Syntax-Pragmatics Interface: Mandarin Chinese *Wh-the-hell* and Point-of-View Operator

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Abstract. Based on previously unnoted data concerning *wh-the-hell* attitude-bearing questions in Mandarin Chinese, I argue that integrating the pragmatic notion ''point of view'' into the syntactic computation enables us to capture certain properties of *wh-the-hell* questions in Mandarin Chinese in a systematic and illuminating way. The two central phenomena analyzed are (1) causal *zenme* 'how come' is not compatible with *daodi* 'the-hell' in Chinese, and (2) in Chinese *wh-the-hell* questions, when *daodi* 'the-hell' takes matrix scope while staying overtly in the embedded clause, the person feature of the matrix subject cannot be third person. I argue that explaining these phenomena depends on recognizing the logophoricity of the negative attitudes carried by *daodi* and causal *zenme*. The valuation relation that I postulate between the Point-of-View operator and an unvalued Point-of-View feature of *daodi* and causal *zenme* not only explains these data but also formally captures certain properties of the Chinese logophor *ziji* (cf. Huang & Liu 2001).

1. Introduction

We undertake the study of *wh-the-hell* questions in Mandarin Chinese (MC) to explore the territory of the syntax-pragmatics interface in this language. There are several properties of the MC *wh-the-hell* questions worth mentioning. First, the *wh-the-hell* question in MC is constructed by the *wh*-question operator, the attitudinal adverb *daodi* 'the-hell' and the *wh*-associate, as in (1). Unlike their English counterparts,[1] in overt syntax, *daodi* 'the-hell' and its *wh*-associate do not need to form a constituent and both of them stay in situ, as exemplified by (2).

(1) $Q_{wh}...daodi...wh$

(2) Ta **daodi**   xihuan **shenme**?
    he THE-HELL like   what
    'What the hell does he like?'

  Second, as noted by Kuo (1996) and Huang & Ochi (2004), in overt syntax, *daodi* 'the-hell' must occur in the c-command domain of the question operator in Spec,CP as

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  [1] The *wh-the-hell* expression in English must occur as a (continuous) constituent that obligatorily moves overtly (see Huang & Ochi 2004:1–2):

(i) a. *What did you buy ___ the hell?
    b. *Who bought what the hell?

shown by the contrast in (3), and the *wh*-associate (*shei* 'who') must be c-commanded by *daodi* as evidenced by (4).

(3) a. Ta xiang-zhidao [**Q~wh~** ni   **daodi**   xihuan shei].
         he wonder   you THE-HELL like   who
         'He wonders who the hell you like.'
  b. *Ta **daodi** xiang-zhidao [**Q~wh~** ni xihuan shei].

(4) a. Ta xiang-zhidao [**Q~wh~** **daodi**   **shei** mei lai   shang ke].
         he wonder   THE-HELL who   not come attend class
         'He wonders who the hell did not come to class.'
  b. *Ta xiang-zhidao [**Q~wh~** **shei daodi** mei lai shang ke].

Example (3b) is ungrammatical because *daodi* is not in the interrogative complement clause subcategorized by *xiang-zhidao* 'wonder', and (4b) is ill-formed because the *wh*-associate *shei* 'who' is not c-commanded by *daodi* even though the question operator c-commands *daodi*. Therefore, there exist two constraints: the question operator needs to c-command *daodi*, and *daodi* has to c-command the *wh*-associate, forming a serial c-command relationship.

Third, Huang, Li & Li (2009:241) note that *daodi* can take matrix scope while staying overtly in the embedded clause as exemplified by (5).[2,3]

(5) Ni   renwei [Lisi **daodi**   xihuan shei]?
    you think   Lisi THE-HELL like   who
    'Who the hell do you think Lisi likes?'

Huang & Ochi (2004:6) provide an illuminating summary of the structure of the *wh-the-hell* questions in MC. There are two kinds of dependencies in a MC *wh-the-hell* question as represented in (6): one between the null *wh*-question operator at Spec,CP and the attitudinal adverb *daodi* (dependency A), and the other between *daodi* and the *wh*-associate (dependency B). These three key elements must form a successive c-command relation as exemplified by (3) and (4). Dependency A exhibits island sensitivity due to *daodi*'s covert adverbial movement, observed by Kuo (1996),[4] and dependency B indicates that the *wh*-associate can occur in an island only if it is an

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[2] By matrix scope, they mean that the negative attitude expressed by *daodi* covers the matrix sentence, indicating the attitude of the external speaker of the entire utterance.
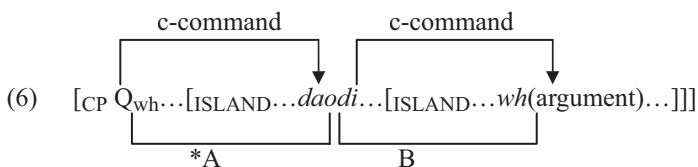
[3] The example cited by Huang et al. (2009) to demonstrate this embeddability property of *daodi* is (i), but as I will show in the next section, the person feature of the matrix subject cannot be third person when *daodi* occurs in the embedded clause of a direct question. *Daodi* needs to occur in the matrix clause to make (i) grammatical as in (ii).

  (i) *Lisi shuo [ta daodi   shenme shihou hui jia]?
        Lisi say he THE-HELL what   time   go home
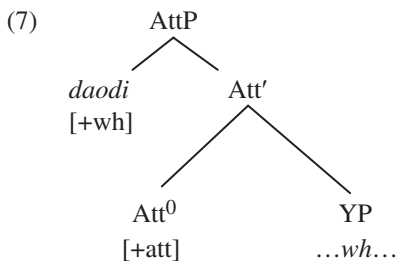   'When the hell did Lisi say that he will go home?'

  (ii) Lisi daodi shuo [ta shenme shihou hui jia]?

[4] The island sensitivity of the distribution of *daodi* is not the focus of the current paper due to space limitations. The readers are referred to Kuo 1996 and Huang & Ochi 2004 for the relevant discussion.

argument, as is well known in the literature (see Huang 1982 and Tsai 1994, among others).

$$c\text{-command} \qquad c\text{-command}$$

(6) $[_{CP} Q_{wh}\ldots[_{ISLAND}\ldots daodi\ldots[_{ISLAND}\ldots wh(\text{argument})\ldots]]]$

   *A   B

In the spirit of Cinque's (1999) phrase structure analyses, Huang & Ochi also propose that *daodi* occupies the specifier of an (interrogative) Attitude Phrase in (7) in the left periphery of IP.[5,6]

(7)

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              AttP
             /    \
       daodi       Att′
       [+wh]       /  \
                  /    \
              Att⁰      YP
              [+att]    …wh…
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(7)

$$
\begin{array}{c}
\text{AttP} \\
\end{array}
$$

The existence of this Attitude Phrase signals that you have ''a question with an attitude'' and the head of the Attitude Phrase encodes the logophoric feature of this attitude (Huang & Ochi 2004:7), which must be ascribed to either the external speaker of the entire utterance or the internal speaker (typically the subject referent of certain speech-act verbs). This proposal is highly related to my analysis in this paper because the Attitude Phrase encodes the logophoric feature of *daodi's* attitude, whose ascription, as I will argue, should be represented within the syntactic computation.

   It is worth pointing out that although Huang & Ochi (2004) note the logophoricity of the negative attitude carried by *daodi* 'the-hell', they did not further develop the idea regarding its potential influence on syntactic computation, which I argue to be the key component of this analysis explaining the new empirical observations presented in the next section.

