Low Predicate Inversion in Mandarin

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Abstract　A VP, AP, or NP in a predicate can undergo a clause-internal movement in Mandarin Chinese (e.g., *Ta yao mai shu qu* 'He wants to <u>buy books</u>', *Ta shou de hen* 'He is very <u>thin</u>', and *Ta shi bendan yi ge* 'He is a <u>fool</u>'). The moving element must be predicative, and the landing site must be lower than any functional element in the IP-domain of the clause. The paper shows that there is a formal dependency between a low functional head and the predicate in the clausal spine. The exponents of the functional head for stative predicates are different from those for non-stative predicates, and the predicative category that is attracted by the functional head carries a stativity feature. Similar predicate raising can be obligatory and can land above a subject if the latter remains in situ in some languages. Moreover, the stativity contrasts of predicates are morphologically visible in some languages. The paper severs the syntactic licensing of predicates from the syntactic licensing of other parts of a clause, arguing that while subjects need their formal features such as Case to be licensed, predicates need their stativity feature to be licensed. In both cases, licensing of an element can be achieved by either its relation to a local c-commanding functional head or the movement of an element that bears the relevant feature to the Spec of the functional head.

1 Introduction

If two positions in a linguistic structure are syntactically or semantically related to each other, they establish a dependency. In our understanding of clause structures, so far, we have recognized certain dependencies that are for subjects only (e.g., Keenan 1976; McClosky 1997; Sheehan & Bailey 2017; see den Dikken 2018: Ch. 5 for a review), and the dependencies can be seen in the subject movement in, e.g., raising constructions. The movement has been claimed to be driven to license the abstract Case features of subjects, rather than to achieve any semantic effect. Is there any parallel dependency for predicates? Specifically, is there any abstract feature in predicates that has a dependency on a functional head? The goal of this paper is to give a positive answer. My evidence for the dependency of predicates comes from a cross-categorial Low Predicate Inversion (LPI) in Mandarin Chinese (MC). The word *low* here means both the low surface position of the inverted element in the clausal spine and its low projection level (i.e., it is the lexical core of a predicate). Compared with (1a), the AP *shou* 'thin' precedes the degree word *hen* 'very' in (1b), with an additional *de*. Based on the stranded overt element, I call such an inversion Degree-LPI (Deg-LPI). Also, compared with (2a), the NP *bendan* 'fool' precedes *yi ge* 'one CL' in (2b). I call such an inversion in copular constructions CL-LPI.[1]

(1) a.　Axin　　hen <u>shou</u>.　　　　　b.　Axin　　<u>shou</u> de hen.
　　　Axin　　very thin　　　　　　　　Axin　　thin DE　very
　　　a & b: 'Axin is very thin.'　　　　　　　　　　　　　　*Deg-LPI*

(2) a.　Axin　　shi yi　ge　<u>bendan</u>.　b.　Axin　　shi <u>bendan</u>　yi　ge.
　　　Axin　　be　one CL　fool　　　　　Axin　　be　fool　　one CL
　　　a & b: 'Axin is a fool.'　　　　　　　　　　　　　　　*CL-LPI*

A third type of LPI, GO-LPI, can also be identified. Compared with (3a), the VP *mai shu* 'buy book' is followed by *qu* 'go' in (3b); compared with (4a), the same VP is followed by *lai* 'come' in (4b) (see Chao 1968: 579, among many others). The basic syntactic properties of the *lai*-constructions are covered by those of the *qu*-constructions (cf. Lu 1985: §5), although *qu* encodes that the event denoted by the VP is away from the deictic center, whereas *lai* encodes that the event denoted by the VP is towards the deictic center. I treat the *lai*-version as a syntactic

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[1] Abbreviations: CL: classifier; BA: causative; DE: modification; EXP: experiential; IMP: imperative; PRF: perfective; PRG: progressive; PRT: sentence-final particle.

variant of the *qu*-version, and discuss the latter only.

(3) a. Axin   qu   <u>mai shu</u>   le.   b.   Axin   <u>mai shu</u>   qu le.

       Axin   go   buy book   PRT   Axin   buy book   go PRT

       a & b: 'Axin has gone to buy books.'   *GO-LPI*

(4) a. Axin   lai   <u>mai shu</u>   le.   b.   Axin   <u>mai shu</u>   lai   le.

       Axin   come buy book   PRT   Axin   buy book   come PRT

       a & b: 'Axin has come to buy books.'   *GO-LPI*

I now show that the post-VP *qu* is a functional element, similar to the stranded *hen* in (1b) and the stranded CL in (2b), and a GO-LPI is responsible for the VP-*qu* order. Arguments for the non-verb status of the post-VP *qu* are the following. First, like an auxiliary, the post-VP *qu* disallows the co-occurring verb to have an aspect suffix (Lu 1985: 24 (4b)), as shown in (5).[2]

(5) Wo   kan-{*le/*guo/*zhe}   chang   dianying qu.

    I   see-PRF/EXP/PRG   CL   movie   go

    'I go to see a movie.'

Second, if the post-VP *qu* were a verb, it should be accessed by an independent modifier; however, like an auxiliary and unlike a verb, the post-VP *qu* rejects any independent modifier, such as *zhuo-zhe che* 'sitting in a car' in (6).

(6) Wo   yao (*zuo-zhe   che) kan shu   (*zuo-zhe   che) qu.

    I   want sit-PRG   bus read book   sit-PRG   bus go

    'I want to go to read books.'

    Intended but impossible reading: 'I want to go by bus to read books.'

Third, like an auxiliary and unlike a verb, the post-VP *qu* must be phonologically weak, having a neutral tone (Zhu 1982: 165). See Zhu's minimal pair in (7). In (7a), *qu* has a full tone, and it is the verb of the matrix predicate, while the VP *qi ma* 'ride horse' is a manner modifier of the going action. In (7b), *qu* has a neutral tone (marked by the superscript ^{0}), and the VP *qi ma* is the lexical predicate, rather than a modifier of *qu*. This post-VP *qu* is functional.

(7) a. Qi ma   qu.   b.   Qi ma qu^0.

       ride horse   go   ride horse   go

       'Go to a certain place by riding a horse.'   'Go to ride a horse.'

All of the three facts show that the post-VP *qu* is a functional element, and thus the VP to its left is not base-generated as its modifier. The pre-VP *qu*, as in (3a), on the other hand, can be ambiguous in its syntactic status. It may have the same status as the post-VP *qu* (cf. Chao 1968: 479) or be a control verb.[3] In the former case, it is not a verb, and has all the three properties mentioned above. It precedes the selected VP, without any LPI. In this case, (3a) has

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[2] Xinjunrong Huang (p.c.) uses (i) to challenge Lu's (1985) claim that no aspect suffix may occur with the verb that precedes *qu*. Note that all GO-LPICs have their canonical counterparts, but (ii), the canonical version of (i), is unacceptable. Furthermore, if the verb in (i) is replaced with another verb, as in (iii), the sentence is unacceptable. The special use of *–zhe* in (i) is found in imperatives (Yuan 1993). I thus treat (i) as an idiomatic expression.

(i) Yibianr wan-zhe qu   (ba)!   (ii) *Yibianr   qu   wan-zhe   (ba)!   (iii) *Yibianr chi-zhe qu (ba)!

    away play-PRG go   IMP   away   go   play-PRG   IMP   away eat-PRG go IMP

    'Go and play in another place!'

[3] For other special uses of the pre-VP *qu,* see Lu (1985) and Huang (2018: 91), and for other special uses of the post-VP *qu*, see Tang (1979: 308) and Lu (1985).

the canonical order, similar to those in (1a) and (2a). If the VP is inverted, we get a GO-LPIC, as in (3b). In contrast, when a pre-VP *qu* is used as a control verb, it is a prospective aspectual control verb, taking a non-finite clause as its complement, similar to other aspectual control verbs such as *kaishi* 'start', *jixu* 'continue', and *tingzhi* 'stop' (Landau 2000, Tang 2000). In this use, like some control verbs, *qu* does not have the above three properties (see Appendix C).

The post-VP *qu* is treated as a particle in Chao (1968: 479), a functional element in Zhu (1982: 165), and an auxiliary in Tang (1979: 307). Based on the arguments introduced above, I also treat the post-VP *qu* as a functional element. As in a Deg-LPI and CL-LPI, a functional element occurs with a preceding predicative XP in examples like (3b/4b), (6) and (7b). Thus, GO-LPI is identified.

I have introduced three types of LPI: Deg-, CL-, and GO-LPI. The relevant construcitons can be called Deg-LPIC, CL-LPIC, and GO-LPIC, respectively. LPI is productive. In a Deg-LPIC, as in its canonical counterpart, the gradable XP can also be a stative VP, e.g., *ai chuniu de hen* 'love to boast very much', *hui jijiao de hen* 'tend to be fussy about very much', and (8).

(8)　Ai　guan　　xianshi　　　　de　hen.
　　　love control　other's.buisness　DE　very
　　　'(He) loves to boss around very much.'

In a CL-LPIC, as in its canonical counterpart, in addition to a copula, other verbs that take a predicative expression as their complement, such as *biancheng* 'become', *chengwei* 'become', *dang* 'regard as' (cf. Partee 1987), may also occur. Also, as in the canonical construction, the CL or unit word in a CL-LPIC can be in various forms. In the CL-LPICs in (9), the individual CL *ben* occurs in (9a), the individuating CL *tan* occurs in (9b), the collective CL *qún* occurs in (9c), and the container unit word *kuang* 'basket' occurs in (9d).

(9)　a.　Na　ke　　　shi　<u>hao　　　shu</u>　　yi　ben.
　　　　　that　rather　be　good　　　book　　one　CL
　　　　　'That is a good book.'
　　　b.　Jiéguǒ　　　　bianchéng-le　<u>chou　　　shuǐ</u>　　yi　tan.
　　　　　consequently　become-PRF　stinky　　water　　one　puddle
　　　　　'Consequently, it became a puddle of stinky water.'
　　　c.　Naxiē　　rén　　　shi　<u>weijunzǐ</u>　　yi　qún.
　　　　　those　　person　be　hypocrites　　one　group
　　　　　'Those people are a group of hypocrites.'
　　　d.　Jiéguǒ　　　　bianchéng-le　<u>potónglantie</u>　yi　kuang.
　　　　　consequently　become-PRF　useless.metal　one　basket
　　　　　'Consequently, it became a basket of useless metal.'

LPI is also found in non-root predications. In (10), LPI occurs in secondary predicates.

(10)　a.　Ta　ba　na　ge　xiaohai　ma　　　de　zhao　　mama　　qu　le.
　　　　　he　BA　that　CL　kid　　　scold　DE　look.for　mom　　　go　PRT
　　　　　'He scolded that kid such that the kid went to look for his mom.'
　　　b.　Na　pi　ma　　　pao　de　kuai de　hen.
　　　　　that　CL　horse　　run　DE　fast　DE　very
　　　　　'That horse runs very fast.'
　　　c.　Wo　ma　ta　bendan　yi　ge.
　　　　　I　call　he　fool　　　one　CL
　　　　　'I call him a fool.'

