

Formation and constraints of scalar structure in Taiwanese Southern Min

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The paper explores the formation and constraint of an aspect of scalar structure in Taiwanese Southern Min (TSM). The scale structure as we understand it is realized as a relation between the degree adverb and the gradable predicates it selects. The gradable predicate that the degree adverb selects must bear the feature of degree. There are two approaches to compose the degree adverb and the gradable predicates it modifies: (1) the top-down construal and (2) the bottom-up construal. The first approach is simple and straightforward and applicable in most cases. However, there will be difficulties when the immediate modified element is an ambivalent element. A way out of the dilemma is the second approach. We give a unitary account of *u*⁷-headed VP constructions in terms of the bottom-up approach, and if viable, it attains a measure of economy. This study also touches on the parametric variations in TSM vis-à-vis Mandarin in the patterns of degree expressions. Such variations in the degree expressions have some implications in the studies of Sinitic languages as well as language universals.

Keywords: scalar structure, Taiwanese, formation, constraints

1. Introduction

The paper explores the formation and constraints of scalar structures in TSM based on a mini-corpus dubbed 語苑 *Go-en* (Yǔyuàn) datable to the first half of the twentieth century. Although gradable expressions are mostly adjectival, some of them are verbal and even nominal, notwithstanding much rarer. To be sure, traditionally adverbials are adjuncts, not arguments projected by predicates, and therefore are optional rather than obligatory elements in sentences. However, along the lines of dependency grammar it is the adverbials that select the obligatory elements (Bowers 2018). Degree adverbs are selectors that impose a restric-

tion on the predicate in construction with them. We can therefore rely on degree adverbials as a touchstone to pin down gradable expressions.

In TSM the degree adverbs such as 真 *tsin*¹/成 *tsiann*⁵/蓋 *kai*³ ‘very’, 足 *tsiok*⁴ ‘awfully, extremely’, and 傷 *siunn*¹/太 *thai*³ ‘too, excessively’ as well as the comparative marker 較 *khah*⁴ ‘more, -er’, and deictic terms-derived degree adverbs such as 遮(爾) *tsiah*⁴(*ni*⁷)/遐(爾) *hiah*⁴(*ni*⁷) ‘so’, and 佢(爾) *jua*⁷(*ni*⁷) ‘so, how’ in TSM can be construed as the elements that select gradable predicates.¹ There are two kinds of gradable predicates: (i) simple gradable predicates, and (ii) derived gradable predicates.² The simple gradable predicates can directly merge with the degree adverbs without resulting in ungrammatical sentences. The complex gradable predicates are complex and comprise the roots and the functors. If the roots are non-gradable and are therefore not compatible with the degree adverbs such as 較 *khah*⁴ ‘more’ as well as other degree adverbs, they have to be mediated by gradable predicates as 愛 *ai*³ ‘want’/無欲(愛) *bo*⁵*ai*³ ‘not want’, 賢(勢) *gau*⁵ ‘good at’/含(慙)慢 *ham*¹*ban*⁷ ‘poor at’, 能(會) *e*⁷ ‘can, able’/沒(袂) *be*⁷ ‘cannot, unable’, 好 *ho*² ‘good’/歹 *phai*² ‘bad’, and 快 *khuai*³ ‘fast, easy’/難(惡) *oh*⁴ ‘slow, difficult’.³ They are in a paradigmatic relationship, and are able to convert non-gradable predicates to gradable predicates. When degree adverbials and their selectees merge, feature checking will take place. The elements are to be merged in agree-

1. The spelling of TSM in this paper is based on the Church Romanization given in Douglas (1873). Some modifications have been made. In particular, the diacritic tone marks have been replaced by numerical superscripts. No distinction is made between *ch* and *ts* or *chh* and *tsh* as they do not involve a phonemic contrast. Open *o* and closed *o* are rewritten as *oo* and *o*, as in 古 *koo*² ‘ancient’ and 稿 *ko*² ‘draft’. Nasalization of vowels is signaled by a double *n*, as in 井 *tsinn*² ‘well’. The postvocalic glottal stop /ʔ/ is rendered as /h/. For characters we mostly follow the online Ministry of Education’s Taiwanese Southern Min Common Words Dictionary (https://twblg.dict.edu.tw/holodict_new/).

2. Gradable predicates are taken in a broad sense in this paper. They may be the only predicates that serve as the main predicates in the sentence or the higher predicates that take a VP as their complements. In the second sense they may be treated as higher predicates which can be taken as modal verbs or adverbs in the traditional sense.

3. For the sake of comparison, a character used in *Go-en* may be followed by another alternative character in parentheses. The Japanese often follows the practice of *kunyomi* (訓讀), viz., semantic borrowing without regarding the sound value of the original character, as in 賢(勢) *gau*⁵ ‘good at’ where an alternative character is enclosed in parentheses. But there are also the reverse cases of graphic representation by borrowing the sound value while ignoring the semantic value, as in 沒(袂) *be*⁷ ‘may not, unable’. Both variant characters, viz. 沒 and 袂, are phonetic loans. *Be*⁷ is a fusional word consisting of a negative element (*b* < **m*-) and 解 *e*⁷ often written as 能(會).

ment. Otherwise the output will clash. So, the functions fulfill the role of remedy making the repaired elements compatible.

A hallmark of the paper is to demonstrate that a set of constituents embracing the gradable feature serve as a mediator between the degree adverb and the non-gradable predicates in TSM. The simple gradable predicates embrace only the predicates carrying the gradable feature, whereas the complex gradable predicates embrace a set of explicit gradable elements and other non-gradable elements.⁴ The paper is organized as follows: § 2 provides the theoretical assumptions. § 3 examines the selectional restriction of degree adverbs. § 4 deals with the function and construal of gradable predicates (§ 4.1 presents the function of gradable predicates, and § 4.2. compares the top-down construal and bottom-up construal). § 5 presents the composition of complex gradable predicates (§ 5.1 maps out the internal structure of complex gradable predicates, and § 5.2 concerns the step-wise building of the complex gradable predicates). § 6 touches on the remaining issues relating to gradable predicates (§ 6.1 provides a unitary account of gradable 有 u^7 -headed VPs, § 6.2 deals with the non-gradable assertive marker 有 u^7 , and § 6.3 furnishes the formation of individual-level predicates). § 7 dwells on the motivation of studying the scalar structure in TSM. § 8 concludes the paper.

2. Theoretical assumptions

Studies on the comparative presupposes the notion of scale. The research of scale starts primarily with the semantics of adjectives. Adjectives are divided into two basic classes: (i) gradable adjectives, and (ii) non-gradable adjectives. Gradable adjectives feature a scalar structure in contrast to non-gradable adjectives, which are trivial in structure (Wellwood 2019). Gradable adjectives involve the relation of individuals and degree. Degree is construed as an ordered set of intervals along a context-determined domain (Kennedy 1997; 2007). There is a sustained interest in the theoretical foundation underscoring the expressions of degree as well as the research of the comparative from a crosslinguistic perspective.

There is a rich literature on the comparative in Mandarin (Lin 2009; Liu 2011; Erlewine 2018, among others). Chiefly among the issues explored are (i) whether the comparatives involve phrasal or clausal comparison, (ii) how many places gradable predicates take, (iii) what kind of syntactic categories are compared, and (iv) the presence or absence of degree abstraction among many others. The comparative often involves the comparison between target and standard. Standard can be implicit or explicit. The studies on the comparison are mostly concerned with

4. See Kennedy & McNally (2005) for the postulation of degree argument.

the comparison of target and explicit standard. Although the central concern of my paper also involves the comparison of target and standard, the standard is implicit rather than explicit.

Another aspect of engrossing interest in the comparative in Mandarin bears on the theoretical explorations of the nature of degree adverbs such as 很 *hen*³ ‘very’, 更 *geng*⁴ ‘more -er’, and 比較 *bi³jiao*⁴ ‘more’, be they overt or covert. Each of the degree adverbs is construed as comprising two covert and overt allomorphs in complementary distribution. The covert and overt allomorph of the comparative and positive morpheme are attributed to the manifestation of the avoidance of the constraint on multiple foci (Liu 2010a, b, 2011; Grano 2012; Zhang 2015).

A commonly held assumption, if not strictly a consensus, about the essence of degree expressions is that they denote a relationship between individuals and degrees. The gradable predicates involve the ordering of two objects with respect to a context-determined dimension (e.g. Sapir 1944; Cresswell 1977; Heim 2000; Kennedy & McNally 2005; Kennedy 2007).

A scalar structure is formed when a degree adverb modifies a gradable predicate, and there must be a checking relationship between the degree adverb as a probe and the modified as a goal. The degree adverb bears the feature [interpretable DEG] and the modified takes on the feature [uninterpretable DEG]. In the process of internal merge, if the probe does not find the goal for the checking relationship, the spell-out will clash.⁵

Scalar structure comes in many flavors. It may consist of inherent scalar phrases such as adjectives, as in 厚 *kau*⁷ ‘thick’, and stative verbs, as in 合意 *kah⁴i*³ ‘like’, which can be directly modified by degree adverbs like 真/足/成 *tsin¹/tsiok⁴/tsiann⁵* ‘very’. Some scalar structure is composite and consists of the indispensable scalar operator and the root. For example, if 路用 *loo⁷iong⁷* ‘use’ merges with 真 *tsin¹* ‘very’, it will yield an ungrammatical phrase *真路用 **tsin¹loo⁷iong⁷*. In contrast, if 路用 *loo⁷iong⁷* ‘use’ first merges with 有 *u⁷* ‘have’ or 無 *bo⁵* ‘not have’, yielding 有路用 *u⁷loo⁷iong⁷* ‘useful’ or 無路用 *bo⁵loo⁷iong⁷* ‘useless’, then the phrase, when further modified by 真 *tsin¹* ‘very’, will be perfectly well-formed, as in 真有路用 *tsin¹u⁷loo⁷iong⁷* ‘very useful’ and 真無路用 *tsin¹bo⁵loo⁷iong⁷* ‘utterly useless’.