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[5] Huang & Ochi (2004:7, fn.6) suggest that the Attitude Phrase is very similar to the Source/Self/Pivot Phrase or the Point-of-View Phrase proposed by Huang & Liu (2001) that hosts the LF-moved logophor *ziji* in MC.

[6] Speas (2004), Tenny & Speas (2003), and Tenny (2006) propose similar ideas that pragmatic notions such as sentience, point of view, and evidentiality should be syntactically encoded to explain constraints on the grammaticalization of possible pragmatic roles and a peculiar person-feature constraint of the subject of certain predicates in Japanese. The analysis in this paper is in part inspired by their research on the syntax-discourse interface. Additionally, Pires & Taylor (2007) argue for encoding in the syntax a complementizer that maps to ''common ground,'' and which yields *wh*-in-situ in English and Portuguese. Due to space limitations, I refer readers to these interesting works for comparison.

The remainder of this paper is organized as follows. Section 2 presents two previously unnoted observations regarding the MC *wh-the-hell* questions. In section 3, I briefly review previous analyses of *how come* and argue that they do not explain the phenomena this paper aims to account for. Section 4 is the analysis of the data presented in section 2 and the discussion of how this analysis can also naturally and formally capture certain properties of the MC logophor *ziji*. Section 5 is a brief comparison with den Dikken & Giannakidou's (2002) work on *wh-the-hell* in English. Finally I summarize the paper in section 6.

2. The New Data

2.1 Incompatibility with Causal Zenme

Although *daodi* 'the-hell' typically combines with a *wh*-associate to form an attitude-bearing *wh-the-hell* question in MC, it is not allowed to co-occur with causal *zenme* 'how come' to construct an attitude-bearing question, the expression of which constitutes an inquiry about cause or reason:

(8) (***Daodi**)   ta **zenme**   zuotien   mei lai   shang ke?
       THE-HELL he how-come yesterday not come attend class
     'How come (*the hell) he did not come to class yesterday?'

This incompatibility is surprising because *daodi* can combine with *weishenme* 'why', which is also an adverb expressing an inquiry about the reason for or cause of the propositional content of the question:

(9) Daodi   ta **weishenme** zuotien   mei lai   shang ke?
     THE-HELL he why   yesterday not come attend class
     'Why the hell didn't he come to class yesterday?'

To the best of my knowledge, this incompatibility has not been previously noted or accounted for. In section 3, I will show that the previous studies of *how come* cannot provide an adequate explanation for this incompatibility in MC.

2.2 The Matrix Subject Person-Feature Constraint

As already shown in (5) (repeated here as (10)), *daodi* can take matrix scope while staying in the embedded clause:

(10) Ni   renwei [Lisi **daodi**   xihuan shei]?
      you think   Lisi THE-HELL like   who
       'Who the hell do you think Lisi likes?'

Nevertheless, this distribution is, in fact, highly restricted by the person feature of the matrix subject. We cannot replace the second-person matrix subject in (10) with a third-person one as in (11).[7,8]

(11) *__Zhangsan__ renwei [Lisi daodi   xihuan shei]?
     Zhangsan   think   Lisi THE-HELL like   who
     'Who the hell does Zhangsan think Lisi likes?'

Interestingly, if we put *daodi* in the matrix clause, the person-feature constraint is lifted with the same intended interpretation. Compare (10) and (11) with (12a,b).

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[7] The person feature of the matrix subject in (10) cannot be first person as in (i). This is because it is pragmatically odd, and thus must be distinguished from the syntactically ill-formed (11).

(i) #Wo renwei Lisi daodi   xihuan shei?
    I   think Lisi THE-HELL like   who
    'Who the hell do I think Lisi likes?'

The pragmatic oddity of (i) could be remedied as in (ii) in a context in which I lose my memory due to brain injury.

(ii) Ni   keyi gaosu wo [wo renwei [Lisi daodi   xihuan shei]] ma?
     you can tell   me I   think Lisi THE-HELL like   who Q$_{yes-no}$
     'Can you tell me who the hell I thought Lisi likes?'

By contrast, no context can render (11) acceptable.

[8] One may wonder if the embedded clause in (10) is actually a direct question with *ni renwei* 'you think' simply as a parenthetical interjection meaning ''in your opinion'' as in (i), so that *daodi* is actually in the root clause of a direct question.

(i) Ni   renwei, Lisi daodi   xihuan shei?
    you think   Lisi THE-HELL like   who
    'In your opinion, who the hell does Lisi like?'

The evidence against this line of analysis comes from the distribution of causal *zenme* 'how come'. As noted by Collins (1991), the construal of *how come* in (ii) is not ambiguous; that is, *how come* cannot originate from the embedded clause.

(ii) How come Bill thought Mary quit?
     a.   What is the cause of Bill's thinking that Mary quit?
     b.   *What is the cause of Mary's quitting that Bill thought?

Similarly, in MC, causal *zenme* cannot occur in the embedded clause, as in (iiia), unless the embedded clause is an interrogative CP as in (iiib).

(iii) a. *Zhangsan renwei [Lisi zenme   cizhi le].
            Zhangsan think   Lisi how-come quit ASP
      b. Zhangsan xiang-zhidao [Lisi zenme   cizhi le].
            Zhangsan wonder   Lisi how-come quit ASP
            'Zhangsan wonders how come Lisi quit.'

If the embedded clause of (10) is actually a direct question with *ni renwei* 'you think' as a parenthetical interjection, causal *zenme* should be able to occur in it; however, this is not borne out as evidenced by (iv). We take this as evidence against the direct question analysis of (10).

(iv) *Ni   renwei Lisi zenme   cizhi le   ne?
      you think Lisi how-come quit ASP Q$_{wh}$

(12) a. Ni **daodi** renwei [Lisi xihuan shei]?
     you the-hell think Lisi like who
     'Who the hell do you think Lisi likes?'
  b. Zhangsan **daodi** renwei [Lisi xihuan shei]?
     Zhangsan the-hell thinks Lisi like who
     'Who the hell does Zhangsan think Lisi likes?'

Also, the person feature of the embedded subject does not affect the grammaticality of either (10) or (11), as shown by (13).

(13) a. Ni renwei [**ni/wo** daodi xihuan shei]?   (cf. (10))
     you think you/I THE-HELL like who
     'Who the hell do you think you/I like?'
  b. *Zhangsan renwei [**ni/wo** daodi xihuan shei]?   (cf. (11))
     Zhangsan think you/I THE-HELL like who
     'Who the hell does Zhangsan think you/I like?'

This aspect of the distribution of *daodi* can be summarized in diagram (14). *Daodi* cannot occur in the embedded clause of a direct question when the matrix subject is a third-person NP:

(14) a. Q_{wh} Subject$_{2nd}$ ***daodi***…[Subject$_{1st/2nd/3rd}$…*wh*…]?
  b. Q_{wh} Subject$_{2nd}$…[Subject$_{1st/2nd/3rd}$ ***daodi***…*wh*…]?
  c. Q_{wh} Subject$_{3rd}$ ***daodi***…[Subject$_{1st/2nd/3rd}$…*wh*…]?
  d.   *Q_{wh} **Subject$_{3rd}$**…[Subject$_{1st/2nd/3rd}$ ***daodi***…*wh*…]?