Deg- and CL-LPICs express states, while GO-LPICs express either episodic events, as seen in the examples above, or habitual events, as seen in (11) (Huang 2018: 63).

(11) a. Xiaoming jingchangqianshui qu.   b. A-Q tiantian mai shu qu.
      Xiaoming often dive go   A-Q everyday sell book go
      'Xiaoming often goes to dive.'   'A-Q goes to sell books everyday.'

Each of the three LPICs has been studied by many, e.g., Chao (1968), Tang (1979), Zhu (1982), Lu (1985), Ma (1988), Zhang (2003), and Huang (2018) on GO-LPICs, Zhang (1999, 2000) on CL-LPICs, and Lü (1999: 268) and Zhang (2010: 312) on Deg-LPICs. Also, constructions similar to a CL-LPIC are discussed in Tang (1996) and constructions similar to Deg-LPIC are discussed in Liu (2018). However, the sharing of certain properties of the three LPICs has not been noted, and thus the existence of a cross-categorial LPI has not been discussed. Assuming that unusual patterns are an empirical reality, linguistic theory should be capable of analyzing them. In this paper, I argue that a LPIC is derived from the basic structure of its corresponding canonical construction by a phrasal movement, and that for a predication, not only the subject, but also the predicate, needs to be licensed by a functional category in syntax, via Agree (i.e., valuing an unvalued feature) or Move under Agree. I further specify that while the functional projection for licensing a subject is generally assumed to be IP (or TP), the one for licensing a predicate is StP (Stativity Phrase), which is specified with [±stative]. Accordingly, I will propose the structure in (12), in which the movement of XP derives a LPIC.

(12)   [$_{IP}$ sbj [$_{I'}$ I ... [$_{StP}$ XP [$_{St'}$ St   [$_{vP}$<sbj> ... <XP>
                             [±stative]   [±stative]

The main text of the paper does not focus on contain constraints on various types of LPIC (see the appendixes). Instead of analyzing various constraints, which tell us where we can find a LPI of a certain type, we try to understand why a LPI exists in language. Also, the MC discussed in this research is the modern system only, not any old system of Chinese.

In §2, I introduce three shared properties of various types of LPIC. I then argue in §3 that a LPIC is derived by a movement that has no semantic motivation. In §4, I argue that the movement is connected to the stativity of predicates, and the stativity dependency is for licensing predicates in syntax. In §5, I introduce other modes of predicate licensing in other languages, including obligatory movement of predicates, and morphological strategies. §6 concludes. In the appendixes, I elaborate a few issues regarding each type of LPIC in MC.

2 Shared syntactic properties of various LPICs
Various LPICs share basic syntactic properties, showing that they are plausibly belong to the same kind of syntactic phenomenon.

2.1 An LPIC does not express any new predication relation
The first shared property of various LPICs is that they do not express any new predication relation. Compared to the canonical construction, a LPIC does not express any additional predication relation. In a CL-LPIC, the stranded CL, as in a canonical construction, is a functional element, and is thus never an independent predicate. In a GO-LPIC, I have argued in §1 that the post-VP *qu* is not a verb; instead, it is a functional element. In these two LPICs, the same predication relation is expressed as in the corresponding canonical constructions.

We now consider Deg-LPICs. If the canonical (13a) is a mono-predicate clause, so is the Deg-LPIC in (13b). In both constructions, *hen* alone is not a predicate independent of *lihai*

'terrific'. Instead, it requires the occurrence of a gradable stative such as *lihai*. A predicate encodes a substantial property of a subject. In neither (13a) nor (13b) does *hen* express a property of any possible subject, and thus it is not a predicate. In the Deg-LPIC in (13b), *de* is thus not a relator in the sense of den Dikken (2006), which occurs between a predicate and its subject. Also, unlike a lexical element, *hen* in a LPIC cannot be modified. Thus, *hen* here is a functional element, as in the canonical version.[4]

(13) a.　Zai　jufaxué-fangmian　Axin　　hen　lihai.
　　　　　at　　syntax-area　　　　Axin　　very　terrific
　　　b.　Zai　jufaxué-fangmian　Axin　　lihai　　　de　　hen.
　　　　　at　　syntax-area　　　　Axin　　terrific　DE　　very
　　　　　a & b: 'In the syntax area, Axin is very strong'.

In MC, the functional element *de* may also introduce a clause, which denotes a secondary predication (e.g., Li 1999). If the subject in such a clause is null, the post-*de* string is a predicate. In (14a), for example, the post-*de* string *hen lihai* 'very terrific' is a secondary predicate, taking a null argument that denotes a sick state as its argument (cf. Corver 2000; Liu 2018). (14b) shows that in such a *hen*-XP predicate, XP cannot be null. This restriction rules out L. Zhang's (2019: 5, fn 2) conjecture that a Deg-LPIC is derived by a silent predicate to the right of *hen*, assuming that the *de* in a Deg-LPIC also introduces a predication. In the conjecture, a silent *lihai* follows *hen* in (13b) (this conjecture has no impact on the main claim of her paper). Since the conjecture is challenged by (14b), we do not adopt it. Instead, we conclude that there is no new predication relation expressed in a Deg-LPIC, compared to its canonical counterpart.

(14) a.　Axin　　　bing de　hen lihai.
　　　　　Axin　　　sick DE　very terrific
　　　　　'Axin is seriously sick.'
　　　b.　*Dabao　bing de　hen lihai,　　Axin　　　ye　bing de　hen ~~lihai~~.
　　　　　 Dabao　sick DE　very terrific　Axin　　　also sick DE　very terrific

Since no LPIC expresses any additional predication relation, the inversion is semantically vacuous. More about this will be discussed in 3.2.

2.2 The predicative category of the inverted XP
The second shared property of various LPICs is that the inverted XP must be a predicative category (i.e., not a type *e* element or a quantificational <et,<et,t>> element, semantically). The inverted element can be a bare lexical expression, rather than an extended projection. For example, in a GO-LPIC, it is a bare VP that is inverted. In a Deg-LPIC, the whole predicate is a DegP, but it is a bare AP or bare stative VP that is away from its canonical position. In this sense, an LPI can be a partial predicate inversion, unlike den Dikken's (2006) whole predicate raising, and thus *de* in a Deg-LPIC is not a linker for the raising of a whole predicate. Likewise, in a CL-LPIC, the whole predicate contains *yi* and the CL, but neither is inverted. Instead, it is the NP, which is predicative, that is inverted. Also, if the post-CL part contains the degree word use of *da* 'big' or *xiao* 'small', as seen in (15a), it may also be inverted, as seen in (15b). Such an expression is also predicative (Morzycki 2009, N. Zhang 2013: 14).

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[4] We steer clear of the post-stative *jí* 'extremely', which must precede the sentence-final *le*, as in (i), whereas the post-stative *hen* never does no. See N. Zhang (2019b) for a syntactic analysis of this use of *ji*.
(i)　Tianqi　　　re　　ji　　　　　*(le).
　　 weather　　hot　extreme　　PRT
　　 'The weather is extremely hot.'

(15) a. Ta shi yi ge <u>da bendan</u>.   b. Ta shi <u>da bendan</u> yi ge.
     he be one CL big fool   he be big fool one CL
     a & b: 'He is a big fool.'

This shared property of various LPICs shows that the operation to derive a LPIC applies to predicative elements only, and applies to various lexical categories of predicative elements.[5]

2.3 The low surface position of the inverted XP in a clause

The third shared property of various LPICs is that the inverted predicative XP surfaces at a very low position in a clause. First, it never surfaces at a clause's left edge, as shown in (16).

(16) a. *<u>Mai shu</u> Axin yinggai qu le.
     buy book Axin should go PRT
   b. *<u>Shou</u> Axin de hen.   c. *<u>Bendan</u> Axin shi yi ge.
     thin Axin DE very   fool Axin be one CL

Second, the inverted predicative XP of a LPIC never surfaces at a position higher than a modal/auxiliary, as shown in (17) through (19).

(17) a. Axin bixu <u>mai shu</u> qu.   b. *Axin <u>mai shu</u> bixu qu.
     Axin must buy book go   Axin buy book must go
     'Axin must go to buy books.'
(18) a. Ta yiding hui <u>gaoxing</u> de hen. b. *Ta yiding <u>gaoxing</u> hui de hen.
     he definitely will glad DE very   he definitely happy will DE very
     'He will definitely be very happy.'
(19) a. Axin shi <u>bendan</u> yi ge.   b. *Axin <u>bendan</u> shi yi ge.
     Axin be fool one CL   Axin fool be one CL
     'Axin is a fool.'

Third, the inverted XP of a LPIC never surfaces at a position higher than an A-not-A form, which can be an auxiliary or verb, denoting a polar question. This is shown in (20) through (22).

(20) a. Axin shi-bu-shi <u>mai shu</u> qu le?
     Axin be-not-be buy book go PRT
     'Has Axin gone to buy gooks?'
   b. *Axin <u>mai shu</u> shi-bu-shi qu le?
     Axin buy book be-not-be go PRT
(21) a. Axin shi-bu-shi <u>ben</u> de hen?
     Axin be-not-be foolish DE very
     'Is Axin very foolish?'
   b. *Axin <u>ben</u> (de) shi-bu-shi (de) hen?
     Axin foolish DE be-not-be DE very
(22) a. Axin shi-bu-shi <u>bendan</u> yi ge?
     Axin be-not-be fool one CL
     'Is Axin a fool?'

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[5] Chinese has no PP predicate (ia), and thus there is no LPIC based on a PP (ib).
(i) a. *Dàhǔ (shi) cóng Riběn.   b. *Dàhǔ (shi) Riběn cóng.
     Dahu be from Japan   Dahu be Japan from
     Intended: 'Dahu is from Japan.'

Low predicate inversion in Mandarin

    b.   *Axin   <u>bendan</u>   shi-bu-shi   yi   ge?
          Axin   fool   be-not-be   one CL

Fourth, the inverted predicative XP of a LPIC never surfaces at a position higher than a sentential negation. This is shown in (23) through (25).

(23) a.   Axin   meiyou   <u>mai shu</u> qu.   b.   *Axin   <u>mai shu</u> meiyou   qu.
          Axin   not   buy book go   Axin   buy book not   go
          'Axin did not go to buy books.'
(24) a.   Axin   bu   shi   <u>bendan</u>   yi   ge. b.   *Axin   <u>bendan</u>   bu   shi   yi   ge.
          Axin   not   be   fool   one CL   Axin   fool   not   be   one CL
          'Axin is not a fool.'
(25) a.   Fangzi   bing   bu   shi   <u>xiao</u>   de   hen.
          house   rather   not   be   small   DE   very
          'The house is not very small.'
    b.   *Fangzi   <u>xiao</u>   (de)   bing   bu   shi   hen.
          house   small   DE   rather   not   be   very

Fifth, the inverted predicative XP of a LPIC never surfaces at a position higher than an adverbial, as shown in (26). Each type of adverbial is licensed by a functional projection (Travis 1988, Cinque 1999), and thus the restriction on the inverted predicate shows its low position. Note that if an adverb occurs in a nominal predicate clause, it must be higher than the copula, which is also higher than the inverted NP (see (19)). Thus, the inverted NP must be lower than an adverb, as well as a copula.

