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On the Syntax of Mirativity: Evidence from Mandarin Chinese*

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1. Setting the Stage

In this paper, we look into the syntax and pragmatics of Mandarin mirative construals, where syntactic means are employed to encode unexpectedness from the speaker's point of view. In the literature, mirativity is often characterized as a distinctive category expressing sudden discovery, surprise and unprepared mind of the speaker, as already well-documented in DeLancy's pioneering works (DeLancy 1997, 2001, 2012; Aikhenvald 2004, 2012; Peterson 2016; among others). It is usually encoded by a verbal affix, a complex predicate, or a sentence final particle (SFP), as shown in (1).

(1) O-ba-**o** ci **o-le-o**.
3SG-go-**NML** CEP **MIR**
'He already left.' (I expected him to still be here!) (Kham; Watters 2002)

By contrast, just like its tense makeup, Mandarin does not have a morphological marker for mirativity, but relies on sentential adverbs such as *yuanlai* 'turn out' or *zenme* 'how come', as shown in (2b) and (2c) respectively. Or it may employ the sentence-final particle (SFP) a^0 with a neutral tone, as in (2d). The mirative reading is most salient when the two adverbs *yuanlai* and *zenme* occupy the sentence-initial position. Otherwise, they need to carry stress after a topicalized subject, where the presence of a^0 is required, as in (3a,b):

(2) a. Akiu qu-le Budapesi.
Akiu go-PERF Budapest
'Akiu went to Budapest.'

b. **Yuanlai** Akiu qu-le Budapesi!
turn.out Akiu go-PERF Budapest
'It turns out that Akiu went to Budapest!'

c. **Zenme** Akiu qu-le Budapesi!
how.come Akiu go-PERF Budapest
'How come Akiu went to Budapest!'

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d. Akiu qu-le Budapesi **a^0**!
Akiu go-PERF Budapest SFP
'To my surprise, Akiu went to Budapest!'

(3) a. Akiu **yuanlai** qu-le Budapesi **a^0**!
Akiu turn.out go-PERF Budapest SFP
'It turns out that Akiu went to Budapest!'
b. Akiu **zenme** qu-le Budapesi **a^0**!
Akiu how.come go-PERF Budapest SFP
'How come Akiu went to Budapest!'

In this paper, we provide a unified analysis of these mirative forms in Mandarin, and reach the conclusion that mirativity in Mandarin is expressed by discrete functional elements appearing very high in the sentential projections. Related observations have already been made by Li (2006), Paul (2014, 2015) and Pan (2015). Under the cartographic approach (Cinque 1999; Rizzi 1997; Tsai 2015; among many others), it is therefore quite plausible to suggest that mirativity is actually represented by the projection of a Speech Act Phrase (SAP) in the left periphery: the SFP a^0 merges to its head position, while *yuanlai* 'turn out' and *zenme* 'how come' end up in its Spec position.

2. Mirativity as a Distinctive Category

In the literature, there is a debate on whether mirativity is a distinctive category or a semantic extension of inferential evidentiality. Mirativity is conveyed by the same form of verbal suffixes as indirect evidentiality in Turkish, as in (4) (Aksu-Koç & Slobin 1986).

(4) Kemal gel-miş (Turkish; Slobin and Aksu 1982:187)
Kemal came-EVID
'Kemal came.'

Similarly, mirative construals in Kham do not specify the source of information (e.g., first-hand observation, inference or hearsay). In Magar, the mirative marker *le* can co-occur with the indirect evidence marker –*sa*, as in (5).

(5) *ŋa-i* *i-din-cʌ* *sya* (Magar; Aikhenvald 2014)
1SG-ERG PROX-type-ATT meat
ŋa-jya-o ***le-sa-ŋ***
1.PRON-eat-NML IMPF.MIR-INFER-1.PRON
[I realize to my surprise that:] 'Apparently I have eaten this type of meat!'

Interestingly enough, Mandarin miratives behave quite differently in this respect: A mirative sentence such as (6) can be uttered not only in situations of indirect evidence, as in (6a), but is also compatible with other evidential types such as direct

evidence and hearsay, as specified in (6b) and (6c) respectively:

(6) **Yuanlai /Zenme** Akiu chi sherou a^0!
turn.out/how.come Akiu eat snake.meat SFP
'{How come/It turns out that} Akiu eats snake meat!'

a. Indirect evidence: the speaker found that Akiu went to a restaurant which mainly serves snake meat and he spent an hour staying there.
b. Direct evidence: the speaker directly witnesses the situation that Akiu is eating snake meat.
c. Hearsay: the speaker is told that Akiu eats snake meat.

