

Subjective standard-setting in gradable predicates: On the Mandarin *hen* structure¹

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Abstract. Canonical positive degree sentences in Mandarin Chinese are formed with a morpheme *hen*. In the literature, this morpheme is regarded as the positive degree morpheme *pos* (Kennedy, 1999; Liu, 2010; Grano, 2012; Zhang, 2015) that introduces a contextually given norm, as well as binding the degree argument. However, the traditional *pos* analysis cannot fully account for some behaviors of *hen*. First, *hen* sentences share several characteristics of subjective predicates like Predicates of Personal Tastes (PPTs). These features include the triggering of faultless disagreement and embedding under perceptual verb *ganjue* and *ganjue-dao* ‘feel/find’. Furthermore, when compared with other adjectival expressions, the *hen* form makes a weaker statement, which is related to the speaker’s subjective belief. To account for these two characteristics, I propose that *hen* introduces a subjective standard determined by a judge that is based on a subjective epistemic knowledge state.

Keywords: degree semantics, gradable adjectives, positive degree sentences, subjectivity, Mandarin Chinese

1. Introduction

This work focuses on a type of Mandarin adjectival sentence, the *hen* sentence, which has the basic structure like (1). It is unique in that there is an obligatory morpheme *hen* that appears before the adjective.

- (1) Afu hen gao
Afu HEN tall
‘Afu is tall.’

It is hard to pinpoint the meaning of *hen*. By some native speakers’ intuition, this particle is a dummy marker in the sentence. Yet other speakers might think that it also means *very*, which indicates that the degree is high. Because of these features, *hen* is often regarded as the overt realization of positive degree morpheme, *pos* (see von Stechow, 1984; Kennedy, 1999, 2005, 2007, among many others, on *pos*). *Pos* has two functions. It introduces a contextually given standard, and the degree of the sentence exceeds this standard significantly. Second, gradable adjectives take a degree argument, *pos* binds this argument to avoid type mismatches when combined with the subject. The lexical entry of *pos* is given in (2). The function *s* here is a contextually sensitive function that takes a gradable adjective *g* and returns a corresponding standard. An example of the derivation is given in (3).

- (2) $\llbracket pos \rrbracket = \lambda g \lambda x. g(x) > s(g)$ (Kennedy, 2007)

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- (3) $\llbracket pos \text{ expensive} \rrbracket = \lambda d \lambda x. \text{expensive}(x) \geq s(g)$

Meaning: the degree of expensiveness exceeds a contextually given degree.

Implication: The degree of expensiveness stands out among a comparison class.

The advantage of this analysis is straightforward. It explains why *hen* is obligatory with gradable adjectives, and it also accounts for certain parallels of *hen* sentences with positive degree sentences in English. For example, the degree of the sentence should not only exceed the standard, but it should be significant enough for the subject to stand out among the objects in a comparison class. Therefore, *John is tall* implies that John's height not only exceeds a certain norm for tall people, but it also is significant enough to 'stand out' among them. As a support for the *pos* analysis of *hen*, this feature might be able to explain why some native speakers have an intuition that *hen* is similar to *very*, which also implies the degree to be significant.

However, there are several features of *hen* that cannot be accounted for directly by viewing it as *pos*. The first one is related to the subtypes of gradable adjectives that *hen* can occur with, and the different meanings they trigger, followed by problems that emerge when compared with another adjectival form, the *shi...-de* form. Second, contrary to previous analyses, *hen* is only obligatory when the sentence is uttered out of the blue. When there is an existing standard from the context, it can be dropped. The *hen* form is also weaker than the expression where *hen* is dropped. Third, *hen* predicates are licensed by a negation form *mei* that only selects eventive predicates. Finally, *hen* shows certain features that are parallel to subjective predicates, such as *Predicates of Personal Tastes* (PPTs). These properties can be accounted for if one sees *hen* as related to a subjective standard determined by a judge's knowledge state. In the following sections, I start by discussing the first three problems in section 2, and then move on to discuss the subjective features of *hen* predicates in section 3. In section 4, I discuss the characteristics of the subjectivity of *hen*. In section 5, I provide an analysis for the *hen* sentences, which is similar to Fernald's view on verbs like *appear* and *seem* (Fernald, 2000). Section 6 concludes this work.