(26) a.   Axin   (yijing)   <u>mai shu</u> (*yijing)   qu   le.
          Axin   already   buy book already   go   PRT
          'Axin has already gone to buy books.'
    b.   Axin   (yijing)   <u>mang</u>   de   (*yijing)   hen   le.
          Axin   already   busy   DE   already   very PRT
          'He is already very busy.'
    c.   Axin   (yijing)   shi   <u>jiugui</u>   (*yijing)   yi   ge   le.
          Axin   already   be   alcoholic   already   one CL   PRT
          'Axin has already become an alcoholic.'

The fact that the inverted predicative XP of a LPIC must surface at a position lower than the left edge of a clause, a modal or auxiliary, sentential negation, an A-not-A auxiliary, and an adverb indicates that the XP surfaces lower than any recognized functional head in the IP-domain.[6] In this aspect, the inversion is different from the light predicate raising discussed in

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[6] The sentence-final particle *le* may occur in all three types of LPIC, as seen in (i).
(i) a.   Ta   mai   shu   qu   le.   b.   Ta   yijing   mang de   hen   le.
        he   buy   book   go   PRT   he   already   busy DE   very   PRT
        'He has gone to buy books.'   'He is already very busy.'
    c.   Ta   yijing   shi   jiugui   yi   ge   le.
        he   already   be   alcoholic   one CL   PRT
        'He has already become an alcoholic.'
When the adverb *yijing* 'already' occurs in a GO-LPIC, as in (iia), it is in construal with the sentence-final *le*, rather than the word *qu* alone. This is because, on the one hand, in the absence of the sentence-final *le*, *yijing* may not occur in a LPIC, as seen in (iia); and on the other hand, in a construction that rejects the sentence-final *le*, the occurrence of *yijing* rescues the construction, as seen in (iib). See Huang (2018: 65) on the issue when a post-VP *qu* can be followed by this non-suffix *le*. This *le* is higher than the domain of LPI.

Simpson (2001), for the modal-final clauses in some Asian languages. In such clauses, the fronted predicate lands at a position higher than the sentential negation, a regular A-bar movement, as shown in (27).

(27) khaw   phuut   phasaa   thai mai dai.   [Thai; Simpson 2001: 95]
     he   speak   language thai NEG can
     'He cannot speak Thai.'

2.4 The DegP- and DP-external surface positions of the inverted XP
The fourth shared property of various LPICs is that the low surface position of the inverted predicative XP is with respect to the clausal structure, rather than a non-clausal domain. The position is not internal to a DegP or DP, as seen in (28a) (cf. (1b)), and (28b) (cf. (2b)).

(28) a.   *Axin   [hen <u>shou</u> de _].   b.   *Axin   shi [yi <u>bendan</u> ge _].
          Axin   very thin   DE   Axin   be   one fool   CL

   I adopt the common assumption on the sequence D-Num-Cl-NP of a nominal (see Geist 2019: 1320 for a detailed formal analysis of this sequence for a predicative nominal). In CL-LPI, the NP is displaced out of the whole DP.
   The inversion is also independent of any element displacement within an argument. In this respect, a relevant issue is whether (29b) is derived from (29a) by the movement of *shu* 'book' from the right of the CL *ben* to the left-edge of the subject, a DP-internal movement. My answer is no. In (29b), the clause-initial bare noun *shu* is used as a topic of the whole sentence, and it has either a generic or definite kind reading ('this kind of books'). Moreover, it is possible that the noun *shu* follows the CL *ben* in (29b) and gets deleted. Thus *shu yi ben* in (29b) is not a constituent. The full structure of (29b) can be (29c). (29d) further shows that if the post-CL noun has a different form from the clause-initial noun, it is not deleted. We thus see no derivation relation between the clause-initial bare noun and the post-CL position.

(29) a.   [Yi ben shu] mei duoshao   qian.
          one CL   book not much   money
          'One book does not cost much.'
     b.   Shu yi   ben mei duoshao qian.   c.   Shu [[yi ben ~~shu~~] mei duoshao qian].
          book one CL   not much   money   book one CL   book not   much   money
          'Regarding books, one copy does not cost much.'
     d.   Jingcha   yi ge   ren   ke   zhifu   bu-liao   na ge   qiangdao.
          policeman   one CL   person   but control   not-able   that CL   robber
          'Regarding policemen, one policeman is not capable of controlling that robber.'

   (30) and (31) (also see Tang 1996) show that within a DP, the movement of the NP is impossible. Although DP-internal raising of the NP is possible in languages such as Bangla (e.g., Simpson & Syed 2016), no evidence of such a raising has been seen in MC yet. What is important to the research of this paper is that the CL-LPI is not a DP-internal inversion.

(30) a.   Ta ba [yi ge   xiaotou] zhifú-le.   b.   *Ta ba [xiaotou yi ge]   zhifú-le.
          He BA one CL   thief   subdue-PRF   he   BA thief   one CL   subdue-PRF
          'He subdued a thief.'

(ii) a.   Axin yijing   mai shu qu   *(le).   b.   Zhe *(yijing) hen hao le.
          Axin already   buy book go   PRT   this already   very good PRT
          'Axin has already gone to buy books.'   'This is already very good.'

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(31) a. na   ge   xiaotou   b. *xiaotou na   ge
         that CL   thief   thief   that CL
         'that thief'

Thus, LPI is a syntactic reality of the predication expressed by a clause, not a DegP- or DP-internal variation. The significance of this reality will be discussed in §4.

The descriptive conclusion of this section is that the various types of LPIC share the following properties: the inversion does not express any new predication relation, the inverted phrase must be predicative, and it surfaces below all functional elements in the IP-domain in a clausal structure, but above the DegP for Deg-LIP and above the DP for CL-LPI. All of these suggest that various LPICs are derived by a unified syntactic operation.

3 A special type of movement

In this section, I argue that the inverted XP in a LPIC has moved to its surface position because of the selection and subextraction restrictions (3.1), the inverstion exibits a delayed EPP effect, which is seen in certain well-studied phrasal movement (3.2), the movement does not show any consistent semantic or information-structure effect (3.3), and it exhibits contrastive properties with the type of movement that applies to subjects only (3.4).

3.1 Two movement effects of LPI

The goal of this section is to give arguments for the movement analysis of LPI.[7] Movement is an operation following the syntactic Agree operation. Since Agree itself has a locality restriction, locality alone may just indicate a syntactic dependency, but not necessarily the occurrence of a movement. However, if X is not only related to two positions that are syntactically local to each other, but also exibits the same selection restriction in two positions, it is possible that X moves from the low positon to the high one (Adger & Ramchand 2005). Indeed, LPI has this reconstruction effect in selection.

In both a LPIC and its canonical counterpart, a functional element selects a predicative expression, and the selection is not affected by the order of the two elements. For example, the CL *tiao* can s-select *hao han* 'good guy', but not *bendan* 'fool', as shown by the acceptability contrast in (32a). The CL-LPIC in (32b) keeps the contrast.

(32) a. Axin   shi yi   tiao {hao-han/*bendan}.
         Axin   be   one CL   good-guy/fool
     b. Axin   shi {hao-han/*bendan} yi   tiao.
         Axin   be   good-guy/fool   one CL
         a & b: 'Axin is a good guy.'

Moreover, unlike experiencer-subject psych-verbs, such as *xihuan* 'like', *taoyan* 'dislike', *pa* 'fear', *danxin* 'be worried', *xianmu* 'envy', *xiangnian* 'miss', experiencer-object psych-verbs, such as *jinu* 'infuriate', *gandong* 'touch', and *wuru* 'insult', cannot be combined with *hen* 'very' (Cheung & Larson 2015: 134), as shown by the acceptability contrast in (33a). The Deg-LPIC in (33b) keeps the contrast.

(33) a. Ta   hen {taoyan/*jinu}   Yani.   b. Ta   {taoyan/*jinu}   Yani de hen.
         he   very dislike/infuriate Yani   he   dislike/infuriate Yani DE very
         a & b: 'He dislikes Yani very much.'

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[7]Another well-known movement test, the idiomatic chunk test, is hard to apply to LPICs, since the stranded element is functional, while an idiomatic reading is generally observed in the combination of lexical elements.

Furthermore, verbs like *likai* 'leave' are not compatible with *qu*, as shown by (34a). The related GO-LPICs are also unacceptable, as shown by (34b).

(34) a. *Ta qu   likai   le.   b. *Ta likai   qu   le.
      he go   leave   PRT   he   leave   go   PRT

In MC, if a head selects an XP, it precedes the latter immediately. The same selection effect in a LPIC and its corresponding canonical construction cannot be analyzed as two linearization patterns of the combination of a head and its complement. Also, as seen in Deg- and CL-LPICs, when a predicative XP precedes its selecting head, it is not adjacent to the latter. The XP is separated from *hen* by *de* in Deg-LPICs and from the CL by a numeral in CL-LPICs. The above selection parallelisms point to the possibility that the base-generated selection relation is kept when the selected XP moves to the left of the selecting element in a LPIC.

Another movement effect in LPICs is a restriction on subextraction. den Dikken (2019) shows that subextraxtion from a moved predicate is systematically impossible (see his further discussion on the freezing effect, which bans subextraction from a moved constituent). In (35a), *xihuan* 'like' may have an indefinite object *yi ge nühai* 'a girl'. The indefinite object of a mental attitude verb must be specific, and thus it must undergo a covert Quantifier Raising (QR; Diesing 1992). The unacceptability of the same indefinite object in (35b) can be explained by a QR failure: since the indefinite is contained in a moved predicative expression, it cannot move any more. The definite *Lili* does not undergo QR, and thus it survives in the LPI.

(35) a. Axin   hen [xihuan   {yi ge   nühai/Lili}].
       Axin   very like   one CL   girl /Lili
       'Axin likes {a girl/Lili} very much.'
    b. Axin   [xihuan {*yi ge   nühai/Lili}]   de   hen _.
       Axin   like   one CL   girl /Lili   DE   very
       'Axin likes Lili very much.'

Similarly, in the canonical (36a), the indefinite object *yi ben shu* 'a book' has either a nonspecific reading, under the scope of the universally quantified subject, or a specific reading, scoping over the subject. In the former reading, the example can be followed by *Suibian shenme shu* 'Anybook'; while in the latter reading, the example can be followed by, e.g., *Jiushi Dongwu Nongzhuang* 'That is *Animal Farm*'. In this latter reading, the indefinite has undergone RQ, moving to a position higher than the quantificational subject. The correlated GO-LPIC in (36b), in the default prosodic pattern, however, has the first reading only, indicating that the QR of the indefinite object does not occur from the inverted VP.

