NON-TYPICAL MIDDLES IN TAIWAN SOUTHERN MIN[*]

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ABSTRACT

This paper discusses non-typical middles that involve resultative verbal compounds in Taiwan Southern Min. This paper first applies tests to prove that the patient NP before the compound in question is a subject, not a topic, and thus this compound occurs in a middle construction. Next, this paper distinguishes middles (surface unaccusatives) from another type of intransitive compound, deep unaccusatives, which alternate with causatives. The two types differ in that middles retain an implicit agent and thus are paraphrasable by their passive counterparts. Moreover, with an implied agent, middles do not allow another overt agent. As to the derivation stage, this paper proposes a mixed account. Middles are argued to be formed in syntax through verb-incorporation, de-thematization, and NP movement. Even though the implied agent is not available in syntax, it is arbitrarily interpreted at the Conceptual-Intentional interface.

Key words: middle, surface unaccusative, deep unaccusative, Taiwan Southern
                 Min

1. INTRODUCTION

Cross-linguistically change-of-state verbs can often undergo causative-unaccusative alternations. For instance, the verb *melt* functions as either a causative predicate as in (1a) or an unaccusative predicate as in (1b). Likewise, in unrelated languages, *adiase* 'empty' in Greek and *lei⁴-si³* 'tired-dead' in Mandarin Chinese occur in causative alternations as shown in (2) and (3).[1]

(1) a. The sun melted the ice.   (English)
     b. The ice melted.
(2) a. O Janis   adiase   ti sakula.   (Greek)
         the John.NOM emptied the bag.ACC[2]
         'John emptied the bag.'
     b. I sakula   adiase.
         the bag.NOM emptied.Act
         'The bag emptied.'
(3) a. 這件事累死他們了。
         zhe⁴ jian⁴ shi⁴ lei⁴-si³   ta¹men le.   (Mandarin Chinese)
         this CL matter tired-dead them   ASP
         'This matter tired them to death.'
     b. 他們累死了。
         ta¹men lei⁴-si³-le.
         they   tired-dead-ASP
         'They are extremely tired.'

However, some verbs denoting a change of state seem to alternate with non-causative transitives, but not causatives, as shown in (4).

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[1] Example (2) is taken from Alexiadou and Anagnostopoulou (2004); Example (3a) is from Cheng et al. (1997).

[2] Abbreviations used in this paper are listed below:

ACC: accusative, Act: active, ASP: aspect, ASSOC: associative, CL: classifier, NOM: nominative, PASS: passive, PRT: particle, RVC: resultative verbal complement.

(4) a. 張三哭濕了手帕。
        Zhang^{1}san^1 ku^1-shi^1-le shou^{3}pa^4.   (Mandarin Chinese)
        Zhangsan   cry-wet-ASP handkerchief
        'Zhangsan cried so much that the handkerchief got wet.'
     b. 手帕哭濕了。
        shou^{3}pa^4 ku^1-shi^1-le.
        handkerchief cry-wet-ASP
        'The handkerchief got wet because of someone's crying.'

Cheng and Huang (1994) consider the alternation between (4a) and (4b) as being one between transitive and middle, unlike the causative-unaccusative alternation between (3a) and (3b).[3] Following Keyser and Roeper (1984), Cheng and Huang distinguish the two types of intransitives as illustrated in (3b) and (4b) and term the intransitive in (3b) deep ergative and that in (4b) surface ergative.[4]

Taiwan Southern Min (TSM), a Chinese language spoken by more than 80% of the people in Taiwan (Cheng 1985),[5] abounds with deep unaccusatives such as *thiam^2-si^2* 'tired-dead' in (5) and surface unaccusatives such as *sio^1-si^2* 'burn-dead' as in (6). Even though deep unaccusatives have been discussed in depth in the literature (Cheng et al. 1997, Lin 2007), surface unaccusatives have drawn less attention. Therefore, the focus of this study is on surface unaccusatives (middles) in

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[3] Ting (2006) also takes examples like (4b) to be a middle construction according to her definition that "middle construction" refers to "a construction where a patient argument does not occur in the canonical object position but instead in the grammatical subject position" (pp. 89-90). In addition to the feature that middles alternate with transitives, not causatives (Cheng and Huang 1994), more tests will be introduced to distinguish unaccusatives from middles in Section 2. For instance, Ting (2006) also indicates that middles, but not unaccusatives, contain an implicit agent.

[4] The term "unaccusative" instead of "ergative" is used in this paper.

[5] According to a survey by the Council for Hakka Affairs, Executive Yuan, Republic of China (Taiwan) (2008), 69.2% of the population in Taiwan consider that they belong to the ethnic group of Hok-Lo, whose native language is Taiwan Southern Min. The drop from 80% in Cheng's study in 1985 to 69.2% in the survey in 2008 seems to indicate a decrease in the number of speakers of Taiwan Southern Min. However, it should be noted that in addition to the Hok-Lo people, people of other ethnic groups also speak Taiwan Southern Min fluently. Therefore, the percentage of people who speak Taiwan Southern Min is larger than the figure of 69.2%.

TSM. This paper aims to discuss how to identify middles in TSM and how they are derived.

(5) a. 這層事志悿死(一群)人矣。
 cit^4 can^5 tai^{7}ci^3 thiam^2-si^2 (cit^4-kun^5) lang^5　a^0.[6,7]　(Taiwan
 this CL matter　tired-dead one-pile　person ASP Southern Min)
 'This matter tired (many) people to death.'
 b. 一群人悿死矣。
 cit^4-kun^5 lang^5　thiam^2-si^2-a^0.
 one-pile person tired-dead-ASP
 'Many people were tired to death.'

(6) a. 伊燒死彼隻塗蚓矣。
 i^1　sio^1-si^2　hit^4 ciah^4 thoo^{5}kun^2　a^0. (Taiwan Southern Min)
 he burn-dead that CL　earthworm PRT
 'He burnt that earthworm to death.'
 b. 彼隻塗蚓燒死矣。
 hit^4 ciah^4 thoo^{5}kun^2 sio^1-si^2　a^0.
 that CL earthworm burn-dead PRT
 'That earthworm burnt to death.'

 Middles are also termed surface unaccusatives or derived unaccusatives. The core characteristics of middles across languages include occurring in generic sentences and often being modified by adverbs as demonstrated in (7-8) (Keyser and Roeper 1984, Schäfer 2008).[8]

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[6] Example (5a) is taken from Cheng et al. (1997).

[7] The romanization used in this paper for Taiwan Southern Min examples is according to the TLPA (Taiwan Language Phonetic Alphabet), which was promulgated by the Ministry of Education in Taiwan in 1998. The original transliteration of the examples from Cheng et al. (1997) has been modified according to the TLPA.

[8] Example (7) is taken from Keyser and Roeper (1984), and Example (8) is from Schäfer (2008).

(7) a. Bureaucrats bribe easily.
    b. ?Yesterday, the mayor bribed easily, according to the newspaper.

(8) a. This book reads easily.   (English)
    b. Dit boek leest makelijk.   (Dutch)

Some middles in Chinese also demonstrate these two features. For instance, the sentence in the Mandarin example (9), an example provided by Ting (2006), is generic and the verb mai^4 'sell' is modified by the descriptive phrase *de hen³ hao³* 'very good'.

(9) 張三ᵢ的車在自己ᵢ的店裡賣得很好。
Zhang¹san¹ᵢde che¹ zai⁴ zi⁴ji³ᵢ de dian⁴-li³   mai⁴ de hen³ hao³.
Zhangsan   DE car at self DE store-inside sell DE very good
'Zhangsanᵢ's car sells well at the car dealership that heᵢ owns.'
                                        (Mandarin Chinese)

TSM examples can also be found in Lien (2010) as shown in (10-11).[9] Lien (2010) terms the structure in (10) as a pluractional middle and that in (11) an evaluative middle; u^7 in (10) and ho^2 in (11) respectively convert the transitive verb *ching⁷* 'wear' and *sia²* 'write' into an intransitive verb. These two types of middle also involve a generic reading and are modified by adverbs such as *cin¹* 'really' in (10) and (11). Pluractional middles denote the degree of the effect resulting from the activity denoted by the transitive verb; to illustrate, the pluractional middle in (10) denotes that the clothes are durable and that they can be worn for a long time. Evaluative middles differ from pluractional middles in that the former lack the implication of quantity, among several other differences;[10] that is, the evaluative middle in (11) only denotes that the pencils write well but nothing is implied about the length of time for which they can be used.