2. Problems with the *pos* analysis

2.1. *Hen* with absolute adjectives

Gradable adjectives can be classified into two major classes, *relative adjectives* and *absolute adjectives* (Kennedy and McNally 2005). They are distinguished according to whether the scales they correspond to are bounded or open. As scales are set of ordered degrees, if a scale has no minimal or maximal degrees, it is an open scale. If it has maximal or minimal degrees, it is a closed scale. For example, the adjective *tall* corresponds to a scale of height, and there is no maximal or minimal degree for height. Adjectives with an open scale are relative adjectives. Some examples are given in (4).

Relative adjectives:

- (4) Open scales: the standard is contextually restricted
Gao, 'tall', *pang* 'fat', *chang* 'long', *kuan* 'wide', *shuai* 'handsome'

In contrast, adjectives corresponding to closed scales are absolute adjectives. They can be further classified into three types, upper-closed scales, which have a maximal degree but no minimal degree, lower-closed scales, which have only a minimal degree, and totally closed scales, which have both minimal and maximal degrees. The examples are given in (5). I assume that the same categorization works for Mandarin as well.²

Absolute adjectives:

- (5) a. Upper-closed scales: **standard=degree_{max}**
gan ‘dry’, *ganjin* ‘clean’, *ping* ‘flat’, *zhi* ‘straight’
 b. Lower-closed scales: **standard=degree_{min}**
shi ‘wet’, *zan* ‘dirty’
 c. Totally-closed scales: **standard=degree_{max}**
man ‘full’, *xing* ‘awake’, *touming* ‘transparent’, *kai* ‘opened’, *kandejian* ‘visible’

In English, when an absolute adjective has a maximal degree, which include upper-closed scale and totally-closed scale adjectives, the standard is set at the maximal degree. A lower-closed scale has only a minimal degree, and the standard is set at this degree.

While both positive degree sentences with absolute and relative adjectives in English use the same form, Mandarin Chinese actually grammaticalizes this distinction. The *hen* form is only the default form for relative adjectives, as shown in (1), while the canonical positive form for absolute adjectives is the *shi...-de* form. *Shi* is the main copula in Mandarin Chinese, and *-de* is a modifier marker. The *shi...-de* form is also the predicative form for non-gradable adjectives, as in (9).

Upper-closed scales: standard=d_{max}

- (6) Wazi shi gan-de
 sock COP dry-DE
 ‘The sock is dry.’
 Implication: The dryness of the sock reaches d_{max}

Lower-closed scales: standard=d_{min}

- (7) Wazi shi shi-de
 sock COP wet-DE
 ‘The sock is wet.’
 Implication: The sock has at least minimal wetness

Totally-closed scales: standard=d_{max}

- (8) Beizi shi man-de
 cup COP full-DE
 ‘The cup is full.’

² The major piece of evidence for this categorization, according to Kennedy and McNally (2005), is from modification by certain degree modifiers. An adjective like *slightly* modifies adjectives with lower bounds. *Completely* takes adjectives with upper bounds. Proportional adjectives, such as *half*, modify adjectives with totally-closed scales. Adjectives in Mandarin Chinese have similar properties. Due to limitations of space, I will not include the examples here.

Non-gradable adjectives

- (9) Dìqiú shì yuán-xíng-de
 Earth COP round-shape-de
 ‘The Earth is round.’

The *shi...-de* form can also occur with relative adjectives, but only when there is a known standard given in the context, which sets things into categorical distinctions. Take (10) for example. When the *shi...-de* form is used with *gāo* ‘tall’, it implies that there is an absolute degree that separates objects into those that are tall and those that are not. If being 6 feet tall count as tall, as long as Afu reaches this degree of height, he is a tall person. Afu does not need to ‘stand out’ in a comparison class, which is distinct from English positive degree sentences.

- (10) Afu shì gāo-de, Ali bù-shì.
 Afu COP tall-DE Ali NEG-COP
 ‘Afu belongs to the category of tall people, while Ali doesn’t.’

Quite unexpectedly, *hěn* can also co-occur with absolute adjectives. Yet it only means that the degree is rather high, and it does not necessarily reach the absolute standard. It can be anywhere on the scale, as long as it is regarded as high. The sentences in (11) are examples of upper-closed scale adjectives. As shown in (11b), a *hěn* sentence does not entail the *shi...-de* form, of which the standard is the maximal degree.

- (11) a. Wazi hěn shì
 sock HEN wet
 ‘The sock is very wet.’
 b. Wazi hěn gān, dàn bù-shì (wánquán) gān-de
 sock HEN dry but NEG-COP totally dry-DE
 ‘The sock is very dry, but it is not (completely) dry.’

