Approximating to the Event Boundary, (Counter)Factuality and Approximative Cha(yi)dian

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Abstract

Treating language as material that can be collected as language data helps us generalize surface language usage and better understand underlying principles and structures. This chapter exemplifies this approach by examining an approximative *cha*(*yi*)*dian* 'almost, nearly' literally meaning *missing one point* in Mandarin Chinese in diachronic and synchronic corpora. The canonical use of *cha*(*yi*)*dian* in Modern Chinese, on a par with English *almost,* expresses a reversed polarity interpretation, which has been debated in the literature as a semantic entailment, pragmatic implication, or contextual determination. In addition to this canonical reading, there exist cases in which *cha*(*yi*)*dian* does not reverse the polarity in negative sentences, the so-called "expletive negation" case. Despite that the expletive negation is obtained when the predicate expresses some sort of "undesirable", "unexpected", (Zhu 1959; Li 1976 among others) or "anomalous" situation (Biq 1989), little attention has been paid to the syntactic properties deriving these two types. This study proposes two distinct structures that derive the ambiguity of *cha*(*yi*)*dian* sentences. Specifically, the canonical interpretation is derived from a counterfactual or predicative clause structure. By contrast, the "expletive negation" sentences are derived from a conjunction structure that asserts both the proximal component and the factual predicate. The proposed structures are further supported by diachronic evidence drawn from both diachronic and contemporary corpora. The result of the study helps elucidate previous debates and calls for the interfaces among syntax, semantics, and pragmatics.

Keywords: approximative, counterfactuality, expletive negation

摘要

　　將語言視作可收集的語言資料物質，使我們能歸納表層語言的使用，且更加了解深層原理及結構。本章則藉助漢語歷時和共時語料庫中「差（一）點」這個近似詞之用法，進一步探究其歷史演進與當代用法中歧義現象之關聯，提出其句法結構。差一點字面上的意義是錯過了一點。在現代漢語裡，差（一）點一般的用法與英文的almost 相同，兩者皆表達了反極性的解讀。文獻中認為反極性的語意有不同的論點，有的認為是語義上的蘊含意義，有的認為是語用上的隱含，亦或是在語境決定的結果。除了此一般用法，差（一）點出現在否定句中並無表達反極性的解讀，也就是所謂的「虛位否定」。儘管朱(1959)，李(1976)，和其他學者提出了虛位否定出現在主要謂語表達「不企望」、「非預期」或是畢(1989)所說的「反常」的語境下，然而較少文獻以句法上的特性來探究反極性和虛位否定之區別。本章提出了兩種不同的句法結構來分辨差(一)點句式的歧義。一般反極性的解讀是包含與事實相反或謂詞性的子句得來。相對地，虛位否定句式則是對等連接結構，加上趨近義之事實結果。從歷時及當代語料庫中所得來的資料也支持了本章提出的兩種結構。此研究結果有助於闡明文獻中的爭論，並且提供了句法，語義，及語用介面之研究視野。

關鍵詞：近似詞、與事實相反、虛位否定

1. INTRODUCTION

Treating language as material that can be collected as language data helps us generalize surface language usage and better understand underlying principles and structures. This chapter exemplifies this approach by examining an approximative *cha*(*yi*)*dian* 'almost, nearly' literally meaning *missing one point* in Mandarin Chinese drawing data from diachronic and synchronic corpora. Let us first introduce the contemporary use of the approximative adverb *cha*(*yi*)*dianr* 'almost, nearly', literally meaning 'missing one point' modifies only predicates. Like English *almost* in (1a), Mandarin sentence (1b) is interpreted as comprising two propositions represented by a "proximal component" and "polar component" as shown in (1c), following the terms from Sevi (1998) and Horn (2002).

(1) a. Gore almost won the election.

  b. Gaoer cha.(yi).dian xuan.shang zongtong.
      Gore   CHA.YI.DIAN elect.up   president

  c. Gore "came close to" winning [PROXIMAL component] and Gore did not win [POLAR component].

While the affirmative sentence is rendered as $\neg p$ as in (1b) and (2), the negative sentence in (3) reverses the polarity $\neg\neg p \rightarrow p$, resulting in a state of being the case, e.g., *having caught the bus*.

(2) a. Ta cha.(yi).dian   hun-dao
         he   CHA.YI.DIAN   pass.out
         'He almost passed out.' (He didn't pass out.)

  b. Ta cha.(yi).dian   si-diao
       he   CHA.YI.DIAN   die
       'He almost died.' (He didn't die.)

(3)   Ta cha.(yi).dian mei   gan-shang gongche
         he   CHA.YI.DIAN not   catch.up   bus
         'He almost did not catch the bus.' (He caught the bus.)

In addition to the above "canonical" *cha*(*yi*)*dianr*, there is another use in which *cha*(*yi*)*dianr* does not reverse the polarity of the negative proposition. In contrast to the reversed polarity in (3), negative counterparts of (2) as in (4) remain the "$\neg p$" interpretation. It seems that the function of the predicate negation in (4) is inert, hence, termed as "expletive" negation in the literature (Kaufmann and Xu (K&X in press); cf. Spanish in Pons Borderia and Schwenter (2005)).

(4) a. Ta cha.(yi).dian mei   hundao.
      he CHA.YI.DIAN not   pass.out
      'He barely didn't pass out.' (He didn't pass out.)

   b. Ta cha.(yi).dian   mei si-diao.
      he CHA.YI.DIAN not die
      'He barely survived.' (He didn't die.)

The contexts that give rise to expletive negation interpretation have mainly been ascribed to semantic-pragmatic unexpectedness or undesirability of the predicates (Zhu 1959; Li 1976), "contextual anomaly" (Biq 1989), pragmatic implicature (Shen 1987), or emphasizing a factual situation (Jiang 1998). Based on the pragmatic "undesirability" criterion, Kaufmann and Xu (In press) propose a polysemous *chayidian* account, in which *chayidianr* in positive sentences is lexically *chayidian*$_{PPI}$ (positive polarity item), but in negative sentence as *chayidian*$_{NPI}$ (negative polarity item). Expletive negation arises when the *chayidian*$_{NPI}$ occurs with the predicate that is semantically "undesirable". Despite the above inspiring pragmatic and semantic studies, questions remain as to the vagueness of purely pragmatic considerations and counter evidence. Thus, this s aims to articulate the syntactic structures and semantic conditions that yield to the ambiguity. Instead of siding with the approach of polysemous *cha*(*yi*)*dianr* (K&X), we propose two structures that can account for the ambiguity, further supported by diachronic evidence.

