

Modern Standard Mandarin Lacks a Basic Colour Term for ORANGE: Formal and Experimental Evidence¹

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The term for ORANGE² is one of the latest basic colour terms (BCT) in the chronological order of the lexical encoding of basic colour categories in each language; it belongs to the so-called *derived* colour category, located at the intersection of two primaries, RED and YELLOW. The orange portion of the spectrum had been thoroughly differentiated in Chinese cultural tradition. In Old and Classical Chinese orange shades were expressed by the contextually restricted 騂 *xīng* and 緹 *tí*, applied to mammal hair and silk fabric respectively. Despite the fact that China is a homeland of various citrus species that were known in China in the 5th century BCE, and that sweet orange *Citrus sinensis* in many languages is referred to as the ‘apple from China’, the present paper deploys different kinds of evidence to demonstrate that there is no monomorphemic monosyllabic colour term for encoding ORANGE in Modern Standard Mandarin (MSM), and the possible candidates do not possess the entire set of the criteria for basicness, established by Berlin and Kay and enriched by other scholars.

1. Colour and basic colour terms

The exact nature of colours we see is the result of a complicated interaction between the physics of light, the physiology of the human eye, environmental conditions at the time of viewing, the physical properties of the object being viewed and the way in which our brains receive and interpret all this information (Biggam 2012: 2).

Although colour vocabularies of different languages vary considerably in their details, they often make use of one or more of three principal dimensions: *hue*, *brightness*, and *saturation*. *Hue* is what is called *colour* in non-technical English, is the chromatic element to colours, such as red, green or blue. *Saturation* refers to the purity of a hue, in relation to the amount of grey it is perceived to contain. *Brightness* is concerned with the amount of light reaching the eye, but the nature and sources of such light are varied. An object may be bright because it is pale and well-lit, or because the surface is

¹ I am very grateful to Dr. Rüdiger Breuer (Ruhr-University Bochum) for helpful comments on Chinese poetry.

² SMALL CAPITALS indicate a semantic feature, a colour category (as opposed to a word-*form*).

made of a reflective material (cfr. Biggam 2012: 3-5).

How many basic colour categories does a linguistic society have at any one time? The hypothesis postulated by Berlin and Kay (1999 [1969]) suggests that a language may encode between two and eleven basic colour categories, developed in a precise chronological order (Berlin and Kay 1999 [1969]: 2-5). According to that theory, for a colour term to be basic (BCT), it should correspond to the following criteria³:

- i. It is *monolexic*; that is, its meaning is not predictable from the meaning of its parts. This criterion eliminates examples like *lemon-coloured* (檸檬色的 *níngméngsède*), *reddish* (帶紅色的 *dàihóngsède*).
- ii. Its signification is not included in that of any other colour term. This criterion eliminates examples like *crimson* (艷紅 *yànhóng*) and *scarlet* (絳 *jiàng*), which are both hyponyms of *red*.
- iii. Its application must not be restricted to a narrow class of objects. This criterion eliminates examples like 驪 *lí* black, used only for description of the horse hair (see Bogushevskaya 2016: 46 – 48).

An interesting viewpoint on contextual freedom is described by Rakhilina and Paramei (2011), and called *combinability*, and refers to the ability (or inability) of a colour term to combine with terms for natural phenomena and artefacts.

- iv. It must be psychologically salient for informants: (1) tendency to occur at the beginning of elicited lists of colour terms, (2) stability of reference across informants and across occasions of use, (3) occurrence in the idiolects of all informants.

The doubtful cases that arise should be handled by the following subsidiary criteria:

- v. The doubtful form should have the same distributional potential as the previously established colour terms. E.g., in English, allowing the suffix *-ish*: *reddish*, *greenish*.
- vi. Colour terms that are also the name of an object characteristically having that colour are suspect, e.g., *gold*, *silver*, and *ash*. This subsidiary criterion would exclude *orange*, in English, *if* it were a doubtful case on the basic criteria (i-iv).
- vii. Recent foreign loanwords may be suspect.
- viii. In cases where lexemic status is difficult to assess, morphological complexity is given some weight as a secondary criterion. The English term *blue-green* might be eliminated by this criterion.

The present paper deploys different kinds of evidence to demonstrate that there is no monomorphemic/monosyllabic colour term for encoding ORANGE in Modern Standard Mandarin (MSM), and the possible candidates do not possess the entire set of the criteria

³ I am quoting the definitions suggested by Berlin and Kay (1999 [1969]: 6-7) with my remarks for Chinese.

for “basicness”.

2. Lexemes expressing ORANGE in Old and Classical Chinese⁴

In colour science brown is defined as “orange of low brightness” (Frumkina 1984: 23). In other words, in contrast, orange can be described as “brown of high brightness”. I would also add, as “highly saturated brown”, due to the absence of grey.

The BCT for ORANGE — together with those for PINK, PURPLE, and GREY — is one of the latest; it appears on the highest evolutionary stage of basic colour lexicon development, and belongs to the so-called *derived* colour category, located at the intersection of two primaries, RED and YELLOW (Kay and McDaniel 1978: 631-636).

In Old and Classical Chinese orange shades were included in the RED category, and were expressed by the contextually restricted lexemes 騂 *xīng* and 緹 *tí*, applied to mammal hair or silk fabric respectively.

Reddish animals were preferred in the Western Zhōu 西周 (ca. 1046–771 BCE) rituals:

皇皇后帝、皇祖后稷。

享以騂犧、是饗是宜。

To the great and sovereign God,
And to his great ancestor Hou-ji,
He offers the victims, red and pure.

Then enjoy, they approve (*Shījīng* 詩經, Ode 300.3, translated by Legge)

秋而載嘗、夏而禘衡。

白牡騂剛、犧尊將將。

In autumn comes the sacrifice of the season,
But in summer the bulls for it have had their horns capped.
They are the white bull and the red one;

[There are] the bull-figured goblet in its dignity (Ode 300.4, translated by Legge).

⁴ There is no general consensus on the periodization of Chinese language with respect not only to the number of major periods and the terminology used, but also to the demarcation points and to the major linguistic changes that took place in each period. In the present paper, the term “Old Chinese” (OC) is used in a broad sense to refer to varieties of Chinese used before the unification of China under the Qín 秦 dynasty in 221 BCE. “Classical Chinese”: the language of the texts from 3rd century BCE till the end of the 2nd century CE. “Middle Chinese” refers to the language of the so-called rhyme books, especially the *Qièyùn* 《切韻》 of 601 CE and the *Guǎngyùn* 《廣韻》 of 1008 CE. “Old Mandarin”: 12th–20th centuries, “Modern Standard Mandarin” refers to contemporary Chinese, i.e. from the 20th century onwards. The scheme sketched here should be considered no more than a working outline.

Máo's 毛 commentary says: “red-yellow (赤黃) is called *xīng* (駢)” (OC form *seŋ, see Schuessler 2007: 426). Kǒng Yǐngdá 孔穎達 (a scholar of the Táng 唐 Dynasty, 618–907 CE) explains: “*Xīng* (駢) is a pure red colour (純赤色), but slightly yellowish, this colour is also called reddish-yellow (赤黃); this colour is bright and clear”. These explanations suggest that *xīng* refers to the highly saturated yellow-red —therefore, to orange — colour.

緹 *tí* (no OC reconstruction available)⁵ emerges relatively late. Originally a textile term, glossed by Xǔ Shèn 許慎 in the *Shuōwén jiězì* 說文解字 (100 CE) as “the colour that [undyed silk] cloth acquires after being immersed into scarlet (丹) and yellow (黃) dyes” (*Shuōwén* 25, 系部, 1859), in the Hàn 漢 texts it is often applied to fabrics:

為治齋宮河上，張緹絳帷，女居其中 (*Shǐjì* 史記, “Huájī lièzhuàn” 滑稽列傳, 23.1).

For that [purpose, they] made a dwelling for fasting, stretched orange and scarlet curtains, and lodged the woman in there.