It is clear that the embedded occurrence of *daodi* in direct questions is not constrained by the person feature of the embedded subject. It is the person feature of the matrix subject that constrains the distribution of embedded *daodi*.

3. Previous Studies of *How Come*

Developing a suggestion in Collins 1991 concerning *how come*, Fitzpatrick (2005) advances a factivity analysis of *how come* questions to explain an array of distinctions between *why* and *how come* such as the contrast with respect to rhetorical questions in (15).

(15) a.   Why would John leave?
  b. *How come John would leave?

The key idea in Fitzpatrick's analysis of the various disparities between *how come* and *why* is that only *how come* carries a genuine existential presupposition of the truth of the propositional content of the question. Also, rhetorical questions are negatively biased questions to which the speaker assumes that only a negative answer is the

correct answer. Therefore, (15b) is ruled out due to the clash between the existential presupposition carried by *how come* in (16a) and the negative bias of the rhetorical question in (16b) (henceforth, the factivity-bias clash).[9]

(16) a. Presupposed: He would leave.
   b. Negative bias: He would not leave.

On the basis of the contrast in (15), Fitzpatrick claims that in contrast to *how come*, *why* does not carry the existential presupposition of the truth of the propositional content of the question, and hence does not conflict with the negative bias of a rhetorical question. The apparent existential presupposition of a *why* question actually comes from the inference from the set of its possible answers as in (17) (Fitzpatrick 2005:7). The inference from all the possible answers to a *why* question like (17) is that John hit Bill (for whatever reason[s]), and this leads to the apparent factivity presupposition of a *why* question.

(17) Why did John hit Bill?
   {John hit Bill for reason x, John hit Bill for reason y, John hit Bill for no reason}

First, we agree that *how come* presupposes the truth of the propositional content of the question it occurs in, but I do not think the factivity-bias clash can help explain the illicit combination of causal *zenme* with *daodi* to form a *wh-the-hell* question, which according to den Dikken & Giannakidou (2002:43–44), carries a negative attitude toward the propositional content of the *wh*-question (i.e., the state of affairs described in the propositional content of a *wh-the-hell* question is characterized by the speaker as an event that s/he assumed should not happen). One possible way for Fitzpatrick's (2005) analysis to capture this incompatibility might be to say that the presupposition of *how come* conflicts with the negative attitude of a *wh-the-hell* question as well. However, there are good reasons against this extension. Conceptually, it is perfectly reasonable and common for one to wish or think that a certain true proposition should not happen. Empirically, consider (18) with the factive verb *regret*.

(18) John regrets that he stole the book yesterday.

Factive verbs like *regret* presuppose the truth of the proposition of their complement clause. However, the verb *regret* also carries a negative attitude on the part of the

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[9] An anonymous reviewer suggests that the presupposition of 'how come John left' is 'John left for *some* reason' rather than just 'John left', as assumed in Fitzpatrick's paper, and 'how come John would leave?' would be a felicitous rhetorical question only if the speaker has the expectation that 'there is *no* reason for John to leave.' This speaker's expectation conflicts with the presupposition of *how come*, and the infelicity of this rhetorical question is correctly predicted even if the speaker does not have a negative attitude toward the actual leaving. We agree that the infelicity of (15b) may be derived without assuming the negative attitude carried by *how come* argued for in this paper, but the goal of this section is to show that a factivity analysis of *how come* is not enough to explain the incompatibility between causal *zenme* 'how come' and *daodi* 'the hell' in MC, which is the main issue in this paper.

referent of its subject that s/he would prefer that the event expressed by the embedded proposition were not to have happened. If factivity conflicts with negative attitude, (18) would be ungrammatical, but this is not borne out. Thus, we cannot exclude the combination of *daodi* and causal *zenme* by a constraint banning the combination of factivity and negative attitude.

Second, as an anonymous reviewer correctly points out, most semantic analyses of questions would have both 'why did Mary leave' and 'how come Mary left' presupposing the truth that Mary left. Even though Fitzpatrick (2005) contends that only *how come* carries the true existential presupposition of truth of the propositional content of the question, while the apparent presuppositionality of *why* questions should be viewed as the inference from the set of its possible answers,[10] it is not clear how this distinction can help us analyze the contrast between causal *zenme* and reason *weishenme* with respect to the combination with *daodi*. The truth of the propositional content of a *weishenme* 'why' question is clearly presupposed by the speaker as well, regardless of the source of this presupposition.

Therefore, I conclude that the factivity analysis does not provide an explanation for the incompatibility between *daodi* 'the hell' and causal *zenme* 'how come'. In the next section, I present a formal analysis that capitalizes on the logophoric negative attitudes of *daodi* and causal *zenme* to account for the new observations. Moreover, it will be shown that this proposal provides further refinements of Huang & Liu's (2001) pragmatic account of the Blocking Effects of the logophor *ziji* in MC.

4. The Analysis

I propose that the solution to the new data presented in section 2 is related to the logophoric negative attitudes carried by *daodi* 'the hell' and causal *zenme* 'how come' toward the propositional content of the question they occur in. Semantically, the negative attitude of these elements is logophoric in the sense that it must be ascribed to either the external speaker or the internal speaker (typically the subject of certain speech-act verbs like *think*) for full interpretation of these attitude-bearing questions (see Sells 1987, Chierchia 1989, and Huang & Liu 2001 for logophoricity ascription).

4.1 The Logophoric Negative Attitudes of Daodi and Causal Zenme

As pointed out explicitly by den Dikken & Giannakidou (2002:43–44), ''*wh-the-hell* in English carries a presupposition of negative attitude on the part of the speaker.'' Specifically, the speaker of a *wh-the-hell* question holds a negative attitude toward the proposition expressed in the interrogative. For instance, the speaker of (19) thinks that for any x, such that x bought this book, x should not have done this.

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[10] Fitzpatrick seems to suggest that the presupposition of *how come* is based on its inherent semantics, whereas that of *why* questions is inferred from its set of possible answers as a pragmatic consequence. Despite this alleged underlying difference, the speaker of *why* questions clearly presupposes the truth of the propositional content in the question (cf. #*I don't believe that John left, but I want to know why John left.*), and it is not clear why this presupposition does not conflict with the negative bias of a rhetorical question.

(19) Who the hell bought this book?

As for the MC counterpart *daodi*, Huang et al. (2009:237, fn. 2) point out that *daodi* in MC *wh-the-hell* questions, conveys ''an urgent desire, even a sense of impatience, on the part of the speaker to get to the specific information being requested.''

  I would like to provide two additional comments regarding the presupposition of the speaker's attitude of *wh-the-hell* in MC. First of all, Den Dikken and Giannakidou's (2002) observation on the negative attitude of the speaker in a *wh-the-hell* question deserves elaboration. In particular, the ascription of this negative attitude calls for a formal mechanism. Consider (20) and (21) regarding the negative attitude ascription of *daodi*.

(20) Lisi **daodi**   mai le   shenme?
      Lisi THE-HELL buy ASP what
      'What the hell did Lisi buy?'

(21) Zhangsan xiang-zhidao [Lisi **daodi**   mai le   shenme].
      Zhangsan wonder   Lisi THE-HELL buy ASP what
      'Zhangsan wonders what the hell Lisi bought.'