The chapter is organized as follows. We will first re-examine previous pragmatic accounts in section two, and then illustrate the proposed two structures and their corresponding meanings in §3.1 and §3.2 respectively, followed by the diachronic discussion in §3.3 and §3.4. Further issues are discussed in section four and section five concludes the study.

2. UNDESIRABILITY OR CONTEXTUAL ANOMALY?

As mentioned above, negative sentences with *cha*(*yi*)*dianr* may be polarity ambiguous. Take sentence (5) for an example.

(5)   Wo cha.(yi).dian mei   gen   ta   jiehun.
      I   CHA.YI.DIAN not   with   he   marry
      '(i) I came close not to marry him. (I married him.)'
      '(ii) (Fortunately) I didn't marry him.'

The canonical reading (5-i) is referred to a situation of marrying him as desirable, expected (Zhu 1959) from the speaker's point of view (K&X), or normative (Biq 1989). As the speaker came close not to marrying him, one can infer that they managed to get married despite some obstacles. In this case, *cha*(*yi*)*dianr* seems to carry an inherent negative function of negating

the main negative predicate rendering ¬¬*p* → *p*. By contrast, when marrying him is considered as "undesirable" or "anomalous", sentence (5) can be interpreted as (ii), in which the negation seems to lack its canonical function, the "expletive negation" case, rendering ¬*p*. Though the ambivalent readings could be pragmatically explained in terms of Zhu's "expectancy/desirability" or Biq's "contextual norm", the contextual definition runs into the problem of vagueness, also criticized by Jiang (1998).

Biq (1989) has criticized Zhu's undesirability hypothesis with respect to cases where the main predicate in the expletive negation sentence is *not* undesirable. In her expletive negation example repeated in (6), rendering that *he came close to holding up his mother, but he didn't,* the main predicate *holding up his mother* is *not* undesirable from the speaker's point of view.

(6)   Ta gao xing de cha.dian mei ba   ta muqin   bao qilai
         He happily   CHA.DIAN NEG BA his mother   hold up
         'He is so happy that he almost holds up his mother.' (He didn't hold up his mother.)
         (Biq 1989: 79)

To circumvent the problem, she proposed the "contextual anomaly" hypothesis, claiming that the predicate following *cha*(*yi*)*dianr mei* marks "oddity or unexpectedness of a predicate event in a particular context" and the use of *chadian mei* conveys the speaker's "involved attitude" (p. 80).

Although we side with previous observations that the use of *cha*(*yi*)*dianr* involves the speaker's attitude and his/her viewpoint of treating the events as odd, unexpected, or undesirable, the sole pragmatic criterion is too vague. Firstly, they are not a necessary condition for the expletive negation cases, because desirable or normal contexts would render expletive negation interpretation as well. Consider sentence (7b) from the Academia Sinica Balanced Corpus. In the context of (7a), the speaker does not necessarily consider the situation of getting 90 points as "undesirable" or "anomalous"; rather, she may consider reaching the score of 90 as expected or neutral in this context. The (7b) is uttered to assert the proximal reading, just missing very little from 90 points, and repors the factual situation that Qingqing did not reach 90.

(7) a.   Qingqing has always been good at geology subject. But this time she
               was disappointed.
       b.   (ta) cha(yi)dian   mei [dao   jiushi fen], kexi   duo cuo-le yi ti.
               CHA.YI.DIAN NEG achieve 90   point regrettably more missed one item
           'Lit: She missed a little and didn't achieve 90 points. Regrettably she missed one
               more item.' (Academia Sinica)

Moreover, undesirability or anomaly is not a sufficient condition for the expletive negation *cha(yi)dianr* sentences either. It is not impossible to find canonical (non-expletive negation) cases co-occurring with undesirable predicate situations. Consider (8), in which failing students is undesirable, yet the canonical reading is possible: the teacher failed him by just a very small margin.

(8)   Ta cha(yi)dian   mei   bei laoshi dang-diao.
            CHA.YI.DIAN NEG   by   teacher fail
        'The teacher almost didn't fail him.'

Previous studies also fall short of explaining why the ambiguity occurs only in negative sentences. By taking into consideration of the syntactic and semantic properties, we argue that *cha(yi)dianr* involves two structures: the counterfactual, predicative sentence derives the canonical pattern yielding to a polarity-reverse inference, whereas the so-called "expletive negation" case actually involves the conjoined structure asserting the proximal component in the first conjunct, and the factual negative predicate in the second conjunct. These two structures will be elaborated in turn in the next section.

3.   TWO STRUCTURES

3.1 Approximating to the boundary of the event situation

We propose that the canonical reading as in (2) and (3) actually is represented as the main predicate modified by a (grammaticalized) approximative adverb *cha(yi)dianr*, which zooms the verb situation into the proximal component. This follows that sentences of this type assert the proximal component, but only infers the polar component (Horn 2002 and references cited therein), regardless of negative or affirmative main predicates. It is supported by the co-occurrence with the temporal adverb *jiu* 'then' as illustrated in the schema (9), also noted by Jiang (1998). The adverb *jiu* indicates "immediate future" (Biq 1988: 83) and implies that its prejacent [1] proposition happened/will happen in quick succession (Zhang and Lee 2013). If the speaker is evaluating a realis situation, it is a counterfactual situation. If it the situation has not taken place, it is a predicative situation.

(9)   … cha.yi.dian   jiu   (mei)   VP.
            CHA.YI.DIAN   then NEG

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[1] The term "prejacent" is first used by Horn (1996:1) to refer to the proposition in the domain of the focus operator *only*; e.g., in *Only God can make a tree,* the prejacent would be *God can make a tree*.

(10)   Ta   cha.yi.dian   <u>jiu/jiuyao/</u>yao   hun-dao le.   --*chayidian* VP → ~*p*
          he   CHA.YI.DIAN   then/then.want/want   pass.out PARTICLE
          'He almost passed out.' (He didn't pass out.) (10)

(11)   Ta   cha.yi.dian   jiu/jiu   hui mei gan-shang gongche   --*chayidian* Neg VP → *p*
          he   CHA.YI.DIAN   then/then will not catch.up   bus
          'He almost did/would not catch the bus.' (He caught the bus.)