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[9] The original transliteration in Lien (2010) has been modified according to the TLPA, which is adopted in this paper for the transliteration of TSM examples.
[10] Please refer to Lien (2010) for a detailed comparison of pluractional and evaluative middles.

(10) 這款衫真有穿。

cit⁴ khuan² sann¹　　cin¹ u⁷ ching⁷.　　(Taiwan Southern Min)

this CL　　clothing really have wear

'These clothes are quite durable.'

(11) 這款鉛筆真好寫。

cit⁴ khuan² ian⁵-pit⁴ cin¹　ho²　sia².

this CL　　pencil　really good write

'These pencils write well.'

As argued by Iwata (1999), "genericity and modality are only typical, not essential, properties of middles" (p. 527). Other than the typical middles discussed above, middles that do not demonstrate the core characteristics can also be found in Chinese. For instance, the middle construction in (4b) makes reference to an actual event, a past event in this case, and thus the perfective aspectual marker *le* is used. Moreover, the example in (4b) shows that it is not necessary for a middle verb in Mandarin Chinese to co-occur with an adverb such as *rong²yi⁴* 'easily'. Arguing that examples such as (4b) involve middle verbs, Cheng and Huang (1994) and Ting (2006) provide evidence to support the view that the pre-verbal NP in (4b) is a subject, not a pre-posed object functioning as a topic, and also unlike deep unaccusatives as in (3b), the middle in (4b) involves some implicit agent.

In a middle construction, the canonical object of a transitive verb occurs before the verb. It is far more common in TSM to find the canonical object of a transitive verb occurring before, not after, the verb for various reasons such as that verb-final aspect markers and phase markers in TSM must occur in a clause-final position as shown in (12-13) (Cheng 1992, Lien 1995, Lin 2001, Tang and Tang 2000). The phase marker *suah⁴* 'finished' in (12) and the aspect marker *leh⁴* in (13) must occur clause-finally, and thus the object, e.g., *png⁷* 'meal' in (12) and *cheh⁴* 'book' in (13), is pre-posed to the pre-verbal position. Therefore, in TSM the pre-verbal NP may be a subject or a pre-posed object functioning as a topic,[11] and the verb involved may or may not be a middle verb. That is, middles are often difficult to identify in TSM.

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[11] A clear case involving both a subject and a topic is as shown in (i), where *i¹* 'he' has a "doing" relationship with the verb *ciah⁸* 'eat' and thus is taken as the subject, while the

(12) a. 飯食煞，伊就出去矣。

png^7 ciah^8-suah^4, i^1 to^7 chut^4-khi^3 a^0.

meal eat-finished he then go-out PRT

'After finishing eating the meal, he went out.'

　　b. *食煞飯，伊就出去矣。

*ciah^8-suah^4 png^7, i^1 to^7 chut^4-khi^3 a^0.

eat-finished meal he then go-out PRT

'After finishing eating the meal, he went out.'

(13) a. 冊提咧，伊就出去矣。

cheh^4 theh^8-leh^4, i^1 to^7 chut^4-khi^3 a^0.

book carry-ASP he then go-out PRT

'Carrying the book, he went out.'

　　b. *提咧冊，伊就出去矣。

*theh^8-leh^4 cheh^4, i^1 to^7 chut^4-khi^3 a^0.

carry-ASP book he then go-out PRT

'Carrying the book, he went out.'

This research studies TSM middles involving resultative compounds such as *be^7-liao^2* 'sell-up' in (14), *sio^1-si^2* 'burn-dead' in (15), and *ciah^8-liao^2* 'eat-up' in (16). In regard to middles, first, this paper aims to judge the status of the pre-verbal patient NP in the following sentence pattern—NP + transitive resultative compound, where the NP can also occur in the canonical object position of the transitive compound. The sentence is taken to be a middle construction only when the pre-verbal patient NP is judged to be subject.

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sentence-initial NP object *png^7* 'meal' tells what the sentence is about and thus functions as a topic (Li and Thompson 1981).

(i) 飯伊食煞矣。

png^7 i^1 ciah^8-suah^4 a^0.

meal he eat-finished PRT

'He finished eating the meal.'

(14) 最後啊財產賣了了。　　　　　　　(新社鄉閩南語故事集)
cue^3-au^7　a^0　cai^{5}san^2　be^7-liao^2-liao^2.
in-the-end PRT property sell-up
'In the end, the property was sold up.'　　　(Hu and Huang 1996b)

(15) 燒水共淋落，啊彼隻塗蚓就會燒死。　(清水鎮閩南語故事集)
sio^{1}cui^2　ka^7 lam^5-lue^3,　a^0　hit^4 ciah^4 thoo^{5}kun^2　to^7　e^7
hot-water KA pour-down PRT that　CL　earthworm then will
sio^1-si^2.
burn-dead
'Pour the hot water on it. Then that earthworm will be burnt to
death.'　　　　　　　　　　　　　　　(Hu and Huang 1996a)

(16) 我麻糍就食了了去啊啦。　　(雲林縣閩南語故事集(四))
gua^2 mua^{5}ci^5　　　　　to^7 ciah^8-liao^2-liao^2 khi^3 a^0　la^0.
I　sticky-rice-cake then eat-up　　　　go PRT PRT
'My sticky rice cakes were eaten up.'　　(Hu and Chen 1999)

Another issue related to middles (surface unaccusatives) is how to distinguish surface unaccusatives from deep unaccusatives in TSM. These two types of intransitive verbs both alternate with a transitive verb. For instance, the deep unaccusative *thiam^2-si^2* 'tired-dead' in (5b) alternates with the causative *thiam^2-si^2* 'tired-dead' in (5a), while the surface unaccusative-transitive alternation is demonstrated by *sio^1-si^2* 'burn-dead' in (6).

One more issue related to middles is the derivation stage, syntactic or pre-syntactic. TSM is more analytical than Mandarin Chinese, and thus Lin (2007) has argued that resultative compounds in TSM are derived in syntax. Since middles often involve resultative compounds such as *be^7-liao^2* 'sell-up' in (14), *sio^1-si^2* 'burn-dead' in (15), and *ciah^8-liao^2* 'eat-up' in (16), whether the syntactic proposal can also explain the derivation of middles is one of the issues to be discussed in this paper.

This paper is organized as follows. Section 1 presents the focus of this study—middles in TSM and introduces the motivation for carrying out the study. To be exact, as the middles discussed in this paper do not demonstrate the core characteristics of middles, they should be termed as non-typical middles. The three issues of middles in TSM are also

presented in this introductory section. Section 2 reviews previous literature on middles in languages other than TSM, and includes tests on subjecthood. Since no previous study has been conducted on non-typical middles in TSM, no critical review is given for this area. The tests on subjecthood introduced in Section 2 are applied in Section 3 to judge the subjecthood of the pre-verbal patient NPs in the construction in question. Then because middles (surface unaccusatives) demonstrate features different from those of deep unaccusatives, these two types of unaccusative are further distinguished. A mixed approach is proposed for the derivation of middles in consideration of the features demonstrated by middles in TSM. This paper ends with Section 4, where comparison is made between middles in Mandarin Chinese and those in TSM and the contributions of this paper are stated.

2. LITERATURE REVIEW

Regarding the first issue discussed in Introduction as to whether the pre‐verbal patient NP is topic or subject, Cheng and Huang (1994) propose three pieces of evidence to argue for the subjecthood of the pre‐verbal NP in (4b). First, if (4b) involves a topic and an empty subject, it cannot be explained as to why (17) does not have a similar structure and interpretation. On the other hand, if the pre‐verbal NPs in (4b) and (17) are analyzed as subjects, the contrast between (4b) and (17) can be easily explained. That is, (4b) involves a middle verb $ku^1\text{-}shi^1$ 'cry-wet' and the pre-verbal NP functions as a subject, while the verb xi^3huan^1 'like' in (17) cannot have undergone middle formation since only predicates indicating results, but not state- or activity-denoting verbs, can undergo middle formation (Hale and Keyser 1987).

(17) *郭靖很喜歡。
　　 *guo^{1}jing^4 hen^3 xi^{3}huan^1.　(Cheng and Huang 1994)
　　　Guojing　very like
　　 'Lit.: Guojing, [someone] likes him very much.'

Second, as indicated by Sybesma (1992), (4b) is perfectly natural when the pre-verbal NP is not followed by a pause, which usually accompanies a topic. Thus the pre-verbal NP in (4b) can be taken to be a subject rather than a topic. Third, as proposed by Ning (1993), the relative operator in a relativized structure must bind into a syntactic position in the relative clause. If the pre-verbal NP in (4b) is analyzed as a subject, the contrast between (18a) and (18b) can be explained. In (18b) the relative operator binds into the subject position of the relative clause which involves a transitive ku^1-shi^1 'cry-wet', while in (18a) the relative clause involves a middle verb and the subject position is already taken by $shou^3pa^4$ 'handkerchief'; the relative operator cannot bind into the subject position and (18a) is thus ungrammatical.