In the direct question (20), the negative attitude of *daodi* is ascribed to the external speaker of the question, whereas it is the matrix subject referent, the ''internal speaker'' *Zhangsan*, that is holding this negative attitude in the indirect question (21).[11] Note that the attitude holder of *daodi* can only be determined when the syntactic derivation unfolds, given that it depends on the position of *daodi* in a sentence. Accordingly, we should have a derivational mechanism responsible for this value-setting.

  Second, causal *zenme* 'how come' carries another kind of speaker's negative attitude toward the propositional content of the question. According to Tsai (2004:5), causal *zenme* contributes a sense of speaker's counter-expectation. More specifically, the state of affairs expressed in the propositional content of a causal *zenme* question does not match the speaker's expectation regarding what should be the real-world situation. As we will see, it is precisely this speaker's negative attitude that distinguishes causal *zenme* 'how come' and reason *weishenme* '*why*' with respect to their different compatibility with *daodi*. To see the mismatch between the

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[11] Note that (21) cannot mean that both the external speaker and the matrix subject referent *Zhangsan*, as the internal speaker of the embedded clause, hold the negative attitude. Also consider the direct questions (i) and (ii).

  (i) Who the hell did John say Bill saw?

  (ii) Ni   renwei Lisi daodi   xihuan shenme?
        you think   Lisi THE-HELL like   what
        'What the hell do you think Lisi likes?'

In direction questions like (i) and (ii), only the external speaker, rather than the matrix subject referent (*John* and *ni* 'you'), holds the negative attitude.

propositional content of the causal *zenme* question and the speaker's expectation, consider (22).

(22) Zhangsan zenme   zai ku?
       Zhangsan how-come ASP cry
       'How come Zhangsan is crying?'

The speaker of (22) holds the negative attitude that Zhangsan's crying is contrary to his/her expectation, and hence is asking about the cause of this unexpected state of affairs.[12]
   Further examples of speaker's use of causal *zenme* to express his/her counter-expectation regarding the real world are the following interrogatives that inquire about the reason for or the cause of a mathematical fact (one plus one equals two):

(23) a. Yi jia yi **weishenme** hui   denyu er?
          one plus one why   would equal two
          'Why does one plus one equal two?'
     b. #Yi jia yi **zenme**   hui   denyu er?
          one plus one how-come   would equal two
          '#How come one plus one equals two?'

The sentences in (23a) and (23b) differ minimally in the interrogative adverb they use. However, (23b) is semantically and pragmatically odd. The subtle yet crucial distinction between them lies in the speaker's counter-expectation toward the propositional content of the question. By uttering (23b), the speaker is not only asking about the cause of the truth of the mathematical equation, but is also expressing his/her negative attitude toward it; that is, the speaker thinks that the mathematical equation does not match the real-world fact, and asks for the cause of this mistaken equation. With this much said, it is obvious that the oddity of (23b) stems from the clash between this speaker's negative attitude induced by causal *zenme* and the real-world mathematical fact; that is, one plus one *indeed* equals two. As a result, an interrogative like (23b) is not a felicitous information-seeking question. Note that compared to causal *zenme*, reason *weishenme* 'why' is rather neutral with respect to the speaker's attitude toward the propositional content of the question. The speaker of (23a) simply inquires about the principles underlying the mathematical equation, which s/he regards as the truth. The oddity of (23b), when compared with (23a),

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[12] Consider the contrast between *how come* and *why* in this aspect:

(i) I expected Zhangsan to be crying, but
     a.   why is he crying?
     b.   *how come he is crying?

Example (ib) is bad precisely because the speaker cannot utter a *how come* question that asks for the cause of some event or state that is consistent with his/her expectation.

shows the contrast between causal *zenme* and reason *weishenme* in the negative attitude carried by the former.[13]

The prediction is that we can use causal *zenme* to question a proposition that is definitely false because the speaker can felicitously express his/her negative attitude that the propositional content does not match the real-world fact. This prediction is borne out. Consider the contrast between (23b) and (24).[14]

(24) Yi   jia   yi   **zenme**   hui   denyu san?
     one plus one how-come   would equal three
     'How come one plus one equals three?'

Given that the propositional content ''one plus one equals three'' is not a true mathematical fact, it is licit for the speaker to express his/her negative attitude that this equation does not match the real-world fact, and inquire about the cause of this false equation.

Additionally, the logophoric property of *daodi*'s negative attitude carries over to the negative attitude of causal *zenme* as well. Compare the attitude ascription of (25) and (26).

(25) Lisi **zenme**   mei lai   shang ke?
     Lisi how-come not come attend class
     'How come Lisi did not attend the class?'

(26) Zhangsan xiang-zhidao [Lisi **zenme**   mei lai   shang ke].
     Zhangsan wonder   Lisi how-come not come attend class
     'Zhangsan wonders how come Lisi did not attend the class.'

Just like the *daodi* question counterparts in (20) and (21), the ascription of the negative attitude of causal *zenme* varies according to its overt syntactic position. In direct questions such as (20) and (25), it is the external speaker holding the negative attitude, whereas in indirect questions such as (21) and (26), the negative attitude goes only to the matrix subject referent (i.e., the internal speaker of the embedded clause).

Summing up thus far, the negative attitudes carried by *daodi* 'the-hell' and causal *zenme* 'how come' must be ascribed to either the external speaker of the entire utterance or the internal speaker (typically the subject of certain speech-act verbs) for full interpretation of an attitude-bearing question. Any adequate analysis of questions containing *daodi* and causal *zenme* in MC must take this logophoric property into

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[13] The oddity of (23b) also indicates that Fitzpatrick's (2005) factivity analysis of *how come* in English is not sufficient for causal *zenme* in MC. Causal *zenme*, carrying the factivity presupposition, should be able to combine with a true proposition expressing a mathematical fact to form an interrogative, but this is not borne out. Therefore, causal *zenme* 'how come' must have something more than this presupposition that is responsible for the oddity of (23b). As argued in the text, it is the speaker's negative attitude that leads to this anomaly.
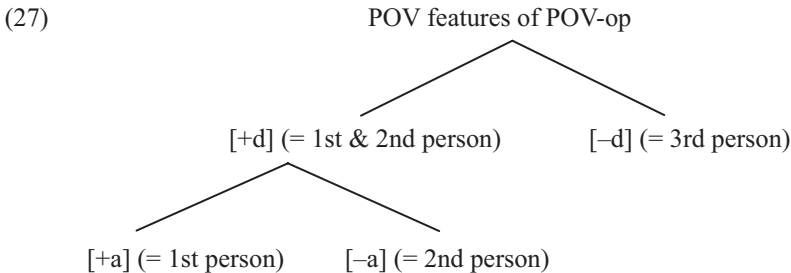
[14] One context in which (24) is a felicitous question is when a young child, who is just beginning to learn basic arithmetic, thinks that one plus one equals three, and one may correct him/her by asking (24). On the other hand, one can never utter (23b) to correct the child.

consideration. In the next subsection, it will be shown how this pragmatic concept may be formalized and integrated into the syntactic computation.

4.2 The Point-of-View Feature and the Point-of-View Operator

To formalize the logophoric property of the negative attitudes carried by *daodi* and causal *zenme*, I propose that there is an unvalued Point-of-View feature (POV feature) in both *doadi* and causal *zenme*, and the POV feature needs to be valued via the probe-goal relationship with the closest c-commanding Point-of-View operator (POV-op) in the left periphery of CP[15] to identify ''the logophoric orientation'' (to quote a comment from a reviewer) for full interpretation of the attitude-bearer of these attitude-bearing questions.