On the other hand, Mandarin miratives do pattern like their counterparts in other languages in pragmatic terms, namely, expressing the surprise of the speaker. In particular, mirative *yuanlai* 'turn out' expresses the speaker's sudden discovery or realization of the situation (cf. Lü 1980; Xing 1985; Tang 2006; Wu 2012; among others). This is illustrated by the pragmatic restrictions laid out in (7).

(7) **Yuanlai** Akiu chuguo-le! {#wo yi-dian
turn.out Akiu go. abroad -PERF I one-bit
dou bu yiwai / # Zhe-jian shi wo zhiqian JIU zhidao-le}.
DOU not surprise/ This-CL thing I before JIU know-PERF
'It turns out that Akiu is not in the country! {I am not surprised at all / I have already known}.'

Wu (2012: 203) points out that *yuanlai* observes a contrast constraint: "a proposition did not hold at a past time but holds at the time of assertion". As will become clear below, this property is shared by both the mirative and temporal usages of *yuanlai*. Temporal *yuanlai* can be translated as 'originally', in which case the relevant proposition was true in the past, but false now.

Similarly, mirative *zenme* and the SFP *a*^{0} express a proposition contrary to the speaker's belief or expectation (Lü 1980; Huang & Ochi 2004; Tsai 2008; among others), as shown by (8a) and (8b) respectively. On the other hand, the pragmatic force of mirative *zenme* is characterized as astonishment by Paul (2014), and as "the matter being addressed as deviant from how it should be, or normally is, from the speaker's point of view" in Wu (2004: 178).

(8) a. **Zenme** Akiu chuguo-le! {#wo yi-dian
how.come Akiu go. abroad-PERF I one-bit
dou bu yiwai / # gen wo cai-de yiyang}.
DOU not surprise/ with I guess-DE same
'How come Akiu is not in the country! {I am not surprised at all / It's just as what I suspected}.'

b. Akiu chuguo-le **a^0**! {#wo yi-dian
Akiu go. abroad -PERF SFP I one-bit
dou bu yiwai / # gen wo cai-de yiyang}.
DOU not surprise/ with I guess-DE same
'To my surprise, Akiu is not in the country! {I am not surprised at all / It's just as what I suspected}.'

Another defining property of a mirative expression is that it cannot be used to answer a question, as evidenced by the contrasts in the question-answer pairs of (9-11). This is because there is a pragmatic conflict between the answerhood and the surprise attitude as proclaimed by Speaker B in (9a,b). The same situation does not arise under the unexpectedness evaluation associated with *jingran* in (9c).[1]

(9) A: Akiu ganggang yudao-le shei? Name xingfen.
Akiu just meet-PERF who that excited
'Who did Akiu just meet? He is so excited!'

B: a. # **Yuanlai** ta yudao-le Chenglong!
turn.out he meet-PERF Jackie.Chan
'It turns out that he met Jackie Chan!'
b. # Ta yudao-le Chenglong a^0!
he meet-PERF Jackie.Chan SFP
'He met Jackie Chan!'
c. Ta (jingran) yudao-le Chenglong.
he unexpectedly meet-PERF Jackie.Chan
'He met Jackie Chan (unexpectedly).'

Additionally, it is widely assumed that a^0 merges high in the left periphery. Li (2006) proposes that the SFP a^0 is a discourse particle located in DiscourseP, which scopes over EvaP (Evaluative Phrase) headed by *ne*, as evidenced by the linear precedence of *ne* over a^0 in (10).

(10) Xiaowang hai cang zhe zhe baobei **ne** **a^0**/ ***a^0** **ne**. (Li 2006: 61)
Xiaowang still hide Prog this treasure SFP SFP SFP SFP
'Little Wang's still keeping this treasure.'

In Paul's (2014) analysis, a^0 occurs as the head of the highest projection of the CP layer, namely, AttP (Attitude Phrase), as shown in the following schematization:

[1] As pointed out by an anonymous reviewer, *jingran* 'unexpectedly' can also be said to express some sort of surprise. However, we would argue that it actually expresses "unexpectedness" as an evaluative adverb, and does not fall under the same category as mirative *yuanlai*. The latter is evidential in nature, and functions as an attitude operator by raising to the Spec of SAP2, as sketched in the diagram (27a).