Likewise, with lower-closed adjectives, the sentence asserts that the degree is significantly high, not just reaching the minimal degree.

- (12) Wazi hěn shì
 sock HEN wet
 ‘The sock is very wet.’
 Implication: the reference value is significantly high.

As for adjectives with totally-closed scales, the standard does not need to reach the upper bound, but it is significantly high.

- (13) a. Beizi hěn mǎn
 cup HEN full
 ‘The cup is very full.’
 b. Beizi hěn mǎn, dàn bù-shì (wánquán) mǎn-de
 cup HEN full but NEG-COP totally full-DE
 ‘The cup is very full, but it’s not totally full.’

What is the difference between the *shi...-de* form and the *hen* form when it comes to absolute adjectives? A possible analysis is that the *shi...-de* form introduces what is known as a *conventional standard* (Kennedy, 2007), while *hen* introduces a contextually given standard, functioning just like *pos*. In English, the traditional analysis of *pos* cannot directly account for why standards for absolute adjectives are set at the bounds. Kennedy (2007) proposes an economy principle, *Interpretive Economy*, which requires the interpretations of a sentence to be based on conventional understanding as much as possible. Since the standards of absolute adjectives are conventionally on the natural bounds, their standards are interpreted on these bounds, unless such interpretations are unavailable.

Take *wet* for example. *Wet* has a lower-closed scale. For an expression *the sock is wet*, it only requires minimal wetness for things to count as wet. As a result, context-dependent standards become last resort, which emerges only when conventional standards are unavailable. It is possible that Mandarin has both types of standards irrespective of the categories of the gradable adjectives. Therefore, the *hen* form derives a standard from a comparison class even with absolute adjectives. Take (13) for example. It would mean that the cup's fullness exceeds a contextually given standard of being full, which is derived from comparing the fullness of this specific cup with other objects filled to different degrees. It does not entail that it reaches the conventional standard, which is the maximal degree. In other words, absolute adjectives now behave just like relative adjectives in standard setting when *hen* is added. This explains why (13b) is not contradictory under the traditional *pos* analysis.

The above analysis, however, faces a problem. If what *hen* introduces is a contextual standard for a thing *x* to count as having a property *P*, it would be nearly equivalent to, when expressed under that same context, that *x* is a *P* thing. This works for relative adjectives in English. In (14), once the standard for being tall is set through the context, and the girl exceeds that height, she is a girl that has the property of being tall.

(14) That girl is tall. \approx That girl is a tall girl.

This is not borne out for *hen* sentences with absolute adjectives, as shown in (15). For the sock to be *hen*-dry, it does not need to be dry at all, whether the standard is given contextually or stipulated conventionally. It only implies that the dryness of the sock is significantly high.

(15) Zhe wazi hen gan \approx zhe wazi shi yi-zhi gan-de wazi.
 this sock HEN dry this sock COP one-CL dry-DE sock
 'This sock is very dry.' \approx 'This sock is a dry sock.'

The data presented here seems to suggest that the *hen* form is a weaker statement than the attributive form in (15). Similarly, it is weaker than the *shi...-de* form in (13). In conclusion, the *hen* form is not simply the *pos* counterpart of English, or at least this is not the full picture.

2.2. Comparison with the ‘bare’ form

A second problem with the *pos* analysis is that *hen* is not obligatory in some marked environments.³ When a simple sentence is uttered out of the blue, it is infelicitous without *hen*, as in (16).

Out of the blue context:

- (16) A: #Afu congming.
 Afu smart
 ‘Afu is smart.’

However, *hen* can be omitted when the property denoted by the gradable adjective is regarded as a known fact.

- (17) Women dou zhidao, Afu gao.
 we all know Afu tall
 ‘We all know, that Afu is tall.’

Furthermore, as pointed out by Liu (2010), *hen* can be omitted under some modals, including factive verbs such as *aonao* ‘regret/annoyed’ and *zhidao* ‘know’, and epistemic modals like *renwei*, as shown in (18) and (19).

Factive verbs:

- (18) a. Wo aonao ta (hen) wuzhi.
 I feel-annoyed s/he HEN ignorant
 ‘I feel annoyed at her/his being ignorant.’
 b. Wo zhidao ta (hen) wusi.
 I know s/he HEN altruistic
 ‘I know that he is altruistic.’
- (Liu, 2010)

Epistemic modal *renwei* ‘think’:

- (19) Wo renwei ta (hen) wuli.
 I think s/he HEN unreasonable
 ‘I think s/he is unreasonable.’
- (Liu, 2010)

Based on the analysis that *hen* is the realization of *pos*, Liu proposes that modals, as well as several other structures (see footnote 3), carry an operator that licenses a covert form of *hen*.

