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Two Types of Exclamatives in Mandarin Chinese

by Yining Wang

Under the supervision of:

Jon Ander Mendia

UAB

Universitat Autònoma
de Barcelona



UNIVERSITAT DE
BARCELONA



Universitat
Pompeu Fabra
Barcelona



UNIVERSITAT
ROVIRA I VIRGILI

Abstract: This paper explores two types of exclamatives in Mandarin Chinese, as Badan and Cheng (2015) identified. Whilst type I exclamatives employ degree demonstratives *zheme/name* (this.ME/that.ME) and exclusively have the surprise reading, type II exclamatives recruit the degree quantifier *duome* (much.ME) and exclusively have the non-surprise reading. In this paper, a lexical approach is taken to account for the contrast in their expressions of surprise and non-surprise. The central claim is that this distinction is firmly rooted in the semantics of the degree adverbs involved. To be precise, the degree demonstrative *zheme/name* operates within equative comparatives, where it selects the expected degree according to the speaker's perspective as the standard of comparison, and the sense of surprise emerges when the actual degree surpasses this initial expectation. In contrast, the degree quantifier *duome* predominantly contributes to positive constructions, simply demanding the degree in question to be noteworthy in comparison to a contextually given standard, without invoking surprise. Moreover, their syntactic properties and the resulting compositional consequences are also discussed.

Keywords: Mandarin exclamatives, degree adverbs, surprise, semantics

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1 Introduction

Previous studies by Badan and Cheng (2015) have identified two types of exclamatives in Mandarin Chinese, characterized by the presence of scalar degree adverbs, as illustrated in (1). Specifically, type I exclamatives in (1a) make use of the demonstratives of degrees *zheme/name* (this.ME/that.ME) and consistently convey a sense of surprise, whereas type II in (1b) employ the degree quantifier *duome* (much.ME) and are devoid of surprise.

- (1) a. Lǐsì zhème/ nàme gāo a! surprise

Lisi this.ME/that.ME tall SFP

‘How tall Lisi is!’

- b. Lǐsì duōme gāo a! non-surprise

Lisi much.ME tall SFP

‘How very tall Lisi is!’

Building upon their observations, this paper aims to delve deeper into the role of the degree determiners in Mandarin exclamatives, namely, the degree demonstrative *zheme/name* and the degree quantifier *duome*, in relation to the surprise/non-surprise effect. My proposal is that they are fundamentally two types of degree determiners, leading to compositional differences in exclamatives. Semantically, *zheme/name* and *duome* operate on equative comparatives and positives, respectively, therefore distinct in the way they establish the standard scale of comparison. The surface construction of the

putative comparison in Mandarin exclamatives, as well as the corresponding terminology for each constitutive part, is presented below for convenience:

- (2) $\underbrace{\text{Lisi}}^1$ [DegP $\underbrace{\text{zheme/name/duome}}$ [Standard Deg (d)] [AP $\underbrace{\text{gao}}$]]
- target of comparison degree adverbs standard of comparison gradable predicate

Here, the implicit standard of comparison is computed on the reference degree scale that varies according to the semantic selection of two types of degree adverbs. The degree demonstrative *zheme/name* involving the definite determiner *zhe* ‘this’/ *na* ‘that’, imposes semantic restrictions that govern the selection of a specific reference scale in comparison, which will be specified by the speaker's expectations for the degree property in terms of the individual in question. For instance, in (1a), the standard of comparison falls on the expected height for Lisi, which is surpassed by the actual height. The violation of expectations naturally yields surprise. By contrast, the degree quantifier *duome* composed of the indefinite determiner *duo* ‘much’, triggers a comparison reference that is set to a non-specific default degree scale, which is typically derived from averaging over the class within the utterance context (e.g., the average height of people in the case of (1b)), regardless of expectedness, and therefore excludes surprise.

In line with Castroviejo's (2019) treatment of the degree adverb *tan* ‘so’ in contrast to the positive morpheme *pos* in Catalan exclamatives, I further propose that the degree demonstrative *zheme/name* and the degree quantifier *duome* similarly exhibit distinct

¹ The precise target of comparison in this case should be the tallness of Lisi.

syntactic behaviors, contributing to different syntactic structures and truth conditions for the respective exclamatives they form. To be specific, the degree demonstrative has undergone raising and ranges over the original proposition, whereas the degree quantifier is interpreted in the local position within the scope of the proposition. As a result, the demonstrative-exclamatives denote degrees, precisely the degree that fulfills a comparative equative relation (\geq) with respect to the expected standard degree². In other words, (1a) is true as long as the degree of tallness that holds for the specific individual Lisi exceeds the speaker's expectations, independent of the proposition *Lisi is tall*; while the quantifier-exclamative (1b) still denotes the proposition that Lisi is tall (to a contextually salient standard).

The paper is organized as follows. In the next section, I will present the full set of data on two types of exclamatives, along with the involved degree adverbs. Additionally, I will provide illustrations of the contrasting surprise/non-surprise effects through felicitous condition tests. In light of this, there are two significant issues that need to be addressed: (1) How is surprise derived in Mandarin exclamatives? and (2) How does this surprise effect relate to the demonstratives? Section 3 will examine the mechanisms of domain widening and the illocutionary force operator, two prominent approaches in the

² In the literature of degree semantics, the equative has been treated in a parallel manner to the comparative and denotes an ordering that is “equal or greater than” (\geq) rather than an intuitive equivalence relation. See Rett (2020) for a more comprehensive exploration of this topic.

literature to account for the surprise reading of exclamatives. Particular attention will be given to assessing their relevance and applicability to Mandarin exclamatives. Nevertheless, I shall argue that neither approach is necessary, as the sense of surprise can be derived directly from the lexical semantics regarding the degree demonstrative itself. Section 4 is devoted to the proposal, discussing the difference in semantic and syntactic properties between degree demonstratives and degree quantifiers, and their respective contribution to the contrast in conveying surprise. The concluding section will summarize the findings and consider some general implications of the interaction between degree adverbs and surprise effects.

2 Basic data

2.1 *Zheme-exclamatives vs. duome-exclamatives*

According to Badan and Cheng (2015), two types of true exclamatives exist in Mandarin Chinese, as demonstrated in (1). On the surface, they differ in the use of degree adverbs: the exclamatives in (1a) contain the adverbial element *zheme/name* [this.ME/that.ME], meaning ‘so, such’; while the exclamatives in (1b) are composed of the degree adverb *duome* [much.ME], meaning ‘very’.

More precisely, *zheme* [this.ME] and *name* [that.ME] are composites of the demonstrative pronoun *zhe* ‘this’ or *na* ‘that’ and the affix *-me*. Though occurring in adverbial positions, they are usually classified as demonstratives of degree, quantity, or manner (see Lü et al., 1980; König & Umbach, 2018).

It is worth noting here that without the final particle *a*, (1a) is simply a descriptive statement, *zheme* will be interpreted either in its exophoric (deictic or gestural) use to indicate the actual height of Lisi as shown in (3a), or as endophoric (anaphoric or cataphoric) replacements of the tallness referred in the preceding or following discourse.³ This explains why it sounds incomplete on its own, requiring a sort of ‘continuation’ (see (3b)).

(3) a. Lǐsì zhème gāo (+ pointing gesture).

Lisi this.ME tall

‘Lisi is this tall.’

b. Lǐsì zhème/ nàme gāo, wǒ kàn bú dào tā de yǎnjīng .