(11) Attitude (C_3) > Force (C_2) > low C (C_1)

ou	warning	*ma*	interrogative	*le*	currently relevant state
(y)a	astonishment	*ba*	imperative	*laizhe*	recent past
ne_3	exaggeration	ne_2	follow-up question	ne_1	continued state

Finally, mirative *yuanlai* and *zenme* must precede epistemic modals such as *yiding* 'surely' in (12-13) and evaluative adverbs such as *juran* 'unexpectedly' in (14-15). This indicates that they are merged high up in the top layer of the left periphery.

(12) a. **Yuanlai** ta mai-de gupiao **yiding** hui zhang!
turn.out he buy-DE stock surely will rise
'It turns out that the price of the stock that he buys will surely rise!.'

b. * Ta mai-de gupiao **yiding** **yuanlai** hui zhang!
he buy-DE stock surely turn.out will rise

(13) a. **Zenme** ta mai-de gupiao **yiding** hui zhang!
how.come he buy-DE stock surely will rise
'How come the price of the stock that he buys will surely rise!'

b. * Ta mai-de gupiao **yiding** **zenme** hui zhang!
he buy-DE stock surely how.come will rise

(14) a. **Yuanlai** zhenxiang **juran** zheme canku!
turn.out truth unexpectedly this cruel
'It turns out that the truth is unexpectedly cruel!'

b. * Zhenxiang **juran** **yuanlai** zheme canku!
truth unexpectedly turn.out this cruel

(15) a. **Zenme** zhenxiang **juran** zheme canku!
how.come truth unexpectedly this cruel
'It turns out that the truth is unexpectedly cruel!'

b. * Zhenxiang **juran** **zenme** zheme canku!
truth unexpectedly how.come this cruel

Moreover, mirative *yuanlai* has an IP-internal counterpart whose interpretation is distinctively non-mirative. Rather, it is construed as a temporal adverb, which can be translated as 'originally'. Temporal *yuanlai*, unlike its mirative counterpart, can be embedded under a matrix predicate like *faxian* 'find out', as evidenced by the contrast between (16a) and (16b).

(16) a. ?? Akiu faxian [**yuanlai** wo zai Budapesi].
Akiu find.out turn.out I in Budapest
'?? Akiu found out [that it turns out that I am in Budapest!]'

b. Akiu faxian [wo **yuanlai** zai Budapesi].
Akiu find.out I originally in Budapest
'Akiu found out [that I was originally in Budapest].'

Likewise, only mirative *zenme*, but not its causal counterpart, is blocked from the complement of *xiangzhidao* 'wonder', as shown by the contrast between (17a) and (17b):

(17) a. ?? Akiu xiangzhidao [**zenme** Xiaodi qu-le Budapesi].
Akiu wonder how.come Xiaodi go-Prf Budapest
'?? Akiu wondered [why the hell Xiaodi went to Budapest!]'
b. Akiu xiangzhidao [Xiaodi **zenme** qu-le Budapesi].
Akiu wonder Xiaodi how.come go-Prf Budapest
'Akiu wondered [how come Xiaodi went to Budapest].'

We attribute the deviance of (16a) and (17a) to the selectional restrictions imposed by the matrix predicates, which cause the truncation of the top layer of their clausal complements. More specifically, *faxian* 'find out' selects a Finite Phrase (FinP), hence incapable of accommodating an SAP. *Xiangzhidao* 'wonder', on the other hand, selects an Interrogative Phrase (IntP), and cannot host an SAP, either.

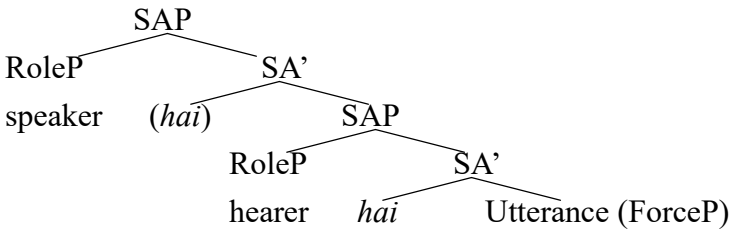
All these observations point to the conclusion that sentence-initial *yuanlai* and *zenme* are merged much higher than their IP-internal counterparts, and associated with syntactic projections encoding mirativity in the left periphery. This distributional property is directly responsible for their inability either to appear in truncated complements, or to be scoped over by lower functional categories.