A distinction is drawn between gradable and non-gradable predicates. For simple gradable predicates such as 厚 *kau*⁷ ‘thick’, we conjecture the bundling of the covert degree head and the root THICK. There is a need for a mediator between the degree adverb and a non-gradable predicate. For example, 看 *khuann*³ ‘look’ cannot merge with the degree adverb 真 *tsin¹* ‘very’ without clash-

5. See Chomsky (1995) as well as Ura (2000) for the notion of checking.

ing, as in *真看 **tsin*¹ *khuann*³ *‘very look’. However, 看 *khuann*³ can merge with the gradable predicate 好 *ho*² ‘good’ to yield 好看 *ho*²*khuann*³ ‘good-looking’ first. Then the scalar structure 好看 *ho*²*khuann*³ warrants further modification by the degree adverb 真 *tsin*¹, as in 真好看 *tsin*¹ *ho*²*khuann*³ ‘fairly good-looking’. 真好看 *Tsin*¹ *ho*²*khuann*³ is well-formed because the interpretable DEG feature of the probe 真 *tsin*¹ matches the uninterpretable DEG feature of the goal 好看 *ho*²*khuann*³ in keeping with the principle of checking. *真看 **tsin*¹*khuann*³ clashes in that no match can be established. We also dwell on the formation of scalar structure triggered by a set of functional words dubbed gradable predicates like 有 *u*⁷ ‘have’, 無 *bo*⁵ ‘not have’, 歹 *phai*² ‘bad’, and 賢(勢) *gau*⁵ ‘good at’ alongside of 好 *ho*² ‘good’ which plays a pivotal role in the formation of scalar structure which can be further scoped over by degree adverbs like 真 *tsin*¹ ‘very’ and 較 *khah*⁴ ‘more’.

Even though the paper centers on the essence of scalar structure in TSM, the formation of scalar expressions has an intimate relationship with events. Davidson (1967) pioneers the notion of identifying event as a linguistic entity, and Higginbotham (1985) and Parsons (1990) among others further the theory of events by advancing a neo-Davidsonian approach in which arguments are no longer projected by verbs and every verb is associated an event argument and every participant (i.e. thematic role) in the sentence is accorded an event argument. The ontological properties of events include the following features: events are perceptible, can be located in space and time, and have a unique manner of realization. In particular, as attested in linguistic terms, events can combine with locative and temporal modifiers as well as various kinds of adverbials (Maienborn 2019). The notion of event as an identifiable argument in the spirit of neo-Davidsonian approach forms an important underlying assumption in the discussion of the interface between scale and event in the paper.

3. The selectional restriction of degree adverbs

Though an optional element each of the degree adverbs in § 3.1 is an element that selects the gradable predicate denoting a scale (for the notion of the modifier as a selector see Bowers 2018). A scale features an ordered set of degrees or values along a relevant dimension.⁶

6. Although all the degree adverbs can serve as the touchstones for defining the scalar structure, the examples adduced in the paper will be limited to degree adverbs such as 真 *tsin*¹/成 *tsiann*⁵/蓋 *kai*³ ‘very’, 足 *tsiok*⁴ ‘extremely, awfully’, and 較 *khah*⁴ ‘more, -er’ only. 真 *Tsin*¹, 成

3.1 Degree adverbs

Let us capture at the outset the core idea of the degree adverbs along the lines of Kennedy (1997) and Kennedy & McNally (2005: 350). As shown in (1), a degree adverb (pos), be it implicit or explicit, is a functional category that relates the degree argument of a predicate to an appropriate standard of comparison. This relation dictates that a degree d exceed a standard on a scale associated with G which is based on the comparison class identified by C as a variable whose value is contextually determined.

$$(1) \llbracket \text{pos} \rrbracket = \lambda G. \lambda x. \exists d [\text{standard}(d)(G)(C) \wedge G(d)(x)]$$

Degree adverbs select gradable predicates as their modified. The composition of degree adverbs and their modified exemplified by 巧 *khiau*² ‘clever’ yields a scalar structure, as in (2):

$$(2) \llbracket \text{pos} \rrbracket (\llbracket \text{巧} \rrbracket) = \lambda x. \exists d [\text{standard}(d)(\llbracket \text{巧} \rrbracket)(C) \wedge \llbracket \text{standard} \rrbracket (d)(x)]$$

The gradable predicate 巧 *khiau*² ‘clever’ and its antonym 蠢 *gong*⁷ ‘stupid’ forms a scale of intelligence on the basis of bipolar contrast. pos as a degree adverb realized, e.g. as 真 *tsin*¹ ‘very’, relates the degree argument of the predicate to an appropriate standard of comparison. The relation requires that a degree d exceed a standard on a scale based on the comparison class whose value is contextually determined. The level of intelligence accruing to the individual as the subject is higher than the level of intelligence of people on the average. Thus, we can see that the degree adverb fulfills the role of $\llbracket \text{pos} \rrbracket$. There are four classes of degree adverbs in TSM: (i) common degree adverbs,⁷ (ii) excessive degree adverbs, (iii) comparative degree adverbs, and (iv) deictic terms-based degree adverbs.⁸

All degree adverbs involve the comparison of entities with respect to degrees along some dimensions. The Standard of Comparison (SC) has to be implicit for all the degree adverbs except the comparative degree adverb 較 *khah*⁴ ‘more, -er’. When the standard of comparison is explicit, as in (3), the comparative degree adverb 較 *khah*⁴ ‘-er, more’ is obligatory in TSM.⁹

*tsiann*⁵, and 蓋 *kai*³ are lexical variants and interchangeable without obvious semantic and syntactic difference.

7. 不止 *Put*⁴*tsi*² literally means ‘more than (the expected amount)’.

8. 遮 *Tsiah*⁴ and 遐 *hiah*⁴ are degree adverbs derived from proximal and distal deictic elements meaning ‘this’ and ‘that’ respectively. 佢 *Jua*⁷ is a degree wh-adverbial meaning ‘how’. 爾 *Ni*⁷ is an optional adverbial suffix denoting extent.

9. There is a historical reason why both SC and the degree adverb should be present in SM (Southern Min) since it is argued to be a hybrid of two typologically distinct types of the com-

Table 1. Classes of degree adverbs in TSM

Classes	Degree adverbs
Common degree adverbs	真 <i>tsin</i> ¹ ‘very’, 成 <i>tsiann</i> ⁵ ‘very’, 蓋 <i>kai</i> ³ ‘very’, 足 <i>tsiok</i> ⁴ ‘extremely, awfully’, 不止 <i>put</i> ⁴ <i>tsi</i> ² ‘fairly, rather’
Excessive degree adverbs	傷 <i>siunn</i> ⁷ ‘too’, 太 <i>thai</i> ³ ‘too, excessively’
Comparative degree adverbs	較 <i>khah</i> ⁴ ‘more, -er’
Deictic terms-derived degree adverbs	遮(爾) <i>tsiah</i> ⁴ (<i>ni</i> ⁷), 遐(爾) <i>hiah</i> ⁴ (<i>ni</i> ⁷) ‘so’, 佻(爾) <i>jua</i> ⁷ (<i>ni</i> ⁷) ‘so’

(3) 阿蘭仔 比 阿香仔 * (較) 巧。
A¹lan⁵-a² pi² A¹hiang¹-a² khah⁴ khiau².
 Alan-SUF than Ahiang-SUF more clever
 ‘Alan is cleverer than Ahiang.’

However, as shown in (4), when the standard of comparison is implicit, the comparative degree adverb 較 *khah*⁴ ‘-er, more’ is arguably optional in TSM. 巧 *Khiau*² is predicated of 阿蘭仔 *A¹lan⁵a²* the Target of Comparison (TC) as the subject.

(4) 阿蘭仔 (較) 巧。
A¹lan⁵-a² (khah⁴) khiau².
 Alan-SUF more clever
 ‘Alana is cleverer.’

When 較 *khah*⁴ is absent, the sentence 阿蘭仔巧 *A¹lan⁵a² khiau²* ‘Alan is clever’ cannot stand alone. The predicate 巧 *khiau*² ‘clever’ has become a focus element which should be set off against a background like 阿蘭仔無巧 *A¹lan⁵a² bo⁵ khiau²* ‘Alan is not clever’. In contrast, if the degree adverb is present, the sentence will be well-formed.¹⁰

paratives of inequality. The Mandarin comparative featuring TC-SC-bare predicate and the SM comparative featuring TC-較-predicate-SC. See Chappell et al. (2020) for a detailed exploration of the comparative in Southern Min from a diachronic perspective. There is in modern TSM an alternative way of putting (3): 阿蘭仔較巧阿香仔 *A¹lan⁵a² khah⁴ khiau² A¹hiang¹a²* TC-較-predicate-SC, ‘Alan is more clever than Ahiang’, which is perfectly well-formed. Despite the change in sentence structure, the meaning remains the same.

10. Whenever a degree compound adverb 比較 *bi³jiao⁴* ‘more/-er’ is present, the SC should be implicit in Mandarin, as in 小英比較聰明 *Xiao³ying¹ bi³jiao⁴ cong¹ming⁵* ‘Xiaoying is more clever.’ (Liu 2018a). However, such a usage cannot carry over to TSM without adjustment.

The excessive degree adverb 傷 *siunn*¹ ‘too’ cannot occur with the explicit standard of comparison.

- (5) 阿蘭仔 (*比 阿香仔) 傷 巧。
A¹lan⁵a² pi² A¹hiang¹-a² siunn¹ khiau².
 Alan-SUF than Ahiang-SUF most/too clever
 ‘Alan is too clever.’