(adopted from Badan & Cheng, 2015, p. 387)

³ Mandarin exclamatives have long been recognized in traditional literature as being associated with the sentence-final particle *a* (Chao 1968; Dow 1983, among others). Though it is regarded as a sign to overtly mark the exclamatory attitude, the presence of the final particle *a* seems not mandatory in all types of exclamatives. Since this is not the primary focus of this paper, I will leave the question open. But I share the view with Du, 2005; Badan & Cheng, 2015, among others, that the final particle *a*, owing to its multifunctional nature (Chao 1968; Li & Thompson, 1981), is neither necessary nor sufficient for the construction of exclamatives.

Lisi this.ME/that.ME tall, I see not arrive she DE eye

‘Lisi is so tall, that I cannot see her eyes.’

Moreover, given that *zheme* and *name* are interchangeable in most contexts with the minor variation in psychological distance implicated by the proximal and distal forms, henceforth, I will use solely *zheme* to represent degree demonstratives in the subsequent sections for the sake of simplicity.

The degree adverb *duome* is composed of the adjective of quantity *duo*, translated as ‘much/many’ indicating multiplicity, and also the affix *-me*. By analogy to other frequently employed degree modifiers with similar intensifying meanings and distributions preceding gradable expressions, as shown in (4), *duome* can also be viewed as a positive operator indicating the explicit realization of the underlying positive form (see, for instance Lin, 2014).⁴

⁴ A commonly accepted view posits that Mandarin Chinese has an overt positive morpheme, namely, the degree adverb *hen* (Kennedy, 1999; Liu, 2010; Grano, 2012; among others). However, once we consider the positive operator as a type shifter, a class of degree adverbs, such as *ting*, *feichang*, *jiqi*, *shifen*, etc. (classified as the *hen* ‘very’ type, according to Lu & Ma (1999) and others), can also be deemed as positive degree markers, despite being contentful to give emphasis to the modified degrees. Besides, it is disputable whether *hen* represents the neutral form of the positive morpheme (see the discussion in Fang, 2017). Here,

(4) a. Lǐsì hěn/ fēicháng/ jíqí gāo!

Lisi very/very much/ extremely tall

‘Lisi is very tall!’

b. Lǐsì duome gāo (a)!

Lisi much.ME tall SFP

‘How very tall Lisi is!’

One thing that should be clarified is that though *duo* is considered to be the oral informal form of *duome* (Du, 2005; Zhang, 2021, among others), the element *duo* alone is insufficient to constitute an exclamation. This is illustrated in (5), where the interrogative interpretation takes precedence. For this reason, it has been contended that *duo* serves as an interrogative morpheme in Mandarin exclamatives, rendering *duo(me)*-exclamatives comparable to *wh*-exclamatives in English (see Badan & Cheng, 2015).

(5) Lǐsì duō gāo (a)?

Lisi much tall SFP

to my knowledge, *duome* patterns with these degree intensifiers; the only distinction lies in its exclusive licensing in exclamatives, whereas the others can appear in declarative sentences.

‘How tall is Lisi?’

However, recall (1b), once *duo* is suffixed by *me*, the interrogative reading is blocked and the sentence can exclusively be interpreted as exclamatives. Hence, the classification of *duome* as a degree quantifier will be in preference to *wh*-phrase.^{5 6}

⁵ I reserve my view upon whether *duome* should be treated as a *wh*-adverbial. While it can appear in questions it cannot independently generate interrogative reading unless embedded under possessive predicate *you* or certain non-factive predicates such as *yiwéi* ‘think’, shown in (i). Consequently, *duome* is at least a partly defective *wh*-phrase if not entirely irrelevant to *wh*-form, particularly when interpreted in regard to exclamatives.

i. a. Lǐsì yǒu duōme gāo ?

Lisi POSS how.much tall

‘How tall is Lisi?’

b. Nǐ yǐwéi nǐ duōme gāo?

you think you how.much tall

‘How tall do you think you are?’ (rhetorical question)

⁶ Additionally, the distinction between *duo* and *duome* draws attention to the role of the suffix *-me* in exclamatives. In this paper, I assume with Badan and Cheng (2015) that the morpheme *me* in degree adverbs *zheme*, *name*, *duome* has been grammaticalized to denote the implicit scale of degrees (for an extensive review of the grammaticalization process, see Shimura, 1995; Badan & Cheng, 2015).

2.2 Surprise vs. non-surprise contexts

Contrary to the widespread view that surprise is an integral part of *wh*-exclamatives (Zanutinni & Porter 2003, among others), it is optional in Mandarin exclamatives, as presented above. Furthermore, Mandarin exclamatives seem to differentiate between surprise and non-surprise through the use of different types of degree adverbs. Specifically, the surprise reading in exclamatives is associated with the presence of the degree demonstratives *zhème/name*, whereas it is incompatible with the presence of the degree quantifier *duōme*. This distinction becomes evident in specific contextual conditions.

Consider the following context (adapted from Badan & Cheng, 2015): A girl with a height of 2m10 enters the office, whom the speaker has never met before. She is so tall that she even needs to bend to fit through the doorway. In this surprising scenario, a Mandarin speaker can express surprise at her unexpected tallness by uttering the demonstrative-exclamative (6a). Conversely, *duōme*-exclamative (6b) appears to be inappropriate.

(6) a. Tā zhème gāo a! surprise

She this.ME tall SFP

‘How very tall she is!’

b. *Tā duōme gāo a! non-surprise

She much.ME tall SFP

In a subsequent instance, the same girl, whose height of 2m10 is already known to the speaker, enters the office and again needs to bend to enter the room. Although the speaker is not surprised this time, as she can already expect such a scenario, she still experiences a sense of amazement due to the visual impact of the girl's extraordinary height. In this case, the *zheme*-exclamative (7a), which is designed to convey surprise, is not applicable. However, even in the absence of surprise, the speaker can still exclaim at the degree of tallness using the *duome*-exclamative (7b).

(7) a. *Tā zhème gāo a! surprise

She this.ME tall SFP

b. Tā duōme gāo a! non-surprise

She much.ME tall SFP

‘How very tall she is!’

I have demonstrated that *zheme*-exclamatives and *duome*-exclamatives differ in their expression of surprise. The latter conveys an expressive attitude towards the high degree of the target of comparison, whereas the former necessarily communicates a strong feeling of being surprised by the unexpected degree property. I also use distinct descriptive terms here, namely *surprise* and *amazement* for each respective context, in

order to differentiate between these two emotional patterns. Surprise, as discussed in cognitive psychology, is an automatic reaction to an inconsistency between incoming information and prior knowledge, often characterized by disconfirmed expectations (Teigen & Keren, 2003; Lorini & Castelfranch, 2007). This surprise effect is linguistically formalized as mirativity, a semantic category that signals the relationship between the proposition and the speaker's knowledge structure (DeLancy 1997, 2001, 2012; Aikhenvald 2004, 2012; Peterson, 2016). On the contrary, I propose that the emotion of amazement can be attributed to the notion of markedness (cf. Nouwen, 2011). It could be evoked by the salient property of the perceived event or object, which stands out as noteworthy in some way, without necessarily contradicting expectations. For example, in the aforementioned case where the speaker saw the same girl of 2m10 for the second time, the degree property of tallness is already within expectations but still impressive and thus marked, as it stands out in its domain (off the normal scale of human's height).⁷

2.3 the Scope of surprise

⁷ By employing the terms *surprise* and *amazement*, I am not suggesting that these emotions are mutually exclusive, especially in real-life situations. In this paper, to avoid confusion, *surprise* specifically refers to counter-expectations, whereas *amazement* represents an emotive attitude towards a state of affairs that, although expectable, is still considered unusual and deserving of exclamation, as exemplified in the second time seeing an extremely tall person.