3. The Syntax of Speech Act and Mirativity

Now we move on to the technical side of our treatment. Speas & Tenny (2003) and Hill (2007), propose that Speech Act Phrase (SAP) should be analyzed as a Larsonian shell structure: The higher layer conveys the speaker's point of view (expressing an indirect address or exclamative construal), and the lower layer identifies the addressee (expressing a direct address or vocative construal), as evidenced by the distribution of *vai* 'oh' in (18). *Vai* is used as the RoleP for the speaker and *măi Ioane* 'you Ion' for the addressee, while *hai* is considered as a Romanian speech act marker used when the speaker wants to influence the hearer's reaction through injunction or evidentiality. Their distribution is illustrated in (19).

(18) (Vai) măi (Ioane) (*vai) hai că nu te crede nimeni!
oh you Ion oh hai that not you believe nobody
'My God, Ion, give it up, nobody believes you!'

(19)



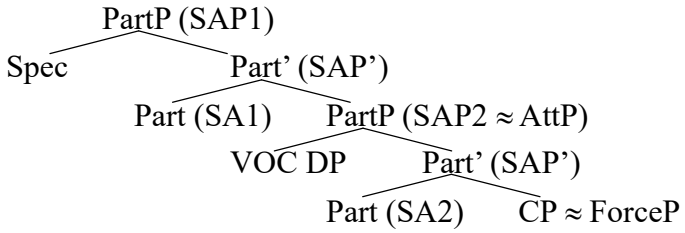
In a somewhat different analysis, Haegeman (2014) adopts a split SAP approach to West Flemish vocatives in (20a,b):

(20) a. M' een al een medalie wè/zulle. (West Flemish)
we have already a medal SA2 vocative
'We already have a medal, you know.'

b. Zé/né, m' een al een medalie.
SA1 vocative we have already a medal
'Look, we already have a medal.'

As illustrated in the diagram (21), the higher SAP (SAP1) establishes the discourse relation between speaker and addressee, whereas the lower SAP (SAP2) is stative and more attitudinal in Paul's (2014) sense: Namely, it reaffirms the already established speaker-addressee relationship with regard to the content of the utterance.

(21)



English performs a transparent correspondence between the form of a sentence and the use of a sentence. For example, sentences are equipped with an interrogative mood if performing subject-auxiliary inversion, and are used as questions. To offer a working analysis of Chinese miratives, we would like to point out again that the mapping between sentential mood and the force/attitude of a sentence is not transparent in Mandarin, due to the lack of morphological markers (cf. *hai* in Romanian) and overt syntactic mechanisms such as subject-aux inversion and *wh*-movement. Both sentence-initial adverbs and sentence-final particles, which may appear in sentences with indicative mood, occur as instantiations of mirativity, as exemplified by (22a-c).

(22) a. **Yuanlai** Akiu chi she-rou (a^0)!
turn.out Akiu eat snake-meat SFP
'It turns out that Akiu eats snake meat!'

b. **Zenme** Akiu chi she-rou (a^0)!
how.come Akiu eat snake-meat SFP
'How come Akiu eats snake meat!'

c. Akiu chi she-rou **a^0**!
Akiu eat snake-meat SFP
'To my surprise, Akiu eats snake meat!'

As mentioned above, both mirative adverbs have a lower counterpart, i.e., temporal *yuanlai* in (23a) and causal *zenme* in (23b). The former is associated with the indicative mood, and the latter the interrogative mood.

(23) a. Akiu **yuanlai** chi she-rou, dan xianzai bu chi le.
Akiu originally eat snake-meat but now not eat Inc
'Akiu originally ate snake meat, but now he doesn't eat it anymore'

b. Akiu **zenme** chi she-rou (ne)?
Akiu how.come eat snake-meat SFP
'How come Akiu eats snake meat?'

Along the line of Coniglio & Zegrean (2012), we distinguish a Mood Phrase (MoodP, cf. Cheng 1991, 1997) from an SAP by assuming that the Mood head is equipped with a feature signaling the clause type (cf. Speas & Tenny 2003; Haegeman 2014; among others). We further propose that MoodP situates in the lower CP layer, where the Mood head may be marked either as [indicative], as in (24a), or as [interrogative]. In the latter case, *zenme* may merge low as an instrumental *wh*, and undergo covert movement in LF, as in (24b). The other option is to merge *zenme* high to check the interrogative feature directly, which results in a causal question, as in (24c).