However, Liu does not mention a common feature when *hen* is dropped in these sentences. In the bare form, there is always a strong implication that the property denoted by the adjective is already an accepted fact. This explains why the bare form is compatible with factive verbs, which trigger the presupposition that the complement proposition is true. Similarly, with

³ Liu (2010) points out that there are several structures in which *hen* is not obligatory, which include questions, embedding under certain modals, and in the predicative position of contrastive focus forms. He proposes that these syntactic structures license a covert counterpart of *pos*, and the restriction is syntactic. However, the data given in this section are not syntactically unique. A thorough study on these structures is beyond the scope of this article. I leave it for future research.

epistemic modal like (19), the bare form implies that the speaker is emphasizing a statement that is acknowledged in the context, while when *hen* is present, there is no such implication.

In conclusion, although *hen* can be absent, it implies that the statement is about a given standard, or a known fact. This feature cannot be explained directly by the *pos* analysis.

2.3. The puzzle of negation

A third puzzle regarding *hen* is related to negation. In Mandarin Chinese, there are two negation markers, *bu* and *mei*. *Bu* negates generic or habitual predicates, as in (20), and states, as shown in (21).

Generic and habitual readings:

- (20) Wo bu chi mugua.
I NEG eat papaya
'I don't (generally) eat papayas.'
(Ernst, 1995: 1)

States:

- (21) Wo bu shi laoshi.
I NEG COP teacher
'I'm not a teacher.'

Mei negates eventive predicates and non-states (*a la* Lin, 2003; also see Huang, 1988; Ernst, 1995; Lee and Pan, 2001; Hsieh, 2001; a.m.o.). According to Lin, a predicate negated by *mei* has an episodic meaning. Therefore, compared to (21), (22) denies that there was an episode of papaya eating. Generally speaking, *mei* cannot negate states, as shown in (23) and (24).

- (22) Wo mei chi mugua.
I NEG eat papaya
'I did not eat papayas.'
(Ernst, 1995: 1)

- (23)*Afu mei shi laoshi.
Afu NEG COP teacher
Intended: 'Afu is/was not a teacher.'

- (24)*Afu mei gao.
Afu NEG tall
Intended: 'Afu is not tall.'

One would expect that a predicate with gradable adjectives to be negated by *bu* only, since it describes a state. An example is shown in (25).

Hen form under *bu*:

- (25) Afu bu hen gao.
Afu NEG HEN tall
'Afu is not tall.'

However, surprisingly, when *hen* is present, it can be negated by *mei*. This is shown in (26). When *hen* is absent, the sentence is ungrammatical, as shown in (24).

***Hen* form under *mei*:**

- (26) Afu mei hen gao.
 Afu NEG HEN tall
 ‘Afu is/was not very tall.’

In comparison, the *shi...-de* form can only be negated by *bu*, never by *mei*, as shown in (27) and (28). In fact, the copula *shi* only co-exist with negation marker *bu*.

***Shi...-de* form:**

- (27) Beizi bu shi man-de.
 cup NEG COP full-DE
 ‘The cup is not full.’

- (28)*Beizi mei shi man-de
 cup NEG COP full-DE

Table 1 is a summary of adjectival predicates in negation sentences. The major puzzle is that *hen* licenses the use of *mei*. It seems to imply that the *hen* form is more ‘eventive’ than the *shi...-de* form. This is the third phenomenon that the *pos* analysis cannot account for.

Table 1 Types of adjectival predicates under negation

| | <i>Mei</i> | <i>Bu</i> |
|--|------------|-----------|
| <i>Hen</i> | Ok | Ok |
| <i>Shi...-de</i> | No | No |
| Bare adjectives (no <i>hen</i>) | No | Ok |

3. *Hen* sentences are subjective

3.1. Subjectivity in adjectives

In this section I propose that *hen* is related to a subjective reading. Subjectivity is related to people’s opinions. It is well known that certain predicates are more subjective than others. One of the widely discussed topics on subjectivity in the domain of adjectives is on Predicates of Personal Tastes (PPTs) (See Kennedy, 2013; Lasersohn, 2005, 2009; Stephenson, 2007; Pearson, 2013; among others). Adjectives like *tasty* and *fun* have truth conditions relativized to a judge. In other words, a sentence like (29a) has the truth condition of (29b), in which *j* refers to the judge who makes the evaluation of what counts as tasty.