(18) a.   *手帕哭濕了的人來了。
           *$shou^3pa^4$ ku^1-shi^1-le   de ren^2 lai^2-le.[12]
            handkerchief cry-wet-ASP de person come-ASP
           'The person such that the handkerchief was cried-wet came.'
      b.   哭濕了手帕的人來了。
           ku^1-shi^1-le $shou^3pa^4$ de ren^2 lai^2-le.
           cry-wet-ASP handkerchief de person come-ASP
           'The person who cried and made the handkerchief wet came.'

Ting (2006) proposes two more arguments for the subjecthood of the pre-verbal NP in a middle construction. The first argument is that a subcommander in a subject, but not in a topic, can bind a reflexive as shown in (19b) and (19c). In the passive (19b), $Zhang^1san^1$, a subcommander in a subject, binds the reflexive zi^4ji^3 'self', while in (19c), $Zhang^1san^1$, a subcommander in a topic, cannot bind the reflexive. Since the NP $Zhang^1san^1$ in (19a) can bind a reflexive, this NP has to be inside a subject, not a topic. That is, $Zhang^1san^1$ de che^1 'Zhangsan's car' is a subject, not a topic.

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[12] (18) is taken from Cheng and Huang (1994).

(19) a.　張三ᵢ的車在自己ᵢ的店裡賣得很好。
Zhang¹san¹ᵢ de che¹ zai⁴ zi⁴ji³ᵢ de dian⁴-li³　　mai⁴ de hen³
Zhangsan　DE car　at　self　DE store-inside sell DE very
hao³.¹³
good
'Zhangsanᵢ's car sells well at the car dealership that heᵢ owns.'

　　 b.　張三ᵢ的車被李四ⱼ在自己ᵢ/ⱼ的店裡賣得很好。
Zhang¹san¹ᵢ de che¹ bei⁴ Li³si⁴ⱼ zai⁴ zi⁴ji³ᵢ/ⱼ de dian⁴-li³
Zhangsan　DE car　BEI Lisi　at self　DE store-inside
mai⁴ de hen³ hao³.
sell　DE very good
'Zhangsanᵢ's car is sold well by Lisiⱼ at the car dealership that
heᵢ/ⱼ owns.'

　　 c.　張三ᵢ的車李四ⱼ在自己*ᵢ/ⱼ的店裡賣得很好。
Zhang¹san¹ᵢ de che¹, Li³si⁴ⱼ zai⁴ zi⁴ji³*ᵢ/ⱼ de dian⁴-li³　　mai⁴ de
Zhangsan　DE car Lisi　at　self　DE store-inside sell DE
hen³ hao³.
very good
'Zhangsanᵢ's car, Lisiⱼ sold it well at the car dealership that
he*ᵢ/ⱼ owns.'

The second argument comes from the possibility for an indefinite NP to occur in the subject position. Even though a topic NP must be definite as shown in (20c), the subject NP may be indefinite if the clause involves a stage level predicate as shown in (20b). Since the pre-verbal NP in (20a) is an indefinite NP, this pre-verbal NP must be a subject, not a topic.

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[13] (19) is taken from Ting (2006).

(20) a. 一件背心織得又肥又長，不知道打算給誰穿。
yi¹jian⁴ bei⁴xin¹ zhi¹ de you⁴ fei² you⁴ chang²
one vest weave DE again fat again long
bu⁴ zhi¹dao⁴ da³suan⁴ gei³ shei² chuan¹.[14]
not know plan give who wear
'One vest was made wide and long. I don't know who is
going to wear it.'

b. 一件背心被織得又肥又長。
yi¹jian⁴ bei⁴xin¹ bei⁴ zhi¹ de you⁴ fei² you⁴ chang².
one vest BEI weave DE again fat again long
'One vest was made wide and long.'

c. *一件背心他織得又肥又長。
*yi¹jian⁴ bei⁴xin¹ ta¹ zhi¹ de you⁴ fei² you⁴ chang².
one vest he weave DE again fat again long
'One vest, he wove it both wide and long.'

To distinguish deep unaccusatives from surface unaccusatives, Cheng and Huang (1994) specify two differences. First, surface unaccusatives entail the existence of an implicit agent, while deep unaccusatives do not. Thus surface unaccusatives can be paraphrased as passives, while deep unaccusatives cannot. To illustrate, (4b) can be paraphrased as (21).[15]

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[14] (20) is taken from Ting (2006).

[15] Passives often denote adversity. To illustrate, the passive in (ib) carries an extra adversative meaning.

(i) a. 那本書出版了。
na⁴ ben³ shu¹ chu¹ban³ le.
that CL book publish PRT
'That book was published.'

b. 那本書被出版了。
na⁴ ben³ shu¹ bei⁴ chu¹ban³ le.
that CL book BEI publish PRT
'That book was published.'

Likewise, (4b) and (21) are not completely synonymous. However, this test is introduced here to indicate the near synonymity between (4b) and (21), which is missing in the pair (3b) and (22), to distinguish deep unaccusatives from surface unaccusatives.

However, a deep unaccusative such as *lei⁴-si³* 'tired-dead' in (3b) does not have a passive form such as (22) as its paraphrase; (3b) differs from the passive form (22) in that the former does not entail the existence of an implicit agent while the latter does imply the existence of an unspecified agent.

(4) b. 手帕哭濕了。
          shou³pa⁴   ku¹-shi¹-le.
          handkerchief cry-wet-ASP
          'The handkerchief got wet because of someone's crying.'
(21) 手帕被哭濕了。
          shou³pa⁴   bei⁴ ku¹-shi¹-le.   (Cheng and Huang 1994)
          handkerchief BEI cry-wet-ASP
          'The handkerchief was cried-wet.'
(3) b. 他們累死了。
          ta¹men lei⁴-si³-le.
          they   tired-dead-ASP
          'They are extremely tired.'
(22) 他們被累死了。
          ta¹men bei⁴ lei⁴-si³-le.
          they   BEI tired-dead-ASP
          'They were made extremely tired.'

Second, as argued in Keyser and Roeper (1984), surface unaccusatives involve agentivity; however, deep unaccusatives do not. As demonstrated in (23), a surface unaccusative such as *tui¹-kai¹* 'push-open' cannot occur with the adverb *zi⁴dong⁴* 'automatically' because an implicit agent is implied, while the adverb *zi⁴dong⁴* is compatible with a deep unaccusative such as *da³-kai¹* 'hit-open' as in (24).

(23) *門自動推開了。
　　　*men^2 zi^{4}dong^4　　　tui^1-kai^1-le.　　(Cheng and Huang 1994)
　　　door　automatically push-open-ASP
　　　'Lit. The door was automatically pushed open.'
(24) 門自動打開了。
　　　men^2 zi^{4}dong^4　　　da^3-kai^1-le.　　(Cheng and Huang 1994)
　　　door automatically hit-open-ASP
　　　'The door opened automatically.'

　　Regarding the derivation of middles, three proposals are available. The syntactic proposal argues that middles are derived in syntax through argument-suppression followed by NP-movement (Carrier and Randall 1992, Cheng and Huang 1994, Keyser and Roeper 1984, Stroik 1992, 1995, 1999). To illustrate, Keyser and Roeper (1984) propose that the external argument of middles is demoted and then the canonical object of middles moves to the subject position. Stroik (1992, 1995, 1999) further argues that the implicit external argument of middles is present at the syntax level, where it "can emerge either as a nonovert DP or as an overt DP that occurs in an adjunct position and must be Case-licensed inside a PP" (1999:130). The structure for an English middle such as (7a) is proposed to be (25), where the external argument surfaces as the nonovert PRO adjoined to VP. Considering examples such as (26), Stroik (1992, 1995, 1999) posits that the demoted external argument can be overtly expressed by the prepositional object headed by *for*. His argument comes from sentences which involve reflexives introduced by *for* such as (27). He proposes that both the subject and the prepositional object are co-arguments of the middle verb.