The POV-op consists of two POV features: [discourse participant] and [addresser] (henceforth, [d] and [a], respectively), as shown in (27).[16]

(27)   POV features of POV-op

[+d] (= 1st & 2nd person)   [–d] (= 3rd person)

[+a] (= 1st person)   [–a] (= 2nd person)

The node [+d] encompasses first and second person, which are the addresser and the addressee in the discourse, and the node [–d] represents third person. Further, the feature [a] distinguishes first person from second person.

Note that there is a critical distinction between the matrix-clause POV-op and the POV-op in the embedded clause. The POV features of the matrix POV-op is always [+d, +a], which represents the point of view of the external speaker of the entire utterance, whereas those of the embedded POV-op are indeterminate with respect to ''logophoric orientation,'' which is determined by the person feature of the minimal c-commanding subject as shown in the diagrams in (28).[17,18]

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[15] The POV-op may be hosted by a phrase encoding pragmatic information such as the Evaluative Mood Phrase in Cinque's (1999) theory of phrase structures.

[16] Harley & Ritter (2002) propose a morphological feature geometry for pronouns to capture the crosslinguistic uniformity and variations of the acquisition order and the inventory of pronouns in a wide range of languages. The POV features of POV-op in (27) is inspired by and adapted from a portion of their geometry. However, (27) is different from their geometry not only in form but also in its theoretical purpose. I adopt a binary-valued feature system (they intend a unary-valued geometry), and the features in (27) are meant to denote only the logophoric orientation of point of view.

[17] Note that [–d, +a] is not a possible combination; an addresser must be a discourse participant by definition.

[18] As an anonymous reviewer points out, if the external speaker is viewed as the subject of a performative verb in some representation, the POV setting of the matrix POV-op can be assimilated to the one of the embedded POV-op. Both are determined by the minimal c-commanding subject.

(28) a. [Matrix POV-op$_{[+d, +a]}$…Subj$_1$…[POV-op$_{[+d, +a]}$…]]

b. [Matrix POV-op$_{[+d, +a]}$…Subj$_2$…[POV-op$_{[+d, -a]}$…]]

c. [Matrix POV-op$_{[+d, +a]}$…Subj$_3$…[POV-op$_{[-d, -a]}$…]]

Next, we turn to the POV feature of *daodi* and causal *zenme*. Each of them contains the single unvalued [*u*d] feature, which has to be valued via probe-goal relation with the POV-op. Additionally, *daodi* and causal *zenme* have to adjoin covertly to POV-op to obtain their scope over the attitude-bearing question. Let us see how the valuation proceeds case by case. Consider (29), a direct question.

(29) [***daodi*$_{[+d]}$-POV-op$_{[+d, +a]}$** [ni *t* xihuan shenme]]?

      THE-HELL   you like   what

      'What the hell do you like?'

First, the [*u*d] of *daodi* is valued as [+d] via probe-goal relation with the matrix POV-op. This identifies the logophoric orientation of *daodi* as the one belonging to the discourse participants. Second, *daodi* adjoins to POV-op to obtain scope over the attitude-bearing question. Last but not least, the amalgam of POV features of *daodi* and the matrix POV-op, [+d, +a], correctly identifies the attitude-bearer of *daodi* as the addresser of the discourse participants, and thereby we have a full interpretation of this attitude-bearing question.

Next, consider the derivations related to the POV valuation in the indirect question (30).

(30) **Zhangsan** xiang-zhidao [Lisi **daodi**   xihuan shenme].

      Zhangsan wonder   Lisi THE-HELL like   what

      'Zhangsan wonders what the hell Lisi likes.'

a. [*daodi*$_{[ud]}$-POV-op$_{[ud, ua]}$ LS *t* xihuan shenme]

b. **ZS** xiang-zhidao [*daodi*$_{[-d]}$-POV-op$_{[-d, -a]}$ LS *t*…]

In (30a), *daodi* adjoins to the embedded POV-op, taking scope over the embedded question. Also, note that neither *daodi* nor the embedded POV-op has valued POV features at this stage of derivation because both are indeterminate with respect to their logophoric orientation, which is determined by the minimal c-commanding subject,

as shown in (30b).[19] Also, the POV features amalgam [–d, –a] of *daodi* and the embedded POV-op in (30b) correctly identifies the bearer of the negative attitude of *daodi* as the non-discourse-participant matrix subject referent *Zhangsan*.

   With the mechanism of POV valuation, we are now ready to explain the person-feature constraint of the matrix subject in MC *wh-the-hell* questions. When *daodi* occurs in the embedded clause in a direct question, the attitude-bearer of *daodi* is always the external speaker of the entire question. When the matrix subject of a direct question is a second-person NP, the relevant derivations of this interpretation would be as in (31).

(31) **Ni**   renwei [Lisi **daodi**   xihuan shenme]?
   you think   Lisi THE-HELL like   what
   'What the hell do you think Lisi likes?'
   a.   [*daodi*$_{[ud]}$-POV-op$_{[ud, \, ua]}$ LS *t* xihuan shenme]
   b.   **Ni** renwei [*daodi*$_{[+d]}$-POV-op$_{[+d, \, -a]}$ LS *t*…]?
   c.   [*daodi*$_{[+d]}$-POV-op$_{[+d, \, +a]}$ **Ni** renwei [*t*-POV-op$_{[+d, \, -a]}$…*t*…]

The diagrams in (31a,b) are similar to (30a,b) except for the person feature of the matrix subject and the selection of the main verb. The POV features of *daodi* and the embedded POV-op are determined by the person feature of the minimal c-commanding subject, as shown in (30b) and (31b). Besides, given that (31) is a direct question, *daodi* has to adjoin successive-cyclically to the matrix POV-op to obtain matrix scope over the entire question. Crucially, the POV feature of *daodi* is consistent with the POV features of the matrix POV-op at its scope position, so we obtain the correct ascription of *daodi*'s negative attitude to the external speaker of the direct question in (31) with the POV features amalgam [+d, +a] of *daodi* and the matrix POV-op.

   Next, consider the direct question (32) with a third-person matrix subject, the case illustrating the matrix-subject person-feature constraint. Note that like (31), (32) is a direct question in which the negative attitude carried by *daodi* should be ascribed only to the external speaker of the entire question.

(32) *****Zhangsan** renwei [Lisi **daodi**   xihuan shenme]]?
   Zhangsan think   Lisi THE-HELL like   what
   'What the hell does Zhangsan think that Lisi likes?'
   a.   [*daodi*$_{[ud]}$-POV-op$_{[ud, \, ua]}$ LS *t* xihuan shenme]
   b.   **ZS** renwei [*daodi*$_{[-d]}$-POV-op$_{[-d, \, -a]}$ LS *t*…]?
   c.   *[*daodi*$_{[-d]}$-POV-op$_{[+d, \, +a]}$ **ZS** renwei [*t*-POV-op$_{[-d, \, -a]}$…*t*…]]

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[19] The derivational relation between the embedded POV-op/*daodi* and the minimal c-commanding subject in (30b) is similar to the one between the null operator and the local subject in the derivation of a *tough*-construction in (i) (see Chomsky 1982, 1986).

   (i)   *Fred* said *John* is easy [*Op* PRO to please *t*].

The null operator within the embedded clause in (i) is anaphoric in the sense that its referent is indeterminate until *John* is merged in the derivation. Also, the relation is local because the antecedent can only be the closest subject *John*, rather than the remote *Fred*.