- (29) a. The cake is tasty.
 b. The cake is tasty for *j*.

In comparison, adjectives that have objective dimensions, such as *tall*, *large*, *heavy*, *dry*, *full*, *long*, *empty*, are generally not regarded as subjective.

There are two commonly discussed diagnostics to identify subjective predicates. The first one is called *faultless disagreement* (Kölbel, 2002; Lasersohn, 2005, 2009; among many others). Faultless disagreement refers to the phenomenon that participants of a conversation can argue over whether a statement is true, without reaching a real conclusion, since both of them are entitled to their own opinions. This is shown in (30). None of them can be wrong with respect to whether chili is tasty.

- (30) *John*: The chili is tasty.
Mary: No! The chili is not tasty. (Lasersohn, 2005)

Lasersohn proposes that there should be an independent judge parameter, aside from the ordinary world and time parameters. He adopts a Kaplanian (Kaplan, 1989) approach in explaining faultless disagreement. Kaplan distinguishes between *characters* and *contents*. The character of a sentence is a function from context to the contents. When the indexicality of the character is resolved, the result is the content of the sentence. Faultless disagreement is the debate over the same content, but they are evaluated by different judge parameters. The case of PPTs contrasts with sentences with other indexical expressions, such as first person indexicals, as in (31). The expression *I'm a doctor* has different contents when uttered by different speakers. If what John says is true, Mary's objection here is infelicitous.

- (31) *John*: I'm a doctor.
Mary: #No, you're not a doctor! (Lasersohn, 2005)

Another feature of subjective predicates is the capability of embedding under perceptual attitude verb, such as *find* (Sæbø, 2009; Kennedy, 2013). The English *find* is a verb that expresses a person's personal perceptions. Non-subjective adjectives, such as *tall*, are not acceptable under *find*, as shown in (32) and (33).

- (32) John finds the cake tasty.

- (33) #John finds Mary tall.

The *hen* form shows both characteristics. This is explained in the following sections.

3.2. Faultless disagreement in Mandarin Chinese

Similar to the PPTs, the *hen* form triggers faultless disagreement. This is shown in (36). Imaging the two speakers are arguing about whether Afu is a tall person. When using the *hen* form, it is more likely to trigger faultless disagreement than the *shi...-de* form, as in (35). By a native speaker's intuition, while the *hen* form provides a certain vagueness related to how

the standard is set with respect to the speaker, the *shi...-de* form is related to a more absolute standard that is objective, without the need for assessment from the speaker.

- (34) A: Afu hen gao
 Afu HEN tall
 ‘Afu is tall.’
 B: Cuo! Afu bu gao!
 wrong Afu NEG tall
 ‘Wrong! Afu is not tall.’

- (35) A: Afu shi gao-de
 Afu COP tall-DE
 ‘Afu is tall.’
 B: Cuo! Afu bu-shi!
 wrong Afu NEG-COP
 ‘Wrong! Afu is not tall.’

This contrast is more obvious with absolute adjectives. When they appear with *hen*, there is vagueness with respect to what counts as significantly full for each individuals, which triggers faultless disagreement, as in (36). As for the *shi...-de* form, there is no faultless disagreement, as in (37).

- (36) A: Beizi hen man.
 cup HEN full
 ‘The cup is very full.’
 B: Cuo! Beizi bu hen man!
 wrong cup NEG HEN full
 ‘Wrong! The cup is not very full!’

- (37) A: Beizi shi man-de
 cup COP full-DE
 ‘The cup is full.’
 B: Cuo! Beizi bu shi man-de
 wrong cup NEG COP full-DE
 ‘Wrong! The cup is not full!’

In conclusion, there is a strong intuition that the *hen* form triggers faultless disagreement, and this contrast is particularly obvious when compared with the *shi...-de* counterpart.

3.3. Embedding under *ganjue* and *ganjue-dao* ‘find/feel’

PPTs can embed under attitude verb *find*. Kennedy (2013) points out that only subjective predicates like PPTs can embed under *find* with positive forms, while non-subjective adjectives, such as *big*, *large* or *small*, cannot.

- (38) a. Anna finds her bowl of pasta tasty/delicious. (Positive sentences)
 b. ?Anna finds her bowl of pasta big/large/small.