There are basically two classes of gradable predicates: (i) simple gradable predicates, as in 燒 *sio*¹ ‘hot’ and (ii) complex gradable predicates, as in 欲(愛)講話 *ai*³ *kong*²*ue*⁷ (like talk.word) ‘be talkative’ where the predicate 講話 *kong*²*ue*⁷ (talk.word) ‘talk’ without being modified by 欲(愛) *ai*³ ‘like’ cannot count as a gradable predicate. The complex gradable predicates comprise a limited set of gradable predicates and other non-gradable elements. Listed in the tables in § 3.2.1, § 3.2.2, and § 3.2.3 is a limited set of gradable predicates.

3.2 Types of constituents bearing the gradable feature

There are three types of constituents carrying the gradable feature: (i) modal verbs, (ii) adverbs, and (iii) verbs to be explored in § 3.2.1, § 3.2.2, and § 3.2.3 respectively. The underlying assumption of the present paper is that there is no uniform syntactic realization associated with the semantic property of gradability. In particular, the gradable feature is not embraced by adjectives only.

3.2.1 Modal verbs

The constituents taking events as their arguments may correspond to dynamic modal verbs denoting preference or desire, as in Type A, ability or competence, as in Type B, possibility and inclination, as in Type C, and resilience and sustainability, as in Type D.¹¹

As a first approximation the subject of Types A and B must be a sentient being, and this may not be the case for Types C and D. For example, the subject in (6) and (7) featuring the modal verbs of Types C and D can be non-sentient, but such non-sentient subjects will not be accepted for the sentences featuring modal verbs of Types A and B.¹²

For example, an added degree adverb like 較 *khah*⁴ in TSM is mandatory, as in 阿蘭仔比較 * (較) 巧 *A¹lan⁵a² pi²kau³ *(khah⁴) khiau²* ‘Alan is more clever.’

11. The expressions enclosed in square brackets are the verb phrases as the complements that the modal verbs take.

12. Not all modals can carry the gradable feature. The modals of necessity such as 著 *tioh*⁸ ‘must’ (deontic modal) and 定著 *tiann⁷tioh⁸* ‘must’ (epistemic modal), for example, cannot

Table 2. Modals taking event-denoting complements

Types	Positive modal verbs	Negative modal verbs
A	欲(愛)[食] <i>ai³ tsiah⁸</i> ‘love eating’	無欲(愛)[與人相爭] <i>bo⁵ ai³ kah⁴ lang⁵ sio¹ tsinn¹</i> ‘do not want to vie with others’
B	賢(勢)[讀冊] <i>gau⁵ thak⁸ tsheh⁴</i> ‘do well in studies’	含(慙)慢[趁錢] <i>ham¹ ban⁷ than³ tsinn⁵</i> ‘poor at making money’
C	能(會)[生痱仔] <i>e⁷ sinn¹ pui³ a²</i> ‘can have a prickly heat’	沒(袂)[破病] <i>be⁷ phua³ pinn⁷</i> ‘may not fall ill’
D	能(會)勘得[浸水] <i>e⁷ kham¹ tit⁴ tsim³ tsui²</i> ‘can stand soaking in water’	沒(袂)勘得[罵] <i>be⁷ kham¹ tit⁴ ma⁷</i> ‘cannot stand scolding’

- (6) 新竹 較 會 透 風。
Sin¹ tik⁴ khah⁴ e⁷ thau³ hong¹.
Hsinchu more can blow wind
‘It is windier in Hsinchu.’
- (7) 此 款 鞋 較 會 勘得 穿¹³。
tsit⁴ khuan² ue⁵ khah⁴ e⁷ kham¹ tit⁴ tshing⁷.
this type shoes more can stand wear
‘The shoes are more durable.’

Even though there is a commonality shared by (A) and (B), there is still a major semantic distinction between them, as shown in (8) and (9).

- (8) 伊 真 愛 飲 酒。
i¹ tsin¹ ai³ lim¹ tsiu².
s/he very like drink wine
‘S/he likes drinking.’
- (9) 伊 真 賢(勢) 飲 酒。
i¹ tsin¹ gau⁵ lim¹ tsiu².
s/he very good.at drink wine
‘S/he has a high alcohol tolerance/ S/he can drink a lot.’

bear the gradable feature in that they cannot be modified by the adverb 真 *tsin¹* ‘very’ and function as closed scale predicates denoting maximality. Note that 著 *tioh⁸* ‘correct, right’ in 你講個話真著 *li² kong² e⁵ ue⁷ tsin¹ tioh⁸* ‘what you said is quite right’ is a gradable adjective rather than a deontic modal verb.

13. This sentence literally means the shoes of this kind stand more chances of wearing.

We can see that (8) denotes the degree of preference, whereas (9) indicates the degree of capacity. What is more, the subject of the sentence featuring Type B can be realized by a non-sentient being, as in (10).

- (10) 此 種 刀仔 真 賢 (勢) 生 銹。
tsit⁴ tsiong² to¹-a² tsin¹ gau⁵ sinn¹ sian¹.
 this kind knife-SUF very capable produce rust
 ‘Knives of this type rust easily.’

But such a semantic shift does not obtain for the constituents of Type A. That is, the sentence will become deviant if 愛 *ai³* is replaced by 賢(勢) *gau⁵* in (10).

3.2.2 Adverbs

Beside dynamic modal verbs evaluative adverbs and manner adverbs may hold the gradable feature. Let us first consider evaluative adverbs, as in Type E.

Table 3. Gradable evaluative and manner adverbs

Type	Positive adverbs	Negative adverbs
E	好[食] <i>ho² tsiah⁸</i> ‘tasty, delicious’	歹[食] <i>phai² tsiah⁸</i> ‘unpalatable’

Type E involves the positive or negative evaluation based on the scale along some dimension such as tastiness. A cursory perusal at the data in 語苑 *Go-en* turns up the following situation. For Type E the modifier 好 *ho²* ‘good’ may compose with a range of verbs, mostly transitive verbs, such as 食 *tsiah⁸* ‘eat’, 看 *khuann³* ‘look, watch’, 講 *kong²* ‘speak’, 做 *tso³* ‘do’, 聽 *thiann¹* ‘listen’, 趁 *than³* ‘make money’, 穿 *tshing⁷* ‘wear’, 賣 *bue⁷*/銷 *siau¹* ‘sell’, and rarely intransitive verbs such as 笑 *tshio³* ‘laugh, smile’. 好 *Ho²* as a positive adverb has a role in turning the activity into a scalar expression. Its negative counterpart 歹 *phai²* ‘bad’, though less productive, can combine with 看 *khuann³* ‘look, watch’, 行 *kiann⁵* ‘walk’, 聽 *thiann¹* ‘listen’, 做 *tso³* ‘do’, 食 *tsiah⁸* ‘eat’, 穿 *tshing⁷* ‘wear’, and 用 *iong⁷* ‘use’. It has the same function of yielding scalar expressions.¹⁴

Let us now turn to manner adverbs, as in Type F.

14. It is interesting to compare TSM as a Sinitic language and English in the spell-out of this category. For example, 歹聽 *phai² thiann¹* ‘bad listen’ in TSM corresponds to ‘(music, e.g.) is awful, unpleasant’ in English. The aspect in which something is unpleasant to the auditory sense of e.g. sound is explicit in TSM, but it remains implicit in English.

Table 4. Gradable manner adverbs

Type	Positive adverbs	Negative adverbs
F	快[變心] <i>khuai³ pian³ sim¹</i> ‘quick to change mind’	難(惡)(得)[講] <i>oh⁴ (tit⁴) kong²</i> ‘difficult to say’

Type F concerns the positive or negative manner featuring the scale of speed or easiness for an event. The positive adverb of Type F 快 *khuai³* ‘rapidly’ concerns the speed at which an event is processed, as in (11) and (12).

- (11) 皮膚 病 真 快 過 人。
phe⁵ hu⁷ pinn⁷ tsin¹ khuai³ ke³ lang⁵.
skin disease very fast infest people
‘The skin disease infests people rapidly.’
(9-8-4 *Go-en* 24, 1931)¹⁵

(12) 揮發 油 真 快 引 火 著。
hui¹ huat⁴ iu⁵ tsin¹ khuai³ in² he² tloh⁸.
volatilize oil very fast draw fire ASP
‘Gasoline catches fire rapidly.’
(3-58-4 *Go-en* 26, 1933)

Its negative counterpart 難(惡) *oh⁴* ‘difficultly, slowly’ involves the degree of difficulty in which an event occurs or is processed, as in (13) and (14).

- (13) 實在 的 情形 真 難 (惡) 得 知 影。
sit⁸ tsai⁷ e⁵ tsing⁵ hing⁵ tsin¹ oh⁴ tit⁴ tsai¹ iann².
real LINK situation very difficult know
‘It is very difficult to get to know the real situation.’
(9-11-3 *Go-en* 33, 1940)

(14) 未 曾 未 的 事情 真 難 (惡) 出 嘴。
be⁷ tsing⁵ be⁷ e⁷ tai⁷ tsi³ tsin¹ oh⁴ tshut⁴ tshui².
not.yet EXP not.yet LINK matter very difficult exit mouth
‘It is very difficult to voice what has not happened yet.’ (10-45-4 *Go-en* 3, 1910)

3.2.3 Verbs

There is still a type of constituents, classified as Type G shown below, which are not event-related. They take nominal expressions, mostly abstract noun phrases, in their scope and return the scalar expressions that can be further modified by the degree adverb 真 *tsin¹* ‘very’.

15. The source of each example is enclosed in parenthesis. What precede *Go-en* are the numbers of month, page, and line with the volume number following it.