(24) a. Declaratives:
... [$_{\text{MoodP}}$ [Mood^0 $_{\text{[indicative]}}$…[$_{\text{IP}}$ *Akiu chi-le jirou*.]]]

b. Instrumental *how*-questions:
... [$_{\text{MoodP}}$ *zenme*$_i$ [Mood^0 $_{\text{[interrogative]}}$…[$_{\text{IP}}$ *Akiu* t_i *chi she-rou*]]]
covert movement

c. Causal *how*-questions:
... [$_{\text{MoodP}}$ *zenme* [Mood^0 $_{\text{[interrogative]}}$…[$_{\text{IP}}$ *Akiu chi she-rou*]]]

In terms of pragmatics, mirativity is often associated with the speech act of expressives. Its main function is to express the attitude of the speaker. Therefore, it does not require the involvement of the addressee. This is demonstrated by the curious fact that Chinese miratives are not compatible with addressee-oriented SFPs. Technically, we construe the lower SAP (SAP2) in Haegeman's sense, which encodes a distinctive relation of the speaker and the addressee. For miratives, SAP2 is endowed with the feature EXPRESS (or [mirative]), and hence rejects the occurrence

of addressee-oriented SFPs.

(25) a. **Yuanlai** Akiu mei qu Budapesi {a^{0}/$^{??}$$la^{0}$/$^{??}$$ne^{0}$}!
turn.out Akiu not go Budapest SFP/SFP/SFP
'It turns out that Akiu did not go to Budapest!'

b. **Zenme** Akiu mei qu Budapesi {a^{0}/*a^{11}/*ne^{11}}!
how.come Akiu not go Budapest SFP/SFP/SFP
'How come Akiu didn't go to Budpest!'

In terms of syntax, we adopt the criterial approach of Rizzi (2010, 2016). In these works it is claimed that the left periphery consists of a sequence of functional head (Top, Foc, Q, Rel, Excl,…) which have a dual function:

I. In (narrow) syntax, they trigger movement (and determine freezing effects).

II. At the interfaces with sound and meaning, they trigger interpretive procedures for the proper assignment of scope-discourse properties at LF, as well as the appropriate intonational contours at PF.

Based on these guidelines, we propose that *yuanlai* is hosted by an Evidential Phrase (EviP), whereas *zenme* is hosted by a Focus Phrase (FocP). Moreover, we take SAP2 to be endowed with a criterial feature [mirative], expressing the surprise attitude. This mirative feature can be checked by merging a^{0} directly to its head, which in turn values *yuanlai* and *zenme* as [mirative] through Agree, as illustrated below.

(26) a. $[_{SAP2}\ a^{0}_{[mirative]}\ldots[_{EviP}\ \textit{yuanlai}\ Evi^{0}\ [_{MoodP}\ Mood^{0}_{[indicative]}\ldots[_{IP}\ldots$

b. $[_{SAP2}\ a^{0}_{[mirative]}\ldots[_{FocP}\ \textit{zenme}\ Foc^{0}\ [_{MoodP}\ Mood^{0}_{[interrogative]}\ldots[_{IP}\ \ldots$

Alternatively, *yuanlai* may carry the feature [mirative], and raise to the Spec position of SAP2 to implement criterial checking, as in (27a), in which case the presence of a^{0} is no longer required. The same analysis applies to mirative *zenme* in (27b) as well.

(27) a. $[_{SAP2}\ \textit{yuanlai}_{i[mirative]}\ SA2^{0}_{\ [mirative]}\ \ldots[_{EviP}\ t_{i}\ Evi^{0}\ [_{MoodP}\ Mood^{0}_{[indicative]}\ldots$
criterial checking

b. $[_{SAP2}\ \textit{zenme}_{i\ [mirative]}\ SA2^{0}_{[mirative]}\ \ldots\ [_{FocP}\ t_{i}\ Foc^{0}\ [_{MoodP}\ Mood^{0}_{[interrogative]}\ldots$
criterial checking

As a way to test our proposal, we may look into the grammatical properties of *qishi* 'actually' in (28a), which expresses that the speaker takes the addressee's belief to be inconsistent with reality (cf. Wang et al. 2011). In a mirative construal involving sentence-initial *yuanlai* 'turn.out', it is the speaker's belief that is contradicted. As a result, mirative *yuanlai* is fully compatible with *qishi*, as evidenced by (28b).