(36) a. Mei ge   ren   dou bixu qu [mai yi   ben shu]. $\forall > \exists; \exists > \forall$
       each CL person   all must go   buy one CL book
       'Everyone must go to buy a book.'
    b. Mei ge   ren   dou bixu   [mai (yi) ben shu]   qu. $\forall > \exists$
       each CL person   all must   buy one CL book   go
       'Everyone must go to buy a book.'

The absence of the subextraction from the inverted predicative XP supports a movement analysis of LPI, and rules out a base-generation analysis of the inversion.

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3.2 The Delayed EPP effect of LPI

In this section, we report one more movement property of LPI. In addition to the four shared properties of various LPICs reported in §2, one more shared property is that the inverted XP is followed by a functional head element immediately. In GO-LPICs, the inversed VP is next to *qu*, which is a functional element (§1). In Deg-LPICs, the inverted XP is next to the functional element *de*, and thus a *de*-support is required, as seen in (37a), but the correlated canonical construction bans *de*, as seen in (37b).

(37) a. *Axin   gaoxing hen.   b.   *Axin   de   hen gaoxing.
          Axin   glad   very   Axin   DE   very glad

Accordingly, an inverted XP may not be separated from *qu* or *de* by an adverbial (see (26) and (6)). As for CL-LPICs, they reject any real numeral (as pointed out by a reviewer), as seen in (38a). No such a constraint is found in a canonical copular construction, as seen in (38b).

(38) a. *Tamen shi bendan si   ge.   b.   Tamen   shi si   ge   bendan.
          they   be   fool   four CL   they   be   four CL   fool
                                                    'They are four fools.'

Yi in Mandarin may play the role of an indefinite article (Zhang 2019a), but a real numeral is not a head element. In Heim & Kratzer (1998: 62) and Geist (2019: 1321), an indefinite article in a predicative nominal is an identity function, i.e., a function that maps every function to itself. This use of the indefinite article thus contributes no content at all, although it does select an atomic element. This is also true of y*i* in a CL-LPIC. Thus, all inverted XP is immediately followed by a functional head element in LPICs.

Independently from LPICs, there is a correlation between the movement of an element and the overtness of the functional head that probes the element. The correlation can be covered by the Delayed EPP (DEPP) (also called delayed gratification in Hsu 2019). I state DEPP in (39):

(39) DEPP: For some functional FPs, the overtness of the Spec needs the overtness of F.

For DEPP, the overtness of the head F can be achieved by either the merger of a head element or a head movement to F. While EPP exhibits a reliance of a head F on the overtness of its Spec element, DEPP exhibits a reliance of the overtness of the SpecFP on the overtness of the head F. Such a correlation is observed in the optional negative movement in English, as seen in (40) (Adger 2003: 335), the optional *so*-XP movement in English, as seen in (41) (Adger 2003: 404), and matrix wh-questions in English: a non-subject wh-phrase moves to SpecCP only when C is realized overtly (i.e., T-to-C movement), as seen in (45). But DEPP is not seen in some other types of movement, such as topicalization, Argument-Movement, and the low predicate movement discussed in 5.1 and 5.2. See Hsu (2019) for an account of DEPP.

(40) a.   Never <u>will</u> I do syntax again. b.   I swore that never again <u>would</u> I drink absinthe.
     c.   *Never I <u>will</u> do syntax again.
(41) a.   So quickly <u>did</u> the vampire move, that we barely saw him.
     b.   *So quickly the vampire moved, that we barely saw him.
(42) a.   What <u>are</u> you doing?   b.   *What you <u>are</u> doing?

DEPP can explain the obligatory adjacency of the inverted XP and a functional head element in a LPIC. The adjacency between the inverted VP and *qu* in GO-LPICs is covered by DEPP, if the VP moves to the Spec that is headed by *qu*. DEPP also explains the *de*-support in

Deg-LPICs, as shown in (37a). If the inverted XP moves landing at the Spec of a functional projection, the head of the projection must be overt and thus *de* occurs. If a stative XP does not move, no *de* is allowed, as shown in (37b), since DEPP is not triggered if there is no movement (see more about this issue in Appendix A). DEPP can also explain the *yi* restriction on CL-LPICs. If *yi* is an article in the construction, it heads a DP and may undergo a head movement to satisfy DEPP, whereas numerals, which are merged at a Spec position below DP, cannot. The general DEPP effect exhibited in LPIs supports the movement analysis of the inversion.[8]

In (43), I label the stranded head element in an LPIC as the general E. This E is base-generated to the left of the predicative XP, as in (43a), and the XP moves to the left of E in a LPIC, as in (43b). Specifically, XP is an NP under a CL in a CL-LPIC, a gradable VP or AP under the degree word *hen* in a Deg-LPIC, and a VP under v in a GO-LPIC. I call the movement of XP Low Predicate Movement (LP-Movement). I assume that an LP-Movement lands at the Spec of a functional projection, called FP for the time being (to be specified in 4.1). I claim that F in (43b) is realized by *qu* and *de* in GO- and Deg-LPI, respectively, and by the raised *yi* in CL-LPI. The Spec-head relation between the raised VP and *qu* in a GO-LIPIC explains the adjacency of the two elements. In (6), between *kan shu* and *qu*, *zuo-zhe che* may not occur. The XP-F adjacency also covers the general low surface position of the inverted XP reported in 2.3.

(43) a. … [$_{EP}$ E XP   (Canonical)   b.   [$_{FP}$ XP [$_{F'}$F… [$_{EP}$ E <XP>   (LPIC)

The existence of the LP-Movement indicates the existence of a movement dependency between two positions for the XP in (43b). I next discuss the nature of this movement.

3.3 The absence of semantic effects of the LP-Movement
The goal of this section is to show that LP-Movement is different from any well-recognized A-bar movement. A predicate may undergo a WH-movement, as shown in (44a), or a topicalization movement, as shown in (44b) (Corver 2000: 157). In both cases, the movement has a certain semantic effect. However, an LP-Movement does not have a semantic effect.

(44) a.   How good a candidate is John?   b.   Down the hill, the baby carriage rolled.

As seen in 2.1, compared to the corresponding canonical construction, a LPIC does not establish any new predication. Also, an LP-Movement neither focalizes nor topicalizes anything.

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[8] Some apparent phrasal movement constructions have been claimed to be derived by juxtaposition and ellipsis (e.g., Ott 2018; Polinsky 2018), as shown in (i), although the deletion violates the right-edge constraint on backward ellipsis (Wilder 1997: 60; e.g., *Mary didn't _, but John might have seen someone.* vs. **John ~~drinks~~ wine, but Mary drinks beer*). One might assume that (iia) is derived from (iib) and (iiia) is derived from (iiib). However, the CL in a predicate nominal and *hen* never license ellipsis, as shown in (iv). Also, the ellipsis analysis does not explain the occurrence *de* in Deg-LPICs.

(i)	a.	Stolz	auf	seinen	Sohn,	das	ist	er	nur	selten.
		proud	of	his	son	that	is	he	only	rarely

'Only rarely is he proud of his son.'

b.   [$_{CP1}$ ~~er ist nur selten~~ [$_{AP}$ stolz auf seinen   Sohn]] [$_{CP2}$ das ist er nur selten] (German; Ott 2018: (13))

(ii)	a.	Axin	hutu	de	hen.		b.	Axin	~~hen~~	hutu.	~~Axin~~ hen ~~hutu~~.
		Axin	confused	DE	very			Axin	very	confused	Axin very confused

'Axin is very confused.'

(iii)	a.	Axin	mai	shu	qu	le.		b.	Axin	~~qu~~	mai	shu	~~le. Axin~~ qu ~~mai shu~~ le.
		Axin	buy	book	go	PRT			Axin	go	buy	book	PRT Axin go buy book PRT

'Axin has gone to buy books.'

(iv)	a.	*Axin	shi	yi	ge	bendan,	Alin	ye	shi	yi	ge	~~bendan~~.
		Axin	be	one	CL	fool	Alin	also	be	one	CL	fool
	b.	*Axin	hen	ben,	Alin	ye	hen	~~ben~~.	(also see (14b))
		Axin	very	foolish	Alin	also	very	foolish	

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Predicates are focused elements by default. It is not subject to any further information-focalization. The question in (45a) can be answered by either (45b) or (45c). In both answers, the information focus is the VP *mai shu* 'buy books'. The LPIC in (45c) does not have more focus meanings than the canonical (45b). The post-VP *qu* in (45c) must be phonologically weak (§1), and thus it does not carry the so-called nuclear stress, which is for a focus (Cinque 1993).

(45) a. Zhao   ni yi xiawu   le. Ni qu gan shenme   le?
        seek   you one afternoon PRT you go do what   PRT
        'I have looked for you the whole afternoon. What did you do?'
     b. Wo qu mai shu   le.   c. Wo mai shu qu   le.
        I go buy book   PRT   I go buy book   PRT
        b & c: 'I have gone to buy books.'

As for contrastive focusing, consider the following pairs of examples:

(46) a. Axin   bu shi yi ge tiancai, er shi yi ge bendan.
        Axin   not be   one CL genius   but be   one CL fool
     b. Axin   bu shi tiancai yi ge, er shi bendan yi ge.   *CL-LPI*
        Axin   not be   genius   one CL   but be   fool   one CL
        a & b: 'Axin is not a genius, but a fool.'
(47) a. Axin   bu shi hen mang,   er shi hen xian.
        Axin   not be   very busy   but be   very idle
     b. Axin   bu shi mang de hen, er shi xian de hen.   *Deg-LPI*
        Axin   not be   busy DE very but be   idle DE very
        a & b: 'Axin is not very busy, but very idle.'
(48) a. Axin   bu shi qu mai shu   le, er shi qu sanbu   le.
        Axin   not be   go buy book   PRT but be   go walk   PRT
     b. Axin   bu shi mai shu   qu le, er shi sanbu   qu le. *GO-LPI*
        Axin   not be   buy book   go PRT but be   walk   go PRT
        a & b: 'Axin has gone not to buy books, but to have a walk.'

Compared with the canonical constructions in the a-examples, no additional focusing meaning is expressed by the LPICs in the b-examples. Thus, no LPIC is a focus construction. The LP-Movement in a CL-LPI is thus different from a nominal-internal focus-driven movement discussed in Aboh (2004).

The fronted XP in a LPIC cannot be a clause-internal topic, either. If the fronted XP in a LPIC were a topic, the string to its right would be its comment. However, in all LPICs, such a string is of functional elements, which cannot be a comment. Moreover, the inverted XP must be lower than negation ((23)-(25)), but a topic must surface higher than negation. In (49), the VP *he jiu* 'drink alchol' is a clause-internal topic, and it may not be lower than *bu* 'not'. Therefore, a LP-Movement is for neither focusing nor topicalization.