Other examples include 緹橐 *tí tuó* ‘orange sack’ (*Yántiělùn* 鹽鐵論, Section “Sǎnbùzú” 散不足), 緹油 *tí yóu* ‘orange oilcloth’ (used under the frontal horizontal bar of a chariot to protect it from dirt) (*Hànshū* 漢書, Section “Xúnlìzhuàn” 循吏傳), 緹騎 *tí qí* ‘orange cavalry’ (officials wearing orange robes, who were sent out to arrest a lawbreaker) (*Dōngguān Hànjì* 東觀漢記, Chapter “Féng Fáng” 馮魴).

駢 *xīng* and 緹 *tí* can be therefore regarded to as the earliest terms for ORANGE, albeit both contextually restricted. In contemporary Chinese, they are archaisms.

3. Designations of the citrus fruits in Chinese

Colour terms are *not* the new linguistic formations purposefully formed to label new concepts; they already existed in a language, but labelled something different. *Meaning*, however, often changes during a word’s evolution, including a colour term’s evolution. Furthermore, in certain cases, the *contexts* of referents need to be added, because they influence colour terms’ *combinability*.

The classic example is the term ‘purple’. In Old English, it derived from Latin *purpura* ‘purple’, from Greek *porphura*, denoting molluscs that yielded a crimson dye, also — by semantic extension — cloth dyed with this dyestuff (OED 1989: 1442).

The oldest known reference to citrus appears in the Sanskrit literature, in the *Vajasaneyi Samhita*, a collection of devotional texts dated prior to 800 BCE and which is

⁵ I am using the Baxter-Sagart (2014) phonological reconstruction of Old Chinese (OC) and Middle Chinese (MC) of October 13, 2015, available online at <http://ocbaxtersagart.lsa.umich.edu/> (last accessed on November 30, 2017).

part of the Brahmin sacred book called the *White Yahir-veda* (Scora 1975: 369).

The earliest Chinese references to citrus fruits are contained in the pre-Qín 先秦 texts, such as the “Kǎogōng jì” 考工記 Section⁶ of the *Zhōulǐ* 周禮 and the “Yǔ gòng” 禹貢 Section of the *Shūjīng* 書經⁷:

橘逾淮而北為枳 (*Zhōulǐ* 周禮, “Kǎogōng jì” 考工記).

Take, for instance, the sweet-fruited orange; when it is transplanted to the north of the Huai River, it turns into the bitter-fruited orange (translated by Wenren 2013: 4).

厥筐織貝，厥包橘柚，錫貢 (*Shūjīng* 書經, “Yǔ gòng” 禹貢).

Their bundles contained small oranges and pummeloes, rendered when specially required (translated by Legge).

The materials in these classic texts were already old by the time they were written down, thus they probably refer to conditions before the beginning of the Eastern Zhōu 東周 (700–221 BCE) period.

Oranges and pummelos were a part of the tribute presented to the court or recommended as the most valued of fruits for the kings’ table, records of these citrus species have been identified in the Western Hàn 西漢 (206 BCE – 9 CE) tombs at Mǎwángduī 馬王堆 (Huang 2000: 54). In another archaeological site assigned to the same historical period and discovered in the same area, have been found the residues of *Citrus sinensis* orange-peel (Krjukov et al. 1983: 147). *Citrus sinensis*, literally “Chinese citrus”, is the contemporary scientific name of sweet orange. It is noteworthy that the designations of the orange fruit in Indo-European languages very often literally meant ‘apple from China’ (for more, see Bogushevskaya 2017).

In 1179, Hán Yànzhí 韓彥直 in his *Jú Lù* 橘錄 *Record of Orange* named and described some 27 varieties of the sweet-sour orange-mandarin group, mainly grown in the Yǒngjiā 永嘉 county (in nowadays Zhèjiāng 浙江). That was the oldest known monograph on citrus in the world.

As Needham *et al.* pointed out, “there can be no manner of doubt that the original home and habitat of these [citrus] trees was on the eastern and southern slopes of the Himalayan massif; a fact which is reflected in the presence of the maximum number of old-established varieties in the Chinese culture-area, also in the extreme antiquity of the

⁶ Compiled presumably not later than the 5th century BCE (Wenren 2013: xxiv)

⁷ *The Classic of Documents* is a collection of speeches made by rulers and important politicians from mythical times to the middle of the Western Zhōu 西周 (1046–771 BCE) period. The “Yǔ gòng” 禹貢 (Tribute of Yu) Section, however, is agreed to be composed relatively late, dating from at least the late Warring States 戰國 (475–221 BCE) period (Yee 1994: 76).

Chinese literary references. It is also betrayed by the considerable number of single written characters denoting particular species – not only 橘 *jú* for orange and 柚 *yóu* for pummelo, but also 柑 *gān* for certain kinds of oranges, 橙/椪 *chéng* for sweet oranges, 欖 *luán* for the sour orange and 椪 *yuán* for the citron – always a sign of ancientness in the nomenclature”⁸ (Needham et al. 1986: 363).

4. Semantic extension of orange-the fruit and mandarin-the-fruit

The contemporary term for the orange fruit, 橙 *chéng* (OC *[d]ʳəŋ > MC *dreang*), is glossed in the *Shuōwén* as ‘a variety of 橘 *jú*’ (OC *[s.k]ʷi[t] > MC *kjwit*) (*Shuōwén* 11, 木部: 741). The latter, glossed as ‘a fruit from Jiāngnán 江南’ (*Shuōwén* 11, 木部: 741), was a generic name applicable to all oranges in general (Needham et al. 1986: 104).

Mandarin is a native Chinese fruit, which has an extremely broad genetic base (Scora 1975: 372). In 2010, Chinese scientists received the very concrete molecular evidence that both sweet orange (*Citrus sinensis*) and the sour orange (*Citrus aurantium*) were the hybrids of mandarin and pummelo, the former being morphologically closer to the mandarin (Li et al. 2010: 346, 348). This close morphological relationship can probably be a reason why in the *Shuōwén* the term for orange (*chéng*) is described via the term for mandarin (*jú*).

Semantic extension from the denotation of the fruit to the denotation of the colour orange took place in relatively recent time. In 1853, Zhāng Fúxī 張福僖 translated Newton’s *Opticks*, which was the first translated scientific work on colour dispersion in China. The orange colour was translated as a nominal-BCT compound⁹ (NC) 橙黃 *chénghuáng* (lit. ‘orange fruit + YELLOW’), which can be translated as ‘orangey-yellow’ or ‘yellow as the orange fruit’. In other words, *chéng* was still not an abstract colour term:

合則為白，分則為紅、為橙黃、為正黃、為綠、為藍、為老藍、為青蓮 (quoted from Liú 1990: 44).

When additively mixed together, [they] result in white [light]; when split, [they] result in red, orangey-yellow, pure yellow, green, [light] blue, deep

⁸ One winter day a man on a sidewalk of a Beijing street got irritated by my question on how much were the *júzi* (橘子) he was selling from his tricycle and exclaimed: “These are not *júzi*, these are *lúgān* (蘆柑)!” The term *lúgān* is absent in Chinese-English dictionaries. BKRS translates it as “yellow citrus, type of oranges grown in Fújiàn”. *Lúgān* remained totally obscure to me for years, until recently I have found its translation simply as ‘Lo tangerine’ (*Citrus tangerine*, *Lugan*) in Zhao et al. (2014: 2646).

⁹ A nominal-BCT compound is a compound consisting of BCT preceded by the name of an object usually with a typical colour as the modifier, indicating attributes of particular-object-like-colour (see Xu 2007: 41–43).

blue, and ‘blue-lotus’.

5. The ways of encoding orange-the-colour in MSM

In MSM explanatory dictionaries, the terms for ‘orange’ *chéng* and ‘mandarin’ *jú* are glossed, first of all, as fruits, and only in the secondary entries are sometimes glossed as particular-object-like-colour terms, each of them, however, requiring a semi-suffix 色 *sè* ‘colour’. Thus, the orange colour is encoded by the so-called nominal-*sè* compounds (N-SE) (Xu 2007: 42) 橙色 *chéngsè* ‘orange fruit + colour’ and 橘色 *júsè* ‘mandarin fruit + colour’.

Lin (1972) glosses *jú* as ‘orange and tangerine; a fruit of either *chénghuáng* ‘orangey-yellow’ (Lin 1972: 122), or *júhóng* ‘tangerine-red’ colour” (Lin 1972: 130).