Canonical *cha(yi)dianr* sentences express that the initiated event situation comes close <mark>to,</mark> entailing that it does not reach the culmination point of the bounded situation at the reference time. Thus, an affirmative VP in (9) will be inferred as 'not being the case' as in (2) and (10), whereas the negative VP as 'being the case' corresponding to (3) and (11). In addition to *jiu*, modals expressing possibility *hui* 'will' or volition *yao* 'want', *kuai* and *jiu yao* 'then want'*,* immediate future *kuai yao* 'fast want, will soon' are common collocates. Synonymous to (10), sentence (10') below without *cha(yi)dianr* expresses the similar immediacy of the situation approximating to the limit boundary *falling down*.

(10')   Ta   *jiu/jiu yao* hun-dao le.   ~ (10)

As sentences without *cha(yi)dianr* like (10') express the similar immediacy but does not assert that he does/did not fall, it naturally follows that in its *cha(yi)dianr* counterpart, the negative proposition is not asserted, vs. the negative proposition in English *almost* as being asserted in Sevi (1998).

While the discussions of the entailment, conventional or conversational implicature of the polar component is largely debated in the literature (see Horn's (2002) summary), little attention has been paid to the scalarity of the proximal component (cf. English *almost* in Hitzemen 1992; Spanish *quasi* in Amaral and Del Prete 2010). Amaral and Del Prete (2010) have analyzed Spanish approximative adverb *quasi* as a scalar adverb, which triggers a set of alternatives (a scale) ordered by the progression of the stages of the event situation denoted by the predicate. For example, in (12a) the accomplishment VP *dimostrò il teorema* introduces a complex event structure encompassing a sequence of stages in a scale: the inception, successive stages and the end point. The scalar adverb asserts that Leo has come close to this event boundary, entailing that he did not reach the limit point.

(12) a.   Leo quasi dimostrò il teorema.
           'Leo almost proved the theorem.'
     b.   L'uomo quasi attraversò il confine.
   'The man almost crossed the border.'

Amaral and Del Prete (2010) further illustrate the semantic scale in negative sentences, such as (13), which expresses a counterfactual entailment: Leo came close to a "limit point" of the

event situation, (Leo not seeing me), which "turns out not to exist in actuality" (p. 69). Thus, it is inferred that Leo saw me.

(13)   Leoquasi non mi vide.
         'Leo almost didn't see me.'

Mandarin *cha*(*yi*)*dianr* overlaps with Spanish *quasi* in terms of functioning as a scalar adverb approximating to the event boundary.[2] In (14a), the relevant event structure is the stages of running for the bus, and it asserts that the agent came close to reach the culmination of the event -- getting on the bus, indicated by the arrow in (14b), but it was a near miss. Consequently, it denotes a counterfactual resultative state: not catching the bus.

(14) a. Ta   cha.(yi).dian gan-shang gongche
          he CHA.YI.DIAN catch.up   bus
          'He almost caught the bus.' (He didn't catch the bus.)

    b.   beginning   limit point
. | … | get on the bus
        ──►
                   running for   ⇡
                   the bus
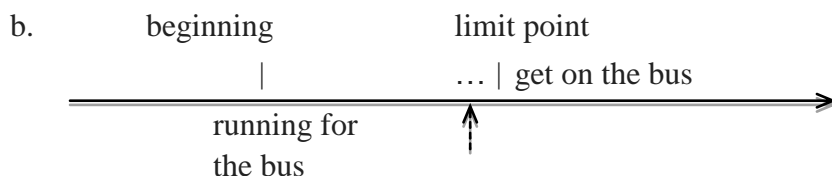
However, sentence (15a), the negative counterpart of (14a), is more complicated. The relevant asserted event boundary is a counterfactual situation "not catching the bus", indicated as the dotted line in (15b). The sentence is made informative when the counterfactual limit point is compared with the realis culmination of the event situation (e.g. *getting on the bus*, indicated as "|" line); particularly, when the time interval between the two is very close. Consequently, (15a) asserts the approximation to the limit point as indicated by the arrow, yielding that he barely got on the bus.

(15) a. Ta   cha.(yi).dian mei   gan-shang gongche   =(3, 11)
          he CHA.YI.DIAN not   catch.up   bus
          'He almost did not catch the bus.' (He caught the bus.)

    b.   beginning
. | .| get on the bus
        ──►
                   running for   ⇡
                   the bus

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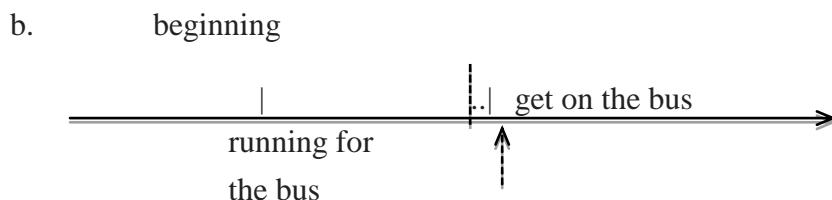
[2] A better synonym of Spanish *quasi* in Chinese is *chabuduo* 'miss.not.much', which is not limited to verbal predicates, but includes nominal phrases as well. We will not further discuss *chabuduo* in this chapter (see Shen 1987; Zhang 2009), but focus on the scalar property of *cha*(*yi*)*dianr*.

Similarly, in (16) synonymous to (15a), the relevant limit point of the event situation (*missing the bus*), to which the approximal component comes close, indicated by the arrow. The sentence is informative because the interval between this (counterfactual) limit point and the natural culmination of the event is very short.

(16)   Ta   cha.(yi).dian cuo.guo gongche
         he CHA.YI.DIAN miss   bus
         'He almost miss the bus.' (He caught the bus.)

If *cha*(*yi*)*dianr* is a scalar adverb (cf. Amaral and Del Prete 2010), one point should be further clarified. We can still maintain that the adverb approximates to a limit point of a scale ordered by the stages of the event situation. However, in the negative sentences, not only the counterfactual limit point is asserted, but also it is mapped against and compared with the actual culmination of the event situation in normal situations. Moreover, the sentence is made informative because the asserted time span between the two is very short.