Examples (31) and (32) differ only in the person feature of the matrix subject. This affects the logophoric orientation the embedded POV-op and *daodi* as seen in (31b) and (32b). The reason why (32) is ungrammatical stems from the clash of the POV features of *daodi* and the matrix POV-op in (32c). The derivations in (32) yield an ill-formed CI representation that cannot identify the bearer of *daodi*'s negative attitude.

Our analysis predicts that if we put *daodi* in the matrix clause rather than in the embedded clause, the sentence should be good because the POV feature of *daodi* would be directly valued by [+d, +a] of the matrix POV-op, generating the correct interpretation. This prediction is borne out (as was shown earlier in (12b)).

(33) **$daodi_{[+d]}$-POV-op$_{[+d, +a]}$** Zhangsan t renwei [Lisi xihuan shei]?
      THE-HELL   Zhangsan   think   Lisi like   who
      'Who the hell does Zhangsan think Lisi likes?'

The same mechanism also applies to *zenme* questions, as in (34)–(36).[20]

(34) **POV-op$_{[+d,+a]}$** [ni   **zenme$_{[+d]}$** mei lai]?
                 you how-come not come
      'How come you did not come?'

(35) **Ni**   xiang-zhidao [**POV-op$_{[+d, -a]}$** Lisi **zenme$_{[+d]}$** mei lai]   ma?
      you wonder   Lisi how-come not come Q_{yes-no}
      'Do you wonder how come Lisi did not come?'

(36) **Zhangsan** xiang-zhidao [**POV-op$_{[-d, -a]}$** Lisi **zenme$_{[-d]}$** mei lai].
      Zhangsan wonder   Lisi how-come not come
      'Zhangsan wonders how come Lisi did not come.'

The generalization emerging from the discussion so far is (37).

(37) Generalization of POV valuation of *daodi*/causal *zenme*
     The POV feature of *daodi*/causal *zenme* must match the POV features of the POV-op at their scope position to ensure correct ascription of their negative attitudes.

Now, if we combine *daodi* and *zenme* in one question, the relevant structure would be (38). The incompatibility between *daodi* and causal *zenme* is ruled out by minimality of POV probe-goal relation. Only the POV feature of *daodi* could be

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[20] The covert movement of *zenme* is omitted here for expository convenience.

valued by POV-op, which leaves the POV feature of causal *zenme* unvalued, causing the derivational crash. Therefore, there is no well-formed CI representation of this word string.[21]

(38) ***POV-op$_{[+d, +a]}$** [Lisi **daodi**$_{[+d]}$ **zenme**$_{[ud]}$ mei lai]?

                Lisi THE-HELL how-come not come

      Intended: 'How come the hell Lisi did not show up?'

This line of analysis gives the following correct prediction: if we split *zenme* 'how come' and *daodi* 'the-hell' in two interrogatives, the construction should be well formed because each of them is valued by a separate POV-op, not intervening with each other's valuation. The sentences in (39) substantiate this prediction.

(39) a. **Daodi**   Zhangsan weishenme xiang-zhidao [Lisi **zenme**   mei lai]?

       THE-HELL Zhangsan why   wonder   Lisi how-come not come

       'Why the hell does Zhangsan wonder how come Lisi did not come?'

    b. Lisi **zenme**   hui   xiang-zhidao [Zhangsan **daodi**   xihuan shei]?

       Lisi how-come would wonder   Zhangsan THE-HELL like   who

       'How come Lisi would wonder who the hell Zhangsan likes?'

The POV valuation analysis proposed here constitutes an explicit mechanism for the ascription of the negative attitudes of *daodi* and causal *zenme*. They are ''doubly anaphoric'' (to quote from Huang & Tang's [1991:274–275] comments on the bare reflexive *ziji* in MC) in the sense that they are indeterminate in both their logophoric orientation and their identification of the attitude-bearer. The logophoric orientation is determined either by the matrix POV-op as in (29) and (34) or by the minimal c-commanding subject as in (30)–(32) and (35)–(36), whereas the attitude-bearer is identified by the amalgam of the POV features of *daodi*/causal *zenme* and the POV-op at their scope position. Crucially, the value of the former cannot clash with the latter, which is in essence captured by generalization (37). Moreover, this helps us deal with two otherwise unexplained observations about the *wh-the-hell* questions in MC. That is, *daodi* cannot occur in the embedded clause of a direct question when the matrix subject is a third-person NP, and *daodi* is not compatible with causal *zenme*. In the next subsection, this analysis is extended to another element that has also been analyzed as sensitive to point of view—the logophor *ziji* in MC.

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[21] An anonymous reviewer suggests another possible line of reasoning based on the ECP to rule out this illicit combination. Given that both *daodi* and *zenme* are adjuncts subject to movement to the POV-op, the configuration would be ruled out on a par with the following sentences:

(i) *Why did you fix the car *how*?

(ii) *How did he leave early *why*?

The traditional ECP account of (i) and (ii) (Lasnik & Saito 1984, 1992) is that both of the adjuncts need to be antecedent-governed, but only one of them satisfies this requirement. I leave the issue open here as to which line of analysis is preferable.

4.3 Extension: The POV Valuation of the Mandarin Logophor Ziji

The reflexive *ziji* in MC can function either as a locally bound anaphor just like *himself* or *herself* in English or as a long-distance bound logophor, as shown by (40).

(40) Zhangsan$_i$ renwei [Lisi$_j$ kan-bu-qi   **ziji**$_{i/j}$].
     Zhangsan think   Lisi look-not-up self
     'Zhangsan$_i$ thinks Lisi$_j$ looks down on him$_i$/himself$_j$.'

There is a well-known property of the logophoric use of *ziji*—the Blocking Effects, first noted by Y.-H. Huang (1984). The long-distance construal of *ziji* may be blocked under various conditions (for a detailed review, see Huang & Liu 2001). Here we focus only on the blocking induced by a first-/second-person local antecedent. Compare (40) with (41), where the third-person embedded subject *Lisi* is replaced by a first-/second-person NP, with the result that *ziji* cannot refer to the remote antecedent.[22]

(41) a. Zhangsan$_i$ renwei [**wo$_j$** kan-bu-qi   **ziji**$_{j/*i}$].
        Zhangsan think   I   look-not-up self
        'Zhangsan$_i$ thinks I$_j$ look down on *him$_i$/myself$_j$.'
     b. Zhangsan$_i$ renwei [**ni$_j$** kan-bu-qi   **ziji**$_{j/*i}$].
        Zhangsan think   you look-not-up self
        'Zhangsan$_i$ thinks you$_j$ look down on *him$_i$/yourself$_j$.'

Developing the functional approach in Huang et al. 1984, Huang & Liu (2001) explain the Blocking Effects in terms of a pragmatic strategy of avoiding perspective conflicts. Specifically, the logophor *ziji* is equivalent to *wo* 'I/me/my' anchored to the matrix subject *Zhangsan* that denotes the internal speaker of the embedded clause in the direct discourse representation as in (42), and the first-/second-person pronoun *wo/ni* in the embedded clause of (41) is anchored to the external speaker of the entire utterance. This produces a perspective conflict in the

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[22] Xu (1993) notes that there exists a person asymmetry between first-/second-person and third-person NPs with respect to the Blocking Effects. Compare (41) with the following examples where the local antecedent of *ziji* is a third-person NP and the remote antecedent is a first-/second-person NP.