Table 5. 有/無 gradable predicates

Type	Positive verbs	Negative verbs
G	有[元氣] u^7 <i>guan</i> ⁵ <i>khi</i> ³ ‘be spirited’	無[性地] bo^5 <i>sing</i> ³ <i>te</i> ⁷ ‘have no temper, affable’

The verb 有 u^7 can take a noun phrase denoting properties in its scope to yield a scalar expression that can be further modified by the degree adverb 真 *tsin*¹ ‘very’, as in (15) and (16).¹⁶

- (15) 如此 真 有 情理。
 an^2ni^1 $tsin^1$ u^7 $tsing^5li^2$.
 like.this very have correct.principle
 ‘It is therefore quite sensible.’ (5-29-6 *Go-en* 27, 1934)
- (16) 實在 是真 無 欸。
 sit^8tsai^7 si^7 $tsin^1$ bo^5 *khuan*².
 really is very not manner
 ‘(S/he) is really insensible.’ (6-577-3 *Go-en* 5, 1912)

To facilitate the compatibility of the modifier 有 u^7 and the modified, there should be an interface between them. In particular there should be a selection of the right function from a set of functions of the modifier to be compatible with the modified.

There is still another way of forming scalar expressions by establishing a link between scale and activity. A property-denoting element 頭 *thau*⁵ functioning as a gradable functor can link an activity to an abstract entity to lay the ground for combining with another gradable predicate 有 u^7 . An abstract noun can be derived by attaching a root 頭 *thau*⁵ to the root 偏 *phinn*¹ ‘get the better of’ yielding 偏頭 *phinn*¹ *thau*⁵ ‘profitability, advantage’. The verb 消 *siau*¹ which means ‘sell off’ when followed by 頭 *thau*⁵ can be converted into a property-denoting abstract noun meaning ‘salability’. As shown in (17) and (18), both 偏頭 *phinn*¹ *thau*⁵ and 消頭 *siau*¹ *thau*⁵ can be modified by 有 u^7 to become scalar predicates which can be further modified by the degree adverb 較 *khah*⁴ ‘more’.

16. The construction of 有 u^7 /無 bo^5 ‘have/not have’ + property-denoting NP invites comparison with the construction involving substance concept in Francez & Koontz-Garboden (2015; 2017).

- (17) 稱 若 較 到 買 物 的 人 較 有 偏頭。
tshin³ na⁷ khah⁴ kau³ bue² mih⁸ e⁵ lang⁵ khah⁴ u⁷ phinn¹ thau⁵.
 weigh if more enough buy thing LINK person more have gain.advantage.RT
 'If there is enough weight, the buyer will have a bigger bargain.'
 (4-75-4 *Go-en* 29, 1936)
- (18) 五 路 的 學生 攏 能 (會) 返 (轉) 來。打 (拍) 算
goo² loo⁷ e⁵ hak⁸ sing¹ long² e⁷ tng² lai⁵. phah⁴ sng³
 five road LINK student all can return come estimate
 的確 較 有 消 (銷) 頭。
tik⁴ khak⁴ khah⁴ u⁷ siau¹ thau⁵.
 certainly more have saleable.RT
 'A wide range of students will all return. So it is estimated that there will
 indeed be a good sale.'
 (7-61-8 *Go-en* 20, 1927)

In some more colloquial contexts the root 頭 *thau⁵* can be optionally dropped without seriously affecting its meaning. The optionality of the root 頭 *thau⁵* may be due to the incorporation of the feature of the abstract property carried by the erstwhile root.

有 *U⁷* in TSM, in fact, is a multiple functional word. Beside serving as a gradable predicate as shown above, it has a puzzling non-gradable function.¹⁷ This is a question that I shall address in the next section.

4. The function and construal of gradable predicates

The dual purpose of the section is (§ 4.1) to grasp the function of gradable predicates, and (§ 4.2) compare top-down and bottom-up construal.

4.1 The function of gradable predicates

The major function of gradable predicates is to serve as a mediator between the degree adverb and the non-gradable predicate. Let DegAdv, GradP, and Non-GradP stand for degree adverbs, gradable predicates, and non-gradable predicates. A question arises as to how the three elements merge to obtain the proper interpretation. Consider (19) as a case in point to show how the parsing or bracketing of the constituents is done when they are merged.

17. The gradable feature that the constituent carries, as assumed in the paper, is very much like the feature *much* that Wellwood (2015; 2019) advances to account for the degree element cutting across grammatical categories.

- (19) 穿 臭 汗酸 的 衫, 較 會 生 痱仔。
tshing⁷ tshau³ kuann⁷ sng¹ e⁵ sann¹ khah⁴ e⁷ sinn¹ pui³-a².
 wear stink sweat LINK shirt more can grow prickly,heat-SUF
 'Wearing a shirt wet with stinking sweat, one is more prone to have prickly heat.'
 (10-28-5 *Go-en* 15, 1922)

In particular, the moot point is whether we are dealing with a lexical compounding expression (see (i) below) or something like a bi-clausal structure (see (ii) below).

- (i) [較 + [會 + [生 痱仔]₁]₂]₃
khah⁴ e⁷ sinn¹ pui³ a²
 more can grow prickly,heat.SUF
- (ii) [[較 + 會]₁ + [生痱仔]₂]₃

In approach (i), the first step is that the verb 生 *sinn¹* 'bear, produce' and the derived noun 痱仔 *pui³a²* 'prickly heat', a root with a suffix, merge into the verb phrase 生痱仔 *sinn¹ pui³a²* 'develop prickly heat'. The second step is that GradP (會 *e⁷*) 'liable, prone' and Non-GradP (生痱仔 *sinn¹ pui³a²*) merge into a phrase. The third step is that 會生痱仔 *e⁷ sinn¹ pui³a²* is formed. In approach (ii) in accordance with dependency grammar, DegAdv (較 *khah⁴*) merges with GradP (會 *e⁷*) first and then further merges with the verb phrase 生痱仔 *sinn¹ pui³a²* 'develop prickly heat'. Approach (i) is a bottom-up construal, whereas approach (ii) is a top-down construal. Compare (i) and (ii) and we find that (ii) seems to be more economical than (i) in that the only thing that we need to worry about is to make sure that the DegAdv selects the gradable (rather than non-gradable) predicates. However, approach (ii) will run into trouble when the GradP is more flexible and may function as a gradable or non-gradable element. We defer tackling this question until 4.2 where we shall show why we cannot rely on approach (ii) exclusively in coping with the problem of construal.

The ordered derivation and the strict locality condition should be observed. In particular, the degree adverb selects a sequence of gradable predicate + VP in which the gradable predicate selects appropriate types of VP. The important constraint of the step-wise composition is that one cannot skip the second step by going from step 1 to step 3. Nor can we go from step 2 to step 3 without going through step 1. Otherwise the interpretation of the whole sequence would have clashed. In essence, the modal is a gradable predicate that mediates between the degree adverb and the verb phrase.

The important matter is that the gradable predicate and the predicate it occurs with must be compatible. What is involved in the aktionsart of the pred-

icates are activity and states featuring the unbounded and cumulative dimension rather than bounded and quantized dimension (Krifka 1998).¹⁸ For example, the predicate 合意彼領衫 *kah⁴i³ hit⁴ nia² sann¹* ‘like the dress’ denotes state, whereas the predicate 趁錢 *than³ tsinn⁵* ‘make money’ features activity. The former can form an input to the degree adverb 真 *tsin¹* ‘really, very much’ without further ado, as in (20), since 合意彼領衫 *kah⁴i³ hit⁴ nia² sann¹* ‘like the dress’ refers to a scalar state. This does not apply in the latter in that 趁錢 *than³ tsinn⁵* ‘make money’ alone is not a scale, but the gradable predicate 賢(勢) *gau⁵* ‘able, good at’ can turn it into a scalar expression, as in (21).

(20) 伊 真 合意 彼 領 衫。

i¹ tsin¹ kah⁴i³ hit⁴ nia² sann¹.

s/he really loves that CL clothes

‘S/he likes the dress very much.’

(21) 伊 真 賢(勢) 趁 (*一寡/真濟) 錢。

i¹ tsin¹ gau⁵ than³ (tsit⁸kua²/tsin¹tsue⁷) tsinn⁵.

s/he really able earn (some/a lot of) money

‘S/he is good at making money.’

The above two examples show that state and activity are unbounded. Only unbounded elements can form the input to the gradable predicate. Nothing but scalar expressions can be further scoped over by degree adverbs. If the object noun phrase is quantized, as when a quantifier like 一寡 *tsit⁸ kua²* ‘some, several’/真濟 *tsin¹ tsue⁷* ‘a lot’ is added, it will become bounded. As a consequence, the derived bounded predicate cannot combine with the degree adverb without resulting in ungrammatical sentences.

Each gradable predicate as well as its negative counterpart except 有 *u⁷*/無 *bo⁵* ‘have/not have’ is event-related and has a verb phrase denoting activity in its scope and returns a scalar expression so that the scalar expression can be further modified by degree adverbs like 真 *tsin¹* ‘very’ and 較 *khah⁴* ‘more’.¹⁹ They all

18. I follow Depraetere (1995) in distinguishing (un)boundedness and (a)telicity. The former involves the actual classification of situation types, whereas the latter concerns the potential classification of situation types. Aspect and tense, for example, may affect the (un)boundedness of sentences. I am indebted to one of the anonymous reviewers for suggesting unboundedness as an important constraint on the aktionsart of the predicate as an input to the gradable predicates.

19. For the aktionsart of state, a distinction is drawn between states (*sit, lie, stand, wait, sleep*) and statives (*know, weigh, own, resemble*). The distinction is also dubbed Davidsonian vs. Kimian states (Maienborn 2019: 65–76). The composition of 有 *u⁷*/無 *bo⁵* ‘have/not have’ + NP involves Kimian states which are not event-related. See also Rothmayr (2009: 7, 29, 34).

share the common property of scalarity and are compatible with gradable predicates. When they merge with non-gradable predicates, the resultant compositions will clash and become uninterpretable.