(7)　a.　　Bureaucrats bribe easily.
(25)　[$_{IP}$ bureaucrats$_i$ [$_{I'}$ I [$_{VP}$ [$_{V'}$ bribe t$_i$ easily]] PRO]]]　(Stroik 1999)
(26)　Bureaucrats bribe easily for Bill.
(27)　Bureaucrats$_i$ always bribe easily for each other$_i$/themselves$_i$/*them$_i$.
　　　　　　　　　　　　　　　　　　　　　　　　(Stroik 1999)

Under the pre-syntactic approach, the formation of middles is argued to take place at the pre-syntactic level (Ackema and Schoorelemmer 1994, 1995, Ting 2006). Ting (2006) argues that if NP movement were involved in the formation of middles, it would not be clear why the same movement cannot apply to sentences such as (28a) to pre-pose the subject of the complement clause and then to derive a middle as in (28c), since the pre-posing of the subject out of the complement clause to form a *ba*-sentence is allowed as shown in (28b). Ting contends that the ungrammaticality of (28c) cannot be explained away by appealing to the affectedness constraint that only predicates that involve an affected argument can form middles because this constraint itself is not reliable.

(28) a.   孟姜女哭得[秦始皇$_j$的皇冠從他自己$_j$的寶座上掉了下來]。
            Meng^{4}jiang^{1}nu^3 ku^1-de [Qin^2-shi^3-huang^2_j de huang^{2}guan^4
            Mengjiangnu   cry-DE Qin-start-Emperor DE   crown
            cong^2 ta^{1}zi^{4}ji^3_j de bao^{3}zou^4 shang^4 diao^4-le xia^{4}lai^2].[16]
            from himself DE seat   top   fall-ASP down
            'Mengjiangnu cried so much that the first Emperor of Qin$_j$'s crown fell down from his$_j$ own seat.'
      b.   孟姜女$_i$把秦始皇$_j$的皇冠哭得[從他自己$_j$的寶座上掉了下來]。
            Meng^{4}jiang^{1}nu^3_i ba^3 Qin^2-shi^3-huang^2_j de huang^{2}guan^4 ku^1-de
            Mengjiangnu   BA   Qin-start-Emperor DE crown   cry-DE
            [cong^2 ta^{1}zi^{4}ji^3_j de bao^{3}zou^4 shang^4 diao^4-le xia^{4}lai^2].
            from himself   DE seat   top fall-ASP down
            'Mengjiangnu$_i$ cried so much that the first Emperor of Qin$_j$'s crown fell down from his$_j$ own seat.'
      c.   *秦始皇$_j$的皇冠哭得從他自己$_j$的寶座上掉了下來。
            *Qin^2-shi^3-huang^2_j de huang^{2}guan^4 ku^1-de [cong^2 ta^{1}zi^{4}ji^3_j de
            Qin-start-Emperor DE crown   cry-DE from himself   DE
            bao^{3}zou^4 shang^4 diao^4-le xia^{4}lai^2].
            seat   top   fall-ASP down
            'The first Emperor of Qin$_j$'s crown fell down from his$_j$ own seat as a result of someone's crying.'

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[16] (28) is taken from Ting (2006).

Ting also argues that the implicit agent that is contained in middles is not syntactically realized because middles cannot occur with agent-oriented adverbs such as *gu⁴yi⁴* 'deliberately' as shown in (29b), while an agent-oriented adverb can occur with a passive as in (29a), which is often taken to involve an implicit agent.

(29) a.　關鍵的證據故意被忽視。
　　　guan¹jian⁴de zheng⁴ju⁴ gu⁴yi⁴　　　bei⁴ hu¹shi⁴.[17]
　　　crucial　　evidence deliberately BEI　ignore
　　　'Crucial evidence was deliberately ignored.'
　　b.　*關鍵的證據故意忽視。
　　　*guan¹jian⁴de zheng⁴ju⁴ gu⁴yi⁴　　　hu¹shi⁴.
　　　 crucial　　evidence deliberately ignore
　　　'Crucial evidence was deliberately ignored.'

Schäfer (2008) offers a mixed proposal for the formation of middles. On the one hand, he argues that the internal patient argument is projected as an object in syntax, which is the syntactic view of middle formation. As shown in (30) middles involve an expletive Voice projection and the internal argument moves into the Specifier of Voice to check the D-feature. On the other hand, he proposes that the implicit agent of middles is not syntactically active. Instead, it is present at the Conceptual-Intentional interface because the encyclopedic knowledge about middles implies its presence.

(30)　[$_{VoiceP}$ Theme$_i$ [$_{Voice'}$ Voice $_{\{D, \emptyset\}}$ [$_{VP}$ V t$_i$]]]　　(Schäfer 2008)

In the following section, the tests on subjecthood presented in the literature will be applied to TSM data to judge the status of the pre-verbal patient NPs. Then surface unaccusatives in TSM will be further distinguished from deep unaccusatives. As to the derivation stage, as presented above, three proposals are available in the literature. The proposal that can best account for middles in TSM will be argued to be the one most suitable to account for the derivation of TSM middles.

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[17] (29) is taken from Ting (2006).

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3. IDENTIFYING MIDDLES IN TAIWAN SOUTHERN MIN

3.1 Subjects Not Topics

Before discussing the status of the pre-verbal patient NP in a middle construction, this paper proposes that there is no need to maintain that each sentence has one structure only. If the sentence is ambiguous with two different meanings, then it is argued to have two different structures. Take (31a) as an example. When it occurs in the context of (31b), the meaning would be 'After he finished eating the meal, he went out.' With this meaning, *png*[7] 'meal' is the pre-posed object serving as a topic and the empty subject is co-referential with the subject of the second clause, that is, *i*[1] 'he'. In the context of (31c), *png*[7] 'meal' is the subject which the verbal compound *ciah*[8]*-uan*[5] 'eat-up' is predicated of, and (31c) denotes the meaning that after the rice is all gone, there is still porridge provided/left.

(31) a.   飯食完
        png[7] ciah[8]-uan[5]
        meal eat-up
        'finish eating the meal'

      b.   飯食完，伊就出去矣。
        png[7] ciah[8]-uan[5], i[1] to[7]   chut[4]-khi[3] a[0].
        meal eat-up   he then go-out   PRT
        'After finishing eating the meal, he went out.'

      c.   飯食完，擱有糜。
        png[7] ciah[8]-uan[5], koh[4] u[7] muai[5].
        meal eat-up   still have porridge
        'After the rice is eaten up, there is still porridge.'

In sum, this paper is not arguing against the possibility that examples like (31a) involve *png*[7] 'meal' as the topic; instead, this paper focuses on the possibilities that *png*[7] 'meal' in (31a) can be a subject and that Example (31c) is a middle construction.

For the following discussion, let us take (32) as an example.[18] The resultative compound *sio¹-si²* 'burn-dead' alternates between an intransitive use as in (32a) and a transitive one as in (32b). To determine whether examples such as (32a) contain a middle, this paper first needs to find out whether the pre-verbal patient NP is a subject. Cheng and Huang (1994) and Ting (2006) have provided various tests for the subjecthood of the pre-verbal NP in middles in Mandarin Chinese. These tests will be applied to the data in TSM to determine the status of the pre-verbal patient NP.

(32) a.   彼隻塗蚓就會燒死。
            hit⁴ ciah⁴ thoo⁵kun² to⁷ e⁷ sio¹-si².
            that CL earthworm then will burn-dead
            'Then that earthworm will be burnt to death.'
      b.   伊燒死彼隻塗蚓矣。
            i¹ sio¹-si² hit⁴ ciah⁴ thoo⁵kun² a⁰.
            he burn-dead that CL   earthworm PRT
            'He burnt that earthworm to death.'

First, if the pre-verbal NP *hit⁴ ciah⁴ thoo⁵kun²* 'that earthworm' in (32a) were analyzed as a topic, (32a) would have the structure as demonstrated in (33), where an empty pronoun occupies the subject position. If (32a) involved a topicalized object, the same analysis should be applicable to a sentence involving a stative verb as shown in (34); that is, (34) should have a structure as shown in (35), and such a sentence should be as grammatical as (32a) is.

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[18] (32) is part of Example (15), which is taken from the Ching-shui Township Collection of Southern Min Stories (Hu and Huang 1996a).

(33) 彼隻塗蚓 $_i$ [Pro 就會燒死 t_i]

    hit^4 ciah^4 thoo^{5}kun^2_i [Pro to^7 e^7 sio^1-si^2 t_i]

    that CL earthworm [Pro then will burn-dead t_i]

(34) *阿榮真愜意。

    *a^1-ing^5 cin^1 ka^3-i^3.

    A-ing very like

    Intended meaning: 'As to A-ing, someone likes him very much.'

(35) 阿榮 $_i$ [Pro 真愜意 t_i]

    a^1-ing^5_i [Pro cin^1 ka^3-i^3 t_i].