Given that both surprise and amazement are emotions inherently tied to comparison, the implicit comparative structure warrants further scrutiny. Following previous research on degree modification by evaluative adverbs (Zwicky, 1970; Katz, 2005; Morzycki, 2008; Nouwen, 2011), I assume that the surprise effect may take over different scopes, parallel to the semantical difference between the ad-sentential and ad-adjectival use of adverbials like *surprisingly*, (8).

(8) a. Lisi is surprisingly tall.

b. Surprisingly, Lisi is tall.

The varying comparative contents and the associated standards can be identified in specific contexts: Suppose in an environment where people average 1m 70, generally a height more than 1m80 will amount to be tall, while a height less than 1m60 will be considered short. Such a standard of tallness is measured through averaging over the comparison class of individuals as in common practice, therefore applicable to everyone. In this sense, it can be considered absolute and default in a normal context without any additional information⁸ (or normative in Balusu's words, 2019).

⁸ Note in the tradition of degree semantics, adjectives such as *tall* are typically classified as *relative adjectives* with unbounded scales (see Kennedy & McNally, 2005; Kennedy, 2007; among others). Here the standard is described as absolute in the sense that it is well-accepted within a given context, yet such absoluteness is relative to the speaker's expected standard towards a specific object which must be personal and subjective. This does not mean that *tall* is an *absolute adjective*.

Now consider the following contexts:

Context 1) I expected Lisi to be tall (with respect to the absolute default standard, e.g., 1m80), but in fact Lisi is still taller than I expected (1m90). In such a context, (7a) is true and (7b) is false (adapted from Morzycki, 2008).

Context 2) I expected Lisi to be short (e.g, 1m50), but in fact Lisi is much taller than I expected (1m65) though still not tall (with respect to the normal standard of being tall). In such a context, (8a) is true. Notably, with the application of different standards, *Lisi is surprisingly tall* does not necessarily entail *Lisi is tall*.

Context 3) I expected Lisi to be short (shorter than 1m60), but in fact, Lisi is tall (with respect to the absolute standard of tallness, e.g, 1m80). In such a context, (8b) is true. Moreover, (8a) also appears to be acceptable, given that Lisi's height has exceeded my expectations, resulting in my surprise at her tallness.

As a result, (8b) expresses surprise at the fact that Lisi is among the tall (tall for being a person), while (8a) expresses surprise with respect to how tall she is (tall for this person, namely Lisi in these contexts).

In all the contexts above, we can use the demonstrative-exclamatives, and I claim that the exclamatives of this kind tend to denote the first type of surprise expressing: surprise at the actual degree of the entity with respect to the expected standard of comparison.

Thus, the surprise arises from the fact that Lisi is taller than the standard degree relative to the speaker's expectations for her, regardless of whether she is tall by contextually absolute standards. In other words, the extreme degree reading in this type of exclamatives is relative to the degree scale of the specific entity (e.g., the tallness of Lisi, independent of the normative tallness calculated on the comparison class).

The same approach can be applied to analyze the scope of amazement in *duome-*exclamatives by substituting *surprisingly* with *remarkably*.

(9) a. Lisi is remarkably tall.

b. Remarkably, Lisi is tall.

Let's consider a context where the absolute standard of tallness is set at 1m80. In this scenario:

- If Lisi's height is 2m10, both (9a) and (9b) are true.
- If Lisi's height is 1m70, both (9a) and (9b) are false.
- If Lisi's height is exactly 1m80, the truth conditions depend on the speaker's evaluative standard of what is considered remarkable.⁹

⁹ They are truth-conditionally distinct in that the former relies on the extent to which Lisi's tallness surpasses the standard degree to be considered remarkable, while the latter may involve other evaluative

I contend that the *duome*-exclamative incorporates the markedness standard in the first place. In other words, the element of amazement should directly pertain to the degree, as interpreted in the form of (9a). However, since the remarkable standard is typically established in comparison to the contextually provided standard, if Lisi is taller than the markedness standard, then she will very likely be taller than the contextually given standard as well. Consequently, the interpretation in (9b) also holds, at least as a status of implicature, if not as a strict entailment (see Katz, 2005 for more discussions).

So far, we have observed that quantifier-exclamatives are exclusively licensed in non-surprise contexts, exclaiming at a remarkably high degree, whereas demonstrative-exclamatives exclusively convey surprise, directed towards the degree of an entity that exceeds the speaker's expectations. In comparison, surprise seems to be an additional ingredient in Mandarin exclamatives. This raises two questions: firstly, what mechanism underlies the generation of surprise? And secondly, why is the surprise specifically associated with demonstratives of degrees, while other degree modifiers like *duome* are excluded? The next section will explore the common approaches in the literature that attempt to account for the surprise effect.

3 Two typical mechanisms underlying surprise

dimensions for markedness once Lisi's height meets the standard of tallness. However, such nuances will be disregarded for the current purpose.

3.1 Domain widening

According to the literature, *wh*-exclamatives necessarily involve a meaning of surprise or unexpectedness (Zanutinni &Porter, 2003; Villalba, 2008; Rett, 2008, 2011; Castroviejo, 2019; among others), and one way to account for this aspect is through the mechanism of domain widening. Drawing inspiration from Kadmon and Landmann's (1993) analysis of *any*, Zanuttini and Portner (2003) propose that exclamatives widen the initial domain of quantification that is constrained by contextual restrictions.¹⁰ By incorporating a proposition that falls outside the original set of alternatives under consideration, widening gives rise to the effect of expectations contravention, resulting in a conventional implicature of a high or extreme degree. In other words, when using an exclamative, the speaker actually presupposes a low likelihood for the proposition that is in fact true, such an unexpected contrast engenders a profound sense of surprise.

¹⁰ Zanuttini and Portner (2003) have recognized two co-occurring but independent components of meaning in exclamatives: factivity and widening. Factivity refers to the presuppositional nature of exclamatives, where certain functions, such as assertions or questions, are ruled out due to their conflict with the presupposed knowledge. In particular, exclamatives cannot be assertions, as they presuppose information that is already known, nor can they be questions, as their answers are presupposed. Hence, a different function is needed for exclamatives, and widening, with its effect on expanding the domain of quantification, contributes to their sentential force.

To illustrate how this works, consider the example: *How very tall Lisi is!* In this case, the *wh*-phrase *how very tall* invokes a set of alternative propositions ordered on a scale, ranging from small to high degrees of tallness. At the same time, the sentence is factive as the propositional content "Lisi is tall" is presupposed to be true. By using the exclamative, the speaker not only asserts that Lisi is indeed tall but also emphasizes that Lisi's height even exceeds the expected degree of tallness. In this way, the scale of tallness is widened to include higher values that were previously not taken into consideration. The surprise or unexpectedness arises from the inclusion of these higher values in the scale, surpassing the expected standard before.