(49) Axin   (*bu)   he   jiu   (bu) yuanyi.
     Axin   not   drink   alchol   not want
     'Axin (does't) want(s) to drink alchol.'

Also, there is also no consistent interaction between a LPI and any intervention effect-trigger in the clausal spine (cf. Soh 2005), since the inversion is allowed to be under a semantic intervener, such as sentential negation (see (23)-(25)), the word *genben* 'simply' (Liu 2019; *Axin genben shi pianzi yi ge* 'Axin is simply a cheater'), and an A-not-A word (see (20)-(22)).

The lack of interaction between the XP inversion and other higher functional heads in the clause indicates that the inversion is a low dependency in the clausal spine.

In syntax, the operator-variable dependency can be analyzed as a valuation of the feature [∧] (for predication; Adger & Ramchand 2005). The element that is responsible for an LP-Movement does not have this [∧]. Overall, the unified low landing site and the unified predicative category of the moving XP of LPI do not correlate with any unified semantic effect.[9]

3.4 Contrastive properties of LP-Movement and Arg-Movement

This section aims at distinguishing LP-Movement from argument movement. There are movement operations that apply to arguments exclusively. The operstions can be found in the arguments of unaccusative verbs and in raising constructions, e.g., in a nonfinite clause selected by a raising verb, and in an ECM construction. I thus call such movement Argument Movement (Arg-Movement), although I discuss the subject arguments only in this paper.

We clarify two issues before comparing LP-Movement and Arg-Movement. First, we do not discuss EPP-movement, which may apply to non-arguments, as well as arguments. Corver (2000: 157; also den Dikken 1994, 2006, Moro 1997) claims that a non-subject element may undergo A movement, landing at the surface position of a subject, as in the copular inversion in (50a) and the locative inversion in (50b). Following Pesetsky (2019: 19), I assume that these two movements are driven by the EPP of T. According to Heycock (2012) and Mikkelsen (2005), an inversion of a nominal predicate, as in (50a), is either an (EPP-driven) "A movement" or A-bar movement, cross-linguistically. Unlike an LP-Movement, such a movement lands at SpecIP (not a low position), the moving element is a DP or PP (not a low projection), and always has an interpretive effect (den Dikken & Singhapreecha 2004).

(50) a. [The best candidate]$_i$ is [John t$_i$]   b. Down the hill rolled the baby carriage.

EPP is an effect that the Spec of a functional head cannot be silent. Such an effect might be a PF-selection of the functional head (Landau 2007; also see Safir 2018). This effect is different from any Agree relation, but it can be combined with an Agree relation of any kind. To satisfy an EPP feature of a functional head, an element of any category can be (re)merged to the Spec position, cross-linguistically. The EPP of IP can be satisfied by a DP, PP, or AdvP, although not an AP in English, (e.g., {*Down the stairs/Downstairs/*Excited} raced the children*; see Boertien 1997: 690), and VP in Niuean (Massam 2001; Longenbaugh & Polinsky 2018: 27). Likewise, if the dependency of an LP-Movement includes an EPP feature, it can be satisfied by the movement of various categories and the movement is obligatory (see 5.1 and 5.2).

The occurrence of an EPP feature in a functional head is different from the Agree relation of the head with another element. The effect of the EPP for the raising of a subject in English may also have a labeling account (Chomsky 2013): neither the subject DP nor its sister v' is a head element, and moving the former makes the latter be able to label the projection. Note that this is not the case of the LPI in MC, because the moving XP is base-generated as the sister of a head element, which is intrinsically able to provide a label for the projection. Thus, LP-Movement is not driven by labeling.

Second, as already seen above, the generally-called A-movement may apply to non-argument elements, and thus the distinction between A-movement and A-bar movement is clearly not that between arguments and predicates. See Safir (2018) for a new understanding of

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[9] It needs to be pointed out that Fanselow & Lenertova (2011) also discuss a certain type of phrasal movement that has no consistent information structure effect, and they claim that the movement is driven by a certain edge feature on C; however, the type of their movement is neither restricted to predicates nor lands at a low position, and thus is different from LP-Movement.

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the traditional classification of A and A-bar movement.[10]

Now back to our comparison of LP-Movement and Arg-Movement. It is generally recognized that Arg-Movement is not semantically motivated. This is also true of LP-Movement (3.2). However, two main contrastive properties can be found between the two types of movement. First, an LP-Movement lands lower than any functional element in the IP-domain (2.3), and it thus never lands in a higher clause; whereas an Arg-Movement lands higher than all functional element in the IP-domain in the local clause (e.g., higher than a modal or negation word), as in (51a), and it may land in a higher clause, as in (51b).

(51) a. The boy will be cheated _. b. The boy seems to like the toy _.

Second, a defining property of Arg-Movement is that it is launched from a non-Case position, and eventually lands at a Case position, but a LP-Movement has no Case-feature involved. Thus, LP-Movement and Arg-Movement exhibit disjunctive properties.

Can the LP-Movement be phonological? My answer is no. One possible clue of a phonological movement is that the movement is triggered or blocked by a phonologically visible element that does not show any consistent syntactic property. For example, Holmberg (1999) argues that the Scandinavian Object Shift applies to the phonological component, since it is blocked by any phonologically visible element (e.g., verb, negation word, prepositional phrase, etc.). This is not the case of LPI. Not every phonological string can be stranded as in a LPIC. The progressive marker *zai* cannot, as shown in (52). The movement of *mai shu* 'buy book' fails in (52b), not because *zai* is phonologically different from *qu* in a GO-LPIC. I will give a syntactic account of this contrast in 4.1.

(52) a. Nashí Axin yinggai zai <u>mai shu</u> ne.
then Axin should PRG buy book PRT
'At that time, Axin should be buying books.'
b. *Nashí Axin yinggai <u>mai shu</u> zai _ ne.
then Axin should buy book PRG PRT

Moreover, the three shared properties of various types of LPIC are not PF-unified. For example, the shared predicative category of the inverted element in LPI (2.2) is not phonological. Furthermore, different types of LPICs do not correlate with any PF difference.

LPI is optional in MC. We have seen the alternation between the canonical (1a) and the Deg-LPIC in (1b), and between the canonical (2a) and the CL-LPIC in (2b). Also, a GO-LPIC can always be expressed by a pre-VP *qu* construction (Lu 1985: 26). Note that the other way around is not true, since a pre-VP *qu* can be a control verb, whereas the post-VP *qu* must not. Thus, the LP-Movement is optional in MC. Optional phrasal movement has been found in various constructions, e.g., the wh-movement in French. The optionality means that the movement is not triggered by any EPP of edge feature (see footnote 13).

I thus conclude that our LP-Movement manifests a dependency of predicates exclusively. It exhibits contrastive properties with Arg-Movement, a dependency of subjects. (43) is repeated here as (53). Importantly, unlike the attractor of an operator movement, F does not have a [∧] feature; also, unlike the attractor of an Arg-Movement, F does not have a Case feature.

(53) a. … [$_{EP}$ E XP (Canonical) b. [$_{FP}$ XP F… [$_{EP}$ E <XP> (LPIC)

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[10] On the A and A' movement distinction (Chomsky 1981), Chomsky (2004: 125, note 30) states that "Note that A- and A-movement have no status in the present framework; the terms are used only for convenience. It follows that no principles can be formulated in terms of the A-A'-distinction, a strong and highly controversial conclusion."

In this section, I have argued for the movement of the inverted XP in LPICs, based on selection reconstruction, the ban of subextraction from the inverted XP, and the DEPP effect. I have also identified the movement as neither an operator movement nor an Arg-Movement.

4 StP

We have argued that a predicative XP undergoes a special type of movement, landing at the Spec of a functional head F in a LPIC. In this section, we investigate the nature of this F. 4.1 specifies that F is a stativity head, 4.2 discusses this functional projection from a theoretical background, and 4.3 further links stativity to predicate-licensing.

4.1 StP and the probe of the LP-Movement

What feature is under Agree between F and the XP in an LP-Movement, as formulated in (53b)? In this section, we examine first the properties of the elements that realize F, *de* and *qu*, and then the properties of the moving XP.

CL-LPICs are copular construcitons, which are stative exclusively (e.g., Geist 2019: 1326). Deg-LPICs are degree constructions, which are also stative exclusively. A nominal predicate and a degree predicate can be conjoined, as in (54a); and a CL-LPIC and a Deg-LPIC can also be conjoined, as seen in (54b). Generally, conjoins are of the same semantic type (Schachter 1977). (54b) tells us that both inversion constructions are stative.

(54) a. Axin   shi yi   ge   tiancai erqie   hen youmo.
         Axin   be   one CL   genius   and   very humorous
     b. Axian   shi tiancai yi   ge   erqie   youmo   de   hen.
         Axin   be   genius   one CL   and   very   DE   humorous
         Both a and b: 'Axin is a genious and humorous.'

Accordingly, the F in the two constructions must be [+stative]. We have observed that functional elements that occur with either stative or non-stative predicates may not be right-next to an inverted predicative expression. This means that such elements cannot realize F in (53b), e.g., the progressive aspect marker *zai* cannot occur in a LPIC, as shown in (55b).

(55) a. Nashí   Axin   yinggai zai <u>mai shu</u>   ne.   (= (52))
         then   Axin   should   PRG buy book   PRT
         'At that time, Axin should be buying books.'
     b. *Nashí Axin   yinggai <u>mai shu</u>   zai _   ne.
          then Axin   should   buy book   PRG   PRT

A contrast between *qu* 'go' and *zai* is that the former cannot occur with a non-stative predicate (Ma 1988), whereas the latter can. As shown in (56), neither the pre-VP *qu* nor the post-VP *qu* may occur with the stative *gaoxing* 'happy' (also see Ma 1992 [1988]: 18). Thus *qu* in either use is different from the prospective *be going to* in English (e.g., *I'm going to be fine*).

(56) a. *Axin   qu   gaoxing.   b.   *Axin   gaoxing qu   _.
          Axin   go   happy   Axin   happy   go

A pre-VP *qu* can be an aspectual control verb or have the same status of the post-VP *qu* (Appendix C). Aspectual control verbs select [-stative] expressions only. The post-VP *qu* is not a verb (§1). Its rejection of stative expressions shows that it is a [-stative] marker.

Unlike *qu, zai* may occur with either a non-stative predicate, as in (55a), or a stage-level stative predicate, as in (57). Other statives such as *fadai* 'dazed', *shengbing* 'ill', and *shengqi*

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'angry', are also compatible with *zai*, but not *qu*. Thus, *qu* is a non-stative marker, but *zai* is not.

(57) Axin   hai zai gaoxing-(zhe).
     Axin   still PRG happy-PRG
     'Axin is still happy now.'

A relevant generalization, which I call No Vacuous Realization, is in (58).

(58) No Vacuous Realization: If a functional head is realized by an overt element, the element
     must be specified with a value of the feature of the functional head.