  (i) Wo$_i$ danxin [Zhangsan$_j$ hui piping   ziji$_{j/??i}$].
      I   worry   Zhangsan will criticize self
      'I am worried that Zhangsan will criticize himself/??me.'

  (ii) Ni$_i$ danxin [Zhangsan$_j$ hui piping   ziji$_{j/?i}$] ma?
       you worry   Zhangsan will criticize self   Q$_{yes-no}$
       'Are you worried that Zhangsan will criticize himself/?you?'

As noted by Huang & Liu (2001:49, fn. 2), although the local construal of *ziji* in (i) and (ii) is the preferred reading over the long-distance construal, it is obvious that the long-distance construal is impossible in (41) with the first-/second-person NP local antecedent. My intuition for this contrast is that the long-distance construal in (i) is even more difficult, if not impossible, to get than it is in (ii). Here I focus only on the clear blocking induced by a local first-/second-person antecedent in (41) and leave this contrast in the degree of acceptability for future research.

direct discourse representation in (42b) because the logophor would need to be anchored to the internal speaker for long-distance construal, whereas the embedded subject is anchored to the external speaker, a situation that Huang & Liu claim is difficult to sort out perceptually:

(42) a.   Zhangsan renwei, ''Lisi kan-bu-qi **wo**.''   (cf. (40))
          Zhangsan thinks, ''Lisi looks down on **me**.''
       b. #Zhangsan renwei, ''**wo/ni** kan-bu-qi **wo**.''   (cf. (41))
          Zhangsan thinks, ''**I/you** look down on **me**.''

This pragmatic explanation admirably explains most of the data concerning the Blocking Effects. Therefore, I do not attempt to claim that the POV valuation mechanism, as it is formulated in the current paper, could outperform this pragmatic account with respect to the empirical coverage of the data. However, I would like to point out that the core pragmatic principle of avoiding perspective conflicts underlying Huang and Liu's account wrongly predicts the grammatical long-distance construal of *ziji* in (43a), with the direct discourse representation (43b). On their view, the underlying *wo* 'I' of *ziji* in (43b) is anchored to the first-person matrix subject, which denotes the external speaker of the entire utterance. This anchoring should not have any perspective conflict with the second-person embedded subject *ni* 'you', which is also anchored to the external speaker.

(43) a. Wo_i renwei [ni_j bu   yinggai   kan-bu-qi $ziji_{j/*i}$].
          I   think   you   not   should   look-not-up   self
          'I_i think you_j should not look down on $yourself_j$/*me_i.'
       b.   Wo renwei, ''**ni** bu yinggai kan-bu-qi **wo**.''
          I think, ''You should not look down on me.''

This indicates that the core concept of perspective conflict of Huang & Liu's (2001) approach, which is intuitively on the right track, needs further refinements to rule out the long-distance construal of *ziji* in (43). Also, one may raise the question whether this perceptual concept could be formalized as a component of the syntactic computation. This is where the POV valuation mechanism comes in. I will demonstrate how to extend the formal POV valuation mechanism to the logophor *ziji* to capture (43) and the related data regarding the Blocking Effects induced by the first-/second-person embedded subject. In particular, I submit that the logophor *ziji* contains unvalued POV features [ud, ua] that need to be valued by the closest POV-op just like the [ud] of *daodi* and causal *zenme*. Essentially, this POV valuation approach is similar to Huang & Tang's (1991) formal approach to the Blocking Effects of *ziji*. However, it is not the agreement of ϕ-features that derive the relevant facts, as claimed in their paper. Rather, it is the concepts of discourse participants and addresser that are governing the

long-distance construal of *ziji*.[23] Before going into the detail of how this mechanism may explain (43), a discussion of the interaction of *ziji* and *daodi*/causal *zenme* is necessary.

Given the valuation relation between the unvalued POV features of the logophor *ziji* and the POV-op, one may expect that the logophor *ziji* is incompatible with *daodi*/causal *zenme* just like the case for the illicit combination of *daodi* and causal *zenme* within one interrogative. However, this prediction is not borne out:

(44) a. Zhangsan$_i$ xiang-zhidao [Lisi$_j$ **daodi** weishenme taoyen **ziji$_{i/j}$**].
         Zhangsan wonder   Lisi THE-HELL why   hate   self
         'Zhangsan$_i$ wonders why the hell Lisi$_j$ hates him$_i$/himself$_j$.'
     b. Zhangsan$_i$ xiang-zhidao [Lisi$_j$ **zenme**   hui   taoyen **ziji$_{i/j}$**].
         Zhangsan wonder   Lisi how-come would hate   self
         'Zhangsan$_i$ wonders how come Lisi$_j$ would hate him$_i$/himself$_j$.'

This problem may be settled by the additional assumption that there is a POV-op at the edge of each phase (i.e., CP and v*P; cf. Chomsky 2000, 2001) when a phase contains one item with unvalued POV features.[24] As a result, the unvalued POV features of *daodi*/causal *zenme* and the logophor *ziji* in (44) are valued by the POV-op at the CP phase edge and the v*P phase edge, respectively. The valuations proceed within two different phases, not interfering with each other; therefore, the co-occurrence of *daodi*/causal *zenme* and *ziji* is allowed.

Now we can examine how the POV valuation mechanism deals with the long-distance construal of *ziji*. The relevant derivations related to the POV valuation in (40) are as in (45).

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[23] The assumption that subject NPs agree with the embedded POV-op, and the POV feature in *daodi*, causal *zenme*, and logophoric *ziji* in terms of [±d, ±a] features in MC suggests that the [±d, ±a] features may be the default setting of φ-features in a language without overt morphological manifestation of such features. It is possible that the fine-grained distinction of φ-features in terms of person, number, and gender features is available only when there is overt morphological evidence for the language learner. This issue is beyond the scope of the current paper, but see Miyagawa 2010 (pp. 150, fn.11) for a similar view on this issue.

[24] One piece of evidence for this comes from the interpretation of (i).

(i) *Fortunately* the Yankees *unfortunately* lost this game.

This sentence may be uttered by a Red Sox baseball fan who thinks that it is fortunate that the Yankees lost this game, a result that may benefit the Red Sox. On the other hand, the players of the Yankees take this as an unfortunate event. Therefore, the CP-level evaluative adverb *fortunately* is uttered from the external speaker's point of view, while the v*P-adjoined *unfortunately* is evaluated from the matrix subject's point of view, presumably licensed by the POV-op at the CP-phase level and the v*P-phase level, respectively.