Both *chéng* and *jú* also form NCs, in which they act as initial nominals / modifiers, followed by one of the two basic constituents, RED or YELLOW. Cfr: 橙紅 *chénghóng* (lit. ‘orange fruit + RED’) ‘orangey-red’ (XDHYCD 2005: 178) and 橙黃 *chénghuáng* (lit. ‘orange fruit + YELLOW’) ‘orangey-yellow’ (XDHYCD 2995: 178), 橘紅 *júhóng* (lit. ‘mandarin fruit + RED’) (Cihǎi 1994: 1559; GJHYCD 2004: 764; XDHYCD 2005: 737) ‘mandarin-red’ and 橘黃 *júhuáng* (lit. ‘mandarin fruit + YELLOW’) ‘mandarin-yellow’ (GJHYCD 2004: 764; XDHYCD 2005: 737).

There is no consensus on naming ORANGE among Chinese linguists either: some are in favour of the monosyllabic term *chéng* (see Lü 1997; Shí 1990; Yáo 1988; Yè 2001), while others deny the possibility of its independent usage and instead prefer the compounds *júhuáng* ‘mandarin fruit + YELLOW’ (see Lǐ 2007; Wǔ 1999) or *júhóng* ‘mandarin fruit + RED’ (Xú 2003).

6. Psycholinguistic and cultural evidence

As it was already mentions a few lines above, the intermediary area between RED and YELLOW can be encoded by NCs (*chénghóng*, *chénghuáng*, *júhóng*, *júhuáng*) or N-SE compounds (*chéngsè* or *júsè*).

The results of the psycholinguistic data collected by Xu (2007), suggest that, since a part of *júhóng*’s (‘mandarin fruit + RED’) foci overlaps the cluster of foci for ORANGE in Berlin and Kay’s universal system, *júhóng* might be interpreted as ‘reddish orange’ (Xu 2007: 82 – 83).

Chénghuáng (‘orange fruit + YELLOW’) and *júhuáng* (‘mandarin fruit + YELLOW’) are virtually identical in semantic structure. Despite the fact that mandarin and orange are very similar in colour appearance, *jú* ‘mandarin’ appears to be preferred over *chéng* ‘orange’ as initial nominal in the NCs designating intermediary hues between YELLOW and RED. The term *júhóng* (‘mandarin fruit + RED’) was unknown to 1% of the

participants¹⁰ of the comprehension test of the psycholinguistic experiment (Xu 2007: 83), whereas the term *chéngguáng* ('orange fruit + YELLOW') revealed to be unknown to 4% of the informants (Xu 2007: 89).

Chéngsè 'orange fruit + colour' appears to be an off-shade of YELLOW, because approximately half of it overlaps with the peripheral YELLOWS, while the other half fills the no-man's land between the extent of YELLOW and RED (Xu 2007: 105 – 106).

Júsè 'mandarin fruit + colour' overlaps heavily with YELLOW, and thus could be considered an off-shade of YELLOW. Despite that *júsè* is distributed similarly to *chéngsè* in outcome Xu's data (Xu 2007: 107 – 108), it should be noted that *júsè* is the N-SE compound that occurred only in the Naming Test (i.e., was elicited from the informants by showing them colour chips in randomly arranged order), whereas *chéngsè* appeared to be unknown to 1% of the participants.

According to Xu (2007: 88), since nowadays mandarin is one of the most common fruits in fruit stores all over China, whereas while oranges are relatively rare and more expensive, this difference seems to be reflected in people's use of colour vocabulary.

Instead, I am convinced that the preference of the mandarin-object-like-colour term is preferred over the orange-object-like colour term is conditioned by the cultural tradition, mnemonic imposed, and the education level of a speaker.

Chéng is often named among the seven rainbow colours by educated native speakers (or, at least, by those from the mainland). The mnemonic “赤橙黃綠青藍紫” *chì chéng huáng lǜ qīng lán zǐ* “Red, orange, yellow, green, blue,¹¹ indigo, violet” — a loose analogue of the English “Richard-of-York-gave-battle-in-vain”¹² that elicits the Newtonian rainbow sequence, — is taught at school, and derives from the line of *cí* 詞 poem “Dàbódì” 大柏地 by Máo Zédōng 毛澤東, written in the pattern of Púsà mán 菩薩蠻:

赤橙黃綠青藍紫，
誰持彩練當空舞？ (Máo Zédōng 毛澤東 “Dàbódì” 大柏地, quoted from

¹⁰ Seventy-nine adult native Chinese speakers with normal colour vision, the age range ran from 17 to 50, with an average of 33 at the time of investigation. The average schooling year was 16, with the lowest 10 years and highest 21 (Xu 2007: 28).

¹¹ 青 *qīng* should be translated as *grue* (a construct out of the English terms for GREEN and BLUE), since it denotes the extended green-blue colour category, and in some cases can also denotes MACRO-BLACK. It is not a BCT in MSM, there are separate *psychologically salient* terms for GREEN, BLUE and BLACK. *Qīng*, however, has not faded away, but still remains in use (more on this, see Bogushevskaya 2015).

¹² Or the Russian mnemonic *každyj* ('red'), *oxotnik* ('orange'), *želaet* ('yellow'), *znat'* ('green'), *gde* (*goluboj*, 'light blue'), *sidit* (*sinij*, 'blue'), *fazan* ('purple') “Each hunter wants to know where is a pheasant”.

GJHYCD 2004: 170-171).

Red, orange, yellow, green, blue, indigo, violet,

Who is dancing, holding these coloured ribbons high above in the sky?

The informants of Xu's psycholinguistic experiment were well-educated people, with the average schooling year of 16 (see note 10 of this paper), and it is noteworthy that even to some of them the terms *chéngsè* and *chénghuáng* are unknown. According to my observations during my over a decade-long residing in Beijing, people with a relatively low education level, as, e.g., clothes' vendors on a street market, would rather use the NCs that contain *jú* as the modifier, and would therefore name ORANGE either as *júhóng* or as *júhuáng*, depending on whether the hue in question tends more towards RED or more towards YELLOW. From the point of cultural tradition, *jú* is more familiar than *chéng* to an ordinary Chinese speaker.

7. The degree of basicness of the term for orange in MSM

The *semantic* word can be understood as the smallest meaningful unit in language, that is, the semantic word can be equated with "morpheme". Since Chinese morphemes *tend to* correspond to one syllable, Chinese is essentially a *monosyllabic* language (Vermaas 2017: 434).

This leads to the following necessary modification of Berlin and Kay's first (i) criterion regarding the assessment of a potential basic colour term (BCT): applied to Chinese, a term must be *monomorphemic* and moreover *monosyllabic* – rather than just *monolexemic* – since almost every syllable is a morpheme in Chinese. Therefore, *chéngsè* and *júsè*, both containing a semi-suffix *sè* 'colour', do not comply with this criterion.

Regarding the significations of *chéng* and *jú*, they are both included into the YELLOW colour category (Lǐ 2007: 140 – 141).

As for the distributional potential of these lexemes, *chéng* and *jú*:

- a) do not form resultatives with the semi-auxiliary verbs that convey visual colour-related effects, such as 發 *fā* 'to show, to become visible' or 變 *biàn* 'change into, become' (cfr. 發白 *fā bái* 'turn (become; grow) white'; 'turn pale (whitish)' (BKRS); 變黃 *biàn huáng* 'to become yellow' (BKRS));
- b) do not combine with the qualitative adverb *very*¹³ and its synonyms (e.g., 很 *hěn* 'very, quite, much', 非常 *fēicháng* 'very, extremely');
- c) do not demonstrate reduplication *par excellence* (cfr. 皚皚 *ái'ái* 'pure white, white as snow' (BKRS)), but *chéng* can be doubled in the final position in the trisyllabics 紅橙橙 *hóngchéngchéng* 'reddish orange' and 黃橙橙 *huángchéngchéng* 'yellowish orange' (Liú 1990: 243 – 244);
- d) can not be modified by the 的 *de* marker, do not accept the 了 *-le* particle (cfr.

¹³ Chromatic adjectives, when combined with the adverb *very*, vary in their degree of gradation (saturated or not), and therefore their quality, not quantity (more on this, see Bernez 2016).