4.2 The top-down construal or the bottom-up construal

The discussion in § 4.1 seems to show that approach (i), namely the top-down operation, is on the right track. Can we therefore rest assured that the top-down operation can apply consistently across the board to all other cases? The answer is no in particular when the mediator is underspecified. 有 U^7 , a pretty protean word, is a good example. If we consider 有 u^7 alone, we cannot be sure whether it is a gradable predicate or not. Our focus is the sequence of DegAdv + GradP/Non-GradP + VP, namely 真 $tsin^1$ + 有 u^7 + 錢 $tsinn^5$ /家伙 ke^1he^2 . Taking approach (ii), we shall have to merge 真 $tsin^1$ + 有 u^7 before merging 真有 $tsin^1 u^7$ with the NP 錢 $tsinn^5$. However, we do not know whether 有 u^7 alone is gradable or not at the first step of merge. It is not until the second step of merge when we reach the third element the VP that we can decide whether the sentence is interpretable or not interpretable. A comparison of (22) and (23) shows that 有錢 $u^7 tsinn^5$ is gradable, whereas 有家伙 $u^7 ke^1he^2$ is non-gradable. If we follow approach (i), namely the bottom-up operation, then the first step is to merge the V and NP into a VP (有錢 $u^7 tsinn^5$ or 有家伙 $u^7 ke^1he^2$), and the next step is to merge the DegAdv 真 $tsin^1$ and the VP yielding 真有錢 $tsin^1 u^7 tsinn^5$, a compatible merge, and *真有家伙 $tsin^1 u^7 ke^1he^2$, an ungrammatical merge. Thus, the DegAdv is a touchstone of making such a distinction. The construal undertaken by approach (i) seems to fare better than approach (ii) in that approach (i) inevitably encounters difficulty in full interpretation in the first step. That is, we have to proceed to the next step when the verb 有 u^7 and the NP (錢 $tsinn^5$ or 家伙 ke^1he^2) merge. By contrast, such a problem does not arise for approach (i) following the bottom-up construal.

- (22) 伊 真 有 錢。

i^1 $tsin^1$ u^7 $tsinn^5$.

s/he very have money

'S/he is very rich.'

- (23) *伊 真 有 家伙。

i^1 $tsin^1$ u^7 ke^1he^2 .

s/he very have property

*'S/he very has property.'

To anticipate the discussion of the role of abstract roots like 頭 *thau*⁵, 量 *liong*⁷, and 額 *giah*⁸ in § 6.1 and § 7, we propose that the well-formedness of (22) is due to the meaning of the gradable property contributed by a covert functor like 水 *tsui*².²⁰ Such function may be missing in (23).

5. The composition of complex gradable predicates

In this section we first treat the internal structure of complex gradable predicates (§ 5.1), and then show how complex gradable predicates are built stepwise (§ 5.2).

5.1 The internal structure of complex gradable predicates

Listed in § 3.2, repeated here as (24), are gradable predicates that serve as functional categories that can serve a mediator between degree adverbs and non-gradable constituents, and such composition may yield complex gradable predicates.

(24) Gradable predicates

有 *u*⁷ ‘have’, 無 *bo*⁵ ‘not have’, 愛 *ai*³ ‘want’, 賢(勢) *gau*⁵ ‘good at’, 含(慇)慢 *ham*¹*ban*⁷ ‘poor at’, 能(會) *e*⁷ ‘can, able’, 沒(袂) *be*⁷ ‘cannot, unable’, 快 *khui*³ ‘rapid’, 難(惡) *oh*⁴ ‘difficult’, 好 *ho*² ‘good’, 歹 *phai*² ‘bad’

The verb 有 *u*⁷ ‘have’ is an existential verb that can combine with the gradable NP to form a complex gradable predicate. For example, assuming along the lines of Distributed Morphology (Halle & Marantz 1993) a double root compound like 禮數 *le*²*soo*³ ‘ceremony, propriety’ bears no grammatical category and acquires its status as a noun phrase fueled by the functional nominal head. It is the second root 數 *soo*³ that contributes the gradable property to the compound 禮數 *le*²*soo*³ which further merges with the existential verb to produce the complex gradable predicates 有禮數 *u*⁷ *le*²*soo*³ ‘be polite, courteous’ before it can combine with the degree adverb 較 *khah*⁴ ‘more’. In short, 較 *khah*⁴ is barred from directly combining with 禮數 *le*²*soo*³ since a property-denoting noun phrase and the degree adverb do not share a common ground, namely no feature agreement. The crude combination will result in a clash, viz., the output *較禮數 *khah*⁴ *le*²*soo*³ is unin-

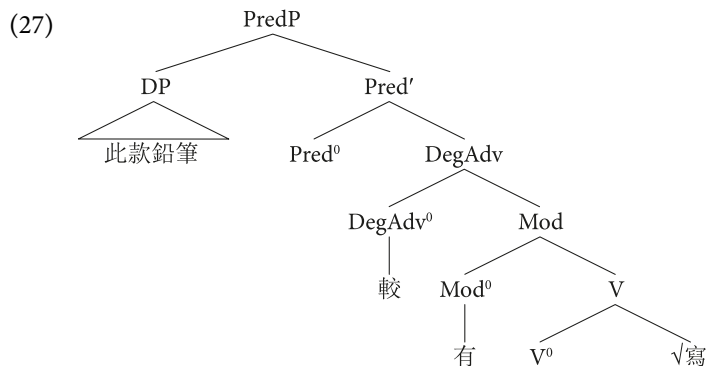
20. 錢水 *Tsinn*⁵ *tsui*² is glossed as ‘cash or money in regard to quantity’ (Douglas 1873:594). 水 *Tsui*² alone means ‘water’. However, 水 *tsui*² in the compound 錢水 *tsinn*⁵ *tsui*² becomes a function denoting an abstract property of gradability.

interpretable. The configuration of the scalar structure of 較有禮數 *khah⁴ u⁷ le²soo³* ‘be more polite’ is given as (25).

(25) [DegAdv DegAdv⁰ [V V⁰ [N N⁰ [√]]]]

As another example, the root 寫(字) *sia²(ji⁷)* (write (characters)) ‘write characters’ denote an activity, and is captured as a verb phrase. If the degree adverb 較 *khah⁴* ‘more’ combines with the activity-denoting verb 寫 *sia²* ‘write’, the result *較寫 *khah⁴ sia²* ‘more write’ makes no sense. The situation can be remedied by the gradable modal 有 *u⁷* ‘have’ in that 較有寫 *khah⁴ u⁷ sia²* is interpretable as long as the object emerges as the subject, a DP, occupying the specifier position of PredP as a further projection above the DegAdv. The gradable modal 有 *u⁷* is a function of returning the aktionsart of activity with a scalar dimension exemplified by the scale of durability in the use of an entity. Thus, these constituents put together yield 此款鉛筆較有寫 *tsit⁴ khuan² ian⁵pit⁴ khah⁴ u⁷ sia²* (this kind pencil more have write) ‘The pencils of this kind are more durable’. Its configuration is shown in (26) and (27) respectively. The comparative degree adverb involves a comparison with an implicit norm in that it indicates the explicit durability of a specific entity exceeding the norm of durability of the entities on the average.

(26) [PredP DP [Pred' Pred⁰ [DegAdv DegAdv⁰ [Mod Mod⁰ [V V⁰ [√]]]]]]



The gradable modal 有 *u⁷* ‘have’ suffices for barring the verb of activity from merging with the tense to acquire the feature of episodicity. In fact, this is a middle construction bearing the hallmark of generic reading. This is the gist of an account based on the framework of middles in TSM in Lien (2010). Liu (2020) is a fairly detailed and in-depth treatment of 有 *u⁷*-related constructions well beyond

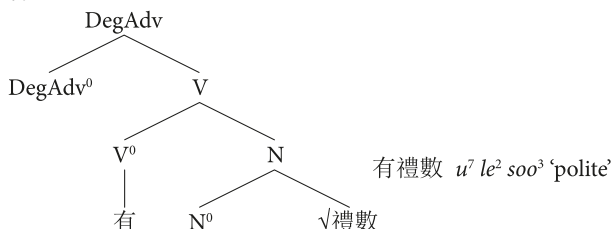
middles in TSM.²¹ An important claim that Liu (2020) made relevant to the present paper is that rather than the V as its adjacent element, it is the verb 有 u^7 that contributes the scalar reading contra the theory of Francez and Koontz-Garboden (2015; 2017). We shall show in § 10 and § 11 that a more unitary account is available in lieu of the previous account based on middle constructions.

In this section 有 u^7 in the 有 u^7 + a variable (N or V) string has been construed as being a gradable predicate that can serve as a mediator between a degree adverb like 真 $tsin^1$ and the variable (N or V) in the building of a scalar structure. But we are faced with a dilemma, viz., 有 u^7 is an underspecified element. We cannot decide on its grammatical status when it occurs alone. We shall provide an alternative analysis which seems to be more viable in § 6.1.

5.2 The step-wise building of the complex gradable predicates

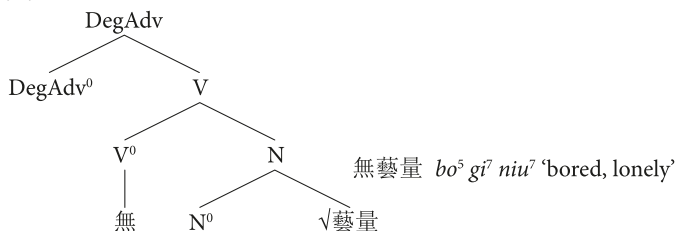
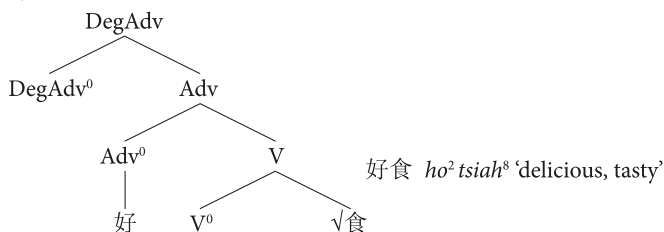
There are two varieties of functional heads in the first step: N and V. The functional heads serve to provide grammatical categories for the roots. The roots such as 禮數 le^2soo^3 ‘propriety, etiquette’ in (28), 藝量 gi^7niu^7 ‘amusement’ in (29), and 食 $tsiah^8$ ‘eat’ in (30) are given grammatical categories by the functional heads N, N, and V respectively (Halle & Marantz 1993; Marantz 2013).²²

(28) 有 u^7 + N + root



21. One may well wonder if the generic reading is attributable to the kind classifier 款 $khuan^2$ or 種 $tsing^2$ as the sole contributor. However, when a particular classifier 枝 ki^1 denoting a stiff and elongated object can occur instead of the kind classifier without erasing the sense of genericness in (27), it shows that the kind classifier is not the sole contributor of the generic reading.