(45) Zhangsan$_i$ renwei [Lisi$_j$ kan-bu-qi **ziji$_{i/j}$**].
Zhangsan think Lisi look-not-up self
'Zhangsan$_i$ thinks Lisi$_j$ looks down on him$_i$/himself$_j$.'
  a. [$_{v*P}$ *ziji$_{[ud, \ ua]}$*-POV-op$_{[ud, \ ua]}$…*t*]
  b. **Lisi**…[$_{v*P}$ *ziji$_{[-d, \ -a]}$*-POV-op$_{[-d, \ -a]}$…*t*]
  c. [$_{CP}$ *ziji$_{[-d, \ -a]}$*-POV-op Lisi…[$_{v*P}$ *t*-POV-op$_{[-d, \ -a]}$…*t*]]
  d. **Zhangsan**…[$_{CP}$ *ziji$_{[-d, \ -a]}$*-POV-op$_{[-d, \ -a]}$ Lisi…[$_{v*P}$ *t*-POV-op$_{[-d, \ -a]}$…*t*]]

First, I follow Huang & Liu's (2001) analysis of the LF movement of *ziji* for creating a direct input for the semantics of attitude *de se* expressed by *ziji* (cf. Huang & Tang 1991 for the LF movement of *ziji*; Chierchia 1989 for the semantics of attitude *de se*). The only difference here is that the movement adjoins first to the intermediate vP-phase POV-op for successive cyclicity as shown in (45a). Second, note that at the stage (45a) the POV features (i.e., the logophoric orientation) of the v*P-phase POV-op and *ziji* are indeterminate. Third, the logophoric orientation of both *ziji* and the v*P-phase POV-op is valued by the embedded subject *Lisi* as [–d, –a] in (45b). Fourth, the movement of *ziji* to the embedded CP-phase POV-op in (45c) is for creating the input for attitude *de se*. Finally, the POV features of the embedded CP-phase POV-op are valued as [–d, –a] by the matrix subject *Zhangsan* in (45d), and the long-distance construal of the logophor *ziji* is allowed precisely because *ziji* and the embedded CP POV-op share the same POV features [–d, –a].

The Blocking Effects emerge when *ziji* and the embedded CP phase POV-op do not share the same POV features, as shown in (46) and (47). The POV features of *ziji* are valued by the embedded subject in (46a) and (47a), respectively. However, the POV features of *ziji* are not consistent with those of the embedded CP-phase POV-op where *ziji* moves to create the input for attitude *de se* as shown in (46b) and (47b). The long-distance construal of the logophor *ziji* is thus blocked by this clash of POV features.

(46) Zhangsan$_i$ renwei [**wo$_j$** kan-bu-qi **ziji$_{j/*i}$**].
Zhangsan think I look-not-up self
'Zhangsan$_i$ thinks I$_j$ look down on *him$_i$/myself$_j$.'
  a. **wo**…[$_{v*P}$ *ziji$_{[+d, \ +a]}$*-POV-op$_{[+d, \ +a]}$…*t*]
  b. *****Zhangsan**…[$_{CP}$ *ziji$_{[+d, \ +a]}$* POV-op$_{[-d, \ -a]}$ **wo**…[$_{v*P}$ *t*-POV-op$_{[+d,+a]}$…*t*]]

(47) Zhangsan$_i$ renwei [**ni$_j$** kan-bu-qi **ziji$_{j/*i}$**].
Zhangsan think you look-not-up self
'Zhangsan$_i$ thinks you$_j$ look down on *him$_i$/yourself$_j$.'
  a. **ni**…[$_{v*P}$ *ziji$_{[+d, \ -a]}$*-POV-op$_{[+d, \ -a]}$…*t*]
  b. *****Zhangsan**…[$_{CP}$ *ziji$_{[+d, \ -a]}$* POV-op$_{[-d, \ -a]}$ **ni**…[$_{v*P}$ *t*-POV-op$_{[+d, \ -a]}$…*t*]]

As for (43a) where Huang & Liu's pragmatic account gives the wrong prediction, the proposed mechanism correctly rules out the long-distance construal of *ziji* in this case because of the conflict of POV features between *ziji* and the CP-phase level POV-op, as shown in (48).

(48) Wo$_i$ renwei [ni$_j$ bu yinggai kan-bu-qi   **ziji**$_{*i/j}$].
 I   think   you not should   look-not-up self
 'I$_i$ think you$_j$ should not look down on *me$_i$/yourself$_j$.'
 a. **ni**…[$_{v*P}$ *ziji*$_{[+d, -a]}$-POV-op$_{[+d, -a]}$…*t*]
 b. *****Wo**…[$_{CP}$ **ziji**$_{[+d, -a]}$-POV-op$_{[+d, +a]}$ **ni**…[$_{v*P}$ *t*-POV-op$_{[+d, -a]}$…*t*]]

In this subsection, I demonstrated how the POV valuation mechanism may explain not only the case where Huang & Liu's (2001) analysis makes a wrong prediction, but also the blocking of the long-distance construal induced by a first-/second-person local antecedent of *ziji*. Nevertheless, the extent to which this mechanism captures all other properties of the logophor *ziji* remains to be seen, and I leave this for future studies.

5. Comparison with den Dikken & Giannakidou (2002)

Den Dikken and Giannakidou (2002) propose a comprehensive analysis of *wh-the-hell* phrases in English as dependent polarity items, which need to be licensed by a c-commanding nonveridical operator such as the question operator and negation. However, it is not clear how this licensing condition could rule out the combination of *daodi* 'the hell' and causal *zenme* 'how come' in MC. More specifically, even if we combine den Dikken & Giannakidou's polarity-licensing analysis with Fitzpatrick's (2005) proposal that *how come* selects a factive complementizer C$_{FACT}$ that creates a factive island (cf. Melvold 1991) as in the structure (49), the result does not provide an explanation for the illicit combination of *daodi* and causal *zenme*, given that the licensing force of the nonveridical operator is not overridden by the C$_{FACT}$ that is lower in the structure.

(49) Nonveridical operator…*daodi*…*zenme* C$_{FACT}$…

   Further, the licensing environments of *wh-the-hell* phrases noted by den Dikken & Giannakidou apply to *how come* as well, as evidenced by (50) and (51). One may also treat *how come* as a dependent polarity item based on this parallelism of licensing environments.

(50) a. I *(don't) know <u>who the hell</u> would buy that book.
 b. He *(didn't) {told me/confirmed/realized} <u>who the hell</u> had spread those horrible rumors about me.

(51) a. I ??(don't) know <u>how come</u> John did not show up yesterday.
 b. He ??(didn't) {told me/confirmed/realized} <u>how come</u> John did not show up yesterday.

However, the licensing condition of dependent polarity items is itself insufficient to rule out the combination of *how come* and *the hell*. This is because although it is

possible to put two polarity items in one licensing environment as in (52a) and (52b), (52c) is still ill-formed.

(52) a.   I don't know [who the hell would read any of the books].
      b.   I don't know [how come anyone would spread bad rumors about me].
      c.   *I don't know [how come the hell John did not come to class yesterday].

Thus, to account for the incompatibility problem, a polarity approach to *wh-the-hell*, although perhaps necessary, should also take the logophoric negative attitude of *daodi* and causal *zenme* into consideration.

6. Summary

Recapitulating the results reached in this paper, the negative attitudes conveyed by *daodi* and causal *zenme* need to be ascribed to either the external speaker or the internal speaker (the subject referent of certain speech-act verbs) to obtain the full interpretation of an attitude-bearing question. This can be formalized as their unvalued POV feature [ud] that must be valued by a POV-op for determination of their logophopric orientation and the identification of their attitude-bearer. The minimality condition of this valuation relation prevents *daodi* from co-occurring with causal *zenme* under the same question operator because only the POV feature of *daodi* may be valued in such a configuration, leaving the POV feature of *zenme* unvalued. Further, the matrix-subject person-feature constraint is derived from the requirement that *daodi's* POV feature obtained from its closest POV-op must be consistent with that of the POV-op at its scope position. Additionally, adopting the POV valuation mechanism makes it possible to formalize the Blocking Effects of *ziji* induced by the first-/second-person embedded subject. More generally, the analysis here, if on the right track, suggests that syntactic computation plays a role in determining pragmatic licensing and contributes to our understanding of the syntax-pragmatics interface.

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