    A-ing [Pro very like t_i]

Since (34) is ungrammatical, the structure in (33) proposed for (32a) and that in (35) for (34) are ruled out. That is, structures containing a Pro and a topicalized object are ungrammatical. Therefore, (32a) does not involve an empty subject; the pre-verbal NP functions as the subject, and (32a) involves a middle construction. (34) is ungrammatical exactly because ka^3-i^3 'like' cannot occur in a middle construction. A stative verb such as ka^3-i^3 'like' in (34) cannot occur in a middle as only predicates denoting results are allowed in the middle. One may argue that (34) is ungrammatical simply because topicalized objects are not allowed for stative verbs. However, as shown in (36), it is not the case that topicalized objects are not allowed for stative verbs. In (36) cin^1 ce^7 $lang^5$ 'many people' is understood to be the subject and the sentence-initial NP A^1-ing^5 is the topic. If (34) were construed to have the same structure as (36), i.e., (35), the ungrammaticality of (34) could not be explained.

(36) 阿榮真濟人真愜意。

    a^1-ing^5 cin^1 ce^7 lang^5 cin^1 ka^3-i^3.

    A-ing very many people very like

    'As to A-ing, many people like him very much.'

Under Cheng and Huang's (1994) analysis, the contrast between (32a) and (34) results from the formation of middles, which is allowed with sio^1-si^2 'burn-dead' in (32a) but disallowed with ka^3-i^3 'like' in (34). However, the fundamental problem with (34) may be that (34) involves a

problematic structure, which is not related to the formation of middles. That is, an empty subject PRO is not allowed with a stative verb.[19] As a result, this account of Cheng and Huang (1994) may not be plausible in arguing for the subjecthood of the pre-verbal NP in (32a).

Second, while a pause is often needed after a topic, (32a) sounds natural without a pause after the pre-verbal NP, which indicates that the pre-verbal NP is a subject, not a topic, as noted by Sybesma (1992). However, it should be noted that this argument, which is based on the possibility of adding a pause after the pre-verbal NP, may not be strong enough to account for the subjecthood of the pre-verbal NP because in slow speech it is also possible for (32a) to be pronounced with a pause, while in fast speech no pause follows the sentence-initial NP, no matter whether it is a topic or subject. Still, it is more natural to pronounce (32a) without a pause after the pre-verbal NP. The fact that (32a) can be pronounced without a pause after the pre-verbal NP thus proves that this pre-verbal NP is a subject.

Third, the last piece of evidence proposed by Cheng and Huang (1994) to argue for the subjecthood of the pre-verbal NP in the middle comes from the contrast between topicalization and relativization. According to the observation made in Huang (1992) and Ning (1993), the relative operator in a relativized structure must be co-indexed with an empty pronoun in the relative clause, while this restriction is not required in a topicalized structure. The contrast between (37) and (38) shows that on the one hand, in (37b) there is no empty pronoun in the relative clause and thus the relativized structure is not allowed, and, that, on the other hand, in (38b) the subject in the relative clause is empty and thus the relative operator can bind into that position. This contrast in turn indicates that the pre-verbal NP in (37) is a subject.

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[19] I would like to thank one of the reviewers for pointing out this possibility.

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(37) a. 彼隻塗蚓就會燒死。
　　　hit^4 ciah^4 thoo^{5}kun^2　to^7　e^7　sio^1-si^2.
　　　that CL　earthworm then will burn-dead
　　　'That earthworm will be burnt to death.'

　　b. *彼隻塗蚓燒死个人佇赫。
　　　*hit^4 ciah^4 thoo^{5}kun^2　sio^1-si^2　e^0　lang^5　ti^7 hiah^4.
　　　that　CL　earthworm burn-dead ASSOC person at there
　　　'The person such that that earthworm was burnt to death is over there.'

(38) a. 伊燒死彼隻塗蚓矣。
　　　i^1　sio^1-si^2　hit^4 ciah^4 thoo^{5}kun^2　a^0.
　　　he burn-dead that CL　earthworm PRT
　　　'He burnt that earthworm to death.'

　　b. 燒死彼隻塗蚓个人佇赫。
　　　sio^1-si^2　hit^4 ciah^4 thoo^{5}kun^2　e^0　lang^5　ti^7 hiah^4.
　　　burn-dead that CL　earthworm ASSOC person at there
　　　'The person who burnt that earthworm to death is over there.'

Fourth, Ting (2006) follows Tan's (1991) argument in proposing that a pre-verbal patient NP in a grammatical subject position, but not that in a topic position, can bind a reflexive in Mandarin Chinese. The same constraint holds in TSM as shown in (39-40). In (40) only the subject *A^1-ing^5*, but not the topic *hit^4 ciah^4 thoo^{5}kun^2* 'that earthworm', can bind the reflexive *ka^{1}ti^7* 'self'. Therefore, the binder of the reflexive in (39), i.e., *hit^4 ciah^4 thoo^{5}kun^2* 'that earthworm', must be the subject.

(39) 彼隻塗蚓 ᵢ燒死佇咧家己 ᵢ个洞內。
hit⁴ ciah⁴ thoo⁵kun²ᵢ sio¹-si²　　ti⁷-leh⁴ ka¹ti⁷ᵢ e⁰　　tong⁷-lai⁷.
that CL　earthworm burn-dead　at　　self　ASSOC hole-inside
'That earthworm was burnt to death inside its own hole.'

(40) 彼隻塗蚓 ᵢ，阿榮 ⱼ燒死佇咧家己 *ᵢ/ⱼ 个洞內。
hit⁴ ciah⁴ thoo⁵kun²ᵢ, a¹-ing⁵ⱼ sio¹-si²　　ti⁷-leh⁴ ka¹ti⁷*ᵢ/ⱼ　e⁰
that CL　earthworm A-ing burn-dead　at　　self　ASSOC
tong⁷-lai⁷.
hole-inside
'At to that earthworm, it was burnt to death by A-ing inside his own cave.'

Fifth, even though topic NPs in Mandarin Chinese must be definite as noted in previous literature (Li and Thompson 1981, Tsao 1977), Shyu (1995) proposes that subject NPs can be indefinite when a stage level predicate is involved. Citing Shyu's proposal, Ting (2006) argues that this NP must be a subject since the pre-verbal patient NP in the construction at issue can be indefinite. The same observation is also found with TSM data. As shown in (41), an indefinite topic NP is not allowed, and an indefinite subject is not allowed with an individual level predicate such as *tua⁷-ciah⁴* 'big' in (42). However, the stage level predicate *sio¹-si²* 'burn-dead' in (43) can occur with an indefinite NP; therefore, the pre-verbal NP, *cit⁴ ciah⁴ thoo⁵kun²* 'an earthworm', must be the subject, not topic.

(41) *一隻塗蚓，我真討厭。
     *cit⁴ ciah⁴ thoo⁵kun²   gua² cin¹ tho²-ia³.
     one CL earthworm I   very hate
     'As to a worm, I hate it very much.'
(42) *一隻塗蚓真大隻。
     *cit⁴ ciah⁴ thoo⁵kun² cin¹ tua⁷-ciah⁴.
     one CL earthworm very big
     'An earthworm is very big.'
(43) 一隻塗蚓燒死佇咧洞內。
     cit⁴ ciah⁴ thoo⁵kun² sio¹-si²   ti⁷-leh⁴ tong⁷-lai⁷.
     one CL earthworm burn-dead at   hole-inside
     'An earthworm burnt to death inside a hole.'

The five tests presented above have proved that the patient NP before the resultative compound *sio¹-si²* 'burn-dead' in (32a) is indeed a subject, not a topic. In consequence, constructions such as (32a) are middle constructions.

3.2 Middles Not Deep Unaccusatives

After showing that the pre-verbal patient NP in examples such as (32a) is a subject, not a topic, this paper next argues that examples such as (32a) involve middles because they demonstrate properties different from those of deep unaccusatives. It has been observed in the literature that middles retain an implicit agent, while deep unaccusatives do not (Cheng and Huang 1994, Iwata 1999, Keyser and Roeper 1984, Schäfer 2008, among others). As a result, middles may be paraphrasable by their passive counterparts; that is, the implicit agent in middles may be explicitly expressed. As demonstrated in (44), the middle and its passive counterpart have a similar meaning. On the contrary, deep unaccusatives do not have passive counterparts. The two sentences in (45), one deep unaccusative and the other passive, do not have a similar meaning. In (45a) no agent is implied; however, an agent is explicitly expressed in the passive in (45b).