紅的 *hóngde* ‘red’, 黑了 *hēile* ‘became dark/black’) or the (diminutive) non-syllabic retroflex suffix 兒 *-r* (e.g., 黑兒 *hēir* ‘darkness’, ‘dusk’, ‘dirt’ (BKRS)).

The orange colour has not yet evolved from the fruit; the colour sense has not become abstract, but is still inseparable from a concrete object in the mind of a native speaker. It is nevertheless *psychologically salient*, because it can be expressed through the denotation of the citrus fruit (either orange or mandarin). The possible candidate lexemes have not become adjectives and/or verbs and always require the constituent *sè* ‘colour’.

8. Conclusion

The orange portion of the spectrum had been thoroughly differentiated in Chinese cultural tradition. In Old and Classical Chinese orange shades were expressed by the contextually restricted terms *xīng* and *tí*.

Despite the fact that China is a homeland of various citrus species, and that sweet orange *Citrus sinensis* in many languages is referred to as the ‘apple from China’, in MSM there is no BCT for ORANGE. The orange colour sense is still inseparable from a concrete object in the mind of a contemporary native Chinese speaker. There is also no consensus among Chinese linguists on naming ORANGE in MSM. Modern explanatory dictionaries gloss ORANGE as Nominal-BCT Compounds (NC). When used for object description, *chéng* and *jú* always require the constituent *sè* ‘colour’, forming Nominal-*sè* Compounds (N-SE).

Thus, the orange colour sense has not become abstract in MSM yet, but is *psychologically salient* and can therefore be defined as starting to become a BCT, though it still does not possess the entire set of the criteria for basicness.

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Intersubjectification across the Taiwan Strait: The Emergence of Adverbial (*Yi*) *Zhengge* in Taiwan Mandarin Revisited

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The role intersubjectivity plays in the development of discourse markers has been highlighted in the literature, where clause-internal adverbs are shown to commonly undergo intersubjectification to become discourse markers. Drawing on data from the PTT Corpus, adverbial (*yi zhengge* in Taiwan Mandarin is argued in this study to instantiate such a process, whereby it has developed from a degree intensifier into a sentential adverb of unexpectedness/undesirability, and then into a discourse marker expressing the speaker's negative comment on prior discourse. The functional spectrum of (*yi zhengge* in Taiwan Mandarin contrasts with that of *zhengge* in Mainland Mandarin; whereas both have developed subjective usages, the former has moved further along in the intersubjectification process in having developed a metatextual usage.

1. Introduction¹

It has been established in the literature that, in both Mainland Mandarin and Taiwan Mandarin, the fused expression *zhengge* (consisting of the totality quantifier *zheng* 'whole' and the general classifier *ge*) has developed preverbal, degree intensifying functions from an older, prenominal usage that serves mainly a quantifying function. Wu (2015), for example, sketches out the development of Mandarin *zhengge*, where its earliest fused compound form occurring in the prenominal position is found in the Northern Song dynasty, as in (1a) and (1b).

- (1) a. 整 個 城 一 時 俱 陷 為 湖
Zheng ge cheng yishi ju xian wei hu.
whole CL city all-of-a-sudden all sink become lake
'The whole city, all of a sudden, sank and became a lake.' (Wu 2015:30)

¹ The earliest ideas for this paper stemmed from discussions with Ling-Chen Chou. Special thanks are given to Chun-Jui Liu for his help with the data collection process, and to Dr. Marianne Mithun for the invaluable intellectual resources she offered me regarding both the content and organization of this paper. Thanks are also given to the NACCL-29 audience, whose comments have been inspiring for writing up this paper. All the errors are, of course, mine.

- b. 整 個 月 不 回 家 來
Zheng ge yue bu hui jia lai.
 whole CL month not return home come
 ‘For the whole month, (he) didn’t come home.’ (Wu 2015:30)

A later development in the late 19th century involves *zhengge* being used as a prenominal adjective, as in (2a), or even undergoing *quantifier floating* (Bobaljik 2001, Buchstaller and Traugott 2006) to serve as an adverb in the preverbal position, as in (2b). As an adjective/adverb, *zhengge* at this stage had both a quantificational function and a degree-modifying function, and can be translated as ‘whole’, ‘totally’ or ‘completely’ in English.

- (2) a. 要 創 立 整 個 的 新 政 治，
Yao chuangli zhengge de xin zhengzhi,
 in-order-to establish whole ATT new politics
 ‘in order to establish a whole new (system of) politics,’ (Wu 2015:30)
- b. 先 生 出 的 題 目， 他 竟
Xiansheng chu de timu, ta jing
 teacher give ATT topic 3SG even
 一 字 不 忘， 整 個 寫 出 來。
yi zi bu wang zhengge xie chulai.
 one character not forget whole write out
 ‘As for the topic that the master gave, he reproduced (it) completely without forgetting even a single word.’ (Wu 2015:31)

The usage of *zhengge* as an adverb is found to further involve increased subjectivity in the early 20th century, being more and more situated in the speaker’s attitude or viewpoint. At this stage, it had completely lost its quantifying function, and have evolved into a degree intensifier reinforcing the speaker’s “subjective appraisal” of the subject referent (Wu 2015:32). As seen below, adverbial *zhengge* in (3a) does not quantify over the subject referent, but serves to reinforce the expression of affectedness (due to the subject referent’s being in hell). Similarly, adverbial *zhengge* in (3b) serves to reinforce the personal trait (of being ridiculous) assigned to the subject referent.

- (3) a. 冬 天， 他 們 整 個 的 是 在 地 獄 裡
Dongtian, tamen zhengge de shi zai diyu li.
 winter they whole DE COP at hell in
 ‘In winter, they are completely in hell.’ (Wu 2015:32)

- b. 尤老二 整個 是 個 笑話！
You Lao Er *zhengge* *shi* *ge* *xiaohua!*
 (personal name) whole COP CL joke
 ‘You Lao Er is completely a joke!’ (Wu 2015:32)

Interestingly, the degree-intensifying function has motivated *zhengge* to be fused with *yi* CL (numeral *yi* ‘one’ + classifier) in contemporary Mainland Mandarin to form the formulaic expression [*zhengge yi* (CL)] to reinforce the speaker’s negative evaluative stance (Wu 2015:32-33). This can be seen in (4) below, where [*zhengge yi* (CL)] introduces a nominal expression that encodes the speaker’s negative comment with a reinforced disapproving tone.

- (4) a. 許多 孩子 在 父母 面前 老實
Xuduo haizi *zai* *fumu* *mianqian* *laoshi*
 many children at parents presence well-behaved
 聽話， 在 爺爺 奶奶 面前 卻
tinghua, *zai* *yeye* *nainai* *mianqian* *que*
 obedient at grandfather grandmother presence but
 整個 一 個 “小 霸王”
zhengge *yi* *ge* ‘*xiao bawang*’.
 whole one CL little lord
 ‘Many children are well-behaved and obedient in front of their parents, but are completely a “little lord” in front of their grandparents.’ (Wu 2015:33)
- b. 她 笑 我 迂 住 得 這麼 近，
Ta xiao wo yu. *Zhu de zheme jin,*
 3SG laugh 1SG pedantic live C this close
 竟 是 整個 一 個 燈 下 黑
jing *shi* *zhengge* *yi* *ge* *deng xia hei.*
 unexpectedly COP whole one CL lamp under dark
 ‘She ridiculed me as being pedantic, since I live quite close (to Zhongguan Cun), but completely know nothing about it (lit. being in the dark under the lamp).’ (Wu 2015:28)

In Taiwan Mandarin, a similar developmental pathway has also been observed for the expression (*yi*) *zhengge* (Lin 2011, Hong 2013), which consists of the totality quantifier *zheng* and the general classifier *ge*, preceded by the optional numeral *yi* ‘one’². As can be seen below, (*yi*) *zhengge* quantifies over the head noun it modifies³.

² One question raised by the audience during the presentation is whether *zhengge* should be functionally distinguished from *yi zhengge*. As no significant functional difference has been

- (5) a. (一) 整 個 學校
 (*yi*) *zheng ge* *xuexiao*
 one whole CL school
 ‘the whole school’ (Lin 2011:148)
- b. (一) 整 個 早上
 (*yi*) *zheng ge* *zaoshang*
 one whole CL morning
 ‘the whole morning’ (Lin 2011:148)

(*yi zhengge* as a fused expression has also been shown to have developed an adverbial usage, occurring in the canonical adverb (preverbal) position, modifying predicates. Similar to the case of *zhengge* discussed in (2), (*yi zhengge* also behaves like a quantifier-float, serving both a quantificational function and a degree-modifying function. When modifying events, (*yi zhengge* is interpreted as denoting the “completeness” of the action expressed by the main predicate, as can be seen in (6) below.