22. It is the theoretical stand taken in the paper that there is no straightforward relation between syntax and semantics. Scalar expressions are not limited to adjectives alone. Predicates may also be scalar. Along the lines of Bowers (2010) I propose the constituent bearing the feature +gradable as a syntactic projection serving as the input to the Degree Adverb (DegAdv), a higher functional projection. DegAdv imposes a selectional restriction on the modified with respect to the gradable feature that it scopes over. That is, the DegAdv are compatible with the modified embracing the gradable feature. If the gradable feature is absent from the modified, then the merger of the modifier and the modified will clash.

(29) 無 bo^5 + N + root(30) 好 ho^2 + V + root

The structure-building of scalar structure proceeds step-wise in a bottom-up manner.

In the first step the root is accorded a grammatical category by the functional head, either N or V. A root, be it a bare noun 禮數 le^2soo^3 'propriety' in (28) or a bare verb 食 $tsiah^8$ 'eat' in (30), denotes properties or activities of an entity and is not eligible for merging with degree adverbs such as 真 $tsin^1$ /成 $tsiann^5$ 'very' that select gradable predicates. The roots have to go into a further step, namely the second step, that will overcome the barrier to participate in the building of a scalar structure. Such a phrase is realized by a set of constituents bearing the gradable feature. The verb 有 u^7 'have', 無 bo^5 'not have', and 好 ho^2 'good' are each the predicates that furnish the output of the first step with the uniform feature DEG. Except the case where the constituent itself that has inherently had the gradable feature, all the cases should undergo the second step before the last step can be implemented, namely the third step.

The third step involves the combination of the end result of the second step with a degree adverb extracted from § 3.1. Degree adverbs like 較 $khah^4$ 'more', 成 $tsiann^5$ 'very', 真 $tsin^1$ 'very', and 足 $tsiok^4$ 'very' can fill the head of the degree adverb as the maximal projection in (28), (29), and (30). The cyclic constraint of step operation should be observed. For example, if the second step is skipped, the combination of degree adverbs and the output of the first step will clash since the merged parts are not interpretable.

6. Remaining issues relating to gradable predicates

The remaining issues to be addressed are first (§ 6.1) to provide a unitary account of gradable 有 v-headed VPs, then (§ 6.2) deals with the non-degree assertive marker 有 u^7 , and last (§ 6.3) dwells on the formation of individual-level predicates.

6.1 A unitary account of gradable 有 v-headed VPs

The V-V construction as shown in 此款貨真有消 $tsit^4\ khuan^2\ he^3\ tsin^1\ u^7\ siau^1$ ‘the goods of this type sell well’ was previously construed as a type of middles in Southern Min (Lien 2010). Prompted by Liu’s recent thought-provoking paper on *u*-related constructions in Taiwanese Southern Min (Liu 2020), we shall attempt a new analysis of the VV construction. Abstracting away the subject, we propose that 真有消 $tsin^1\ u^7\ siau^1$ ‘sell well’ comes from 真有消頭 $tsin^1\ u^7\ siau^1\ thau^5$ ‘sell pretty well’, a nominal derivative. 消 $Siau^1$ is a root meaning ‘sell’ and 頭 $thau^5$ is another root bearing the gradable property. The nominal derivative 消頭 $siau^1\ thau^5$ means saleability. We propose a theory of absorption of semantic feature and syntactic category of the nominal root into the verb. That is, although the phonological shape of 頭 $thau^5$ becomes implicit, its semantic content and grammatical category are still retained despite the spell-out of 消 $siau^1$ alone. Thus 消 $siau^1$ in the absence of 頭 $thau^5$ means the same as 消頭 $siau^1\ thau^5$ and functions as a nominal rather than verbal element. Thus 有消 $u^7\ siau^1$ is a verb-noun string rather than a VV construction. Another example featuring absorption is 有擋 $u^7\ tong^3$ on a par with 有擋頭 $u^7\ tong^3\ thau^5$ sharing ‘have stamina, have great endurance’.²³ Both instances feature a V(有) + NP (擋/擋頭) construction.

Parallel to the NP construction exemplified by 消頭 $siau^1\ thau^5$ ‘saleability’ and 擋頭 $tong^3\ thau^5$ ‘endurance’ is another NP construction exemplified by 膽頭 $tann^2\ thau^5$ ‘courage, guts’, 勢頭 $se^3\ thau^5$ ‘power, authority’, and 力頭 $lat^8\ thau^5$ ‘strength’ whose meaning remain unchanged even when 頭 $thau^5$ is implicit. The NP string can further compose with the verb 有 u^7 yielding 有膽頭 $u^7\ tann^2\ thau^5$ ‘is gutsy’, 有勢頭 $u^7\ se^3\ thau^5$ ‘is powerful’, and 有力頭 $u^7\ lat^8\ thau^5$ ‘is strong’. Even

23. 擋 $Tong^3$ ‘endure, stand, last’ is a verb in traditional grammatical concept. However, in line with the framework of Distributed Morphology (Halle & Marantz 1993; Embick 2010) where lexical items are the roots (i.e. raw materials) bearing no syntactic category, and it is the syntactic frame that provides syntactic category. Thus, both 擋 $tong^3$ and 頭 $thau^5$ are roots which are combined into a compound root to which the grammatical category of noun is accorded by a syntactic frame.

when the second root 頭 *thau*⁵ is pruned the meaning of each truncated form remains unchanged and can serve as the modified of the DegAdv 真 *tsin*¹ ‘very’.²⁴

In this new perspective both types of constructions, be they the first type, as in 有消 *u*⁷*siau*¹ ‘saleable’ and 有擋 *u*⁷*tong*³ ‘have endurance’, or the second type, as in 有膽 *u*⁷*tann*² ‘is gutsy’, 有勢 *u*⁷*se*³ ‘is powerful’, and 有力 *u*⁷*lat*⁸ ‘is strong’, share the same general syntactic structure, namely V + NP. However, the internal structure of NP differs: V+ N (擋頭) in the first type, and N + N (膽頭) in the second type. To the extent that such a parallelism holds, this analysis can be extended to even the cases where the element bearing the gradable property is not overtly attested. We can posit a covert element, as in 此款金瓜真有食(額) *tsit*⁴*khuan*² *kim*¹*kue*¹ *tsin*¹ *u*⁷ *tsiah*⁸(*giah*⁸) ‘this type of pumpkin lasts longer/very substantive’ where the postulated covert element (額)(*giah*⁸) denotes the amount of pumpkin that can be consumed; 真有食(額) *tsin*¹ *u*⁷ *tsiah*⁸(*giah*⁸) means that there is a large portion of pumpkin that can be eaten.²⁵ Thus, if our analysis is on the right track, we have provided a unitary account that attains some measure of economy. We can see that rather than the verb 有 *u*⁷, it is the second root, be it explicit or implicit, in the compound that is instrumental in contributing the sense of gradable property. Such a construal lends support to the thesis that Francez and Koontz-Garboden (2015; 2017) put forward.

6.2 The non-gradable assertive marker 有 *u*⁷

有 *u*⁷ can combine with 讀冊 *thak*⁸*tsheh*⁴ ‘read books, study’ or 破病 *phua*³*pinn*⁷ ‘fall ill’, but they do not yield a scalar reading. I propose that *u*⁷ functions as an assertive marker or particle in the CP layer with the interpersonal illocutionary force in the cartographic system.²⁶ Therefore, the degree adverb is an optional ele-

24. If we consider the case of 消頭 *siau*¹*thau*⁵ ‘saleability’ alone, we tend to believe that 頭 *thau*⁵ is a suffix signaling the syntactic category of the nominal derivative based on the verbal root 消 *siau*¹. But there are also cases such as 膽頭 *tann*²*thau*⁵ ‘courage, guts’ where 頭 *thau*⁵ does not function as a categorizer. Evidently 頭 *thau*⁵ is ambivalent and cannot act as a syntactic categorizer. Pursuing a new approach along the lines of Levinson (2014) while still sticking to the spirit of Distributed Morphology (Halle & Marantz 1993; Embick 2010), we take 頭 *thau*⁵ not as a suffix but as a root, and it is not until after the composition of root₁ 消 *siau*¹ and root₂ 頭 *thau*⁵ into a compound that it is accorded a syntactic category of noun.

25. Postulation of -頭 *thau*⁵, -量 *liong*⁷, and -額 *giah*⁸ as covert elements saves us from treating the string 較-有-V as a type of middles. In short, 較-有-V-頭/量/額 is a garden variety VN construction modified by a degree adverb.

26. There is a bottom-up hierarchy of functional categories in a sentence: CP (Complementizer Phrase), IP (Inflectional Phrase), and VP (Verb Phrase) with CP as the highest projection

ment that cannot be added without yielding an ungrammatical sentence in (31) and (32). What is at stake is that 有 u^7 as an assertive force marker in the CP layer cannot be outscopied by the degree adverb 真 $tsin^1$ ‘very’ which must select a scalar structure. Note that 真 $tsin^1$ cannot compose with a verb phrase denoting activity 讀冊 $thak^8tsheh^4$ ‘read books, study’ in that the composed sequence *真讀冊 $tsin^1 thak^8tsheh^4$ ‘study very’ or *真破病 $tsin^1 phua^3pinn^7$ ‘fall ill very’ will become uninterpretable.²⁷

- (31) 伊 (*真) 有 讀 冊。
 $i^1 (tsin^1) u^7 thak^8 tsheh^4$.
 s/he (very) have read book
 ‘S/he was indeed educated.’
- (32) 伊 (*真) 有 破 病。
 $i^1 (tsin^1) u^7 phua^3 pinn^7$.
 s/he (very) have break.out disease
 ‘S/he indeed fell ill.’