Mandarin Chinese has two similar verbs, *ganjue* and *ganjue-dao* ‘find/feel’. They have the same verb root *ganjue*, which literally means ‘to feel.’ They are both related to a person’s gut feelings or judgment based on personal experiences. These two verbs are generally not completely acceptable to occur with non-subjective expressions, as shown in (39) and (40) respectively.

(39)? Afu ganjue/ganjue-dao hua shi hong-se de
 Afu find/feel flower COP red-color DE
 Int. ‘Afu finds the flower red.’

(40)?? Afu ganjue/ganjue-dao konglong miejue-le
 Afu find/feel dinosaurs extinct-PERF
 Int. ‘Afu find/feel that dinosaurs are extinct.’

A feature that *ganjue* and *ganjue-dao* have is that the judge often has low degree of certainty over his statements. Therefore, it is compatible with an expression in which the speaker second guesses himself.

(41) Wo ganjue/ganjue-dao Lisi hen bukekao, dan ye nanshuo.
 I find/feel Lisi HEN unreliable but still hard-to-say
 ‘I have the feeling that Lisi isn’t reliable, but it’s hard to say.’

Ganjue-dao is often related to evaluation over a specific situation, and it entails an event of direct encounter of the object. *Dao* is a morpheme can be literally translated as ‘to’ or ‘reach’ (Chen and Tao, 2014). When attached to a verb, *dao* adds the meaning that the agent expresses heightened senses and a high degree of transitivity (Chen and Tao, 2014), which is often related to direct perceptual encounters. According to Maienborn (2005), there are several often used diagnostics that can identify an event argument in the predicate position, such as the plausibility of locative and temporal modifiers, and the existence of manner adverbs. *Ganjue-dao* can appear with these three, as shown in (42) to (44) respectively.

Locative modifiers:

(42) Zai zheli Ali ganjue-dao ta hen congming.
 at here Ali find/feel he HEN smart
 ‘Here Ali had the feeling that he was smart.’

Temporal modifiers:

(43) Xianzai Afu ganjue-dao Ali hen mei.
 Now Afu find/feel Ali HEN beautiful
 ‘Now Afu feels that Ali is beautiful.’

Manner adverbs:

(44) Afu jianjian ganjue-dao Lisi hen congming.
 Afu gradually feel/find Lisi HEN smart
 ‘Afu gradually starts to feel that Lisi is smart.’

While *ganjue-dao* is related to direct perceptual experiences, *ganjue* allows guessing based on circumstantial or inferential evidence. Imagine a scenario where Afu has heard people's description of Lisi's build, and how he looks when he stands in a group, but Afu does not know Lisi's exact height, and he has never met him. It is felicitous to say (45) by using *ganjue*. On the contrary, *ganjue-dao* involves an event of actually observing or perceiving the object. Therefore, it is strange to use *ganjue-dao* in the same situation, as shown in (46).

- (45) Afu ganjue Lisi hen congming, suiran mei gen ta peng-guo mien.
 Afu find/feel Lisi HEN smart although NEG with him meet-EXP.PERF face
 'Afu has a feeling that Lisi is smart, although he never met him face to face.'
- (46) Afu ganjue-dao Lisi hen congming, #suiran mei gen ta peng-guo mien.
 Afu find/feel Lisi HEN smart although NEG with he meet-EXP.PERF face
 Int. 'Afu feels that Lisi is smart, although he never met him face to face.'

In conclusion, the *hen* sentences are licensed under both *ganjue* and *ganjue-dao*. The *hen* forms can be used to describe observations of direct perceptual encounters, as in the case of *ganjue-dao*, and also possible to have the reading based on inferential information, as shown in the sentences with *ganjue*.

4. The type of subjectivity of *hen*

What kind of subjectivity do *hen* sentences have? I propose that what *hen* contributes to the meaning is a standard that is evaluated by the judge according to his epistemic knowledge. In a sense, it is similar to subjective epistemic modals, which are statements based on speaker's subjective view. Viewing *hen* as parallel to epistemic modals has a second advantage. It explains why *hen* makes a weaker claim than the bare form: sentences with epistemic modals are usually weaker claims than simple statements (Karttunen, 1972; Lyons, 1977; Kratzer, 1991; Groenendijk and Stokhof, 1975; von Stechow and Gillies, 2009; among others). Therefore, a sentence like (47b) is intuitively weaker than (47a), as pointed out by Karttunen (1972).