- (6) a. 單槓 居然 整個 垮 了。
Dangang juran zhengge kua le.
 horizontal.bar unexpectedly whole collapse CRS
 ‘Unexpectedly, the horizontal bar completely collapsed.’ (Hong 2013:57)
- b. 水 就 整個 淹-了 上來。
Shui jiu zhengge yan-le shanglai.
 water then whole flood-PFV up.come
 ‘The flood then completely rose up.’ (Hong 2013:57)

When modifying stative predicates, on the other hand, (*yi zhengge* strictly serves as a degree intensifier, assigning a high value on a scale implied by the stative meaning of the head predicate (translated as ‘so’, ‘really’, or ‘truly’ in English in the following examples). As can be seen in (7), (*yi zhengge* as a degree-intensifying adverb may occur in a resultative construction (7a), a relative clause (7b), or right preceding a predicate nominal (7c).

- (7) a. (相片) 被 裁切 得 一 整個 怪。
 (*Xiangpian*) *bei caiqie de yi zhengge guai.*
 photo PASS crop CSC one whole weird

identified in this study, we follow Lin (2011) in treating the numeral *yi* ‘one’ as an optional element in (*yi zhengge* as a fused expression for the scope of this paper.

³ Glossing of data involving (*yi zhengge* cited from Lin (2011) and Hong (2013) is based on the author’s own morphological analysis of the data.

- ‘The photo was cropped so weirdly.’ (Lin 2011:151)
- b. 一 整個 難 穿 的 鞋子
yi zhengge nan chuan de xiezi
 one whole difficult put.on NOM shoes
 ‘The shoes that are so/really difficult to put on.’ (Lin 2011:151)
- c. 桃園 機場， 給 人 的 感覺
Taoyuan jichang gei ren de ganjue
 Taoyuan airport give person NOM feeling
 就 整個 威權 時代的 官僚...
jiu zhengge weiquan shidai de guanliao...
 just whole authority era GEN bureaucracy
 ‘Taoyuan airport, the feeling that it gives people is just so/really/truly bureaucratic, reminding people of the authoritarian era (in the past) ...’
 (Lin 2011:151)

According to Lin (2011:151), (*yi*) *zhengge* in these cases are usually identified as a newly emerged usage (especially in internet language) popular among young speakers of Taiwan Mandarin, and can all be replaced with other degree intensifiers such as *hen* 很 ‘very’ without changing the propositional content of the sentence. However, other usages of (*yi*) *zhengge* as exemplified in (8)⁴ below, which can also be considered newly emerged and non-standard/colloquial, have not been discussed in previous studies.

- (8) a. 整個 為了 滿足 基本 物質 生活
Zhengge weile manzu jiben wuzhi shenghuo
 whole for satisfy basic material life
 就 扭曲-了 自己
jiu niuqu-le ziji
 then distort-PFV self
 ‘(She) *zhengge* distorted her own self just to satisfy her material needs in life.’
- b. 人生 整個 少-了 好 多 美食
rensheng Zhengge shao-le hao duo meishi
 life totally decrease-PFV so many delicacy
 可以 吃 的 感覺
keyi chi de ganjue
 can eat NOM feeling

⁴ The data are collected from the PTT Corpus, the process of which will be discussed in section 3. The collected data are glossed and translated based on the author’s own analysis.

- ‘It feels like there is *zhengge* so less delicacy to enjoy in life now!’
- c. 整個 非常 輕鬆 愜意
Zhengge *feichang* *qingsong* *qieyi*
 whole very relaxing pleasing
 ‘(That’s) *zhengge* very relaxing and pleasing.’

The usages of (*yi*) *zhengge* as shown in (8) are crucially distinguished from both the degree-intensifying function of (*yi*) *zhengge* in (7) and the usage of the [*zhengge yi* (CL)] construction in (4). To begin with, whereas (*yi*) *zhengge* as a degree intensifier takes a predicational scope, modifying the head predicate it precedes as in (7), (*yi*) *zhengge* in (8) clearly involves a much wider scope, as it may be followed by complex clauses (8a, 8b) or clauses that already contain other degree intensifiers (8c). In addition, although the degree-intensifying function is observed in the newly developed [*zhengge yi* (CL)] construction in Mainland Mandarin, the meaning of reinforcement or intensified degree is not available in (*yi*) *zhengge* in (8), where replacement with other degree intensifiers would result in ungrammaticality. Moreover, while an increased scope of (*yi*) *zhengge* in (8) is apparent, without considering the discourse context it is difficult to determine its elusive semantic function, as its omission from the sentence would not incur any change to the propositional meaning:

- (8’) a. (整個/*很/*超級)為了滿足基本物質生活就扭曲了自己
 b. 人生(整個/*很/*超級)少了好多美食可以吃的感覺
 c. (整個/*很/*超級)非常輕鬆愜意

To address the questions raised by the peculiar usages of adverbial (*yi*) *zhengge* in (8), the present paper aims to investigate its emergence in Taiwan Mandarin from a usage-based, discourse-pragmatic perspective. Drawing on data from the PTT Corpus (Liu 2014), which is a dynamic corpus that automatically collects, updates, and processes data from PTT (批踢踢實業坊), the largest and most popular BBS (Bulletin Board System) in Taiwan, the functions of adverbial (*yi*) *zhengge* are examined based on its usage in casual, personal online narratives. It is demonstrated that adverbial (*yi*) *zhengge* in Taiwan Mandarin has developed at least two more functions beyond its degree-intensifying usage: (i) as an epistemic adverbial expressing unexpectedness and/or undesirability over the situation described in the sentence, and (ii) as a discourse marker expressing the speaker’s (often) negative evaluative comment on situations described in prior discourse. It is argued that an explanation for the discrepancy between the developments of (*yi*) *zhengge* in Taiwan Mandarin and *zhengge* in Mainland Mandarin lies in intersubjectification, a process well-documented in the development of discourse markers crosslinguistically. Exhibiting a wider spectrum of functions compared to *zhengge* in Mainland Mandarin, adverbial (*yi*) *zhengge* in Taiwan Mandarin can be considered as having moved further along in the intersubjectification process, whereby it

has developed into a full-fledged discourse marker that takes prior discourse, and not just the predicate(s) within the clause, under its scope.

This paper is organized as follows. Section 2 introduces the notion of discourse marker and the process of intersubjectification typically undergone by discourse markers crosslinguistically. Section 3 discusses the data collection process and a quantitative summary of the collected data. In section 4, properties of (*yi*) *zhengge* as a degree intensifier are discussed with regard its frequent subjective use in discourse. In section 5, properties of (*yi*) *zhengge* as an epistemic adverbial are examined. In section 6, (*yi*) *zhengge* as a discourse marker is discussed with regard to its metatextual function. The summary and conclusion of this study is provided in section 5.

2. Discourse markers and intersubjectification

Also known as pragmatic markers, discourse connectives, discourse particles, among other terms (c.f. Heine 2013:1206), discourse markers are a category of linguistic expressions that generally serve as “non-obligatory utterance-initial items that function in relation to ongoing talk and text” (Maschler and Schiffrin 2015:191). Prototypically, discourse markers are realized as non-compositional (and often idiomatic) expressions, and mainly function to relate the clauses/utterances they occur in to the surrounding discourse context. They typically “signal a comment specifying the type of sequential discourse relationship that holds between ... the utterance of which the discourse marker is a part ... and the prior discourse” (Fraser 1988:21-22). In other words, they are markers that concern “a relationship across rather than within utterances, and contribute to the coherence of the discourse” (Fraser and Malamud-Makowski 1996:864). In this regard, their functions are commonly described as *metacommunicative*, *metatextual*, *metapragmatic*, *metadiscursive*, *instructional*, or even *procedural* (Heine 2013:1209-13).