有 u^7 cannot combine with 讀冊 $thak^8tsheh^4$ /破病 $phua^3pinn^7$ and return a gradable expression; for 食 $tsiah^8$ /學 oh^8 , the output as a gradable expression 有食 $u^7 tsiah^8$ /有學 $u^7 oh^8$, if well-formed at all, seem to have a meaning similar to a generic statement (to be discussed in § 8 in the paper). If we apply a degree adverb like 真 $tsin^1$ ‘very’ to each non-gradable predicate, the situation is not remedied as there is still incompatibility. Why should this be? Where does the incompatibility come from? This is the question that I shall address forthwith.

有 u^7 as a multiple function word modifying a verb phrase denoting activity tends to yield a habitual reading, as in (33), or an experiential reading, as in (34).

- (33) 伊 (*真) 有 食 薰。
 $i^1 (tsin^1) u^7 tsiah^8 hun^1$.
 s/he (very) have eat cigarette
 ‘S/he smokes.’

in the cartographic approach (Rizzi 1997; Cinque & Rizzi 2009; Tsai 2015). CP may feature a finer distinction including topic, focus, force or rather mood. 有 U^7 as an assertive marker may be used to convey the speaker’s assertive stand to the addressee. It may be construed as occupying in a position in force in CP. See Coniglio & Zegrean (2012) for particles with the similar interpersonal illocutionary force.

27. If the degree adverb 真 $tsin^1$ ‘very’ is pruned, then the sentence becomes interpretable, as shown in the English rendition.

- (34) 阮 岳父 (*真) 有 寫 一 張 遺囑。
gun² gak⁸ hu⁷ (tsin¹) u⁷ sia² tsit⁸ tiunn¹ ui⁵ tsiok⁴.
 1PL father-in-law (very) have write one CL will
 'My father-in-law has written a will.' (10-65-1 *Go-en* 24, 1931)

We can see that both (33) and (34) become ungrammatical when the degree adverb 真 *tsin¹* 'very' is added. The ungrammaticality lies in the non-scalar function of 有 *u⁷*.

6.3 The formation of individual-level predicates

Unlike 有 *u⁷* which cannot combine with a VP to yield a gradable predicate, the gradable predicate 好 *ho²* 'good' carries such a function.²⁸ 看 *Khuann³* 'look, watch', 食 *tsiah⁸* 'eat', 聽 *thiann¹* 'listen', and 飲 *lim¹* 'drink' feature the aktionsart of a range of activities such as looking, eating, listening, and drinking. Each verb is unbounded and can serve as the input to the gradable adverb 好 *ho²*, as in Table 6.

Table 6. The adverb 好 *ho²* + V

The gradable adverb 好 <i>ho²</i> + V	Gloss
好看 <i>ho² khuann³</i>	'good to look at, beautiful'
好食 <i>ho² tsiah⁸</i>	'good to eat, tasty, delicious'
好聽 <i>ho² thiann¹</i>	'good to listen to, good in sound'
好飲 <i>ho² lim¹</i>	'good to drink, tasty, nice'

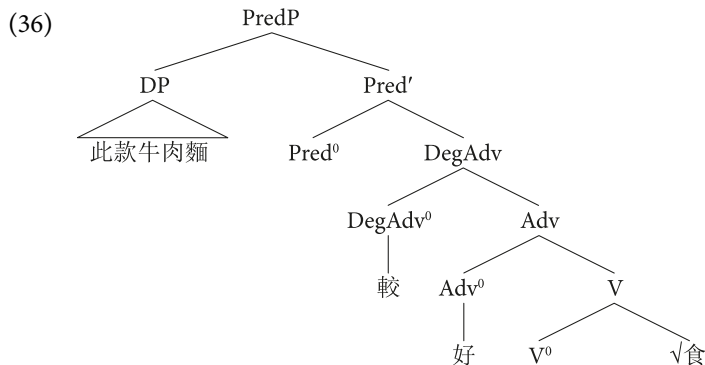
The scalar predicate comprising the gradable adverb 好 *ho²* + V features the positive scale along a relevant dimension based on perceptible entities like watching, eating, listening, and drinking. If a degree adverb 較 *khah⁴* 'more' is added, it will convey the reading that the positive evaluation exceeds a norm that varies with context.

As shown in (35) as well as its stepwise derivation read off from the bracketing of the constituents that immediately follow, supported by the tree diagram in (36), we can see that what starts off as a dynamic activity (a type of event) is forged into an individual-level predicate when it falls into the scope of the gradable adverb 好 *ho²*.

28. The same is true of 好看 *hao³ kan⁴* '(vision) beautiful', 好吃 *hao³ chi¹* 'delicious', 好聽 *hao³ ting¹* '(sound) pleasant', and 好喝 *hao¹ he¹* '(drink) tasty' in Mandarin.

- (35) 此款牛肉麵較好食。
tsit⁴ khuan² gu⁵ bah⁴ mi⁷ khah⁴ ho² tsiah⁸.
 this kind beef.noodle more good eat
 ‘The beef noodles of this kind are more delicious.’

[PredP DP [Pred' Pred⁰ [DegAdv DegAdv⁰ [Adv Adv⁰ [V V⁰ [√]]]]]]]



An individual-level predicate exemplified as 好食 *ho² tsiah⁸* ‘tasty, delicious’ is construed as not involving an event argument. But it constitutes a scalar predicate expressing a Kimian state and is amenable to further qualification by a degree adverb like 較 *khah⁴* ‘more’.

7. The motivation for studying the scale structure in TSM

One of the anonymous reviewers questions the validity of exploring the degree expressions in TSM as a Sinitic language, given an explosion of previous studies on the comparative construction in Mandarin. It is a long-standing prejudice that Chinese dialects differ most in areas like sound systems and choice of lexical items, and syntax or morphology is relatively the same cross-dialectally.

In what follows, I shall show why it is important theoretically to explore the parametric variations in TSM. First, it concerns the protean nature of 有 *u⁷*. As shown in § 8, the ambivalent nature of 有 *u⁷* compels us to opt for a less rigid approach to cope with the interpretation of the degree expressions featuring 有 *u⁷* as a mediator. One cannot resort to the top-down construal blindly across the

board in all cases. In some cases it is viable to adopt the bottom-up construal especially considering 有 u^7 as a fairly underspecified element.²⁹

Second, stative verbs like 貴 kui^3 'expensive' bearing the gradable property can be modified by the degree adverb 足 $tsiok^4$ 'very', as in 足貴 $tsiok^4 kui^3$ 'very expensive'. 貴 kui^3 can also be modified by 有 u^7 , as in 有貴 $u^7 kui^3$ where 有 u^7 as an evaluative modal verb is used to assert the state of expensiveness. But 有貴 $u^7 kui^3$ 'indeed very expensive' is not compatible with the degree adverb 成 $tsiann^5$ 'very', as in *成有貴 $tsiann^5 u^7 kui^3$. Thus, 有貴 $u^7 kui^3$ is not gradable and can be taken as an absolute predicate. The negative form of 有貴 $u^7 kui^3$ ³⁰ is 無貴 $bo^5 kui^3$ 'not expensive' rather than *毋貴 $m^7 kui^3$ 'not expensive'.³¹ 不貴 bu^4 in Mandarin corresponds to 無貴 $bo^5 kui^3$ 'not expensive' or 袂貴 $bue^7 kui^3$ 'cannot possibly be expensive' both being non-gradable adjectives, in TSM.³¹

The negator 別 bie^2 'don't!' in the imperative aside, the negator 不 bu^4 and 沒 me^2 in Mandarin have a skewed correspondence with 毋 m^7 and 無 bo^5 in TSM. Whereas in dealing with non-stative predicates, it seems that 不 bu^4 corresponds to 毋 m^7 , as in 不去 $bu^2 qu^4$ in Mandarin, equivalent to 毋去 $m^7 khi^3$ in TSM, both meaning *will not go* in English. However, 不抽菸 $bu^4 chou^1 yan^1$ in Mandarin corresponds to both 無食薰 $bo^5 tsiah^8 hun^1$ 'do not smoke', a habitual reading, and 毋食薰 $m^7 tsiah^8 hun^1$ 'will not smoke', a volitive reading, in TSM. The predicates in the two examples are not gradable. The distribution and interpretation of the negators is a hard nut to crack from a contrastive perspective and will form a fascinating topic for future research.

Third, TSM is rich in chronological strata. This is a unique trait conspicuous in Sinitic languages (Lien 2001). A word often boasts both colloquial and literary

29. As shown in Cheng (1985), TSM, for example, features 有 u^7 as a modal verb contributing a habitual reading in TSM, whereas bare VP alone can signal a habitual reading in Mandarin.

30. 無 Bo^5 is a negative verb as a fusion of a negative element and the verb 有 u^7 . It is believed that bo^5 comes from an earlier phonological form mau^5 written as 毛. When 有 $*/au/$ changed into $/o/$, the merger of $/b/$ ($< *m/$) and 有 $/o/$ occurred. TSM has a mandatory rule of denasalizing the nasal onset of a syllable, if the rime of the syllable is not nasalized, as in 米 bi^2 'rice'. Bi^2 is a result of denasalizing the nasal onset $*m$. But the onset of 暝 $mi(nn)^5$ 'night' retains the nasal element without being denasalized, since its rime is nasalized, as signaled by nn . The double n is a convention of representing nasalization in Taiwanese Romanization. The symbol nn is as a rule not present when the nasalization of the vowel is predictable from the nasal initial, as in the colloquial form of 林 na^5 ($< nann^5$) 'woods'. For the interplay of the denasalization of the initial and the nasalization of the final in a syllable in TSM see Lien (2000).

