very	fast
		'He	wri	tes ve	ery fas	st.'	
1	h	*i	ci	a-kah	ii	cin	kin

υ.	i sia-kan ji chi kin.
	he write-KAH word very fast
(58) a.	i gin-a phah-kah hunkhi.
	he child hit-KAH faint
	'He hit the child so much that he/she fainted.'

b. i phah-kah gin-a hunkhi. he hit-KAH child faint

The D-structure of the descriptive construction in (57) is proposed to be (59), where the object of *sia* 'write' takes the SPEC of VP2 position. *Ji* is not in a Case position; the verb *sia* thus moves up to a higher VP shell to

- (i) i ciong sann se-kah cin cingkhi. he CIONG clothes wash-KAH very clean 'He washed his clothes clean.'
- (ii) ?i se-kah sann cin cingkhi. he wash-KAH clothes very clean

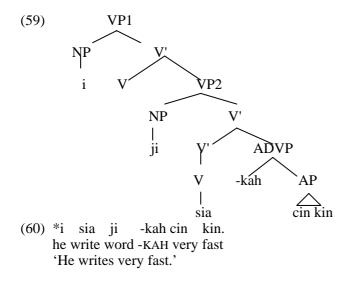
However, this should be considered a rhetorical problem rather than a syntactic one. A comparison can be made of (iii) with (iv). Both of them are grammatical. Therefore, it is not true that *se* does not allow its semantic object to follow it.

(iii)	i	ciong	tak	nia	sar	ın long	se-kah	cin	cingkhi.
	he	e CIONG	even	ry CL	clot	nes all	wash-KAH	I very	clean
	۰ŀ	He washe	ed his	cloth	nes a	nd as a	result each	of the	em was very clean.'
(iv)	i	se-kah	t	ak 1	nia	sann	long cin	cingk	hi.

he wash-KAH every CL clothes all very clean

¹⁵ One reviewer points out that it seems that not every main verb in a resultative construction allows its semantic object to follow it. For instance, in comparison with (32) (repeated here as (i)), (ii) is not acceptable to the reviewer.

assign Case to it. The resultant sentence is (60), which is, however, ungrammatical, since -kah as a clitic stands alone and does not attach to the verb. (57b) also cannot be derived from (60) since the NP *ji* stands in between the verb *sia* and -kah, and thus -kah cannot attach to the preceding verb. From (60), if the NP *ji* is further preposed to be emphasized, it may adjoin to VP, as Ernst & Wang (1995) argue that an NP can move to adjoin to VP for emphasis or contrast, and the derived sentence will be the grammatical (57a), where the NP object occurs before the verb and -kah attaches to the verb *sia*.



As for the resultative construction in (58), its D-structure is something like (33), and after *phah-kah* moves up to a higher VP shell to assign Case to the NP object *gin-a*, (58b) is derived. If the NP *gin-a* is further preposed to adjoin to VP, (58a) is then derived.

Different -kah's in descriptive and resultative constructions also account for their difference in passivization. As discussed in the subsection of 3.2, active resultative, but not descriptive, constructions have passive counterparts as shown in (23) and (26) (repeated here as (61) and (62)). That *sia* 'write' in the descriptive construction does not have a passive counterpart as shown in (61b) is just as in the case that *sia* in a simple clause does not have a passive constructions must signal

disposal and both (61) and (63) lack the sense of disposal. (Li & Thompson 1981) The resultative *sia-kah* is apparently different from a simple *sia*. As discussed in the subsection of 4.1, V-*kah* assigns an extra theta-role, Result. Precisely because of the extra theta-role assignment, V-*kah* has imposed the sense of disposal on the NP object, and thus V-*kah* can occur in the passive construction. *Sia-kah* in (62a) is thus different from *sia*(*-kah*) in (61a) and the passive counterpart of the former is grammatical as shown in (62b), while that of the latter is not as in (61b).¹⁶

(61) a.	i ji sia-kah cin kin.
	he word write-KAH very fast 'He writes very fast.'
b.	*ji hoo i sia-kah cin kin.
	word HOO he write-KAH very fast
	'Words are written very fast.'
(62) a.	i sia-kah pit long bo cui a.
	he write-KAH pen all not-have ink PARTICLE
	'He wrote so much that the pen ran out of ink.'
b.	pit hoo i sai-kah long bo cui a.
	pen HOO he write-KAH all not-have ink PARTICLE
	'The pen ran out of ink because he wrote so much.'
(63) a.	i leh sia ji.
	he DUR write word
	'He is writing words.'
b.	
0.	word DUR HOO he write
	'Words are being written by him.'
	words are being written by fiffi.