The English discourse marker, *in fact*, for example, serves to express “the speaker’s attitude to the appropriateness of the discourse itself”, and functions not at the clausal/utterance level, but at the discourse level in relating the clause/utterance it occurs in to prior discourse (Traugott and Dasher 2002:168). As can be seen in (9), *in fact* occurs with a clause/utterance that introduces justification of what has just been said in the preceding clauses/utterances.

- (9) a. *I should not have used the expression. **In fact**, it does not concern you – it concerns only myself.* (Traugott and Dasher 2002:168)
- b. *Thus in various ways ethical questions lead inevitably to psychological discussions; **in fact**, we may say that all important ethical notions are also psychological.* (Traugott and Dasher 2002:168)

The cross-clausal/cross-utterance nature of discourse markers can be exemplified by another discourse marker in English—*indeed*. As can be seen in (10), *indeed* serves an additive function, signaling that the clause/utterance it occurs with is considered as

“adding to rhetorical argument, being a more appropriate statement for the circumstances at hand than something that preceded” (Traugott and Dasher 2002:164).

- (10) a. *The idea of the Constitution as a living document, written so it can adapt to changing social and political times, is a major theme in U.S. judicial history. **Indeed**, it is the Constitution itself that allows those dissatisfied with Supreme Court rulings to turn to the amendment process.* (Traugott and Dasher 2002:165)
- b. *Besides the problems noted by Sadock for nondetachability as a diagnostic for (content-based) implicata, it would appear that any means of linguistically canceling or suspending an implicatum ... is ipso facto a means of detaching that implicatum. **Indeed**, how could it be otherwise?* (Traugott and Dasher 2002:165)

One of the common threads in the study of discourse markers centers around the observation that they typically exhibit non-discourse-marker functions from which their discourse marker functions develop. Synchronically, it is typical for discourse markers to have corresponding counterparts that serve non-procedural, but content-oriented functions associated with the propositional meaning of the clause it occurs in. This can be exemplified by English *well* and *in other words*, where a clause-internal (manner) adverb function (second *well* in (11), and *in other words* in (12a)) and a clause-initial discourse marker function (first *well* in (11), and *in other words* in (12b)) can be identified for each:

- (11) A: *What did your friend say?*
 B: ***Well***, *I didn't understand him very **well**.* (Heine 2013:1208)
- (12) a. *She asked him to rewrite it **in other words**.*
 b. ***In other words***, *you must rewrite the whole essay.* (Heine 2013:1208)

Diachronically, it is typically the case that the non-discourse marker counterpart has undergone semantic/functional changes that involve a development from serving referential/propositional semantic functions to serving pragmatic/procedural discourse functions, in which an increase of semantic-pragmatic scope (taking larger linguistic units under their scope) and intersubjectification (being increasingly based in the speaker's expression of subjective attitude, and later in the speaker's organization of discourse structure) can be found (Traugott and Dasher 2002, Brinton and Traugott 2005:138, Norde 2009:22). Brinton (2008), for example, posit three pathways of syntactic change that discourse markers in English are found to undergo:

- | | | | |
|-------|------------------------|--------------------------|--------------------|
| (i) | adverb/preposition | > conjunction | > discourse marker |
| (ii) | clause-internal adverb | > sentential adverb | > discourse marker |
| (iii) | matrix clause | > parenthetical disjunct | > discourse marker |

For the sake of direct relevance and the scope of this paper, only the pathway *clause-internal adverb* > *sentential adverb* > *discourse marker* will be exemplified here, with reference to the development of English *in fact*. As reported in Traugott and Dasher (2002), *in fact* started out in the late seventeenth century as a prepositional phrase that came to be used as an adverbial meaning “respect in which”. Here, *in fact* functions as a clause-internal (manner) adverbial, whose function is constrained to modification of the preceding predicate (in this example, *enjoyed an exclusive trade*) with a strictly clause-internal semantic scope (analogous to that of *in law* in the following subordinate clause).

(13) *This company, therefore, have always enjoyed an exclusive trade **in fact**, though they may have no right to it in law.* (Traugott and Dasher 2002:166)

The next step of development *in fact* took is to become an epistemic adversative expression, which does not function to contribute to propositional semantics, but presents the clause/utterance it occurs in as describing a counter-expectation. Here, *in fact* has undergone an increase in its semantic-pragmatic scope and subjectivity: it now serves as both a sentential adverb taking the sentence it occurs in under its scope, and an epistemic modal concerned with conveying the speaker’s certainty over the truth of the proposition.

(14) *When we look about us towards external objects, and consider the operation of causes, we are never able, in a single instance, to discover any power or necessary connexion ... We only find, that the one does actually, **in fact**, follow the other.* (Traugott and Dasher 2002:168)

Finally, *in fact* developed a function at the discourse level to express the speaker’s attitude to the appropriateness of the discourse itself. As can be seen below, *in fact* as a discourse marker retains the contrastive nuance of its epistemic adversative counterpart, but the contrastiveness is now not concerned with truth, but of appropriateness of expression in the context of surrounding discourse. In this regard, *in fact* takes a larger linguistic unit—prior discourse (instead of a sentence)—under its scope, and is intersubjective in nature, as it is concerned with the speaker’s organization of linguistic units in the discourse context.

(15) *Thus in various ways ethical questions lead inevitably to psychological discussions; **in fact**, we may say that all important ethical notions are also psychological.* (Traugott and Dasher 2002:168)

As will be seen in the discussions that follow, similar to the case of English *in fact*, adverbial (yi) *zhengge* in Taiwan Mandarin will be shown to exhibit a functional spectrum that includes:

- (i) a clause-internal adverbial usage with a predicational scope;
- (ii) an epistemic adverbial usage with a sentential scope; and
- (iii) a discourse marker usage with a textual scope,

the latter two representing the usages of (*yi*) *zhengge* beyond the degree intensifying function as exemplified in (8), as a result of intersubjectification.

3. Data and Methodology

PTT is a non-commercial, open-source BBS (Bulletin Board System) used on the internet in Taiwan. It is completely free of charge, has more than 1.5 million registered users, with over 150,000 users during peak hours, and includes 20,000 forums, or “boards”, covering a multitude of topics⁵. The boards mainly serve as online forums for their users to (i) post articles, (ii) reply to posted articles, and (iii) to comment on posted (original and replying) articles. The posted articles normally constitute casual, personal narratives whose content depends on the nature of the board on which an article is posted.

The data examined from this study are collected by searching the keyword *zhengge* (整個) on all articles posted on PTT during March 11 and March 12, 2016. The collected instances of (*yi*) *zhengge* (N=212) can be categorized into (i) prenominal usages and (ii) pre-predicate usages. The prenominal usages are all identified as serving a quantificational function, and account for 55% (N=116) of all instances of (*yi*) *zhengge*. The pre-predicate usages of (*yi*) *zhengge* shows a more diversified picture, accounting for 45% (N=96) of the data, and can be further categorized into three types: degree-intensifying (*yi*) *zhengge* (90%, N=87), epistemic adverbial (*yi*) *zhengge* (4%, N=4), and discourse marker (*yi*) *zhengge* (5%, N=5).

4. Subjectification of degree-intensifying (*yi*) *zhengge*

Among the 87 degree-intensifying usages in the collected data, almost half (N=37) involve (*yi*) *zhengge* modifying predicates that express the speaker’s psychological/emotional experience. Without considering the discourse context, (*yi*) *zhengge* in these cases serves as a clause-internal adverb intensifying the meaning of the immediately following predicate that encodes the speaker’s psychological/emotional experience, being translatable as ‘so’, ‘really’, or ‘truly’ in English. (*yi*) *zhengge* in these cases can all be replaced with other degree intensifiers such as *hen* 很 ‘very’, *feichang* 非常 ‘unusually/extremely’, or *chaoji* 超級 ‘super’, without changing the propositional content of the clause/sentence it occurs in. When omitted, the propositional meaning is crucially affected, as the degree intensifying meaning becomes no longer available.

⁵ Because registration of an account typically requires a valid Taiwanese university e-mail address, PTT users are usually introduced to the system when entering college, and since it was founded in 1995, the age of its users ranges from 18 to approximately 40, making it one of the primary platform for e-social interaction of Taiwanese young adults. For more information regarding PTT, see Liu (2014) or <https://en.wikipedia.org/wiki/PTT_Bulletin_Board_System>.