3.2 Balusu's modification and problems

As a result, the semantic operation of domain widening is commonly seen as the formal counterpart of descriptive terms such as surprise (Castroviejo, 2019, among others). However, this poses an apparent incompatibility when applied to Mandarin Chinese, as one type thereof, namely, *duome*-exclamatives solely expresses non-surprise. A similar concern emerges in cross-linguistic data, including Telugu, which prompted Balusu (2019) to introduce the concept of the Expectation Set (borrowed from Rett, 2011; Rett & Murray, 2013) that "the Speaker's expectations are encoded as sets of possible worlds" (cf. 120). According to Balusu, the Expectation Set can be further differentiated into two categories: ES_{SPKR} (Speaker's Expectation Set) and ES_{NORM} (Normative Expectation Set). When the widened domain surpasses the speaker's

expectations, the sentence expresses surprise, whilst merely exceeding the normative set leads to a non-surprising effect. This modification thereby allows for the application of the domain widening theory to Mandarin Chinese, with *zheme*-exclamatives taking the ES_{SPKR} and *duome*-exclamatives taking ES_{NORM} , resulting in surprise and non-surprise effects respectively.

However, Balusu's explanation raises certain ambiguities. Firstly, the notion of the normative set with respect to expectations seems questionable, considering that exclamatives inherently express the speaker's subjective evaluation of a referent (Michaelis, 2001). Balusu does not provide a precise definition of the normative set, but from my understanding, it remains reliant on the subjective perspective of the speaker. It is evident that people in different regions, such as the south and north, have distinct normative standards when evaluating the degree of coldness. Similarly, the so-called normative set is primarily shaped by personal experiences and individual epistemic knowledge, leading to slight variations from person to person. One plausible approach to defining normality is by averaging over the comparison class, as I employed the absolute standard to assess tallness in the surprise-test contexts earlier. However, in the specific scenario mentioned where a girl of 2m10 enters the office for the first time, surpassing both the speaker's expectations and the normative standard simultaneously, Balusu's account falls short in explaining why *duome*-exclamatives are consistently non-surprising and therefore excluded in this context.

Moreover, Balusu's approach, which attributes non-surprise to the expectation set in regard to the norm, implies a disconnection between surprise and expectations. This not only goes against intuition but also contradicts established views in cognitive psychology.

Given these considerations, there are potential modifications that can be made to Balusu's solution. Firstly, we can propose that domain widening, if necessary, is exclusively triggered by the degree demonstratives *zheme* and operates on a scale based on the speaker's expectations. In contrast, the degree quantifier *duome* would be exempt from semantic widening and hence not associated with surprise. Secondly, we can reevaluate and revise the conceptual distinction between the speaker's expectations and the normative range as two separate reference scales invoked by different types of exclamatives. Since the normative reference does not involve expectations, it becomes irrelevant to unexpectedness and surprise. These modifications can be considered individually or integrated into a unified framework, which will be discussed in detail in the subsequent section.

3.3 Illocutionary operator

Another approach to encoding surprise in exclamatives is to directly ascribe it to the illocutionary operator which is responsible for eliciting the exclamative force and transmitting the affective attitude of unexpectedness. In particular, Rett puts forward the concept of Degree E-Force operator (see also Gutiérrez-Rexach (1996), Grosz (2012),

Castroviejo (2010, 2019), among others for similar proposals) that takes a degree property as its argument and returns an expressive speech act in terms of expectation contravention.¹¹ The formal formulation of the Degree E-Force operator is as follows (adopted from Rett, 2008: 610):

(10) DEGREE E-FORCE ($D_{\langle d, \langle s, t \rangle \rangle}$) is expressively correct in context C iff D is salient in C and $\exists d, d > s$ [the speaker in C is surprised that $\lambda w. D(d)(w)$] (s stands for a contextually provided standard)

However, the nature of degree E-force functions, which operate at the speech act level and introduce unexpectedness as a necessary component, seems to be at odds with Mandarin exclamatives, where the expression of surprise is optional. Therefore, to align with the Mandarin context, I propose that the expressive operator should solely trigger the exclamative force, while the element of unexpectedness should be separated and encoded by the demonstratives of degrees below the CP level. By decoupling the illocutionary force from the surprise effect, we can better accommodate the characteristics of Mandarin exclamatives.

¹¹ In her later work, Rett (2011) further argues that E-Force can have either properties or propositions subject to Degree Restrictions in its domain. Given that the Mandarin exclamatives under discussion always contain overt degree constructions, I will adopt this concise version that focuses solely on the degree domain.

In summary, surprise in exclamatives can either stem from the presence of an illocutionary force or be derived indirectly through the semantic properties of exclamatives, namely the widening of the quantification domain. Nevertheless, due to the optionality in expressing surprise, Mandarin exclamatives are not amenable to these conventional analyses developed for *wh*-exclamatives. To fully understand how surprise is encoded in Mandarin exclamatives, alternative approaches should be taken into account, with a specific emphasis on the role of degree adverbs.

4 Lexical approach

In this section, I will analyze why the surprise effect in Mandarin exclamatives depends on the presence of the degree demonstratives, yet resists the cooccurrence of the degree quantifier *duome*. Since both exclamatives transparently contain these degree components, it is advisable to reevaluate the internal structure and composition of these complex DegPs.

To begin with, in light of the contrast in surprise that surfaces in the option of different degree adverbs, we might investigate the lexical semantics regarding each degree word.

4.1 Lexical semantics of two types of degree adverbs

The use of the degree demonstrative *zheme* is not limited in exclamative contexts. Recall the example (3a), repeated as (11a). The sentence is grammatical only with a

gesture that indicates the actual height of Lisi. In this sense, it can be paraphrased in the form of (11b), where the position preceding the dimensional adjective is occupied by the measure phrase in replacement of the deictic use of the degree adverb *zheme*. In other words, the demonstrative can be used to indicate the degree to which a subject possesses the property denoted by a gradable predicate.

(11) a. Lǐsì zhème gāo (+ pointing gesture).

Lisi this.ME tall

‘Lisi is this tall/as tall as this.’

b. Lǐsì (yǒu) liǎng mǐ gāo.

Lisi POSS two meters tall

‘Lisi is two meters tall.’

To go further, parallel to other demonstratives of degrees exemplified by Catalan *tan*, Italian *tanto*, Spanish *tan*, etc. (König & Umbach, 2018; Rett, 2020), *zheme* patterns with these degree expressions in contributing to equative comparatives, (12), where the standard of comparison is overtly specified either by the measure phrase as in (12a) or by the individual as in (12b); and resulting in clause constructions, (13) repeating (3b), where the comparison standard is inferred from the context (i.e., the height that I can see one’s eyes).

(12) a. Lǐsì yǒu liǎng mǐ zhème gāo.¹²

Lisi POSS two meters this.ME tall

‘Li Si is as tall as two meters.’

b. Lǐsì yǒu Zhāngsān zhème gāo.

Lisi POSS Zhangsan this.ME tall

‘Lisi is as tall as Zhangsan.’

(13) Lǐsì zhème/ nàme gāo, wǒ kàn bú dào tā de yǎnjīng .

Lisi this.ME/that.ME tall, I see not arrive she DE eye

‘Lisi is so tall, that I cannot see her eyes.’

Based on these observations, I propose that the demonstrative *zhème* establishes an equative (\geq) relation with respect to degree properties between the target and standard of comparison as described by Heim (2000), Castroviejo (2019) and many others, formulated in (14).¹³

¹² The possessive verb *yǒu* can be roughly deemed as a copula in this construction, for more discussions see Xie (2013).