- (47) a. John left.
 b. John must have left.

This type of subjectivity is distinct from what is widely discussed in the literature of PPTs. The subjectivity related to PPTs has two well-known features. First, the judge of PPTs should be the direct perceptual experiencer of the evaluated object. Second, a PPT sentence cannot really be denied. On the contrary, the judge of a *hen* sentence does not need to be the direct perceptual experiencer. A *hen* sentence can be denied, as long as there is further evidence to object to the judge's evaluation. These features make *hen* more similar to subjective epistemic modals than PPTs.

4.1. Comparison between *hen* and PPTs

According to Pearson (2013), PPTs requires the judge to be the direct experiencer of the described (stative) event of the object having the property attributed to it. This is shown in the infelicitous sentence (48).

- (48) a. This cake is tasty to John. #But he hasn't tried it.
 b. This cake is tasty to me. #But I haven't tried it.

However, *hen* does not have the same restriction. It is felicitous to say (49), where the judge does not have direct experiences towards Afu.

- (49) Afu *hen* gao, dan wo mei yu-guo ta.
 Afu HEN tall but I NEG met-EXP.PERF him
 'Afu is tall, but I've never met him.'

For the speaker, to know whether Afu is tall does not require him to have perceptual experiences of Afu. This is not surprising, considering that *hen* can appear with a variety of gradable adjectives, not just those related to perceptual experiences.

4.2. Faultless disagreement of *hen* sentences

Hen sentences are not really subject to faultless disagreement. If enough information is provided with respect to how the standard is set, a *hen* statement can still be false. This is shown in the conversation in (50).

- (50) A: Afu *hen* gao.
 Afu HEN tall
 'Afu is tall.'
 B: Bu juede. Afu bu gao.
 NEG find Afu NEG tall
 'I don't think so. Afu isn't tall.'
 A: Zai san-nianji xiaohai limian, Afu *hen* gao
 in third-grade children among Afu HEN tall
 'Among the third grade children, Afu is tall.'
 B: Cuo-le! Wo jiao-guo de yi-nianji dou bi ta gao.
 wrong-PERF I teach-EXP.PERF DE first-grade even COMP he tall
 'Wrong! Even the first grades I taught was taller than him.'
 A: Na wo xian wo cuo-le
 then I think I wrong-PERF
 'Then I guess I was wrong.'

In (50), Speaker A makes a statement that Afu is tall, based on his own understanding. Since it is unclear what his criteria are, there seems to be faultless disagreement. However, when Speaker A further clarifies that he bases his judgment on a group of third graders, the

sentence can be denied by a more knowledgeable person like Speaker B. This is not the case in PPTs. It is infelicitous to negate speaker A's original statement.

- (51) A: Zhe dangao hen haochi.
 this cake HEN tasty
 'This cake is tasty.'
 B: Cuo-le. Youde geng haochi
 wrong-PERF some better tasty
 'Wrong! Some are tastier.'
 A: #Haoba wo jian cuo le
 Okay I say wrong PERF
 'Okay. What I said was wrong.'

4.3. Similarity with subjective epistemic modality

Epistemic modals can be subcategorized into subjective and objective modals. According to Lyons (1977), subjective modals are related to personal and likely more incomplete evidence. This is illustrated by a sentence like (52).

- (52) It may rain tomorrow.

When *may* is interpreted subjectively, it is reasoned according to someone's personal experiences. When it is interpreted objectively, it can be based on more solid evidence, such as scientific data (see Lyons, 1977; Drubig, 2001; von Stechow and Iatridou, 2002; von Stechow, 2003; Papafragou 2006; among others). Specifically, Papafragou (2006) views subjective modals as the special cases such that the modal claim is based on the speaker's personal belief alone, as opposed to beliefs shared by both the speaker and the hearer, or by a subset of people.

Although subjective modals are related to the speaker's knowledge or evidence, the statement expressed with a subjective modal can be challenged by other people when new evidence is available (Papafragou, 2006; von Stechow and Gillies, 2009; MacFarlane 2003). This is shown in an example originally from MacFarlane (2003), which is also discussed in Papafragou (2006).

- (53) Sally: Joe might be in Boston.
 George: He can't be in Boston. I just saw him in the hall five minutes ago.
 (i) Sally: Oh, then I guess I was wrong.
 (ii) Sally: Oh, OK. So he can't be in Boston. Nonetheless, when I said "Joe might be in Boston", what I said was true, and I stand by that claim.