(44) a. 彼隻塗蚓燒死矣。

hit⁴ ciah⁴ thoo⁵kun² sio¹-si² a⁰.

that CL earthworm burn-dead PRT

'That earthworm was burnt to death.'

b. 彼隻塗蚓 hong 燒死矣。

hit⁴ ciah⁴ thoo⁵kun² hong⁹ sio¹-si² a⁰.[20]

that CL earthworm HONG burn-dead PRT

'That earthworm was burnt to death by someone.'

(45) a. 伊悿死矣。

i¹ thiam²-si² a⁰.

he tired-dead PRT

'He was tired to death.'

b. 伊 hong 悿死矣。

i¹ hong⁹ thiam²-si² a⁰.

he HONG tired-dead PRT

'He was made tired to death by someone.'

Moreover, because the deep unaccusative can alternate with a causative as shown in (46a-b), it can be embedded in an analytical syntactic causative as shown in (46c), which is an analytical syntactic counterpart of the causative compound in (46b). However, a middle may alternate with a transitive as shown in (47a-b) and it cannot be embedded in an analytical syntactic causative as in (47c), which is not a possible analytical counterpart of the transitive compound in (47b).

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[20] *hong⁹ = hoo⁷ lang⁵* 'by someone'

(46) a.　一群人恔死矣。
　　　cit⁴-kun⁵ lang⁵　thiam²-si² a⁰.
　　　one-pile person tired-dead PRT
　　　'Many people were tired to death.'

　　b.　這層事志恔死一群人矣。
　　　cit⁴ can⁵ tai⁷ci³　thiam²-si² cit⁴-kun⁵ lang⁵　a⁰.
　　　this CL　matter tired-dead one-pile person PRT
　　　'This matter tired many people to death.'

　　c.　這層事志 hoo 一群人恔死矣。
　　　cit⁴ can⁵ tai⁷ci³　hoo⁷ cit⁴-kun⁵ lang⁵　thiam²-si² a⁰.
　　　this CL　matter cause one-pile person tired-dead PRT
　　　'This matter caused many people to be tired to death.'

(47) a.　彼隻塗蚓燒死矣。
　　　hit⁴ ciah⁴ thoo⁵kun²　sio¹-si²　　a⁰.
　　　that CL　earthworm burn-dead PRT
　　　'That earthworm was burnt to death.'

　　b.　阿榮燒死彼隻塗蚓矣。
　　　a¹-ing⁵ sio¹-si²　　hit⁴ ciah⁴ thoo⁵kun²　a⁰.
　　　A-ing　burn-dead that　CL　earthworm PRT
　　　'A-ing burnt that earthworm to death.'

　　c.　*阿榮 hoo 彼隻塗蚓燒死矣。
　　　*a¹-ing⁵ hoo⁷　hit⁴ ciah⁴ thoo⁵kun²　sio¹-si²　　a⁰.
　　　A-ing　cause　that CL　earthworm burn-dead PRT
　　　Intended meaning: 'A-ing burnt that earthworm to death.'

Furthermore, another agent cannot be added to the sentence because the agent is already implied in the middle construction. For instance, in (48) the reflexive *ka¹ti⁷* 'self' cannot be added to explicitly indicate that the subject *mua⁵ci⁵* 'stick-rice-cake' is the agent because the one who ate up the sticky rice cake is already implied.[21] In contrast, in a deep

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[21] For examples such as (32a) with *ka¹ti⁷* 'self' being added, the derived sentence is still grammatical as shown in (i). The grammaticality results from the possibility that *hit⁴ ciah⁴ thoo⁵kun²* 'that earthworm' can serve as an agent and in (i) the agent is explicitly expressed to be *hit⁴ ciah⁴ thoo⁵kun²*. That is, in (i) the subject is an agent, not a patient, and thus (i) does not involve a middle. (i) is a sentence with a null object; that is, (i) has a meaning

unaccusative no external force is implied, and thus the use of ka^1ti^7 to indicate the internal force does not cause a contradiction as shown in (49).

(48) a. 麻糬食了了去啊。
       mua⁵ci⁵   ciah⁸-liao²-liao² khi³ a⁰.
       sticky-rice-cake eat-up   go PRT
       'The sticky rice cakes were eaten up.'
    b. *麻糬家己食了了去啊。
       *mua⁵ci⁵   ka¹ti⁷ ciah⁸-liao²-liao² khi³ a⁰.
       sticky-rice-cake self   eat-up   go PRT
       '*The sticky rice cakes were eaten up by themselves.'

(49) a. 冰溶去矣。
       ping¹ iunn⁵-khi³ a⁰.
       ice   melt-go   PRT
       'The ice melted.'
    b. 冰家己溶去矣。
       ping¹ ka¹ti⁷ iunn⁵-khi³ a⁰.
       ice   self   melt- go PRT
       'The ice melted by itself.'

To sum up, middles in TSM are to be distinguished from deep unaccusatives. Middles alternate with active transitives, and they involve an implicit external agent and can be paraphrasable by passives. On the contrary, deep unaccusatives, which alternate with causatives, involve no external agent.

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similar to that of (ii), where the object is expressed overtly.

(i)   彼隻土蚓家己燒死矣。
      hit⁴ ciah⁴ thoo⁵kun² ka¹ti⁷ sio¹-si²   a⁰.
      that CL   earthworm self burn-dead PRT
      'That earthworm burnt itself to death.'
(ii)   彼隻土蚓燒死家己矣。
      hit⁴ ciah⁴ thoo⁵kun²   sio¹-si²   ka¹ti⁷ a⁰.
      that CL   earthworm burn-dead self   PRT
      'That earthworm burnt itself to death.'

3.3 Derivation of Middles

As to the derivation of middles, the syntactic view argues that middles are derived in syntax through argument-suppression followed by NP-movement (Cheng and Huang 1994, Keyser and Roeper 1984, Stroik 1992, 1995, 1999) and the lexical or pre-syntactic view proposes that the formation of middles takes place at the pre-syntactic level (Ackema and Schoorelemmer 1994, 1995, Ting 1999). Schäfer (2008) proposes a mixed approach in which the internal argument occurs in the object position in syntax and then moves up to the subject position, and the implicit agent is present at the Conceptual-Intentional interface.

The middles in TSM often involve resultative compounds such as *be^7-liao^2* 'sell-up' in (14), *sio^1-si^2* 'burn-dead' in (15), and *ciah^8-liao^2* 'eat-up' in (16). TSM is an analytical language, and resultative compounds often allow for the insertion of syntactic elements between the two verbal elements as shown in (50a), where the negator *bo^5* is inserted between the two verbal elements, *sio^1* 'burn' and *si^2* 'dead'. Even a causative verb *hoo^7* followed by a third person pronoun *i^1* can be inserted between the two verbal elements as shown in (50b). To explain the possibility of the presence of syntactic elements inside resultative compounds, Lin (2007) argues that resultative compounds in TSM are derived in syntax through verb-incorporation. Even though a lexical account has been proposed by some researchers such as Li (1990) to account for the derivation of resultative compounds in Mandarin Chinese, Mandarin Chinese differs from TSM in that the former is less analytical because the Mandarin counterparts of (50a) and (50b) are not allowed as shown in (51).[22] Therefore, a syntactic account of resultative compounds in TSM is plausible.
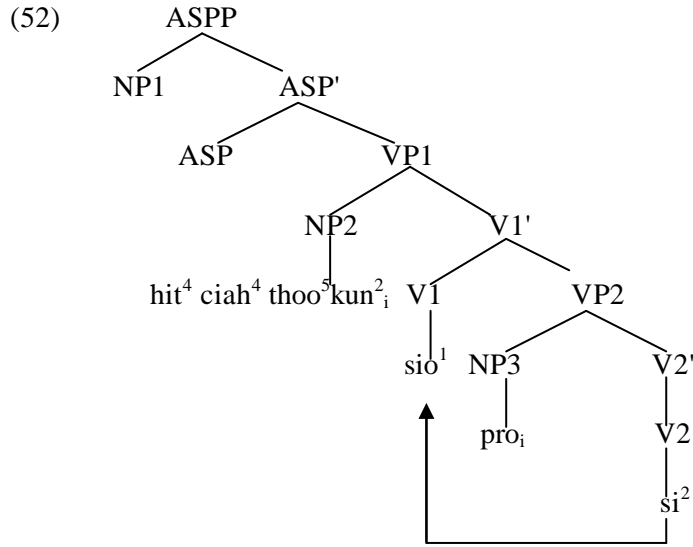
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[22] Even though Mandarin allows the insertion of a negative marker *bu^4* 'not' as in (i), *bu^4* is often treated as a potential marker, which is an infix inserted inside a resultative compound (Li and Thompson 1981, Lu 1976).