The asserted proximal component understood as introducing a contextually relevant scale with a boundary of the event structure denoted by the predicate better explains why only predicates with a closed scale are possible, such as the accomplishment verbs and resultatives. Zhang (2009) has demonstrated that *cha*(*yi*)*dianr* modifies only "closed" adjectival and "bounded" verbal predicates as in (17) and (18) respectively. The scale of (17a) is the degrees of dryness and the scalar *cha*(*yi*)*dianr* targets and approximates to the upper bound of the dryness scale. For (17b), wetness targets the lower bound of the scale ranging degrees of dryness in the sense that the clothes can easily get wet by a small amount of water.

(17) a. Yifu   cha-yi-dian   gan   le.   (total adjective)
        clothes CHA.YI.DIAN dry   PART
        'The clothes are almost dry.'
   b. Yifu   cha-yi-dian   shi le.   (partial adjective)
        clothes CHA.YI.DIAN   wet PART
        'The clothes are almost wet.'

That motivates Zhang (2009) to conclude that *cha*(*yi*)*dianr* modifies close-scale (adjectival and verbal) predicates that target either the upper or the lower bound limit. In addition, non-closed predicates co-occur with *cha*(*yi*)*dianr* only when they are modified by resultative complements or adverbs with an explicit situation boundary, such as the superlative, a measurement with a boundary (18a) or delineated by a duration phrase (18b).

(18) a. Ta cha-yi-dian   zui/liangmi   gao.
        he CHA.YI.DIAN   most/two.meter tall
        'He is almost the tallest/two-meter tall.'

    b.   cha-yi-dian   zou-le   san-li   lu
       CHA.YI.DIAN walk.PERT three.mile road
       'walked almost three miles'

Note that the entailed/implicated negative proposition makes reference only to the opposition to the culmination point, rather than that of the inception or middle stages of the event situation. Thus, sentence (19) denotes that he was furious plus the degree of his madness approximates to the limit point of being dead. It, however, does not denote that he did not lose temper.

(19)   Laoshi   cha.yi.dian   qi-si.
         teacher CHA.YI.DIAN angry-die
         'The teacher was angry almost to death.'

In addition to the realia situations, sentence (20) can be uttered in a predicative situation expressing the immediate future, as shown by the collocated *jiu yao* 'then will'. The speaker evaluates the teacher's angry emotion and asserts that he will soon reach to the limit, exaggeratingly comparable to the life-death boundary.

(20)   Laoshi   cha-yi-dian   (jiu yao)   qi-si   le.
         teacher   CHA.YI.DIAN (then want) angry.dieq PART
         'The teacher was furious almost to death.'

The asserted proximal modification can be further modified by the scalar adverb *hai* 'still' (21) and restrictive adverb *zhi* 'only' in (22) to emphasize the imminence of reaching the limit of the event situation described by the predicate.

(21)   Ta *hai* cha.yi.dian   jiu kuai   kan-wan   naben   xiaoshuo
       he still CHA.YI.DIAN then soon read-finish that.CL novel
       'He is about to finish reading that novel by just a.' (Jiang 1998: 124)

(22)   Ta *zhi* cha.yi.dian   jiu   neng de.dao toujiang le.[3]
       she ony CHA.YI.DIAN then can   receive first.prize PART
       'She came only within an inch of winning the first prize.'

3.2 Approximation and factuality

As mentioned in section 1, *cha*(*yi*)*dianr* occurring in negative sentences may have ambiguity. In addition to the canonical interpretation discussed in section 3.1, sentences like (4) and (23) assert not only the proximal component, but also a factual or realis situation, *not being the case*, without reversing the polarity of the predicate, as schematized in (24).

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[3] Retrieved from http://tw.websaru.com/%E5%B7%AE%E4%B8%80%E9%BB%9E.html on October 1st, 2014.

(23) a.   Ta   cha.yi.dian   er/ (*jiu)   mei   hundao.   = (4)
     he   CHA.YI.DIAN   and/then   not   pass.out
     '*He almost didn't pass out.' (He didn't pass out.)

   b.   Ta   cha.yi.dian   er/ (*jiu)   mei   si-diao.
        he   CHA.YI.DIAN   and/then   not   die
        '*He almost didn't die.' (He didn't die.)

(24) a.   chayidian   + NEG   VP   --factual   ($\neg p$)
   b.   ..[$_{VP}$[$_{VP}$ chayidian] (er)   [$_{VP}$ NEG VP]]

We propose that this pattern actually involves a conjunction or serial verb construction. This point is supported by the fact that it can co-occur with the predicate conjunctor *er*, but not the previous temporal adverb *jiu* or volition words *yao, kuai* under the intended reading in (23). Note that *jiu* and *yao* are allowed only under the structure of (9) that reverses the polarity, rendering 'being the case'.

Our Google search found cases in which the whole VP including *cha(yi)dianr* is in the scope of the predicate negation. Instead of immediately preceding the main predicate, the negation in sentences in (25) and (26) scopes over *chayidian* and the main predicate. They are interpreted equivalently as the pattern in (24). Thus, they express a factual situation; in (25), because of the smelly chicken poo I came close to pass out, but I did not. In this case, the negation operates on the main predicate. In (26) the negation operates on both *chayidian* and the verb, yielding to all the emperors did not have a slight miss in ending the dynasty; they all secured the dynasty.

(25)   (Wo) yi   jinmen   chou-honghong de ji-shi   wei   *mei-you cha.yi.dian*
          I   once enter.door smelly   chicken poo smell not.have CHA.YI.DIAN
          ba   wo   xun-hun   guoqu.[4]
          BA I   smoke-faint pass.out
          'Once I entered the door, I almost fainted by the smelly chicken poo.'

(26) a.   Mu Shengrong…said: "I didn't blame you. It's that I am not deserved as a King.
   b.   Dacheng (nation) na   yige   huangdi ye   mei-you   cha.yi.dian   hui.guo.[5]
        Dacheng   which one emperor all not.have CHA.YI.DIAN destroy.country
        'All the emperors in Dacheng nation did not have the country ended with a near
          miss.'
   c.   If you were not with me, Dacheng nation would have been finished in my term.

These examples lend further support to our claim that a coordinated construction like (24) is needed, in contrast with the previous structure in (9). In addition, *chayidian* in this structure is interchangeable with *jianzhi* 'virtually, literally'.

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[4] Retrieved from http://blog.boxun.com/hero/201011/wolf/4_1.shtml on October 1st, 2014, "Dui Wenming de Lijie! [My Understanding of Civilization!]" by Yili Xiati.
[5] Retrieved from http://www.123yq.com/read/4/4321/412708.shtml on October 1st, 2014, "Chongsheng zhi Dizi [The Reborn First Son]", Chapter 60.