¹⁶ The same argument applies to the pair (57a) and (58a). Even though these two sentences have exactly the same word order on the surface, the former does not have a passive counterpart as shown in (61b), while the latter does allow a passive counterpart as in (i). Again, the resultative *phah-kah* assigns an extra theta-role, Result and because of this extra theta-role assignment, *phah-kah* has imposed the sense of disposal on the NP *gin-a* 'child'. The passive construction is thus possible.

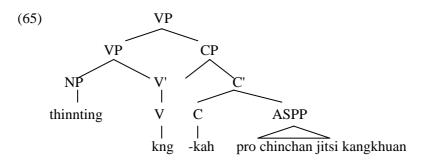
⁽i) gin-a hoo i phah-kah hunkhi.
child HOO he hit-KAH faint
'The child fainted because he/she was hit so much by him.'

4.3 Extent Constructions

As discussed in Section 1, extent constructions are most similar to resultative constructions in that they both denote '... to the extent that...'. However, in this paper extent constructions only refer to those which have 'pure' extent denotation. Two types of 'pure' extent construction can be found. The first is one where the extent clause does not predicate on the subject or object of the main clause as in (8) (repeated here as (64)), where *chinchan jitsi kangkhuan* 'it is like the daytime' does not refer to the main subject *thinnting* 'sky'.

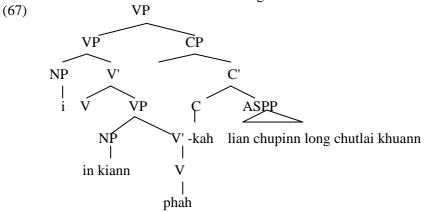
(64) thinnting kng-kah chinchan jitsi kangkhuan. sky bright-KAH like daytime same 'The sky is so bright that (it is) like the daytime.'

Extent constructions are thus proposed to be adjuncts attached to VP as in (65), which is the D-structure of (64). *-Kah* in extent constructions takes a clause as its complement. For instance, *-kah* in (64) takes *chinchan jitsi kangkhuan* 'it is like the daytime' as its complement. Therefore, *-kah* in extent constructions is proposed to be a complementizer. Furthermore, *-kah* in extent constructions is a clitic-like element and must attach to the preceding verb at PF level, just as *-kah* in descriptive constructions. In (65), the empty subject of the extent clause is not controlled by the subject *thinnting* 'sky' since the subject does not c-command the pro in the extent clause, and thus *chinchan jitsi kangkhuan* is not predicated of the main subject.



When the main verb is transitive as that in (31) (repeated here as (66)), its D-structure is something like (67).

- (66) a. i ka in kiann phah-kah lian chupinn long chutlai khuann. he KA his child hit-KAH even neighbor all out see 'He hit his child so much that even the neighbors came out to have a look.'
 - b. *i phah-kah in kiann lian chupinn long chutlai khuann. he hit-KAH his child even neighbor all out see



(66a) is derived from (67) after the case marker *ka* is inserted to assign Case to the NP *in kiann* 'his child.' Another option for *in kiann* to be Case-marked is for the verb *phah* to move to the higher VP-shell. However, the resultant sentence is ungrammatical as shown in (68) since the clitic *-kah* is not attached to V. (66b) also cannot be derived from (68) because *in kiann* intervenes between *phah* and *-kah*; (66b) is thus ungrammatical.