(i)   那隻蚯蚓燒不死。
       na^4 zhi^1 qiu^{1}yin^3 shao^1-bu^4-si^3.
       that CL earthworm burn-not-dead
       'That earthworm cannot be burnt to death.'

(50) a. 彼隻塗蚓燒無死。
    hit⁴ ciah⁴ thoo⁵kun² sio¹ bo⁵ si².
    that CL   earthworm burn not dead
    'That earthworm was burnt but it did not die.'

    b. 彼隻塗蚓愛燒予（伊）死。
     hit⁴ ciah⁴ thoo⁵kun²   ai³   sio¹   hoo⁷ (i¹) si².
     that CL   earthworm must burn HOO it dead
     'That earthworm must be burnt to death.'

(51) a. *那隻蚯蚓燒沒死。
    *na⁴ zhi¹ qiu¹yin³   shao¹ mei² si³. (Mandarin Chinese)
    that CL earthworm burn not dead
    'That earthworm was burnt but it did not die.'

    b. *那隻蚯蚓要燒給（它）死。
     *na⁴ zhi¹ qiu¹yin³   yao⁴ shao¹   gei³ (ta¹) si³.   (Mandarin
     that CL   earthworm must burn   GEI it dead Chinese)
     'That earthworm must be burnt to death.'

Adopting a syntactic account, this paper argues that middles are derived in syntax. To illustrate, the D-structure of (47a) is proposed to be (52), where the second verbal element si^2 'dead' incorporates with the head verb sio^1 'burn' to form the resultative compound sio^1-si^2 'burn-dead'.

The analyticality of TSM is further illustrated in serial-verb like phrasal expressions such as *ciah⁸ png⁷ pa²* 'eat meal full' and *lim¹ ciu² cui³* 'drink wine drunk', whose Mandarin counterparts are verbal compounds followed by an object, *chi¹-bao³ fan⁴* 'eat-full meal' and *he¹-zui⁴ jiu³* 'drink-drunk wine', respectively.

(52)

ASPP
├─ NP1
└─ ASP'
   ├─ ASP
   └─ VP1
      ├─ NP2 — hit⁴ ciah⁴ thoo⁵kun²ᵢ
      └─ V1'
         ├─ V1 — sio¹
         └─ VP2
            ├─ NP3 — proᵢ
            └─ V2' — V2 — si²

$hit^4 \; ciah^4 \; thoo^5kun^2_i$

sio^1

pro_i

si^2

A rule of de-thematization applies, the agent role is suppressed, and as a result, there is no implicit agent available at the syntactic level. The patient NP, which takes the object position, i.e., Spec of VP1 position, is then pre-posed to the subject position, Spec of ASPP position. In (52) as the logical object of the compound verb *sio¹-si²* 'burn-dead', the NP *hit⁴ ciah⁴ thoo⁵kun²* 'that earthworm' is assigned the patient role. As to Spec of VP2 position, i.e., NP3, it cannot be filled by an overt NP because an overt NP in this position cannot receive Case from the compound, which does not assign accusative case. When a syntactic element such as *hoo⁷ (i¹)* or *bo⁵* is inserted between the two verbal elements as in (50), a phrasal projection such as CAUSP or NEGP is added between VP1 and VP2 in a structure such as (52).

Middles often denote results. In a resultative compound, the first component (V1) expresses activity while the second element (V2) denotes the result that is caused by the event denoted by V1, and the overall meaning of the compound focuses on the result part. Thus resultative compounds are compatible with the meaning denoted by middles. Resultative compounds in Chinese are very productive, and middles that

involve resultative compounds are also very common. Object-oriented resultative compounds can often occur in middle constructions. Even though Ting (2006) mentions Example (28) to argue against a syntactic proposal, it should be noted that the compound counterpart of (28c) is acceptable as shown in (53).[23] That is, a middle that involves the compound *ku¹-diao⁴* 'cry-fall' is acceptable, and it can be derived from a D-structure similar to that in (52).

(53) 秦始皇的皇冠哭掉了。
　　　Qin²-shi³-huang² de huang²guan⁴ ku¹ diao⁴-le.(Mandarin Chinese)
　　　Qin-start-Emperor DE crown cry fall-asp
　　　'The first Emperor of Qin's crown fell down as a result of
　　　someone's crying.'

Cross-linguistically, not all verbs can occur in middle constructions, and the constraint may result from one of the following restrictions mentioned in Ackema and Schoorlemmer (2006): a. an aspectual condition, b. responsibility condition, c. delimited event condition, d. affectedness condition, e. anti-double object condition, f. argument sensitivity, g. anti-effectedness condition, or h. agentivity condition (refer to Ackema and Schoorlemmer (2006) for discussion). However, as noted by Ackema and Schoorlemmer, none of them can account for all of the data, and exceptions can always be found. They thus conclude that "the jury is still out on the issue" (p. 159). At this point, there is no satisfactory account for the restrictions on middle formation. Still, in the case of Chinese, resultative compounds are productive and they can often occur in middle constructions; few exceptions may be found.

As Bhatt and Pancheva (2005) indicate, middles are often argued to involve an implicit agent for the following reasons. First, (54) implies that it is easy for someone to hang clothes. Second, the *for* PP in (55) contains an argument identical to the agent of the middle verb. Third, middles are incompatible with a phrase like *all by itself* as in (56).

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[23] When expressed in a shorter compound form as in (53), (28c) becomes acceptable. Therefore, it is speculated that the ungrammaticality of (28c) may result from a problem with the binding of the reflexive.

(54) The clothes hang easily.   (Keyser and Roeper 1984)

(55) French books read easily for educated people. (Bhatt and Pancheva
2005)

(56) *This kind of bread cuts easily all by itself.   (Bhatt and Pancheva
2005)

On the other hand, middles are incompatible with an agent-oriented adverb such as *deliberately* as in (57) and a purpose clause as in (58). The ungrammaticality of (57) and (58) implies that there is no implicit agent available in syntax to license the agent-oriented adverb and control the empty subject in the purpose clause. As mentioned in Section 2, Ting (2006) also cites Example (29b) to show that in Mandarin Chinese the agent-oriented adverb gu^4yi^4 'deliberately' is not compatible with middles, thus indicating that the implicit agent in middles is not present in syntax.

(57) *This bureaucrat bribes deliberately. (Baker et al. 1989)

(58) *This bureaucrat brides easily [PRO to avoid the draft].
(Baker et al. 1989)

Rapoport (1999), however, argues that there is no agent in the English middle which explains why agent-oriented adverbs are not licensed. The fact that middles do not allow phrases such as *all by itself* as in (56) is explained by appealing to the type of the verb that occurs in the middle construction. Not all middles disallow *all by itself* as shown in (59).[24] A middle that involves a simple change-of-state verb such as *break* is not agentive and thus it allows the addition of the phrase *all by itself*. On the contrary, *all by itself* is disallowed in the case of a change-of-state verb involving an instrument/manner component such as *cut* in (56) because the instrument/manner component implies an agent; the agentive interpretation is incompatible with the phrase *all by itself*. Rapoport (1999) thus concludes that it is the type of verb, not the middle construction itself, that renders impossible the inclusion of *all by itself*.

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[24] According to Schäfer (2008), the unaccusatives that allow the phrase *all by itself* as in (59) are deep unaccusatives, not surface unaccusatives (middles).

(59) This kind of glass breaks easily all by itself.   (Rapoport 1999)

The meaning of middles in TSM, however, does entail an implicit agent, no matter the type of verb that occurs in the middle construction. To illustrate, (48a) involves a change-of-state verb $ciah^8$-$liao^2$ 'eat-up', which does not include an instrument/manner component, and its use implies that someone ate up the sticky rice cakes; (48b) demonstrates that middles are incompatible with ka^1ti^7 'by itself'. On the other hand, they are also incompatible with agent-oriented adverbs such as koo^3-i^3 'deliberately' as in (60) and purpose clauses as in (61).

(60) *麻糬故意食了了去啊。
    *mua^{5}ci^5 koo^3-i^3 ciah^8-liao^2-liao^2 khi^3 a^0.
    sticky-rice-cake deliberately eat-up   go PRT
    'Lit. The sticky rice cakes deliberately were eaten up.'
(61) *麻糬食了了去[PRO 來買愈濟]。
    *mua^{5}ci^5 ciah^8-liao^2-liao^2 khi^3 [PRO lai^5 be^2 lu^2-ce^7].
    sticky-rice-cake eat-up   go   [PRO come buy more]
    'Lit. The sticky rice cakes were eaten up to buy more.'