¹³ In this sense, it can be viewed as a degree quantifier of type $\langle\langle d, t \rangle, \langle\langle d, t \rangle, t \rangle\rangle$.

$$(14) \quad [[zheme]] = [\lambda D_{\langle d, t \rangle}. [\lambda D'_{\langle d, t \rangle}. \text{MAX}(D) \geq \text{MAX}(D')]]$$

(adapted from Castroviejo, 2019: 9)

Now, turn back to Mandarin demonstrative-exclamatives that feature a covert comparison. Following Michaelis (2001), Mandarin *zheme* can be identified as anaphoric degree adverbs, analogous to the demonstrative of degrees *so* in English and German. Therefore, even in the absence of an explicit standard of comparison, the intrinsic feature of anaphoricity still requires the demonstrative to link a definite standard degree (either a specific value or a maxima). I also posit that this standard degree is supplied by default through the speaker's expectations, (i.e., the maximum degree expected), which will be detailed in the next subsection.

Taken together, we may modify (14) to (15):

$$(15) \quad [[zheme]] = [\lambda d^*. [\lambda D_{\langle d, t \rangle}. \text{MAX}(D) \geq d^*]] \quad (d^* \text{ stands for the standard degree whose value is assigned by speaker-based expectations})$$

Moving on to the lexical semantics of the degree quantifier *duome*, it should be noted that, unlike the multifunctional nature of the degree demonstrative *zheme*, *duome* typically takes place in exclamative expressions.

As previously discussed, *duome* parallels the degree adverbs of the *hen* type, and accordingly serves the semantic function of incorporating the contextually salient standard into its denotation, resulting in positive semantics. The propositional content of

the *duome*-exclamative (1b), reproduced below in (16), can thereby be interpreted as follows, 'Lisi is tall to some degree that is MUCH compared to the contextual standard or interval', with an explicit indefinite description (existential quantifier) over degrees. Here the capitalized MUCH not only asserts a considerable deviation from the standard degree, but also implicates the speaker's emotional attitude and generates an expressive reading that the degree is large and even remarkably so. In essence, *duome* requires that the individual in question stands out on a relevant scale to a noteworthy degree.

(16) Lǐsì duōme gāo a!

Lisi much.ME tall SFP

'How very tall Lisi is!'

In view of this, I suggest that noteworthiness should be lexically specified in the semantics of *duome*, (17).

(17) $[[\text{duome}]] = [\lambda A_{\langle d, \langle e, t \rangle \rangle}. [\lambda x. \exists d [A(d)(x) \wedge \text{noteworthy}(d)]]]$

$[[\text{noteworthy}]] = [\lambda d. \text{noteworthy}(d)]$

I borrow the notion of *noteworthy* from Chernilovskaya and Nouwen (2012), defined as follows: "An *entity* is **noteworthy** iff its *intrinsic characteristics* (i.e. those characteristics that are independent of the factual situation) **stand out considerably** with

respect to a comparison class of entities” (cf. 175). The semantics can be given in terms of an ordering degree functions:

$$D_0 = \lambda P \lambda c \lambda x. P(c)(x)$$

$$D_1 = \lambda P \lambda c \lambda x. P(P(c))(x)$$

$$D_2 = \lambda P \lambda c \lambda x. P(P(P(c)))(x)$$

...

$$D_n = \lambda P \lambda c \lambda x. P(D_{n-1}(P))(c)(x)$$

c is the variable of comparison class

Suppose D_1 corresponds to *very*, D_2 corresponds to *very very*, and so forth. Now we can assign D_n to the meaning of *noteworthy*, (18).

(18) $\llbracket \text{noteworthy} \rrbracket = \lambda P \lambda c \lambda x. \exists D_n [P(D_{n-1}(P))(c)(x)] \wedge D_n$ is a vague contextually significant amount

With lexical entries defined for each degree word, the fundamental distinction between them becomes clear. Particularly, *zheme* operates within a comparative construction, encoding a specific, expected standard of comparison that must be surpassed by the target. On the other hand, *duome*, resembling positive degree adverbs,

establishes the comparison standard as a non-specific, contextually determined value, and additionally demands that the target degree be contextually noteworthy.

Following this analysis, I propose that the variation in expressing surprise can be attributed to the semantic constraints imposed by lexical meanings, notably the restrictions relevant to specificity in selecting reference scales and the standard of comparison thereon.

4.2 Standard of comparison

I have claimed that the degree construction involving *zheme* behaves differently from that of *duome* in the way that the comparison standard is restricted to be specific in the former. In contrast, *duome*, which forms the positive construction, denotes a contextually appropriate standard of comparison that is deemed non-specific in nature (Kennedy, 1999, 2007; among others). It follows that *duome* can only occur in the absence of explicit information provided about the value of the standard degree argument. This prediction is borne out: when the comparison standard is overtly specified, the indefinite quantifier is ruled out, as demonstrated in (19b) and (20b).

(19) a. Lǐsì yǒu liǎng mǐ zhème gāo.

Lisi POSS two metersthis.ME tall

‘Li Si is as tall as two meters.’

b. *Lǐsì yǒu liǎng mǐ duōme/ hěn gāo.

Lisi POSS two meters much.ME/very tall

(20) a. Lǐsì yǒu Zhāngsān zhème gāo.

Lisi POSS Zhangsan this.ME tall

‘Lisi is as tall as Zhangsan.’

b. *Lǐsì yǒu Zhāngsān duōme/ hěn gāo.

Lisi POSS Zhangsan much.ME/very tall

Considering the linguistic evidence, it is natural to question why specificity is presumed in *zheme* as opposed to *duome*. The answer lies in the internal compositional distinctions between these two degree adverbs. As previously noted, the demonstrative element *zhe* 'this' itself functions as a definite determiner. Given the correlation between definiteness and specificity (Enç, 1991), the composite degree demonstrative *zheme* carries a built-in semantic restriction in selecting a specific comparison reference within equative comparisons.¹⁴ *Duome*, in contrast, consists of the element *duo* 'much/many', which can independently function as an indefinite quantifier therefore apt to the positive construction.

To investigate how the standard of comparison is constrained in terms of specificity, it is crucial to understand how it is determined. In the literature on the positive form of

¹⁴ Although it is debatable whether all definite NPs are specific (Ihsane & Puskás, 2001), the interrelation between definiteness and specificity is notably strong within the Mandarin context. This is due to the absence of a direct equivalent to the English definite article *the*. Instead, Mandarin employs the demonstrative *zhe*, akin to *this* in English. The DPs composed with demonstratives are interpreted as referring to a particular object readily recovered in the discourse, thus eliminating ambiguity between specific and non-specific interpretations of the definite.

gradable adjectives, the comparison standard is commonly calculated relative to a COMPARISON CLASS, which can be made explicit by a *for*-PP, modified nominal, or left implicit (Klein, 1980; Kennedy, 2007). To exemplify the recruitment of the comparison class, let us revisit the three specific contexts concerning the adverbial modification discussed in section 2.2.

As suggested before, the propositional content of the exclamative *How tall Lisi is!* may correspond to two interpretations: either Lisi is tall (for a human) or Lisi is tall (compared to the expectations for this particular individual). The distinction in the specificity of the comparison class becomes obvious in this case: the reference to "a human" bears an intrinsic non-specificity, even when contextually confined to Chinese females of a similar age. The reference to "this particular individual" (based on the speaker's expectations) on the other hand is rather specific. In short, in *duome*-exclamatives, the implicit comparison class includes other subjects who also possess the property, whereas, in *zheme*-exclamatives, the comparison class is constrained to the expectations for this degree property held by the subject in question.