31. The former is an assertive reading, whereas the latter is an epistemic reading. An alternative rendition for 袂, a phonetic loan character, is 𪔐, a more transparent reflection of the word as a fusion of a negative element $b-$ ($< *m-$) and the epistemic modal 會 ue^7 ($< *解$).

phonological forms. For example, 膽 is realized as *tann*² (colloquial) and *tam*² (literary) in TSM. Such a phonological realization has syntactic and morphological implications. There is an interface between stratum distinction and morphological operation. 膽 can compose with 頭 *thau*⁵ and 量 *liang*⁷. When 膽 combines with 頭, its colloquial form *tann*¹ should be adopted. However, it will take on the literary form *tam*² in combination with 量 *liang*⁷. 膽 *Tann*² is a free morpheme, namely a word, but 膽 *tam*² is a bound morpheme and can only be used in 膽量 *tam*²*liang*⁷, as in 有膽量 *u*⁷ *tam*²*liang*⁷ ‘have guts’. 真有膽 *Tsin*¹ *u*⁷ *tann*² is acceptable in TSM, whereas 真有膽 *zhen*¹ *you*³ *dan*³ is not well-formed in Mandarin.³² The example can be remedied by adding 量 *liang*⁴ to 膽 *dan*³, as in 真有膽量 *zhen*¹ *you*³ *dan*³*liang*⁴ ‘so courageous’.

Fourth, as shown in § 6.1, TSM has a gradable V + NP construction selected by such degree adverbs as 真 *tsin*¹, 成 *tsiann*⁵, and 足 *tsiok*⁴. In this gradable construction, V is realized by an existential verb 有 *u*⁷ and the NP comprises a set of verbs and a constant realized as 頭 *thau*⁵. An example is 擋頭 *tong*³*thau*⁵ ‘endurance’. 頭 *Thau*⁵ in the string 真有擋頭 *tsin*¹ *u*⁷ *tong*³*thau*⁵ can be truncated without affecting the meaning of the whole expression. Thus, 真有擋頭 *tsin*¹ *u*⁷ *tong*³*thau*⁵ means the same as 真有擋 *tsin*¹ *u*⁷ *tong*³. The gradable V + NP seems to be few and far between in Mandarin. An often encountered example is 很有看頭 *hen*³ *you*³ *kan*⁴*tou*⁰, as in 這齣戲很有看頭 *zhe*⁴ *chu*¹ *xi*⁴ *hen*³ *you*³ *kan*⁴*tou*⁰ ‘the play is well worth watching/awesome’. While 真有擋頭 *tsin*¹ *u*⁷ *tong*³*thau*⁵ can have 頭 *thau*⁵ clipped off in TSM, as shown above, the truncation of 頭 *tou*⁰ in 很有看頭 *hen*³ *you*³ *kan*⁴*tou*⁰ will yield an ungrammatical sequence *很有看 *hen*³ *you*³ *kan*⁴ in Mandarin. One may contend that the case of 有看頭 *you*³ *kan*⁴*tou*⁰ is an odd man out in Mandarin. But such a functional element as 頭 is quite robust in TSM. As indicated in the third point, the truncation of 頭 *thau*⁵ in the 足 + 有 + N + 頭 construction is acceptable without the loss of the gradable feature, as in 足有膽(頭) *tsiok*⁴ *u*⁷ *tann*²(*thau*⁵) ‘very courageous’, 足有勢(頭) *tsiok*⁴ *u*⁷ *se*³(*thau*⁵) ‘very powerful’, and 足有力(頭) *tsiok*⁴ *u*⁷ *lat*⁸(*thau*⁵) ‘very strong’ in TSM. Such a truncation of the element bearing the gradable property does not seem to be tolerable in Mandarin, as in 很有膽*(量) *hen*³ *you*³ *dan*³*(*liang*⁴) ‘very

32. However, 有膽 *you*³ *dan*³ can be used in an exclamative, as in 你有膽再說一遍 *ni*³ *you*³ *dan*³ *zai*⁴ *shuo*¹ *yi*² *bian*⁴ ‘you say it again!’ (I dare you to say it again).

courageous', 很有勢*(力) *hen³ you³ shi⁴*(li⁴)* 'very powerful', and 很有力*(量) *hen³ you³ li⁴*(liang⁴)* 'very strong'.³³

Fifth, due to the constraint against multiple foci the overt degree adverb 比較 *bi³jiao⁴* 'more' occurs to the exclusion of the standard of comparison, as in 阿順(*比阿福)比較高 *A¹shun⁴ (*bi³ A¹fu²) bi³jiao⁴ gao¹* 'Ashun is taller (*than Afu)' in Mandarin (Liu 2018b). Despite its presence with relatively the same meaning in TSM, 比較 cannot carry over to TSM, as in *順仔比較*(較)懸 *Sun⁷a² pi²kau³ *(khah⁴) kuan⁵* 'Sun is taller', which is not well-formed unless another degree adverb (較 *khah⁴*) is added. 多 *Duo¹* 'much, many' in Mandarin corresponds to 濟 *tsue⁷* in TSM. However, they follow a different path of grammaticalization. 多 *Duo¹* can function as a quantitative adverb, as in degreeless differential sentences in Mandarin, as in 他多吃了一碗 *ta¹ duo¹ chi¹ le i⁴ wan³* 's/he had one more bowl (of rice)' (Li 2015). Another lexical item 加 *ke¹* 'more' has to be chosen in place of 濟 *tsue⁷* in TSM, as in 伊加食一碗 *i¹ ke¹ tsiah⁸ tsit⁸ uann²* 's/he had one more bowl (of rice)'. Compound additive degree adverb 更加漂亮 *geng⁴ jia¹ piao⁴liang⁴* 'even more beautiful' in Mandarin corresponds to 加真嬌 *ke¹ tsin¹ sui²* 'even more beautiful' in TSM. We can see that the position of the adverb 加 is different in the two languages.

I have in the above barely scratched the surface on five areas where the studies on TSM alongside Mandarin can deepen our understanding of the constraints on the scalar structure in Sinitic languages. Patterns of parametric variation may sharpen our views about the secret workings of functional categories across languages.

8. Conclusions

We assume with Bowers (2018) that degree adverbs are the selectors of gradable predicates. Gradable predicates may be inherent or derived. The formation of complex gradable predicates is fueled by degree adverbs. A limited set of gradable predicates provide the pivot that relates event structure to scalar structure. Predicates that serve as an input to the gradable predicates have to meet the constraints that the degree adverbs impose. Despite the disparate syntactic category of each type all the gradable predicates share the common property of gradability. The

33. 勢頭 *Shi⁴thou²* means 'situation' or 'tendency' in most Mandarin dictionaries. But Ijichi (2002: 1303) is an exception in that it registers two senses of 勢頭 *shi⁴tou²*: (i) situation, vigor, and (ii) power, authority in Mandarin. 勢頭 *Se³thau⁵* in TSM embraces only the second sense.

scalar structure derived from its components stepwise features' gradability coupled with the interpretation of genericness rather than episodicity.

We have been concerned with the intriguing issue of how to cope with an aspect of scalar structure with respect to what is its internal structure and how to undertake a stepwise building of such a scalar structure in TSM. In particular, an important point of departure is that the degree adverb is taken as the touchstone for identifying gradable predicates. An underlying assumption for which we benefit from the wisdom of previous literature is that there is no one-to-one correspondence between gradability and grammatical categories. Apart from adjectives as the best exempla of gradable predicates, nouns, and verbs may engage the semantics of degree.

There are two approaches to tackle the composition of a degree adverb as a modifier and its modified: (i) the top-down construal, and (ii) the bottom-up construal. This first approach is simple and straightforward, and workable in most cases. However, not so when the modified as the adjacent element of the degree adverb as exemplified by 有 *u*⁷ is ambivalent and its function is underspecified without proceeding to the next constituent. Such a dilemma can be avoided by adopting the second approach, viz., the bottom-up approach. As argued at length in § 6.1, we cannot rely on the verb 有 *u*⁷ 'have' as an ambivalent element alone to compose directly with the degree adverb. A way out is to take the bottom-up approach by following a three-step derivation: (i) gradable NPs are derived by merging *root*₁ and *root*₂, as in 禮數 *le*²*soo*³ 'politeness' and 擋頭 *tong*³*thau*⁵ 'endurance', (ii) the gradable VPs are derived by merging 有 *u*⁷ and the complex gradable NP, as in [*有*_V + [禮數]_{NP}]_{VP} and [*有*_V + [擋頭]_{NP}]_{VP}, and (iii) the degree adverb 真 *tsin*¹ 'very' merges with the derived VP, be it 有禮數 *u*⁷ *le*²*soo*³ 'very polite' or 有擋頭 *u*⁷ *tong*³*thau*⁵ 'durable, strong'.

We also motivate the study of an aspect of the scalar structure in TSM alongside of Mandarin by exploring five areas where TSM differs from Mandarin. It is hoped that such parametric variation will deepen our understanding of Sinitic languages and have some implications for the universal aspects of language.

Sources

語苑 *Go-en* (*Yǔyuàn*) is a monthly lasting almost half a century (1908–1941) for learning Taiwanese indigenous languages including mainly TSM, Hakka, and rarely Formosan Austronesian by the administrators when Taiwan was under Japan's rule.

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Abbreviations

ASP	aspect	NP	noun phrase
C	context	POS	positive
CL	classifier	RT	root
CP	Complementizer Phrase	SC	Standard of Comparison
DEG	degree	SM	Southern Min
DegAdv	degree adverb	SUF	suffix
EXP	experiential aspect marker	TC	Target of Comparison
G	grade = scale	TSM	Taiwanese Southern Min
GradP	gradable predicate	V	verb
IP	inflectional phrase	VN	verb + noun
LINK	linker	VP	verb phrase
Non-GradP	non-gradable predicate		

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