(27)   Ni shuo zhexie hua, ta ting-le   cha.yi.dian/jianzhi   mei qi-si.
        you speak these word, he listen-Perf CHA.YI.DIAN/JIANZHI not angry-die
        'After he heard what you said, he was completely angry to death.'

Having seen the distinct structures of *chayidian* sentences, we still need to answer the long-debated question: why the ambiguity exists only in negative sentences. In other words, why does (15) yield to catching the bus (*p*), but (28) yields to *not dead* (¬*p*). In the former, in evaluating the situation of his catching the bus, the speaker asserts that he came close to the counterfactual limit point (*not catching the bus*), inferring that he caught the bus by a near miss. However, the approximation to the counterfactual limit point (as in (29)) is not applied to cases like (24) and (28). It is contextually impossible that the speaker was angry nearly to a counterfactual limit of "being not dead" (the dashed line), but then he died, as schematized in (29).

(15) a. Ta cha.(yi).dian mei gan-shang gongche
         he CHA.YI.DIAN not catch.up bus
         'He almost did not catch the bus.' (He caught the bus.)

(28)   Wo cha-yi-dian   mei   qi-si.
        I   CHA.YI.DIAN not   angry.die
        'I was furious almost to death.'

(29)   #   beginning
                  | |...| dead
        ⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯⎯▶
                  getting angry   ↑
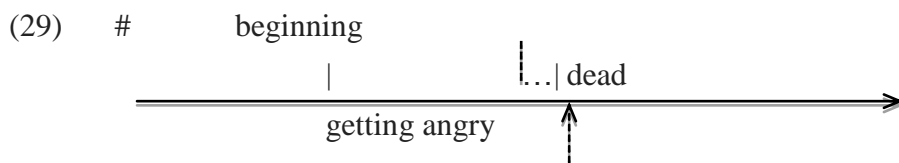
However, one can still think of a situation that the victim could have been saved by a life guard, but a flood suddenly came to flush him away. Then the utterance in (30) is possible with the counterfactual reading: *he wouldn't have drowned.*

(30)   Ta cha-yi-dian   (jiu) mei/buhui   ni-si.
        he CHA.YI.DIAN then not/not.will drown.die
        'He came close to not drowning to death.'

Consequently, the possible interpretations of (29) and (30) are naturally derived by the proposed syntactic representations. By contrast, they cannot be adequately accounted for by the sole pragmatic conditions in terms of the "undesirability" or "anomaly" of the event situations viewed by the speaker as discussed in section 2 and Kaufmann and Xu's (in press) analysis to be discussed in section 4; they would not predict the interpretation in (30) because *drown-dead* is unquestionably undesirable and anomaly regardless of the speaker's attitude.

3.3 Development of cha(yi)dian

This section discusses the development of *cha(yi)dian*. Originally, the word *cha* functioned as a verbal or adjective predicate with synonymous meanings of *sending (errand messengers)* (as in (31)), *differing* (32), or *being inferior* (33).

(31)　　 bing *chai* yi guan　song　 jin (*Tang Wen Shi Yi,* Tang dynasty, 618-907 AD)
　　　　 and　send one official　address　in
　　　　 'And send one official to address.'

(32)　　 wei fenglu you *cha*,　　 zhishi yu zheng　 tong
　　　　 only salary have difference work　as　normal same
　　　　 'Only the salary is different, the work is as the normal ones.'
　　　　 (*Tong Dian,* Tang dynasty, 618-907 AD)

(33)　　 suoyi　　 xingrong　mianmao　 *cha*
　　　　 therefore figure　　 face　　　 inferior
　　　　 'Therefore the appearance is inferior.'
　　　　 (*Dun Huang Bian Wen Xuan*, The Five dynasties, 907-959 AD)

In Sung dynasty (960-1127 AD), the predicate *cha* became to be followed by a postverbal degree modifier *xiezi* 'a little'.

(34)　　 yangmozhishi　 *cha*　 le　　 *xiezi* (*Zhu Zi Yu Lei*, Sung dynasty)
　　　　 Yangmo just　　inferior Perf　a little
　　　　 'Yangmo is just a little bit inferior.'

Later in Ming period, the word *cha* "inferior" has been used as a verbal predicate modified by the adverb *xier* 'some', as shown in (35). In addition, *cha-xier* was followed by a negative verb predicate in (Late) Ming period, as in (36), which witnessed the emergence of coordination structure ascribed to type (iii).

(35)　　 ru lue　　 *chaxie*,　 jiu　da　po　　 ta　 menmian
　　　　 If slightly　CHAXIE　just hit broken his　face
　　　　 "if it falls short of the expectation, just hit his face."
　　　　 (*Xi You Ji*, Chapter 10, Mid-Ming)

(36)　　 dangxia liang-ge　 *cha-xier*　 bu　 ceng　 da-qilai
　　　　 Presently two　　　 CHA-some NEG　ever　fight up
　　　　 'At that time, two people almost started to fight.'
　　　　 (*Jin Ping Mei*, Chapter 7, Late Ming)

Zhang (2007) notes that the adverbial *cha + dianr* is the diachronic substitution of *cha + xier*, both of which were used interchangeably. As illustrated in a negative sentence (37) containing *cha-xier,* it expresses the above-mentioned "expletive negation" reading: the two people came close to fight, but didn't.

(37) …ni jiejie ye jiao   gan de   *cha*   le   *dianr*…
      you sister also compare do Comp inferior Perf one.point
      'What your sister did was comparatively inferior a bit.'
      (*Xingshi Yinyuan Zhuan*, Chapter 74, Late Ming)

In the meantime, the canonical approximative *chayidian* emerged as well, as shown below.