The specificity constraint not only applies to the comparison class but also extends to the reference degree scale, as the latter is established in reliance upon the former. When the comparison class is limited to one unique referent, the speaker is automatically and

even unconsciously afforded a concrete, specific, expected degree scale in regard to it.¹⁵

Usually, the comparison standard, based on the speaker's expectations, is set as the threshold value on this specific degree scale.

Furthermore, through introspection on the scope of surprise realized in section 2.2, we also observe that surprise arises from the implicit comparative relation between the degree property and the expected standard, which exclusively operates on the specific expected scale, irrespective of the contextual standard.

An immediate question arises: why are the speaker's expectations relevant in establishing degree scales of comparison? There are several reasons for this. Firstly, the domain of the comparison class is subject to specificity constraints, hence the degree scale in reference hinges on this specific entity. Secondly, the sentential force of exclamation requires the speaker to express their affective stance on the degree property. This entails that the property possessed by the subject in question should be evaluated as exclamation-worthy in some manner on the reference degree scale. As far as these factors are concerned, we arrive at a specific scale of evaluation that is accessible to the speakers for making affective judgments about a specific property in question, which naturally corresponds to their expectations.

¹⁵ The expected degree scale is specific in the sense that it denotes the speaker's expectations for a definite referent, even though its boundary could be vague, approximated through the speaker's subjective estimation. I will leave this borderline case for later discussion in section 5.

I further argue that demonstrative-exclamatives not only rely on the expectation scale but also block other comparison scales, whether spelled out or implicitly implied, as demonstrated below. In example (21), the comparison scale is introduced by *bìqǐ* constituent, which functions as the so-called context setter akin to the *compared to* phrase in English that sets the standard to a fixed value, Zhangsan's height. Example (22) presents an interesting phenomenon observed by Badan and Cheng (2015), where *zheme*-exclamatives are found to be infelicitous in the presence of expressions like *kàn yi kàn* (have a look/look!) or *kàn nàlǐ* (look there). One plausible explanation for this incompatibility is the requirement of the speaker's expectation as the comparison scale. The perceptual expression "kàn yi kàn" or "kàn nàlǐ" implies that the speaker has already seen the target of comparison and integrated the new information into their knowledge structure, resulting in an updated evaluation while automatically canceling the preexisting expectation scale. However, in the case of (22b), when Speaker A utters *kàn yi kàn* or *kàn nàlǐ* to capture the attention of interlocutor B, B remains in a felicitous condition to express *zheme*-exclamatives. This is because B's expectations for the degree property under discussion that licenses *zheme*-exclamatives are still intact.

(21) * Bǐqǐ Zhāngsān, Lǐsì zhème gāo a!

Compared to Zhangsan, Lisi this.ME tall SPF

Intended: 'Compared to Zhangsan, how tall Lisi is!'

(22) a. Speaker A: Kàn yi kàn/ Kàn nàlǐ! # Nà-ge rén zhème gāo a!

Look one look look there that-CL man this.ME tall SFP

‘Look! How tall that man is!’

b. Speaker A: Kàn yi kàn/ Kàn nàlǐ!

Look one look look there

‘Look!’

Speaker B: Nà-ge rén zheme gāo a!

that-CL man this.ME tall SFP

‘How tall that man is!’

In summary, the differences in expressing surprise between *zheme*-exclamatives and *duome*-exclamatives can be rooted in the lexical semantics of the involving degree adverbs. The former implies an equative construction, while the latter contains a positive construction, and they both obey the constraints on (non)specificity in selecting the standard of comparison. If we adopt the traditional psychological perspective that surprise arises from counter expectations, consider the comparative relation (\geq) encoded in *zheme*-exclamatives which requires the actual degree to surpass the expected standard, this discrepancy between the expected and actual degree naturally elicits surprise. On the other hand, noteworthiness, rather than expectations, are specified in *duome*-exclamatives and hence provide no source for generating surprise.

4.3 Compositional difference

The purpose of this subsection is to illustrate the compositional distinction between two types of exclamatives regarding the degree adverbs they incorporate. The variation in their derivations can be attributed to the merging of degree adverbs at different

syntactic positions with varying constituents. Such differences in syntactic behavior are critical in interpreting the exclamative content to which they are oriented. According to the compositional analysis, one type of degree adverb may express an exclamative attitude directed at the degree itself (e.g., "the tallness beyond expectations"), while the other may target the proposition (e.g., "Lisi is among the tall").

My assumption about the differences in syntactic structures is largely built on the analysis proposed by Castroviejo (2019) on Catalan *quin*-exclamatives, (23), where the demonstrative of degrees *tan* 'so' (or the degree quantifier *més* 'more') is a necessary component to head an overt degree phrase, precisely, it is claimed to prevent the gradable adjective from combining with the positive morpheme *pos*. According to Castroviejo, though both *tan* and *pos* are heads of DegPs, they differ in what they are and where they are located. While *pos* is interpretable *in situ*, *tan* moves to adjoin to CP via Quantifier Raising, leaving a degree variable behind. With similar lexical meanings and semantic functions, the Mandarin degree adverbs *zheme* and *duome* can be regarded as counterparts to *tan* and *pos* in Catalan, respectively, I thereby propose that they also exhibit syntactic similarities when entering exclamatives. However, it's worth noting that, in contrast to Catalan exclamatives where the DegP headed by *tan* is optional, Mandarin exclamatives require the overt presence of a DegP. Without any *wh*-elements that semantically select individuals, Mandarin exclamatives take degree constructions for granted. Moreover, I depart from Castroviejo's analysis by encoding the unexpectedness directly in the lexical

semantics of the degree demonstrative *zheme*, so there is no need to introduce an additional expressive operator dedicated to conveying surprise.

(23) Quin cotxe tan/ més llampant (que) s'ha comprat la Laia!

what car so more flashy that self.has bought the Laia

‘What a flashy car Laia bought!’

Before moving to the full derivation of exclamatives, we need to introduce the lexical entry of gradable adjectives. Here I adopt the common view that gradable predicates denote relations between individuals and degrees, that is, they are of type $\langle d, \langle e, t \rangle \rangle$ (see Cresswell, 1976; von Stechow, 1984; Bierwisch, 1989, among others), exemplified in (24), where **tall** stands for a measure function that maps an individual to a degree on the scale of tallness.