The generalization in (58) is seen in various cases. For instance, Infl can be realized by *is*
in English, as in *John is dancing*, and this *is* is [+finite] exclusively; Infl can also be realized by
to, as in *For John to dance is difficult*, and this *to* is [-finite] exclusively. In contrast, when Infl
is null, it can be either [+finite], as in *John danced*, or [-finite], as in the embedded clause in *I
let him go*. I claim that if F in (53b) is realized by any element, the element must have an
unambiguous value of stativity: it must be either [+stative] or [-stative]. *Qu* is [-stative] and *de*
is [+stative]. They are qualified to realize F in (53b). But *zai* is not. Other functional elements
such as *zhi* 'only', *jin* 'only', *ye* 'also', *jing* 'even', *dou* 'all, already' can also occur with either
a stative or non-stative predicate, and none of them can follow an inverted predicative
expression. None of them can realize F in (53b). Thus, from the perspective of the exponents
of F, only elements that have an unambiguous value of the stativity feature can realize F.

As for CL-LPIC, *yi* 'one' also surfaces at F, via head movement (3.4). Like the F that is
realized by *de*, the F that is adjoined by *yi* is also [+stative]; but the former does not c-select a
nominal, whereas the latter does.

From the perspective of the moving XP in (53b), we have shown that the XP must be
predicative (2.2), which is either [+stative], as in a Deg- and CL-LPIC, or [-stative], as in a GO-
LPIC. Thus it is an element with an unambiguous value of the stativity feature that Agrees with
F and moves to Spec of F.

Accordingly, I assume that F in (53b) has an Agree relation with a predicate with respect
to stativity. The probe of a LP-Movement is the functional head that has a stativity feature. I
name this functional head St (Stativity). Thus, (53b) is updated as (59).

(59)   [StP XP [St' **St**   [… <XP>   (LPIC)
                   [±stative]   [±stative]   *LP-Movement*

In (59), St is realized as *qu* in GO-LPICs, as *de* in Deg-LPICs, and as the raised *yi* in CL-
LPICs, but it is not overtly realized in some other constructions (also see §5). Like other
functional heads, St is not always PF-visible. Moreover, although the functional category St
probes for a stativity feature only, the elements that realize St may be semantically distinctive
from each another (e.g., *qu* 'go' ≠ *lai* 'come'). They may also have their own selecting features.
I have mentioned that in a Deg-LPIC, *de* in St probes for [+stative, -N], and in a CL-LPIC, St
probes for [+stative, +N]. When *qu* or *lai* realizes St, it also contributes the additional selecting
feature [+agentive]. It disallows any non-agentive predicate (Ma 1988). (60a) shows that a GO-
LPIC is different from the *be going to* construction in English (e.g., *It is going to rain.*).

(60) a.   *Xiayu   qu.   b.   *Feng   chui   xiao   shu   qu   le.
          rain   go   wind   blow   small tree go   PRT

Summarizing, in the clausal spine, a very low functional projection, StP, is responsible for

the stativity of the predicate. In MC, *qu* is an exponent of [-stative] St and *de* is an exponent of [+stative] St. For either value of the stativity feature, there is an Agree relation between St and a c-commanded predicative XP, and the latter may move to the Spec of St, under Agree.

4.2 Severing the licensing of predicates from that of other constituents

How do we link this cross-categorial phrasal movement associated with the stativity of predicates to our understanding of clause-building? We answer this question in this section. The notion of predication is important here. "If *r* is a property and *u* an individual (of any sort) and $^\cup$ is the predication relation, then $^\cup r(u)$ is the proposition that *u* has property *r*" (Chierchia 2004: 26). In den Dikken (2007: 134), predication in semantics is property ascription, and in syntax involves an asymmetrical structure including the predicate, its subject, and a functional element mediating the uniformly asymmetrical relationship between the predicate and its subject. Den Dikken (2018: 23) also states that "predication structures are the cornerstones of utterances. But adult unimpaired natural language users typically do not speak in terms of 'bare' predication structures." On the one hand, the grammatical predication requires a functional head, such as the little v (or Pred or relator), to mediate it (Bowers 1993, Baker 2003, den Dikken 2006); and on the other hand, "the constituents that make a predication structure usually need to be grammatically licensed in a certain way: the arguments need case; the predicate head needs to link up with a functional category for finiteness." (Den Dikken 2018: 23)

It is generally-recognized that arguments need Case-licensing (Chomsky 1981, 1986; see Legate 2008, and Poole 2018 for recent supports, and Li 1990, 2013 for MC support). Subject can be a syntactic notion, and so can predicate. Aristotle distinguishes the grammatical notion *kategoroúmenon* from the logical notion *symbebekós*; the former designates the syntactic constituent denoting the property assigned to the subject (grammatical predicate), and the latter is for the property denoted by the predicate (logical predicate). Although he did not make a parallel distinction on the subject side (den Dikken 2006: 8; 2018: 256), the formal properties of subject and the syntactic licensing of subject have been extensively discussed in the literature (e.g., Keenan 1976; McClosky 1997; Sheehan & Bailey 2017; see den Dikken 2018: Ch. 5 for a review). The projection of TP is generally responsible for licensing the formal properties of subjects, including phi-agreement and Nominative Case assignment, and T triggers movement of a subject to its specifier in many languages such as English. On the other hand, the syntactic licensing of predicates has not been thoroughly discussed.

Although a predicate indeed links up with a functional category for finiteness, the functional category that licenses a predicate should not be the one for finiteness (contra den Dikken's claim cited above). The functional category for finiteness (Infl, Finite; Rizzi 1997) is for the whole predication, not a predicate alone. It specifies whether a clause can be used as a stand-alone assertion, syntactically and semantically. Therefore, it must be another functional category that licenses predicates. I have claimed in 4.1 that it is StP that is responsible for the dependency exhibited by LPI.

The upper link of a LP-Movement is lower than all functional projections in the IP-domain, while the upper link of an Arg-Movement is higher than all the functional projections in the IP-domain (3.3). If the former movement and the latter movement license predicates and subjects, respectively, the licensing dependencies are structurally different.

4.3 Stativity as the most basic feature of predicates

In this section, I show that the functional category that licenses a predicate must be StP, from a broader perspective, and then discuss the position of StP in a clause structure.

The two values of stativity, +stative and –stative (or dynamic), minimally represent the two basic types of predicates (cf. Ramchand 2017: 237-238). One might ask the question among so many dynamic verbs, why only the GO and COME verbs can become the overt forms of [-

stative] St. The restriction may be reasonable: they are the most basic dynamic verbs, cross-linguistically (cf. Panagiotidis 2015: 38). In Jingulu, an Australian language, there are only three verbal elements, and they are the forms for COME, GO, and DO/BE (Pensalfini 1997, Baker 2003). In MC, only the most basic verb forms have been grammaticalized to realize the [-stative] St (see 5.3.1 for the same fact in English).

The stativity feature has been analyzed as one of the various features of the so-called Aktionsarten aspect. We now recognize that this feature is responsible for a LPI, which shows a dependency that licenses a predicate in syntax. The conceptual foundations of stative predicates include the covariant properties of constancy and open-endedness, in contrast to change and bounding (Langacker 1987: 261). Such a predicate includes its reference time, and therefore may hold at longer intervals than the one for which it is asserted (Dowty 1986). The reading contrast of the time adverbial between the stative in (61a) and the non-stative in (61b) is noted by Enc (1985), and discussed by Campbell & Martin (1989: 51) (also Michaelis 2011: 1366, citing Vlach 1981). The Chinese versions show the same contrast. (61a) can be true even if John had been in town constantly for the past three weeks. But (61b) means that John begins working at 10 o'clock. Campbell & Martin (1989: 51) state that "this contrast is not just an ambiguity of the adverb, but is clearly related to the event/state distinction."

(61) a.   John was in town at 10 o'clock.   b.   John works at 10 o'clock.

On the other hand, well-known conceptual foundations of non-stative predicates include those in (62) (the first five are from Ernst 2016: 259, 271-272). The semantic contrasts correlate with morphosyntactic contrasts, cross-linguistically (see §5). Thus, the projection of StP, as a category to license the formal features of predicates, is justified.

(62) a.   change through time   d.   causation/causal agent
     b.   beginning point   e.   result
     c.   endpoint   f.   allowing an instrument adverbial
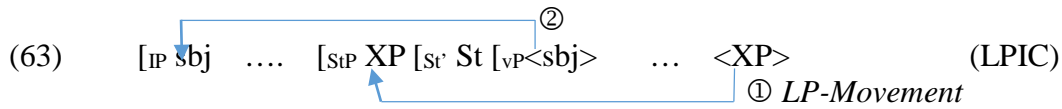
Like other syntactic dependencies, the formalization of stativity for predicates has been grammaticalized and thus is not purely semantic. We will show in 5.3.2 that there are cases in which the semantic stativity of a predicate does not match the morphosyntactically categorized stativity pattern. When discussing Case, Pesetsky & Torrego (2011: 1) claim that the principles of Case relation are "with little apparent connection to external cognitive systems". "We should ask a 'why' question about every aspect of case theory. For example: 1. Nature of case: What is case, and why is it a necessary licenser for nominals" (p. 13). At the end of their discussion, they tell us "many fundamental questions, including the reason why Case should exist at all, do not yet have substantive answers." (p. 17) Our hypothesis is that case feature Agree is for licensing an argument and stativity feature Agree is for licensing a predicate.

Identifying stativity as the feature for the Agree relation of the predicate-licensing rules out the possibility for a general PredicateP, instead of our StP, to be the functional category that licenses predicates. I have shown that only a form that has an unambiguous value of the stativity feature can realize the head of the functional category that triggers LP-Movement (4.1), and only a predicative XP, which has a stativity feature, undergoes the movement (2.2). These syntactic facts are both associated with stativity. Therefore, it is StP, rather than a general PredicateP, that can capture these facts.