The case of *hen* in (50) is similar. When speaker A first makes a *hen* statement, he is talking about evaluation based on his own knowledge. However, when new evidence is added by speaker B about the general height for first grade students, A's knowledge becomes irrelevant. Therefore, the *hen* sentence is parallel with epistemic modal *yiding* 'must', as in (54). Yet this distinction is not acceptable with PPTs, as in (51).

- (54) A: Afu yiding zai jia.
 Afu must at home
 ‘Afu must be at home.’
 B: Cuo-le, Afu lian-fenzhong qian hai zai bangongshi.
 wrong-PERF Afu two-minute ago still at office
 ‘Wrong! He was in the office two minutes ago.’
 A: Haoba wo cai cuo le.
 Ok I guess wrong PERF
 ‘Ok, I guess I was wrong.’

5. *Hen* and parallelism with *seem* and *appear*

So far, I’ve shown that the *hen* form has several features that need to be accounted for. First, *hen* shows features of subjective predicates, such as triggering faultless disagreement, or at least superficially. Second, it licenses an adjectival predicate to appear with *mei*. Third, it is a standard given by a judge’s knowledge state. Finally, in comparison with the bare form, the *hen* form makes a weaker assertion.

To account for these three features, I propose that *hen* is subjective in the sense that it introduces a standard based on a subjective knowledge state. *Hen* introduces an event of evaluation, in which the judge is the evaluator. As a result, it can be licensed under *mei*. *Hen* is similar to epistemic modality in making a weaker statement when compared with the bare form.

There is an interesting parallelism between *hen* and English verbs like *appear* and *seem*. According to Fernald (2000), these two verbs are related to speaker’s judgment over a situation in an evaluative event, and make a generalization based on his evaluation. This is shown in (55). Adopting Carlsonian sorted types, here x is a stage of John, Q is some property of John, G is the generic quantifier, y is a stage realized by z , and z are individuals that are intelligent in general.

- (55) a. John seems to be intelligent.
 b. $\exists Q, x^s[\textit{perceive}'(Q(x)) \ \& \ R(x, j) \ \& \ Q(x) \ \& \ G y^s, z^i (Q(y) \ \& \ R(y, z))[\textit{intelligent}'(z)]]$
 (Modified from Fernald, 2000: 90)

The meaning of (55) is as follows. There exists some stage-level property Q , and a stage x^s , which refers to the sort of stage objects, such that John is realized as x , and there is a perceiving event of x , such that x has Q , and in general, for any stage y and any individual z such that z realizes as y , if y also has the property Q , then z is regarded as intelligent.

Hen can be analyzed in a similar manner. Here a judge is involved in an event of evaluation, and based on his knowledge, he could determine whether the object being evaluated possesses that property denoted by the gradable adjective.

- (56) a. Afu hen gao
 Afu HEN tall
 ‘Afu is tall.’

$$b. \quad \exists Q, x^s, v^i [R(x, Afu) \& Eval(Q(x))(v) \& \forall y^s, z^i (Q(y) \& R(y, z)) [tall'(z)]]$$

In (56), there is a property Q , a stage x^s , and a judge v^i , such that the subject Afu is realized as x , and there is an evaluation event in which the judge v evaluates the stage x of Afu as having the property of Q , and for any stage y , individual z , if z is realized as y , and y has the property of Q , then z is tall.

6. Concluding remarks

On the surface, the Mandarin *hen* sentences are just the counterpart of English positive degree sentences. Yet different from English, they show properties of subjectivity. This work try to account for this property by seeing *hen* as introducing subjectivity in a similar manner as subjective modals. What *hen* does is introducing a subjective standard based on a judge's knowledge.

Although viewing *hen* as introducing a subjective standard is different is the traditional view that *hen* is *pos*, my analysis does not refute the idea that *hen* has the same function of *pos* in terms of binding the degree argument and avoiding type mismatches, as well as introducing a standard. The major difference of this analysis only lies in what the standard is based on. While the traditional *pos* analysis only requires a norm function that takes a comparison class and derives a norm from it, what *hen* does is to provide a norm based on a judge's knowledge state. Syntax-wise, *hen* is similar to a copula for avoiding type mismatches. Some languages are known to have different copulas that contrast in terms of subjectivity (de Bruyne, and Pountain, 1995; Maienborn, 2005; Geist, 2005), and the same contrast may also lie in positive degree morphemes.

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