The above observation indicates that middles in TSM contain an implicit agent, which, however, is not available in syntax because the agent role is already suppressed after de-thematization. The existence of an implicit agent calls for a lexical account as in Schäfer (2008) where the demoted agent in middles is present at the Conceptual-Intentional interface and is arbitrarily interpreted. An overt agent such as ka^1ti^7 'self' is thus excluded in middles. However, the demoted agent is not syntactically present to license the use of an agent-oriented adverb or to control the empty subject in a purpose clause.

To sum up, this paper argues that middles in TSM are formed in syntax through verb-incorporation, de-thematization, and NP movement, while the demoted agent is still present at the Conceptual-Intentional interface. Such a mixed account can better capture the characteristics of middles in TSM. Being analytical, middles in TSM allow syntactic elements to be

inserted between the two verbal elements, and they contain an implicit agent.

4. CONCLUDING REMARKS

In the literature, middles in languages other than TSM have been discussed in great depth. The less-discussed middles in TSM are the focus of this paper. The TSM middles discussed in this paper are present as non-typical middles in the form of resultative compounds. Even though such middles do not demonstrate the typical features of middles, that is, being generic and modifiable by adverbs, they are taken as middles as they alternate with active transitives and their internal patient arguments surface as subjects. Tests presented in the literature have been applied to prove that the patient NP before a resultative compound such as *sio^1-si^2* 'burn-dead' in (32a) is indeed a subject, not a topic, and consequently the construction in question is a middle. Middles (surface unaccusatives) are further distinguished from deep unaccusatives in that the former involve an implicit agent and are paraphrasable by passives, while the latter do not. Even though this paper has proposed that middles are derived in syntax through verb-incorporation, de-thematization, and NP movement, the demoted agent is still argued to be present at the Conceptual-Intentional interface for its arbitrary interpretation. Therefore, this paper has proposed a mixed account to account for both the syntactic and lexical properties of middles in TSM.

Several tests of Mandarin middles taken from Cheng and Huang (1994) and Ting (2006) have been adopted in this paper for middles in TSM, and thus some comparison between Mandarin and TSM middles is in order at the end of this paper. As presented in Section 3, most of the tests for Mandarin Chinese middles are applicable to TSM middles; however, the features of TSM middles are not exactly the same as those of Mandarin Chinese middles. For instance, as discussed in Section 3.3, Mandarin Chinese is less analytical than TSM and thus syntactic elements cannot be inserted between the two verbal elements in resultative compounds in Mandarin Chinese. Moreover, even though *ku^1-shi^1* 'cry-wet' as shown in (4b) is a possible middle in Mandarin Chinese, its TSM counterpart

khau^3-tam^5 'cry-wet' is not allowed as shown in (62b). However, with *khi^3* 'go' added, *khau^3-tam^5-khi^3* 'cry-wet-go' as in (63b) is a possible middle in TSM.[25] It has been argued in Section 3 that a middle in TSM is derived in syntax, and (63b) should be derived from (63a), which is ungrammatical. The ungrammaticality of (63a), however, results from an independent constraint in TSM; that is, it is often maintained that three-syllable verbs in Chinese do not take post-verbal objects (Tang 1992). In consequence, the post-verbal object *chiu^{2}kin^1-a^2* 'handkerchief' has to be pre-posed as shown in (63c). Resultative compounds in TSM often end with *khi^3* 'go', which, on the contrary, is not often found with resultative compounds in Mandarin Chinese. For instance, *ku^1-shi^1-qu^4* 'cry-wet-go' is not a possible compound in Mandarin Chinese. Even though *khi^3* 'go' is preferred in resultative compounds in TSM, it is not required. To illustrate, the compound *sio^1-si^2* 'burn-dead' in (6b) does not end with *khi^3* 'go', and since *sio^1-si^2* 'burn-dead' is a two-syllable compound, it can be followed by a post-verbal object as shown in (6a).

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[25] The reason why (63b) is allowed while (62b) is not acceptable is still not clear. The speculation is that it may be a matter of rhetoric. In discussing the unaccusative construction in Chaozhou dialects, which also belong to the Southern Min dialect family, Matthews et al. (2005) argue that a resultative verbal complement or a resultative clause, which denotes a change of state, is required in an unaccusative construction as shown in (i), where the resultative verbal element *k'ɯ* is obligatory. An element that denotes a change of state, however, is not required (though may be optionally added) in the TSM unaccusative construction, if the verb has already denoted a change of state as in (ii), where *khi^3* is optional. At this point, there seems to be no clear rule regulating the use of *khi^3*; however, it should be noted that the addition of *khi^3* tends to make a sentence more acceptable.

(i)   no kai noukiã k'eʔ i puaʔ loʔ k'ɯ.   (Chaozhou) (Matthews et al. 2005)
       two CL child   PASS he fall down RVC
       'The two children fell over.'

(ii)   兩个囝仔予伊跋落（去）啦。
       nng^7 e^0 gin^2-a^0 hoo^7 (i^1) puah^8-lue^3(-khi^3) la^0.   (Taiwan Southern Min)
       two CL child   PASS he fall-down-go   PRT
       'The two children fell over.'

(4) a. 張三哭濕了手帕。
Zhang^{1}san^1 ku^1-shi^1-le shou^{3}pa^4. (Mandarin Chinese)
Zhangsan cry-wet-ASP handkerchief
'Zhangsan cried so much that the handkerchief got wet.'
   b. 手帕哭濕了。
shou^{3}pa^4 ku^1-shi^1-le.
handkerchief cry-wet-ASP
'The handkerchief got wet because of someone's crying.'

(62) a. *阿榮哭澹手巾仔。
*a^1-ing^5 khau^3-tam^5 chiu^{2}kin^1-a^2. (Taiwan Southern Min)
A-ing   cry-wet   handkerchief
'A-ing cried so much that the handkerchief got wet.'
   b. *手巾仔哭澹矣。
*chiu^{2}kin^1-a^2 khau^3-tam^5 a^0.
handkerchief cry-wet   PRT
'The handkerchief got wet because of someone's crying.'

(63) a. *阿榮哭澹去手巾仔。
*a^1-ing^5 khau^3-tam^5-khi^3 chiu^{2}kin^1-a^2.
A-ing   cry-wet-go   handkerchief
'A-ing cried so much that the handkerchief got wet.'
   b. 手巾仔哭澹去矣。
chiu^{2}kin^1-a^2 khau^3-tam^5-khi^3 a^0.
handkerchief cry-wet-go   PRT
'The handkerchief got wet because of someone's crying.'
   c. 手巾仔阿榮哭澹去矣。
chiu^{2}kin^1-a^2 a^1-ing^5 khau^3-tam^5-khi^3 a^0.
handkerchief A-ing cry-wet-go   PRT
'A-ing cried so much that the handkerchief got wet.'

In sum, even though both Mandarin Chinese and Taiwan Southern Min belong to the Sinitic languages, it does not entail that they have the same type of middles or that their middles are derived in the same way. As presented above, the tests on subjecthood can apply to both Mandarin Chinese and TSM middles. However, the analytical property of TSM motivates a mixed account of middles, which differs from the

pre-syntactic account proposed by Ting (2006) for Mandarin Chinese. This mixed account also differs from a syntactic account as proposed by Cheng and Huang (1994) in that in Cheng and Huang (1994) verb-incorporation is not taken to be part of the derivation process of middles in Mandarin Chinese as the resultative compounds are inserted as a whole in syntax. However, in the case of TSM, the analytical property needs to be accounted for through verb-incorporation in syntax.

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台灣閩南語的非典型中間結構

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本論文探討台灣閩南語中使用結果複合詞之非典型中間結構。本論文首先採用測試證明結果複合詞前之受事者名詞組為主詞非主題，因此該句型為一中間結構。接著，本論文將中間動詞（表層非賓位動詞）與另一類可與使動動詞轉換之不及物動詞（深層非賓位動詞）做進一步區分。中間動詞與深層非賓位動詞不同處在於前者包含有隱性之主事者，因此語意與被動句相似。此外，中間結構因含有隱性主事者，所以無法加入另一可見之主事者。關於衍生層面，本論文提出混合的提案。中間結構乃於句法層面經由動詞合併，去論旨化，及名詞組移位形成。即使隱性的主事者未出現於句法中，其語意可於概念—意圖介面取得。

關鍵字：中間結構、表層非賓位動詞、深層非賓位動詞、台灣閩南語