While PredicateP is too broad for the functional category to license a predicate, as I just stated, another choice, AgentivityP, seems to be too narrow. It is true that *qu* in GO-LPIC, as a lexical item realizing the head of the functional projection that licenses a predicate, selects an agentive predicate. But if X selects Y, X does not have to have the same category as Y (e.g., P

selects D, but P's category is not D), although Y's features can be represented as unvalued features of X (Adger 2003; e.g., P's features can be [P, uD], and the merger of P with a DP can remove the [uD]). Thus, we can represent *qu* in GO-LPIC as [-stative, $u$agentive]. Also, if we consider the category responsible for various types of LPI, Stativity is preferred to Agentivity. Moreover, AgentivityP is easy to be confused with VoiceP (one flavor of vP), which encodes a predication rather than licenses a predicate. Furthermore, as to be presented in Section 5, stativity contrasts are morphologically represented on predicates cross-linguistically. Thus, it is StP that should be the right category to license a predicate. The features [+stative] and [-stative] can be categorized as the universal functional ontological categories BE and DO, respectively, in the clausal spine (cf. Baunaz & Lander 2018). The category BE is seen in the stative Deg- and CL-LPICs, and the category DO is entailed in the non-stative GO-LPICs.[11]

Our next question is where this StP is in the structure of a clause. Since the landing site of a LP-Movement, which is SpecStP, is below all kinds of functional heads in the IP-domain (2.3), StP must be lower than other functional projections of the IP-domain. According to Marantz (2013: 155) "The little v semantically introduces an eventuality, either an activity or a state". Meanwhile, the Spec of vP is the base-position of an external argument. StP licenses the stativity of a predicate, and thus it should c-command a predicate locally. A predicate is base-generated in v'. Since no element may intervene between the Spec and the head of a projection, StP must be projected above the whole vP, and below other functional projections in the IP-domain. I claim that for a LPIC, a predicative XP moves to SpecStP, before the movement of the subject to its surface position. This is illustrated in (63), an updated version of (59).[12]

(63)   [IP sbj   ….   [StP XP [St' St [vP<sbj>   …   <XP>   (LPIC)
                                                                    ① *LP-Movement*

②

One parallelism between subject-licensing and predicate-licensing is that both are accomplished by a functional head. IP licenses a subject, and StP licenses a predicate. Another parallelism between subject-licensing and predicate-licensing is that the licensing functional head is external to vP, which denotes the whole predication. In other words, while the v-domain encodes a predication, the next higher domain, the I-domain (but not the C-domain), licenses the formal features of the subject and predicate that are base-generated in the v-domain.

It needs to be clarified that licensing a feature is different from encoding a feature. Although the dependency revealed by LP-Movement licenses a stativity feature of a predicate, it does not encode the feature, which is expressed by the predicate itself. This is consistent with our claim that an LP-Movement is not semantically driven (3.2). From a broader perspective, licensing a subject or predicate does not mean to encode the meaning of a subject or predicate. Thus, although compared to a Case feature, a stativity feature appears to be less abstract, it still can be a pure formal feature in syntax.

In this section, I have argued that the formal features of predicates need to be licensed by a functional projection, and the projection is StP. The exponents of St must have an

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[11] In Huang (2006), *de* is analyzed as a light verb BECOME in resultatives (see (14a)). If *de* is related to a stative predicate, it can belong to the category BE consistently, even in a resulative. The stative projection of a resultative is in construal with the matrix predicate, such as *bing* 'sick' in (14a). Then, the apparent BECOME reading of *de* in resultative may come from *de*'s subordinate relation to the matrix predication.

[12] Huang (2018: 58) also claims that the post-VP *qu/lai* 'go/come' heads a [+dynamic] functional projection above vP and below AspP, but she does not claim that the surface order is derived by movement.

Since the subject moves out of vP, can a LPIC be derived by raising of the whole vP to SpecStP? I rule out this possibility, considering that if vP is the complement of St, the movement is too short, violating the anti-locality constraint (e.g., Grohmann 2002). Empirically, predicate raising does not correlate with subject raising (5.2).

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unambiguous value of stativity. In deriving a LPIC in MC, a predicative XP, which has a stativity feature, moves to SpecSt.

5 Other strategies of predicate-licensing

I have discussed various LPICs in MC. We now consider the syntax of predicates in some other languages, in the perspective of St Agree. The GO-LPIC and CL-LPIC are also found in Taiwan Southern Min (field work).

(64) a. Kaka   ingkai   khì   bé tsheh   ah.   [Taiwan Southern Min]
         Kaka   should   go   buy book   PRT

    b. Kaka   ingkai   bé tsheh   khì   _   ah.   *GO-LPI*
         Kaka   should   buy book   go   PRT

         a & b: 'Kaka should have gone to buy books.'

(65) a. Kaka   sī   tsit   ê   gōnglâng.
         Kaka   be   one   CL   fool

    b. Kaka   sī   gōnglâng tsit   ê   _.   *CL-LPI*
         Kaka   be   fool   one   CL

         a & b: 'Kaka is a fool.'

Like the LPICs in MC, the inverted part of a LPIC in Taiwan Southern Min also surfaces lower than a modal/auxiliary, an A-not-A form of an auxiliary, a sentential negation, and an adverbial (field work; cf. 2.3). The GO-LPIC is also found in Hangzhou dialect of Chinese (Qiongpeng Luo, Adam Cheng p.c.), and the Jin dialect (mainly spoken in Shanxi) and the southern dialects spoken in Hunan and Nanning (see Huang 2018: 113 and the references therein).

LPIs are optional in these languages. So far the stativity dependency of predicates is seen in an optional movement strategy in various languages.[13] This section provides crosslinguistic evidence for other strategies of the dependency: obligatory predicate movement (5.1, 5.2) and the non-movement strategy (5.3).

5.1 Obligatory LP-Movement

In this section, we introduce one type of obligatory LP-Movement. In the Polynesian language Imere, predicate-fronting is obligatory, and the movement lands below the surface position of the subject, although like other languages in the family, a verb-initial order is also allowed (see van Urk 2019 for verb-initial examples).

(66) a. au   [PP gaia   Ifate]   ana   b. au   [VP sei-a   ana]   Ifate.
         1SG   from   Ifate   still   1SG   see-TR   still   Ifate
         'I am still from Efate.'   'I still see Efate.'

In (66a), the PP predicate is fronted, stranding the predicate-internal particle *ana* 'still'; and in (66b), the VP predicate that includes the same particle is fronted, although the DP object

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[13] LPICs are more easily found in informal speech (see Lu 1985 for this property of GO-LPICs). There are various theories on the optionality in syntax, e.g., tied constraints in the OT syntax (Legendre at al. 2001) and cosyntaxes. In the spirit of the cosyntax theory (which is parallel to cophonlogy; see Fanselow & Féry 2000), one might assume that formal and informal speeches are two systems available to a speaker. In the informal system, LPI occurs as the default if the St element *qu* or *de* is available in the lexical array (the lexical input of the phase), and no LPI occurs elsewhere. In the formal system, however, LPI does not occur at all, although the syntactic Agree relation between St and the associated predicate exists. The latter system is also found in languages that ban LPICs. Then, the optionality of the predicate inversion to a MC speaker in a certain context is similar to the optionality of code-switch between two systems. I leave open the choice of various possible analyses of the optionality.

is stranded (van Urk 2019:11 (44)). See van Urk (2019) for an analysis of the different patterns of the element-stranding in the predicate-fronting. According to him, a nominal predicate also has to move (van Urk 2019: 11). We thus see a case of obligatory and cross-categorial fronting of predicates in this language. No new operator-variable relation is reported on this fronting. Instead, he assumes that the fronting is driven by an uninterpretable $[uV]$-feature of a null functional head, F. The verb of a VP predicate has an interpretable $[iV]$-feature and a DP or PP predicate also has an $[iV]$-feature (p. 11). One can see that this assumed general $[V]$-feature can be covered by our stativity feature of predicates. The obligatory nature of the fronting could be the effect of an EPP-feature that is bundled with the stativity feature in St, in this language.

5.2 LP-Movement without subject raising

In this section, we introduce a type of obligatory LP-Movement different from the one discussed in 5.1. Theoretically, the movement of a predicative XP in the predicate-licensing dependency does not correlate with the raising of the subject. The landing site of XP can also be higher than the subject if the latter remains in situ (i.e., the licensing of the subject is accomplished not by movement). Subject raising is not universal. In Spanish, for example, a subject does not have to move overtly. If a predicate moves and the subject does not move, we get the predicate-subject order. This could be the case of another Polynesian language, Niuean. The predicate has a transitive verb in (67a) and a nominal predicate in (67b). In this language, a raised predicate follows the tense/aspect/mood marker, if there is one; and it also follows the negative marker, if there is one (Massam 2010: 273). Thus, the landing site of the movement of a predicate is similar to that of the LP-Movement in MC.

(67) a. Ne   tutuli   foki   he   tau   tagata   a   ia.   (Massam 2010: 273)
        PST   chase   also   ERG.C   PL   person   ABS.P   3.SG
        'The people also chased him.'
     b. Ko   e   kamuta   a   au.   (Massam 2010: 275)
        PRED   C   carpenter ABS.P 1.SG
        'I am a carpenter.'

According to Massam (2010), both verbal and nominal predicate phrases obligatorily move to a position higher than that of the subject, which does not move in this language. She gives the steps of derivation of (67a) in (68). The object moves out of the VP first, to SpecAbs^0 (similar to the Imere example in (66b)); the subject is base-generated at SpecErg^0 and it does not move; and the remnant VP moves to the Spec of the null functional head Pred^0.

(68) Massam's (2010: 274) derivation of (67a):
     [$_{VP}$ chase him$_i$]
     [v [$_{VP}$ chase him$_i$]]
     Abs^0 [v [$_{VP}$ chase him$_i$]]
     [him$_i$ Abs^0 [v [$_{VP}$ chase t$_i$]]]
     Erg^0 [him$_i$ Abs^0 [v [$_{VP}$ chase t$_i$]]]
     [the people Erg^0 [him$_i$ Abs^0 [v [$_{VP}$ chase t$_i$]]]]
     Pred^0 [the people Erg^0 [him$_i$ Abs^0 [v [$_{VP}$ chase t$_i$]]]]
     [[$_{VP}$ v chase t$_i$] [Pred^0 [the people Erg^0 [him$_i$ Abs^0 t$_{VP}$]]]

Massam (2010: 275) gives a similar derivation to (67b). According to her, the nominal predicate takes one argument (*a au* 'I'); the subject of the intransitive predicate merges directly into AbsP and it does not move; and the nominal predicate moves to SpecPred^0, deriving the predicate-first word order.

Massam (2010) accounts for the movement of the cross-categorial predicates by an assumed EPP feature of PredP, which is projected immediately above the projection that hosts the merger-position of a subject. Her account can be covered by my stativity dependency between the predicate and St (= her Pred), and the obligatory nature of the predicate fronting is the effect of an EPP-feature that is bundled with the stativity feature in St, in this language. It needs to be clarified that the dependency of predicate-licensing does not require that only the lexical core of a predicate moves. Thus, functional elements may be pied-piped with the lexical core of a predicate in the predicate movement, in a language beyond MC (I'm grateful to Marcel den Dikken for bringing my attention to Massam's works).

5.3 Stativity dependencies without an overt movement of a predicate
5.3.1 The in situ version of the GO-LPIC in other languages
Now, we introduce a GO-construction that is similar to the GO-LPIC in MC except that the VP does not move. The in situ version of the GO-LPIC can be found in many languages. In such a construction, the nonstative St is realized by a GO word. We consider the English construction exampled in (69), where the bare form of the word *go* or *come* is followed by the bare form of another verb (Zwicky 1969, Shopen 1971, Carden & Pesetsky 1977, Pullum 1990, Jaeggli & Hyams 1993, Pollock 1994, Cardinaletti & Giusti 2001, Wulff 2006, and Bjorkman 2016). Following Shopen (1971: 255), I call the construction quasi-modal construction (QMC), and word *go* or *come* in the construction quasi-modal verb (I'm grateful to James Huang for the link between my work and QMC).