(28) a. Akiu **qishi** hen congming. Ni gaocuo-le.
Akiu actually very smart you wrong-Inc
'Akiu is actually smart. You got it wrong.'

b. **Yuanlai** Akiu **qishi** hen congming (a^0)!
turn.out Akiu actually very smart SFP
'It turns out that Akiu is actually smart!'

By contrast, when *yuanlai* appears after *qishi* 'actually', it can only receive the temporal interpretation, as shown by the contrast between (29a,b). This suggests that mirative *yuanlai* has indeed merged high in the left periphery, whereas its temporal counterpart is situated within IP.

(29) Akiu **qishi** **yuanlai** hen congming.
Akiu actually originally very smart
a. 'Akiu was actually very smart originally.'
b. # 'It turns out that Akiu is actually smart!'

Also, some people may find the exchange of adverbial word order in (30) acceptable. It is instructive to note that, under this configuration, only the mirative reading of (30a) is possible. By contrast, the temporal reading of (30b) is blocked. It is therefore quite plausible to take the evaluative adverb *qishi* 'actually' as a delimiter, placing mirative *yuanlai* in the upper CP layer (presumably SAP2), where the subject *Akiu* can be marginally topicalized to the sentence-initial position with a stress on *yuanlai*.

(30) ? Akiu **yuanlai** **qishi** hen congming (a^0)!
Akiu turn.out actually very smart SFP
a. 'It turns out that Akiu is actually very smart!'
b. # 'Originally, Akiu was actually very smart.'

4. Further Issues

Two predictions can be made by the our analysis in section 3. First, the semantic/pragmatic dichotomy between mirative *yuanlai* and temporal *yuanlai* suggests that they should be able to co-occur in the same sentence. This is indeed borne out, as illustrated by the following examples:

(31) a. ? **Yuanlai** Akiu **yuanlai** shi ge nonmin!
turn.out Akiu originally is Cl farmer
'It turns out that Akiu is originally a farmer!'

b. ? **Yuanlai** Akiu **qishi** **yuanlai** hen congming!
turn.out Akiu actually originally very smart

'It turns out that Akiu was actually very smart originally.'

The somewhat marginal grammaticality of (31a,b) is presumably due to haplology. Such a view is supported by the fact that, when post-subject *yuanlai* is replaced by its synonym *benlai* 'originally', the sentences become perfect, as evidenced by (32a,b):

(32) a. **Yuanlai** Akiu **benlai** shi ge nonmin!
turn.out Akiu originally is Cl farmer
'It turns out that Akiu is originally a farmer!'

b. **Yuanlai** Akiu **qishi** **benlai** hen congming!
turn.out Akiu actually originally very smart
'It turns out that Akiu was actually very smart originally.'

Second, our analysis predicts that sentence-initial *yuanlai* 'turn out' and *zenme* 'how come' can be embedded under a matrix predicate which selects a "larger" projection in the upper CP layer. Interestingly enough, this also seems to be the case. The selectional properties of *jingya* 'surprised' accommodate an SAP complement hosting either *yuanlai* or *zenme*, as illustrated by (33a) and (33b) respectively:

(33) a. Ta hen jingya [**yuanlai** Akiu qu-le Budapesi].
he very surprised turn.out Akiu go-Prf Budapest
'He is surprised at [(the inexpectancy) that it turns out that Akiu went to Budapest].'

b. Ta hen jingya [**zenme** Akiu qu-le Budapesi].
he very surprised how.come Akiu go-Prf Budapest
'He is surprised at [how come Akiu went to Budapest].'

5. Concluding Remarks

In this article, we argue for the separation of Mood and Force in cartographic terms, and has put forth the claim that pragmatic construals such as speech acts and speaker's attitudes are encoded in syntactic projections on the top layer of the left periphery, as shown below:

I. Mirativity: SAP2 with indicative or interrogative mood
II. Questions: SAP1 and SAP2 with interrogative mood
III. Declaratives: SAP1 and SAP2 with indicative mood

This cartographic account correctly captures the descriptive generalization that mirative adverbs must situate higher than epistemic/evaluative adverbs, and cannot be embedded under predicates that select for a truncated clause as their complements.

Finally, our study demonstrates that criterial checking is at work in shaping the

left periphery of mirative sentences in Mandarin, and that the mirativity in question is encoded as a distinctive category either in the form of a functional head or in the form of an adverb.

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