- (16) a. 我 (整個) 傻眼
Wo (zhengge) shayan.
 I whole dumbfounded
 ‘I was (**so/really/truly**) dumbfounded.’
- b. 看到 好 多 黃安 的 新聞
Kandao hao duo Huangan de xinwen
 see so many Huangan GEN news
 (整個) 火氣 上來
(zhengge) huoqi shanglai
 whole anger up
 ‘Seeing so much news about Huangan, (I got) (**so/really/truly**) furious.’
- c. 我 知道 的 當下 (整個) 氣
wo zhidao de dangxia (zhengge) qi
 I know NOM moment whole mad
 到 發抖
dao fadou
 until shake
 ‘The moment I knew (about it), (I) got (**so/really/truly**) shakingly mad.’

When the discourse context is considered, it is found that many of the cases where (*yi*) *zhengge* is used to intensify the speaker’s psychological/emotional experience are used to introduce the speaker’s negative reaction to a series of events already described in prior discourse. Here, (*yi*) *zhengge* may be interpreted as serving the degree-intensifying function, modifying the psychological/emotional predicates inside the clause it occurs in. Interestingly, however, it may also be interpreted as serving a discourse-pragmatic function of indicating the unexpected/undesired nature of the situation presented in prior discourse. This can be exemplified in (17) below. Here, the speaker presents a series of events involving her boyfriend’s cousin, whom the speaker did not know very well, planning to take a trip to Japan with the speaker and her boyfriend. As this was requested by the boyfriend’s mother, who did not respect the couple’s willingness, it was very shocking to the speaker. The speaker’s intense reaction to the series of shocking events (verbalized by 晴天霹靂 ‘feeling extremely shocked’) is marked with (*yi*) *zhengge*, and may be interpreted as either a mere description of an intense reaction, or an indication of the unexpected/undesired nature of the situation presented in prior discourse.

(17) “[心情] 想跟男友家人出遊問題一大堆” Boy-Girl, Sat. Mar 12 2016⁶

- 1 跟男友回到高雄之後的某天
One day, after I returned to Kaohsiung with my boyfriend,
- 2 男友的表妹"突然"LINE 男友說我們去日本的預算
my boyfriend's cousin suddenly sent a LINE message to him, asking about our budget for the Japan trip.
- 3 會說突然是因為男友跟表妹很不熟
I said “suddenly” because my boyfriend was not close to the cousin at all,
- 4 就連表妹來高雄玩男友都懶得鳥她的那種程度 囧
to an extent where even when she visited Kaohsiung, my boyfriend was too lazy to hang out with her.
- 5 男友跟表妹聊了一些日本的事之後
After my boyfriend chatted with her a little bit about Japan,
- 6 我還天真的以為可能表妹也打算之後去日本玩 在參考行程跟預算
I was still naïve to think that she might have been planning to take a trip to Japan some time later, and that she was just taking our itinerary and budget as reference.
- 7 隔了幾天才知道原來是男友媽跑去問表妹要不要一起去玩.
A couple days later, it turned out that it was my boyfriend's mother who went to ask her whether she wanted to come with us.
- 8 → 知道這件事情的時候我整個晴天霹靂
When I knew about it, I *zhengge* was extremely shocked.
- 9 一來連男友跟表妹都不熟了 更何況我
On the one hand, she's not even close to my boyfriend, let alone to me.
- 10 再來是男友媽完全沒知會我們就跑去邀表妹一同出遊
On the other hand, my boyfriend's mother didn't even tell us before inviting the cousin to come with us.

5. The emergence of (*yi*) *zhengge* as an epistemic adverbial

Interestingly, the discourse-pragmatic function of indicating unexpectedness/undesirability in (*yi*) *zhengge* as a degree intensifier is found to be the core function of the usage of (*yi*) *zhengge* as an epistemic adverbial in the collected data (4% (N=4) of all 96 adverbial usages of (*yi*) *zhengge* in the collected data). Syntactically, (*yi*) *zhengge* as an epistemic adverbial occurs in clauses/sentences that involve not psychological/emotional predicates, but (often complex) predicates that describe situations deemed by the speaker as highly unexpected and/or undesired, as can be seen

⁶ The title of textual data presented in this study is formatted as involving: (i) the title of the article where the data is from (placed within parentheses), (ii) the PTT board on which the article is posted, and (iii) the date it was posted. The data were translated into English by the author.

in (18) below. On the one hand, none of the unexpected/undesired situations in these cases involve stative predicates that imply a scale; (*yi*) *zhengge* here therefore cannot be interpreted as serving a degree intensifying function. On the other hand, all cases of (*yi*) *zhengge* as an epistemic adverb can be omitted without changing the propositional content of the clause/sentence it occurs in; when omitted, it is only the additional speaker attitude (of unexpectedness/undesirability) over the proposition that becomes unavailable in the interpretation.

- (18) a. 我 一 個 漂亮 表妹 北上，
wo yi ge piaoliang biaomei beishang
 1SG one CL pretty female.cousin go.northbound
 (整個) 為了 滿足 基本 物質 生活
 (*zhengge*) *weile manzu jiben wuzhi shenghuo*
 whole for satisfy basic material life
 就 扭曲-了 自己
jiu niuqu-le ziji
 then distort-PFV self
 ‘A pretty female cousin of mine moved to Taipei, (and) *zhengge* distorted her own self just to satisfy her material needs in life! (with surprise and distain)’
- b. 賴雅妍穿了西裝以後，
Laiyayan chuan-le xizhuang yihou,
 Laiyayan put.on-PFV suit after
 (整個) 讓 好 多 人 戀愛 了
 (*zhengge*) *rang hao duo ren lianai le*
 whole let so many person fall.in.love CRV
 ‘After Laiyayan put on her suit, (she) *zhengge* made so many people fall in love (with surprise)!’

The attitude-oriented function of epistemic adverbial (*yi*) *zhengge* significantly differs from the case of degree-intensifying (*yi*) *zhengge* as shown in (16) above, as omission of the latter will crucially change the propositional meaning of the clause/sentence it occurs in. In this regard, (*yi*) *zhengge* as an epistemic adverbial can be rightly considered as a sentential adverb that does not tap into the propositional content of the clause/sentence, but has a sentential scope in expressing the speaker’s epistemic attitude.

When the discourse context is considered, (*yi*) *zhengge* as an epistemic adverb can all be replaced with other sentential adverbs that also convey a similar speaker attitude (of unexpectedness/undesirability), such as *juran* 居然 ‘actually, unexpectedly’, or *jingran* 竟然 ‘(would) go so far as’. This can be seen in an example in (19) below. Here, the speaker narrates a series of events involving him/herself on a bus, where s/he heard a suspicious sound from the glass window to his/her right. After taking a look at the

window, the speaker found out that there was actually a crack in the window. This is not something one would expect or desire when taking the bus, and it made the author change his/her seat immediately. Here, the clause expressing “the window is cracked” involves (*yi*) *zhengge* occurring in it, and may be replaced with other epistemic adverbials expressing unexpectedness such as *jurán* 居然 ‘actually, unexpectedly’, or *jìngrán* 竟然 ‘(would) go so far as’.

(19) “[心情] 福和客運沒有極限...” Keelung, Sat. Mar 12 2016

- 1 今天搭福和客運，
Today, I was on a Fuhe bus.
- 2 右邊玻璃傳來奇怪的聲音，
The glass on my right hand side was making weird sounds.
- 3 認真一看，
I took a serious look
- 4 → 玻璃整個是裂的... = =
(to find that) the glass *zhengge* was cracked... (emoji)
- 5 馬上坐遠離玻璃改靠走道
I immediately took an isle seat that is far away from the glass.

Another example of (*yi*) *zhengge* as an epistemic adverbial can be seen in (20) below. Here, the author complains about the crash of the smartphone app LINE, which led to the unexpected and undesired outcome of the loss of all except one of the emojis s/he had downloaded on the app. Again, *zhengge* here may be replaced with 居然, or 竟然.