(38)   zhe shi liandao kan de   *cha yi dian*   sang le   ming
       This is scythe cut Comp CHAYIDIAN lose Perf life
       'This is cut by scythe, almost lost the life.'
       (*Xingshi Yinyuan Zhuan*, Chapter 75, Late Ming)

The interchangeability of *chaxier* and *chadianr* continued in later (Qing and the Republic) periods in which both usages were found. *Cha* in examples (39) and (40) functions as a main predicate followed by the degree modifier *yidian* and *xier*, respectively, meaning *inferior.*

(39)   yaoshi *cha*   *yidian*er de, zao   lei-de bu zhi zenmeyang ne
       If   inferior a point   already tired not know how   PART
       "if it were the worse one, he would already get tired."
       (*Hong Lou Meng*, Chapter 24, Qing)

(40)   ruo *cha*   *xieer* de ren, tingjian le zhe hua, chaorang qilai
       If inferior a little people heard Perf this word argue   start
       "If he were the worse person, and he heard the conversation, he would start to
        argue. "
       (*Hong Lou Meng*, Chapter 68, Qing)

In addition, the canonical approximative usage meaning *almost* was also found in this period.

(41) *chayidian*   ni wo dixiong bu   neng jian le (*Jigong Quan Zhuan, Qing*)
       CHAYIDIAN you me brothers NEG can see Perf
       "We brothers almost cannot see each other."

(42) *chaxieer*   jiuyao fangsheng daku (*Lu Ye Xian Zong, Qing*)
       CHAXIEER will   loudly   cry out
       "Almost burst into tears."

3.4 Diachronic and contemporary corpora

Having seen the historical development of *cha*(*yi*)*dian* and learned that the intended approximative use did not appear until Ming dynasty*,* we further surveyed its occurrences in the diachronic and synchronic texts from four corpora in total. Our Early Modern Chinese tokens were drawn from Academia Sincia Tagged Corpus of Early Mandarin Chinese (CEMC), and the corpus from the Center for Chinese Linguistics (CCL) at PKU (Peking University), the latter of which also includes the Republic period (1911-1949). The Modern

Chinese examples were elicited from the Academia Sinica Balanced Corpus of Modern Chinese (CMC), and the news corpus from the udndata (UDN), which includes news data from five major newspapers in Taiwan: United Daily News, Economic Daily News, Min Sheng News, United Evening News, and Star Daily News. The keywords of our search include *chayidian, chadian, chaleyidian, chayidian jiu*. The tokens relevant to the current study were tabulated in Table 1 across five periods. Although there were 33 tokens found in the Ming period, only 14 cases relevant to the current study were included. For example, cases like comparative sentences as in (43) were excluded from our tallying as the word *cha* was used mainly as a predicate meaning *fall short of,* or being *inferior,* modified by postverbal modifier *yi dian.* Likewise, thirteen and six cases of this pattern that were found respectively in Qing period and Republic period were not considered.

(43)   …ni jiejie ye jiao   gan de   cha   le   dianr…
         you sister also compare do Comp inferior Perf one.point
         'What your sister did was comparatively inferior a bit.'
         (*Xingshi Yinyuan Zhuan*, Chapter 74, Ming dynasty)

Table 1. Frequencies of *cha(yi)dian* in the corpora

	(i) canonical *chayidian* affirmative	(ii) canonical *chayidian* negative	(iii) expletive negation	Sum
Ming (17th)	2 (14%)	0	12 (86%)	14 (9%)
Qing (18-19th)	7 (50%)	0	7 (50%)	14 (9%)
Republic period (1911-1949)	13 (93%)	0	1 (7%)	14 (9%)
Modern Chinese (CMC)	75 (82%)	5 (6%)	11 (12%)	91 (58%)
Modern Chinese newspaper (UDN)	16 (70%)	1 (4%)	6 (26%)	23 (15%)
Total	113 (72%)	6 (4%)	37 (24%)	156

Thus, for the Modern Chinese tokens, we collected relevant 91 out 106 entries found in the CMC, and elicited 23 news reports that contain the keywords out of a total of 25,646 words from the UDN corpus. We then categorized the total 156 relevant cases according to the chronological sequence and into three types: (i) canonical *chayidian* affirmative, (ii) canonical *chayidian* negative, and (iii) expletive negation, as shown in Table 1.

The 14 tokens in Ming dynasty were mainly from the classical novel *Xingshi Yinyuan Zhuan* (*The Story of a Marital Fate to Awaken the World*, written in the late Ming or early Qing dynasty around the 17th century). It is shown that in this period there was a preponderance of "expletive negation" usage (12; 86%) over the affirmative usage (2; 14%), repeated in (44) and (45) respectively. Note that the canonical *chayidian* in (45) is followed

by the temporal adverb *jiu*. This patterns with the structure (9) discussed in section 3.1 with respect to asserting the proximal component.

(44)   Gangcai (wo) cha yi dianr *mei*   re.xia le   huo.
        just   I   CHA YI DIAN not   make PEFR trouble
        'It was a near miss that I didn't make a big trouble.'
        (Xingshi Yinyuan Zhuan, ch. 37)

(45)   Na kan tou de   …cha yi dianr **jiu** bie-sha   wo le.
        that chop head COMP …CHA YIDIAN not choke-kill I   PART
        'The strong alcohol smell of the extravagant executioner almost choked me to death.'
        (Xingshi Yinyuan Zhuan, ch. 4)

The data of Qing dynasty period were drawn from the novels of *Jigong Quan Zhuan* (The Legend of Crazy Monk, early Qing), *Qixia Wuyi* (*The Seven Heroes and Five Gallants*, first published in 1879), *Xiao Wu Yi* (*The Five Younger Gallants*, 1890), and *Peng Gong An* (*Peng Gong Case*, in late Qing dynasty) in the corpora. Comparing the 14 occurrences found in this period with those in Ming dynasty, we see an increase of the canonical affirmative tokens (7; 50%), which became tied with the expletive negation cases (7; 50%), also illustrated in Figure 1. The later two periods witnessed a plummet of the expletive negation usage, in contrast with the sharp increase of the canonical affirmative usage, eventually the latter of which has become preponderant in Modern Chinese. Interestingly, the canonical *chayidian* in negative sentence (type ii) was not found before Modern Chinese, and is still comparatively rarely used now, only accounting for 4~6% of the total 156 tokens.