(68) *i phah in kiann -kah lian chupinn long chutlai khuann. he hit his child -KAH even neighbor all out see

The second type of extent construction is as shown in (13) (repeated here as (69)), where the extent clause cannot be said to be the result caused by the event denoted by the main verb. The D-structure of (69) is something like that in (65). Even thought pro in the extent clause is not controlled by the main subject, the one that undergoes the event of not waking up for a long time is still known to be the main subject. This could be understood as showing that the value of pro is pragmatically rather than syntactically determined to be the subject. That is, if A sleeps

so well that B does not wake up for a long time, it is pragmatically possible only under the situation that A and B refer to the same person.¹⁷

(69) i khun-kah m cai chenn.he sleep-KAH not know wake'He slept so well that he did not wake up for a long time.'

As shown in the subsection of 3.2, the subject of an extent clause cannot undergo passivization as in (24) (repeated here as (70)). This fact regarding passivization also proves that *-kah* in the extent construction differs from that in the resultative construction. *-Kah* in the resultative construction attaches to V in the lexicon, and V*-kah* is subcategorized for a result complement clause. NP movement out of such a complement clause is thus allowed. On the other hand, *-kah* in the extent construction heads an adjunct clause, which serves as a barrier to movement. Therefore, NP movement out of an extent construction is not allowed.

- (70) a. i ka in kiann phah-kah lian chupinn long chutlai khuann. he KA his child hit-KAH even neighbor all out see 'He hit his child so much that even the neighbors came out to have a look.'
 - b. in kiann hoo i phah-kah lian chupinn long chutlai khuann. his child HOO he hit-KAH even neighbor all out see 'His child was hit so much that even the neighbors came out to have a look.'

¹⁷ One reviewer points out that the second type of extent construction as exemplified in (69) should be considered resultative and the pragmatic explanation provided here undermines the analysis. However, as discussed in the subsection of 3.1, while resultative constructions often have the extent reading, the opposite does not hold. Extent constructions do not necessarily denote result. For instance, the extent clause in (69), *m cai chenn* 'not knowing waking up', cannot be construed as the result of sleeping. Furthermore, the pragmatic explanation for the value of pro is compatible with the control analysis proposed here. Pro in (65), the D-structure of (69), is not c-commanded by the main subject, and this only tells us that this pro is not required to be coindexed with the main subject. Nothing goes against the possibility that pragmatically the value of this pro is construed to be the same as that of the main subject.

c. *chupinn hoo i ka in kiann phah-kah long chutlai khuann. neighbor HOO he KA his child hit-KAH all out see 'The neighbors came out to have a look because he hit his child so much.'

5. CONCLUSION

This paper has adopted a diverse (as opposed to unifying) approach towards the structures of three postverbal secondary predicates in Taiwanese for the reason that these three constructions behave differently from one another in several aspects including scope of modification, passivization, and word order. Resultative constructions are complements subcategorized for by V-kah, and in most cases they are predicated of either the subject or the object of the main clause. Descriptive constructions are adverbial phrases attached to V', and they modify the head verb. Extent constructions, not so precisely modifying any particular element, denote 'pure' extent reading and have the structure of a clause attached to VP. Even though these three constructions all involve the use of -kah, -kah in the three constructions has a different function. -Kah in resultative constructions is attached to V in the lexicon and then V-kah as a unit is inserted under an appropriate V node in syntax, while -kah in both descriptive and extent constructions attaches to V only at PF level for it is a clitic-like element and cannot stand alone. Such a diverse analysis is thus proven to better capture and explain the distributional differences demonstrated by these three constructions.

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臺灣話的動後次要謂語

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臺灣話有結果、描述、程度三種動後次要調語。此三種結構皆含有 kah,並 有相似的表層結構。然而,他們的深層結構在修飾範域、被動、詞序等方 面皆顯示出顯著的差異。因此,本文提議結果結構為 V-kah 所次類劃分的 補語,他們並充當主要子句主語或賓語的述語。描述結構為附著於 V' 的副 詞詞組,並修飾主要動詞。至於程度結構,他們並不修飾任何成分,而僅 具有單純的程度語意,其結構則為附著於 VP 的子句。