(20) “[問題] line 表情不見了” iOS, Sat. Mar 12 2016

- 1 剛 line 大當機恢復後
Just now, right after the huge crash on LINE ended,
- 2 → 整個表情剩一個
Zhengge there’s only one emoji left.
- 3 現在很苦惱要不要重新安裝
I’m very distressed, wondering if I should just install it again.
- 4 各位有人跟我一樣的嗎
Did the same thing happen to any of you guys?

6. Intersubjectification and the emergence of (*yi*) *zhengge* as a discourse marker

Still another type of adverbial (*yi*) *zhengge* identified in the collected data involves (*yi*) *zhengge* serving as a discourse marker with a textual scope in relating the clauses/sentences it occurs in to the discourse context. Similar to the case in the epistemic adverbial usage, (*yi*) *zhengge* as a discourse marker does not contribute to the propositional content of the clause/sentence. Therefore, when considered without the

discourse context, it can be freely omitted without resulting in any change in the propositional meaning. Again, this is crucially different from the case in (*yi*) *zhengge* as a degree intensifier, as has been illustrated in (16) above:

- (21) a. (一整個) 就是 善良 溫馨 八卦版
 (*Yi zhengge*) *jiushi shanliang wenxin baguaban*
 one whole then.COP kind warm Gossiping.Board
 的 畫面。
de huamian.
 GEN picture
 ‘(*Yi zhengge*) what a kind and warm scene on the Gossiping Board!’
- b. (一整個) 制度 大亂 的 詭異 邏輯!
 (*Yi zhengge*) *zhidu daluan de guiyi luoji!*
 one whole system completely.messy ATT strange logic
 ‘(*Yi zhengge*) what a completely messy system with a strange logic!’

Different from the case in (*yi*) *zhengge* as an epistemic adverb, however, all cases of (*yi*) *zhengge* as a discourse marker (5% (N=5) of all 96 adverbial usages of (*yi*) *zhengge* in the collected data) involve complex predicates that describe not situations, but the speaker’s negative evaluative comment. When the discourse context is considered, the evaluative comment introduced by (*yi*) *zhengge* is necessarily construed as having scope over prior discourse, where a situation described across multiple preceding clauses/sentences is deemed as leading to, or involving, an unexpected/undesired outcome. In other words, instead of expressing unexpectedness/undesirability over a clause/sentence (as in the case of (*yi*) *zhengge* as an epistemic adverbial), (*yi*) *zhengge* as a discourse marker serves a metatextual function in indicating that the speaker is making a negative comment on the unexpectedness/undesirability of a situation already described in prior discourse. Consider (22), where an example of the metatextual function of (*yi*) *zhengge* as a discourse marker is exemplified. Here, the author talks about his/her inability to endure spicy food, which, compared to people who can, is deemed as depriving him/her of the opportunity to really enjoy the process of eating spicy food—an undesired outcome.

(22) “[閒聊] 不會吃辣”, WomenTalk, Sat. Mar 12 2016

- 1 一直有個小疑惑
 I’ve been wondering about something for a long time.
- 2 大家是不是都很會吃辣啊
 Is everyone good at eating spicy food?
- 3 看會吃辣的人吃的很爽都有點羨慕
 Whenever I see people eating spicy food totally enjoying it, I get a bit jealous.

- 4 可是我實在是太怕辣
But I'm just too bad at eating spicy food.
- 5 胡椒太重就不行了> <
Even when it's just too much pepper, I won't be able to handle it.
- 6 → 人生整個少了好多美食可以吃的感覺
'It feels like there is *zhengge* so less delicacy to enjoy in life now!'

As can be observed, (yi) *zhengge* in (22) occurs in the final sentence of the post. Here, it introduces the author's negative comment on the preceding clauses/utterances, showing his/her disappointment about what s/he was missing in life.

The discourse marker function of (yi) *zhengge* can also be exemplified in another instance, as in (23) below. Here, (yi) *zhengge* is used in the middle of describing a series of events, where the author switches from narrating the situation (where the speaker's husband, once when he was a child, found a box of cookies and decided to take possession of it) to making a deriding comment on the husband's action of eating the cookies while watching television:

(23) “[無言] 這不是你的啦……”, StupidClown, Sat. Mar 12 2016

- 1 上完廁所走到客廳看到桌上放了一盒很漂亮的餅乾盒
After he came out of the bathroom, he walked into the living room and saw that there was a very pretty cookie box on the table.
- 2 打開一看 哦哦哦 是小餅乾耶!!!
He opened it, thinking: Wow! Little cookies!!!
- 3 (立刻抓一片來吃)
(Immediately grabs one to eat)
- 4 嗯! ? 是鹹的耶 雖然味道不重但脆脆的好好吃哦
Hmm? It's salty. The taste is not strong, but it's kind of crunchy. Tastes very good.
- 5 家裡剛好沒人 老妹也還沒回來 哼哼 這盒我獨佔了
It just happens that no one's home. Little sister is not home yet either. I'm going to keep the whole box to myself.
- 6 明天在帶一點去學校分同學吃好了~~嘿嘿
I'll just bring some to school tomorrow to share with classmates.
- 7 → 就這樣腦公就一口一片配著電視吃著餅乾逗弄著家裡的狗狗 整個非常輕鬆愜意
Just like that, my husband watched TV, ate his cookies one by one, teasing our puppy, *zhengge* very relaxing and pleasing!
- 8 直到腦公的媽媽(我婆婆)回來後……
This continued until my husband's mother (my mother in law) came home.
- 9 腦公: 媽~這盒餅乾哪買的? 脆脆的很好吃耶

- Husband: Mom, where did you get these cookies? They're crunchy and tasty.
 10 婆婆：什麼餅乾？
 Mother in law: What cookies?
 11 腦公：就這盒啊（拿出餅乾盒）
 Husband: This box of cookies. (Shows the cookie box)
 12 婆婆：那盒！？那盒是………
 Mother in law: That!?! That's ...
 13 那盒是皮皮吃的餅乾 你跟他搶餅乾吃哦？
 That's Pipi's (dog's name) cookies! Are you fighting with him over cookies now?

Here, the author ironically evaluates his husband's action as "very relaxing and pleasing" (非常輕鬆愜意), when in fact it was essentially the opposite, as the cookies he was eating would in the end turn out to be dog food, which was not supposed to be enjoyable at all. Again, (*yi*) *zhengge* serves to introduce the author's negative comment on prior discourse, which is considered to be leading to an unexpected and undesired outcome (the cookies turning out to be dog food).

7. Summary and conclusion

It has been shown in this paper that adverbial (*yi*) *zhengge* in Taiwan Mandarin can be considered as having developed two additional usages beyond the degree intensifying usage, as evidenced in the data drawn from PTT forum posts. Although the epistemic adverbial and discourse marker usages of (*yi*) *zhengge* only account for 9.3% (N=9) of all the adverbial instances of (*yi*) *zhengge* in the data (N=96), it has been argued that they should be crucially distinguished from the other adverbial usages. In particular, they differ in terms of (i) their semantic/discourse-pragmatic function, (ii) their semantic-pragmatic scope, and (iii) the degree of (inter)subjectivity involved. The functional spectrum of adverbial (*yi*) *zhengge* based on the collected data is summarized as in table 1 below:

Table 1. Functional spectrum of adverbial (*yi*) *zhengge*

	Function	Scope	(Inter)subjectivity
(<i>yi</i>) <i>zhengge</i> ^{DI}	degree modification	predicate	N/A ~ (subjective)
(<i>yi</i>) <i>zhengge</i> ^{EA}	attitude expression	sentence	subjective
(<i>yi</i>) <i>zhengge</i> ^{DM}	textual cohesion	text	intersubjective

While direct diachronic evidence is still required, the observed (subjective and intersubjective) functions of (*yi*) *zhengge* beyond its degree intensifying function correspond to successive stages of one of the developments typically undergone by discourse markers as illustrated in the case of English *in fact* in section 2. The functional differences as shown in table 1 can therefore be hypothesized as a diachronic pathway that (*yi*) *zhengge* has undergone, where it developed from a clause-internal, degree-

modifying adverb into a sentential, attitude-expressing adverbial, and finally into a discourse marker with a textual scope. In this regard, (*yi*) *zhengge* in Taiwan Mandarin contrasts with the [*zhengge yi* (*CL*)] construction in Mainland Mandarin in having further evolved an intersubjective, metatextual usage, taking prior discourse under its scope.

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