The survey of the diachronic and synchronic data is enlightening. *Cha yi dian* originated as a verbal phrase -- *missing one point* or *being inferior a little*. This meaning correlates with the structure of (24b) in section 3.2 to express a factual situation denoted by the second conjoined predicate. The negative sentences (type iii) are informative in the sense that they are uttered to emphasize the near miss and the avoidance of some misfortune, like being cheated, being killed/injured or encountering disasters. This point is further supported by two cases in the Ming period, in which the verb *cha* is suffixed by a perfective *le*, as repeated in (46).
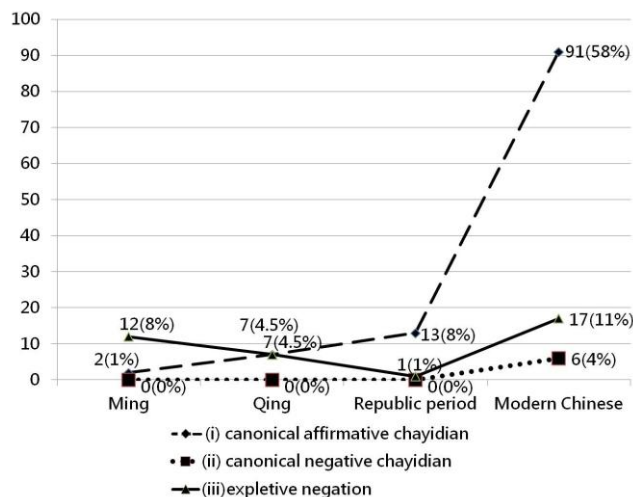
Figure 1. Frequencies of *cha(yi)dian* in the corpora

(46)　　Ta …ba ge laopozi　　ye zhi cha-**le**　　yi dianr　　**mei** teng-sha.
　　　　he　BAthat old.woman also only miss-PERT one.point not pain-kill
　　　　'(That man also gave that old woman a herbal plaster) This herbal plaster gave that
　　　　　woman so much pain that it almost killed her. '
　　　　(Xingshi Yinyuan Zhuan, ch. 67)

The limit point of the event situation is envisaged when using *chayidian,* such as the culmination of the pain – death. The asserted factual state/situation, *not hurt to death*, is very close to the envisaged boundary of the situation. This usage persists in Modern Chinese. As mentioned in section 3.2, the coordinator like *er* can be inserted between the two phrases. This is indeed found from the CMC, as repeated in (47).

(47)　　Ruishi….suran　　cha yi dianr **er**　mei　tiaozhan　chenggong, danshi….
　　　　Swiss　although CHA YIDIAN and not　challenge　success,　　but
　　　　'Although Swiss just fell short a little and did not succeed in the challenge, ….'
　　　　(Academia Sinica Balanced Corpus)

　　　　It is conjectured that *chayidian* in the factual situations was gradually taken over by the emerging scalar meaning of *chayidian* approximating to the natural culmination of the event situation, type (i) reading. Then, its negative counterpart (type-ii) is derived after the emergence of the type (i) reading. As discussed in section 3.1, the canonical usage, types (i) and (ii), can collocate with *jiu* or volition verb *yao*. This is borne out by the cases we found: one case in the Ming period (45), two in the Republic period, and 16 in Modern Chinese. By contrast, there is no case in which the temporal adverb and volition verbs co-occurred with the third type of *chayidian* across all periods.

　　　　In short, it is suggested that while type (i) and type (iii) usages evolved simultaneously in Ming period, the factual negative sentence (type iii) outnumbered type (i), and *cha* maintained its lexical verb function in the VP *cha yi dian*. This usage was gradually taken

over by the scalar *chayidian* and its co-occurrence with temporal *jiu* and words expressing volition. However, type (iii), though has diminished to a certain extent, still persists in Modern Chinese.

4.   RESIDUAL ISSUES

4.1 Polysemous chayidian?

We have seen the diachronic evidence accounting for the ambiguous *chayidian.* One may wonder whether *chayidian* is simply lexically ambiguous in the very beginning. This is an approach that has been taken by Kaufmann and Xu (K&X). In this section we will point out the problems of this analysis and eventually favor our proposed structures.

K&X have argued that *chayidian* is lexically polysemous, as a positive polarity item *chayidian*PPI and a negative polarity item *chayidian*NPI. They state that *chayidian*PPI, like English *almost*, is neutral to the "desirability" of its prejacent, the proposition complement of *chayidian*, such as the desirable one in (48), undesirable situation in (49), or neutral, depending on the speaker's point of view.

(48)   Zhangsan cha(yi)dian   tongguo   kaoshi.
                      CHA.YI.DIAN pass   exam
          'Zhangsan almost passed the exam.'

(49)   Zhangsan cha(yi)dian   si-diao.
                      CHA.YI.DIAN die
          'Zhangsan almost died.'

By contrast, their negative polarity item *chayidian*NPI only appears in the negative sentences and is sensitive to desirability of the predicate situation. When the prejacent is a contextually desirable proposition such as *passing exam* in (50), the negative sentence renders a ~ ~p → p: Zhangsan did pass the exam.

(50)   Zhangsan cha(yi)dian   mei   [tongguo   kaoshi].   [+desirable]
                      CHA.YI.DIAN NEG   pass   exam
          'Zhangsan almost didn't pass the exam.'

When the prejacent is an undesirable context, such as *forgetting keys at home* in (51) and the context in (52), ~p is rendered in K&X's semantics of the *chayidian*NPI.

(51)   Wo cha(yi)dian   mei [ba yaoshi wang   zai jia].   [-desirable]
             I   CHA.YI.DIAN NEG BA key   forget   at   home
          'I almost forgot the key at home.'

(52) Context: I do not want to forget the key at home, because I need the key to get into the office. . .

   a.   A: This morning I would have forgotten it if my wife hadn't reminded me of it at the very last moment. [So, I did not forget them.]

   b.   #B: This morning, I'd already grabbed my key and put them into my pocket. But then I changed my pants at the very last minute before I left home, and so I forgot the key at home. [So, I did forget them.]

An immediate question arises as to whether K&X's sensibility to undesirable context (c-UNDESIRABLE) is semantically encoded, conventionally implicated, or conversationally implicated. As they state that the desirability of the situation hinges on the speaker's viewpoint, it will follow that it should not be semantically encoded or conventionally implicated. Then they would concede it to be a "conversational implicature". However, if c-UNDESIRABLE is conversationally implicated, they would predict that it is cancellable as traditionally assumed. Then their argument runs into a contradiction in the theory; they encode the c-UNDESIRABLE in the semantics of their *chayidian*$_{NPI}$, but assume it to be contextually dependent, eventually cancellable.