(24) $\llbracket \text{gao} \rrbracket = \lambda d. \lambda x. \text{tall} (d) (x)$

I also repeat other lexical entries below for convenience:

(25) a. $\llbracket \text{zheme} \rrbracket = [\lambda d^*. [\lambda D_{\langle d, t \rangle}. \text{MAX} (D) \geq d^*]]$ (d^* is the speaker's expected degree)

b. $\llbracket \text{duome} \rrbracket = [\lambda A_{\langle d, \langle e, t \rangle \rangle}. [\lambda x. \exists d [A (d) (x) \wedge \text{noteworthy} (d)]]]$

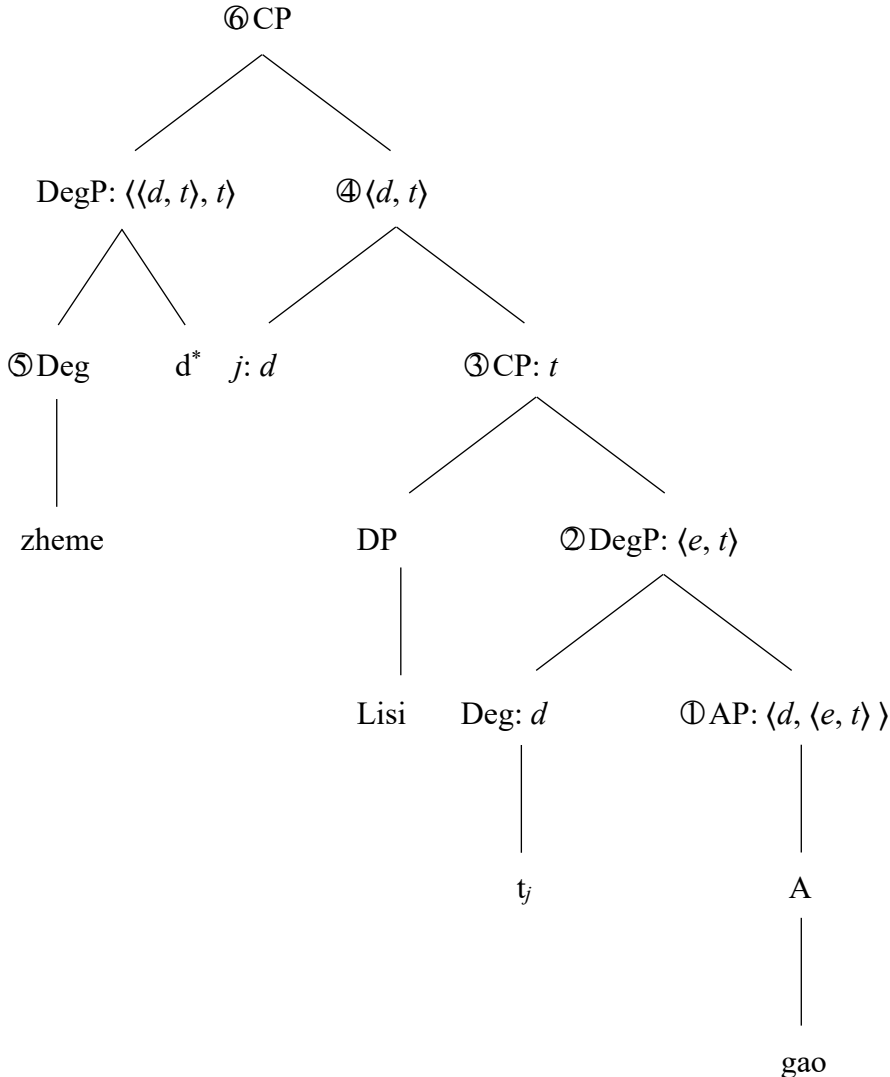
With all the necessary denotations at our disposal, we can now proceed to the derivation of the *zheme*-exclamative (26) step by step. The syntactic structure and interpretations are given in (27) (adapted from Castroviejo, 2019: 21).

(26) Lǐsì zhème gāo a! surprise

Lisi this.ME tall SFP

‘How tall Lisi is!’

(27)



b.

- a. $[[\textcircled{1}]] = [\lambda d. [\lambda x. \text{tall}(d)(x)]]$
- b. $[[\textcircled{2}]] = [\lambda x. \text{tall}(d)(x)]$
- c. $[[\textcircled{3}]] = [\text{tall}(d)(\mathbf{I})]$
- d. $[[\textcircled{4}]] = [\lambda d. \text{tall}(d)(\mathbf{I})]$
- e. $[[\textcircled{5}]] = [\lambda d^* d. [\lambda D_{(d, t)}. \text{MAX}(D) \geq d^*]]$
- f. $[[\textcircled{6}]] = [\text{MAX}(\lambda d. \text{tall}(d)(\mathbf{I})) \geq d^*]$

I assume with Castroviejo that the demonstrative of degrees undergoes quantifier raising. After combining with the speaker's expected degree d^* , it moves to adjoin to the CP and leaves a trace of type d . From the bottom, the adjective *gao* 'tall' takes the degree variable as its argument and returns a predicate of individuals, as shown in $\textcircled{1}$ and $\textcircled{2}$. Subsequently, it combines with the subject *Lisi* and yields the truth condition subject to the concerning degree property. In addition, the raising of the degree demonstrative *zheme* brings about degree abstraction. Consequently, the free degree variable within the CP gets lambda-bound as illustrated in $\textcircled{4}$, and further saturates the second argument of *zheme*. As discussed before, the first argument d^* represents the comparison standard that is determined on the expectation scale. The final output obtained in $\textcircled{6}$ then turns out to be that the maximum degree value regarding the tallness of *Lisi* exceeds the threshold set by the speaker's expectations (for her tallness), and such unexpectedness gives rise to surprise.

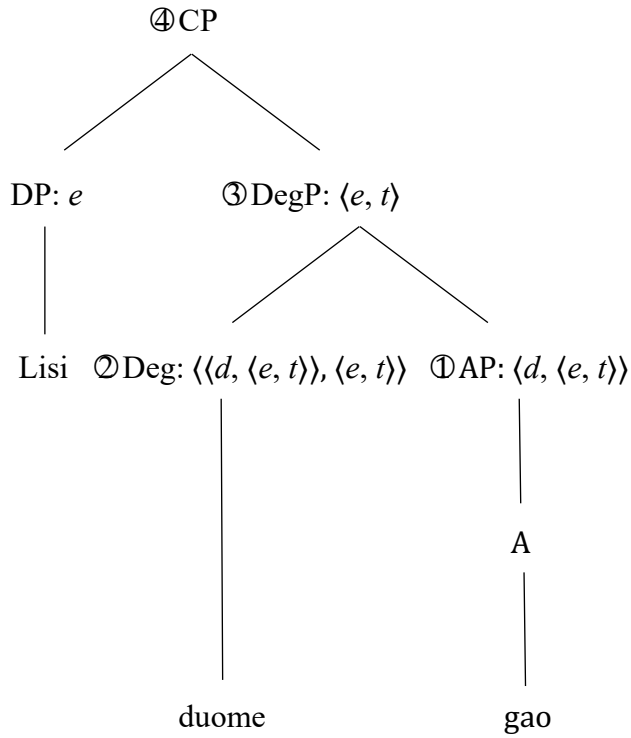
Now, we may turn to the *duome*-exclamative exemplified in (28), with its semantic derivation outlined in (29).

(28) Lǐsì duōme gāo a! non-surprise

Lisi much.ME tall SFP

‘How very tall Lisi is!’

(29) a.



b.

a. $[[\textcircled{1}]] = [\lambda d. [\lambda x. \text{tall}(d)(x)]]$

b. $[[\textcircled{2}]] = [\lambda A_{\langle d, \langle e, t \rangle \rangle}. [\lambda x. \exists d [A(d)(x) \wedge \text{noteworthy}(d)]]]$

c. $[[\textcircled{3}]] = [\lambda x. \exists d [\text{tall}(d)(x) \wedge \text{noteworthy}(d)]]$

d. $[[\textcircled{4}]] = \exists d [\text{tall}(d)(\mathbf{l}) \wedge \text{noteworthy}(d)]$

In this type of exclamatives, reminiscent of the function of *pos* operator as a type-shifter (Grano, 2012), *duome* directly merges with the gradable predicate to denote a noteworthy property of individuals which is then saturated by the subject.