Secondly, their account would assume that *cha*(*yi*)*dian*$_{NPI}$ as a negative polarity item is licensed by the c-UNDESIRABLE context rather than by the predicate negation; otherwise the ambiguity cannot be differentiated. This assumption is contrary to the widely held view that NPIs are licensed by negative elements (e.g. anti-veridical negation (Giannakidou 2011), non-veridicality context (Zwart 1995), or Downward Entailment (Ladusaw 1996), etc.). If the negative polarity in *cha*(*yi*)*dian*$_{NPI}$ is inherently (lexically) determined and the predicate negation is not responsible for NPI licensing, further evidence is needed to prove that the licensing function of negation on NPIs can be inert in some situations and the contextual information can override the negation's licensing of NPIs.

In addition, the c-UNDESIRABLE cannot explain the following examples from the Academia Sinica Balanced Corpus. In the context in (7b), according to K&X's analysis, the expletive negative reading (our factual reading) is rendered due to the "undesirable" situation: getting 90 points. However, this predication is not right in this situation in (7b). *Being able to get 90 points* is not considered as "undesirable" by the speaker/ rather, s/he is very neutral here. Then the sentence is understood as the speaker reporting a factual situation: Qingqing only missed one item, and she didn't get 90 points.

(7)   a.   Qingqing has always been good at geology subject. But this time she was disappointed.

    b.   (ta)   cha(yi)dian   mei   [dao jiushi fen], kexi   duo cuo-le yi ti.
             CHA.YI.DIAN NEG   achieve 90   point regrettably more missed one item
       'Lit: She missed a little and didn't achieve 90 points. Regrettably she missed one more item.' (Academia Sinica)

Example (53b) from the same corpus even counters K&X's analysis. The speaker eagerly desires to have a sexual intercourse with that woman. However, he didn't because the other guy was begging him not to do so.

(53) a.   If it were not that he was under his control.
    b.   (Wo) zhi   cha(yi)dian *mei* [he na   piaoliang nuren zuocheng   yihui
             only CHA.YI.DIAN NEG with that pretty   woman achieve   one   good
         haoshi], ta qiang.ya   yuhuo…
         thing   he force.suppress desire.fire
         'Lit: "I almost would have had sexual intercourse with her." He forced himself to
             suppress his desire.' (Academia Sinica)

4.2 A comparison with Spanish <mark>por poco (no)</mark>

Lastly, it is worth comparing the development of Mandarin *chayidian* with that of Spanish *por poco* (*no*) discussed in Pons Borderia and Schwenter (P&S 2005), as both *chayidian* and *por poco* approximatives exhibit ambiguity in negative sentences. P&S observe that the canonical affirmative use of *por copo* (type-I, 14 tokens) and "expletive negative" use (type-iii, 41 tokens) both emerged during the period of 1200-1500. Thirteen out of the 14 canonical affirmative *por copo* occur in sentences of a verb in the imperfective subject mood that implicates counterfactual ($\neg p$) meaning, such as in (54). They report that all *por poco no* tokens belong to type-iii (e.g., (55)), without any type-ii token in this period.

(54)   Quando Oliveros conosció la grande lealtad de Artús, ***por poco** le reventara el
         coraçón del grande enojo que tenia por la injuria que le havia fecho.
         'When Oliveros learned of Artus' great loyalty, his heart nearly exploded from the
             great anger he had because of the harm he had caused him.' (P&S, p. 275)

(55)   el fue tan triste dela partida de su madre del grand dolor de su padre que
         por poco no desmajo.
         'He was so sad about the death of his mother and about his father's great pain that he
             nearly fainted.' (P&S, p. 273)

They propose that *por poco* + *no* evolved from obligatory preverbal negative concord in that period, on a par with other negative indefinites like *nadie* 'nobody' with the negative concord *no*(*n*) in the preverbal position. Thus, they do not express double negation, but simple negation: $\neg p$. In other words, sentence like (55) only asserts the factual negative VP: *not fainted*. Although the negative concord gradually dropped since the mid of 15th century, the original *por poco*+*no* ($\neg p$) continues to remain to the present. In the meantime, *por poco* + *no* also underwent a diachronic reanalysis to '$\neg\neg p$', giving rise to the '*p*' interpretation (type-ii), which is shown to emerge after 1605, as repeated in (56).

(56)   Encomendaronlo a nuestro Señor muy de veras, suplicaronle les alumbrasse, de lo
          que en esto mas conuenia para su santo seruicio, y el bien de aquellas
          cuitadas almas, tan derribadas a la miseria de su brutez, que ***por poco no*** parecieran
          hijos de Adan.
          'They entrusted it to our Lord very earnestly, they begged him to enlighten them, of
              what was most suitable for their holy service, and the well-being of those
              troubled souls, so downtrodden by the misery of their ignorance, that they nearly
              did not seem like sons of Adam.' (P&S, p. 273)

Consequently, the ambiguity exists in Modern Spanish, as repeated in (57).

(57) a.   *Por poco* me muero de hambre en ese viaje.
      b.   *Por poco no* me muero de hambre en ese viaje.
            Both translatable as 'I nearly died of hunger on that trip.' (P&S, p. 277)

Despite that the negative concord is not well attested in Mandarin, there exist similarities between *chayidian* and *por poco*. Firstly, both type-i and type-iii uses emerged roughly simultaneously, and the type-iii usage outnumbered the type-i in the early stage. Secondly, type-ii usage evolved later when the polarity reverse implicature became the more dominant usage and was interpreted with the predicate negation to derive $\neg\neg p$. The current study of Mandarin *chayidian* further shows that the polarity-reverse is not semantically encoded diachronically. It is because *cha yi dian* originated from a verb phrase: *miss one point*. The type-i is rendered due to the counterfactual use: missing one point to the limit point of the event situation. The type-iii maintains its lexical meaning: missing one point and not *p*.

5.   CONCLUSION

We have demonstrated that language as material object in a form of corpora helps us observe the frequencies and distributions of the usage. In addition, it provides a valuable venue for researchers to probe into the development and underlying structures of the language. As exemplified by our study of the lexical item *cha(yi)dian*, we have proposed two distinct syntactic representations to account for the ambiguities, drawing further evidence from the diachronic and synchronic data from corpora. Although we acknowledge the pragmatic consideration for interpreting ambiguous *cha(yi)dian* sentences, we have shown that "desirability" or "anomaly" is not a necessary or a sufficient condition for disambiguating negative *chayidian* sentences. It is thus concluded that the underlying grammatical representations should be taken into consideration in deriving the surface meanings. Eventually the results of our study call for the interface study among syntax, semantics and pragmatics.

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