Note that, here the positive morpheme *duome* existentially binds the degree argument of the adjective, hence there is no degree variable left unbound. The resulting truth conditions simply correspond to the proposition that Lisi is *d*-tall to a noteworthy standard, devoid of any implication of surprise.

Due to their compositional differences, the truth conditions eventually derived from *zheme*-exclamatives and *duome*-exclamatives also differ, indicating that the sentential force of exclamatives may focus on distinct content. This becomes evident when comparing (27Ⓞ) and (29Ⓞ). In the case of *zheme*-exclamatives, the emotive attitude is directed towards the degree of a property held by the subject, which surpasses the expected standard and thereby necessarily renders surprise. Conversely, the illocutionary force of *duome*-exclamatives in principle targets the proposition, that is, Lisi is tall to a contextually noteworthy degree.

In view of this, *duome*-exclamatives seem to resemble English *what*-exclamatives in denoting propositions and, therefore, potentially give rise to an individual interpretation. This is further supported by the fact that the *duome*-exclamative (30a) can be paraphrased in a corresponding *what*-exclamative form, whereas such a transformation does not apply to *zheme*-exclamatives, as demonstrated in (30b). If this assumption holds true, it may, in

turn, provide evidence in favor of the degree approach for analyzing *wh*-exclamatives. Taking into account the Mandarin data, a tentative proposal would be that languages vary in how they encode the degree component. Although *what*-exclamatives surface in singling out an individual referent without modifications (e.g., *What a man!*), they may implicitly involve some gradable property that can be retrieved from the context (such as height, weight, or some particular quality), while it is obligatory for Mandarin exclamatives to overtly spell out such degree property.

(30) a. Lǐsì shì duōme gāo de yīgè rén a!

Lisi COP much.ME tall DE one person SFP

‘What a tall person Lisi is!’

b. *Lǐsì shì zhème gāo de yīgè rén a!

Lisi COP this.ME tall DE one person SFP

5 Conclusions and discussions

The above analysis focuses on two types of Mandarin exclamatives composed of different degree adverbs that contrast in expressing surprise. Whilst *zhème*-exclamatives exclusively have the surprise reading, *duōme*-exclamatives exclusively have the non-surprise reading. And I have developed a lexical account that this distinction is primarily founded in the semantics of the corresponding degree adverbs. In particular,

the degree demonstrative *zheme* is restricted to equative comparatives, whereby the degree quantifier *duome* contributes to a positive construction. I have also shown that in *zheme*-exclamatives, the standard of comparison is set on the speaker's expected degree scale, and the surprise emerges from the equative relation (\geq) when the target degree of comparison exceeds the expected standard. On the other hand, in *duome*-exclamatives, the target is required to be noteworthy with respect to a contextually determined standard, exempt from expectations and hence inducing a non-surprise interpretation.

Although the demonstratives of degrees are assumed to impose specificity restrictions on the standard of comparison, the reference to the speaker's expectation as the standard scale is not made contextually salient. In this paper, I introduce the dimension of expectations for pragmatic considerations, given the specificity feature of the comparison standard, and the pragmatic condition of subjectivity and evaluativity associated with such a standard¹⁶. In other words, while the sense of surprise may seem to be lexically accessed, the implicit selection of the expected degree as the standard of comparison is partially constrained by the sentential force of exclamatives. On the contrary, in non-surprise quantifier-exclamatives, the amazement or exclamation-worthiness is directly codified in the semantics of the degree quantifier *duome*, which

¹⁶ Indeed, typical explicit equatives such as *Jane is as tall as Bill* are argued to be not evaluative, as they are compatible with the negation of the corresponding antonym, for example, *but she is short* (see Rett, 2020). Consequently, the equative construction in *zheme*-exclamatives is constrained to be evaluative due to the inherent illocutionary force of exclamations.

incorporates the notion of *noteworthy* without the aid of a force element. Notably, the illocutionary force is acknowledged *a priori* in the former and indirectly engages in the composition, which is not the case in the latter where the compositional meaning is sufficient to guarantee the exclamation on its own. This raises the question of whether the presence of illocutionary force is necessary for the composition of exclamatives, and further prompts us to wonder if surprise and non-surprise exclamatives form a unified semantic class provided their radical distinction in the interaction with illocutionary force.

In addition, by attributing *zheme*-exclamatives to equative comparison, it also exhibits a borderline vagueness, which can be diagnosed as follows:

Suppose the speaker expects Lisi to be 1m60 in height at most, but the actual height of Lisi is 1m61, or at the extreme, exactly 1m60. Therefore, even though the tallness of Lisi seems to meet the truth condition of *zheme*-exclamatives (i.e., $\text{MAX}(\lambda d. \text{tall}(d)(l)) \geq d^*$), we might question if such a slight difference, subtle enough to be almost negligible, can truly elicit surprise. This leads to the assumption that the actual degree should not only surpass the expected standard but do so significantly. However, it remains unclear whether this intuitively significant gap between the target and standard is semantically derived or results from pragmatic implicature, which requires further research. This also raises the question of how to determine the expected degree scale. Given the gradability of the degree property and the continuity of the ordering

among degree values on its scale, there is no definitive dividing line between the expected and unexpected intervals. Although expressions like *I expected she was 1m60, but I didn't expect her to be 1m70* are common in daily life, it remains challenging to evaluate whether a height of 1m65 is expected or unexpected for the speaker under this circumstance. One potential solution is to treat the expected degree and unexpected degree as two separate scales that intersect in their respective extended intervals. For example, if the salient interval of the speaker's expected tallness falls between 1m55-1m60, it may have an additional extension until 1m65 which is less expected but still expectable. Similarly, for the unexpected counterpart, the salient degree interval may start from 1m70 but can be broadened to include 1m65 as a slightly unexpected degree. Hence, for the surprise to be induced successfully, the target and standard degree must fall within the salient interval of the expected and unexpected degree scales. In spite of this, the inherent vagueness persists, and it remains uncertain whether a height of 1m65 is expected or unexpected in this context.

Similar concerns may arise for other common approaches. In the account of the illocutionary operator, whilst the unexpectedness is taken for granted as part of the sentential force, there remains vagueness regarding the extent to which the actual degree exceeds the expectation, qualifying as unexpectedness and leading to surprise. On the other hand, the theory of domain widening suffers a similar vagueness in delineating the domain on which semantic widening should operate. For instance, in the exclamative *How tall Lisi is!* the *wh*-operator denotes the set of alternative propositions *Lisi is d-*

tall, where the degree value to be filled is calculated somehow based on the speaker's expectations. Therefore, the widening process, though taking a detour, still encounters the same dilemma of deciding whether the proposition *Lisi is 1m65* can be judged as true or not to compose the initial domain.

In view of the general vagueness in terms of expectations, if we accept that surprise is on the premise of unexpectedness, there is a pressing need for a more precise understanding of this notion. Even the binary classification of surprise versus non-surprise can be rather rough, as there could be more nuanced emotional patterns underlying different types of exclamatives, manifesting themselves at both the semantic and syntactic levels. Further exploration and research are warranted to delve into the subtle interplay between linguistic elements and cognitive processes that govern the generation and interpretation of emotive contents expressed in exclamatives, as well as to establish a comprehensive account of the emotive aspects present in exclamatives.

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