(69) a.   He would usually go get the paper before supper.
     b.   They often come sleep at our house.   (Shopen 1971: 254)

There are several facts showing that a quasi-modal verb heads a [-stative] StP, similar to *qu* in the GO-LPIC in MC, except that there is no predicate inversion.

First, a quasi-modal verb is different from a real verb, which does not have to be next to another verb. No other verbs (e.g., *take, make*, etc.) have such a use (Cardinaletti & Giusti 2001: 375; Bjorkman 2016: 55). As an exponent of a functional head, this restriction is expected. Also, as noted by Cardinaletti & Giusti (2001) and Pullum (1990), a quasi-modal verb alone cannot be modified, as shown by (70a), and it also rejects a particle, as shown by (70b).

(70) a.   *They go eat by car.   (Cardinaletti & Giusti 2001: 379)
     b.   *Go away read something.   (Pullum 1990: 226)

Thus, Cardinaletti & Giusti (2001) claim that QMCs are mono-clausal (p. 374), where the quasi-modal verbs "are merged as functional heads in the extended projection (in Grimshaw's 1991 sense) of the lexical verb which follows them." (p. 372). This is similar to the post-VP *qu* in the GO-LPIC in MC (see (6) and (63)).

Second, QMCs are [-stative] in general. In Wulff's (2006: 116) corpus of QMCs, stative ones are as few as 3.6% (one stative example on her p. 107 is *Why doesn't she go live round there or something*; also see Zwicky 1969: 431). In this respect, QMCs are also similar to GO-LPICs in MC (see (56)). QMCs are also agentive (Shopen 1971: 259; Pullum 1990: 226; Jaeggli & Hyams 1993: 321; Cardinaletti & Giusti 2001: 394; Bjorkman 2016: 59). It is thus different from the asymmetrical coordination *go and get* construction. The non-agentive subject *pieces of drift wood* is not allowed in the QMC in (71a), but it is fine in the *go and get* construction in (71b). In this respect, QMCs are also similar to GO-LPICs in MC (see (60)).

(71) a.   *Pieces of drift wood come wash up on the shore.

b. Pieces of drift wood come and wash up on the shore. (Shopen 1971: 259)

Third, the position of a quasi-modal verb is lower than other functional projections in the IP-domain (Jaeggli and Hyams 1993: 336; Cardinaletti & Giusti 2001: 402–404). *Go* is under the T element *to* in (72a) and the modal *will* in (72b). Also, it can be followed by a manner adverb, such as *carefully* in (73b), but not any higher-leveled adverbial, such as the locative *home* in (73c) (the acceptability contrasts in (73) and (74) are confirmed in my field work).

(72) a. I want to go take a nap.
   b. Birds will come play in your birdbath. (Bjorkman 2016: 55)
(73) a. Kate plans to go write a letter. (Bjorkman 2016: 59)
   b. Kate plans to go carefully write a letter.
   c. *Kate plans to go home write a letter.

A quasi-modal verb can also follow an agentive adverb that modifies the real verb to its right or the whole predicate. In (74a), for example, *carefully* precedes *go* and modifies *write*.

(74) a. Kate plans to (carefully) go write a letter.
   b. We (carefully) go write a letter every day.
   c. They deliberately go occupy the land. (Shopen 1971: 260)

According to Ernst (2010), an auxiliary cannot follow any manner adverb:

(75) a. Gretchen (*softly) may (*softly) have (softly) sung a lullaby. (Ernst 2010: 181)
   b. Bob had (*smoothly) been (smoothly) skiing around the obstacles on the course.

Examples like (74) show that *go* in a QMC is lower than other auxiliaries. Again, in this respect, the position of a quasi-modal verb is similar to *qu* in a GO-LPIC, which hosts the inverted predicative XP at its Spec position, and is lower than any auxiliaries (see (17)).[14]

Fourth, both a quasi-modal verb and the associated verb are morphologically different from other verbs: they must both be in "the unmarked 'base' form" (Cardinaletti & Giusti 2001: 382), i.e., without any overt tense, aspect, or agreement inflection marker. In the unacceptable (76), at least one verbal form has an agreement inflection marker. In this sense, the construction is different from the *go shopping* construction, in which *go* allows an inflection and *shopping* is not bare. The same bareness condition is also seen in the GO-LPIC in MC, where both *qu* and the associated verb must be in a bare form (see (5)).

(76) *She {goes gets/go gets/goes get} the paper every morning. (Bjorkman 2016: 55)

According to Cardinaletti & Giusti (2001) and Bjorkman (2016), other languages such as Modern Greek, Modern Hebrew, and Marsalese (a southern Italian dialect) also have constructions similar to the English QMCs. In such constructions in various languages, the GO or COME word shows an invariant form and shares the morphology with the associated verb. The form of such a word is the unmarked verb form in the language. In English, the unmarked form is the bare form. Bjorkman (2016) proposes that although a QMC is neither semantically

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[14] If *go* in a QMC is higher than vP, it should be able to precede *all*, which marks the base-position of the subject in vP. But (ia) does not support this prediction (Bjorkman 2016: 67, fn. 16). However, not every base-position of a subject is able to host *all*, as seen in (ib) (Adger 2003: 241). Thus (ia) is not enough to falsify the vP-external position of *go* in a QMC, although I leave an account for the restriction in (i) for future research.
(i) a. The children will (all) go (*all) buy ice cream. b. The Greeks arrived (*all).

nor syntactically similar to an imperative construction, the quasi-modal verb and the verb to its right both have the feature [INFL: DIR] (DIR is for "directed motion"; p. 60), whose spell-out requires a bare imperative verb form. From a different perspective, both an imperative verb and a St element appear to be in the unmarked bare form in the language.

In fact, the bare form of the verbs is not enough to ensure the grammaticality of a QMC in English. Not only (76) and (77a) but also (77b) and (78b) are unacceptable.

(77) a.　　*She goes observes the starts whenever there's an opportunity.
　　　b.　　*She go observe the starts whenever there's an opportunity.　　(Zwicky 1969: 430)
(78) a.　　Her supervisor demanded that she go buy a replacement.　　(Bjorkman 2016: 55)
　　　b.　　*She go buy a replacement every day.

Why does the bare form *go* fails in (78b), compared with the same bare form in (78a)? The unacceptability of (77b) and (78b) shows that a quasi-modal verb has a special interaction with the Infl feature in T. Specifically, its bare form must be in syncretism with the form that is licensed by the Infl feature of T. This is clearly shown in Bjorkman (2016). In (78a), the bare form of *go* and *buy* is licensed in the subjunctive mood of the clause. However, in both (77b) and (78b), the bare form of *go* is not licensed by the indicative Infl feature of T, although it is the unmarked form of the verb in the language.

The GO-LPIC in MC shows a similar syncretism between the verb form licensed by the AspP of the clause and the bare form of the St element. In the absence of a modal, a monosyllabic dynamic verb needs an aspect marker, which can be an aspect suffix, as in (79b), or the sentence-final aspect particle *le*, as in (79c). (79d) is not acceptable in an episodic reading because the dynamic *mai* 'buy' does not occur with either a modal or an aspect marker (note that a negative sentence does not require an aspect marker because *bu* 'not' may have a modal feature and *mei* 'not' has a perfective aspect feature; see Wang 1965).

(79) a.　Axin　　yao mai shu.　　　　　　　b.　Axin　　　mai-le　　shu.
　　　　　Axin　　wantbuy book　　　　　　　　　Axin　　　buy-PRF　book
　　　　　'Axin wants to buy books.'　　　　　　　'Axin bought books.'
　　　c.　Axin　　mai shu　　le.　　　　　　d.　*Axin　　mai shu.
　　　　　Axin　　buy book　　PRT　　　　　　　　Axin　　buy book
　　　　　'Axin has bought books.'

Now consider GO-LPICs. If a bare verb is not licensed in the clause, it is not allowed in a LPIC, either. In (80a), as in (79a), the clause has a modal, and thus no verbal form has an aspect marker, as expected. (80b) is not acceptable, because *mai* 'buy' has an aspect suffix, violating the rule that the verb associated with the auxiliary *qu* in St must be bare (see (5); cf. **go gets* in (76)). (80c) is good, because as in (79c), the bare verb occurs with the sentence-final *le*. This is similar to (78a), where the bare *go* is licensed in the syntactic context. Finally, (80d) is bad, because, as in (79d), the bare *mai* 'buy' is not licensed by the AspP in the clause, although the bare form is the expected form from the perspective of the final *qu* (cf. (78b)). Thus, in both a QMC in English and a GO-LPIC in MC, if the bare forms of the verbs are not licensed by a functional head in a higher domain, the construction is rejected.

(80) a.　Axin　　　yao mai shu　　　qu.　　　　　b.　*Axin　　　mai-le　　shu　　　qu.
　　　　　Axin　　　wantbuy book　　go　　　　　　　　Axin　　　buy-PRF　book　　go
　　　　　'Axin wants to go to buy books.'

    c.   Axin   mai shu   qu le.   d. *Axin   mai shu   qu.
        Axin   buy book   go PRT   Axin   buy book   go
        'Axin has gone to buy books.'

All of these parallel properties between the post-VP *qu* in a GO-LPIC and the quasi-modal verb in a QMC cannot be accidental. They indicate that like the former, the latter heads StP, and has an Agree relation with the associated [-stative, +agentive] predicate.[15] A QMC is thus an in situ version of GO-LPIC. This research offers a new understanding of the syntactic status of quasi-modal verbs in English. It also shows that MC and the languages discussed in 5.1 and 5.2 are LP-Movement available languages, whereas English is not.

5.3.2 Stativity markers on verbs

The syntactic dependency between St and a predicate are also seen in stativity markers on verbs. Stative and dynamic verbs can have different morphological markers in generically unrelated languages. In Mantauran Rukai (spoken in Taiwan), the two types of verbs have different prefixes in their finite forms, with dynamic verbs taking *o-* and stative verbs taking *ma-*. For example, the dynamic verb 'roast' is *o-akamə*, while the stative verb 'love' is *ma-ðalamə*. This sort of marking is also characteristic of other Formosan languages. Some examples from Mantauran Rukai are listed in (81) (Zeitoun 2000: 416).

(81) a.   Dynamic verbs in their finite forms

o-akamə	'roast'	o-poʃavo	'plant (millet)'	o-coroko	'jump'
o-riŋiriŋi	'fry'	o-ðapələ	'fish'	o-sialaʃa	'hear'

    b.   Stative verbs in their finite forms

ma-ðalamə	'love'	ma-ravəravərə	'happy'	ma-ʃakasə	'lazy'
ma-taaði?i	'good'	ma-ha?aoco	'scold'	ma-takoʃa	'bad'

It bears noting that some semantically stative verbs such as *o-liho?o* 'know' are morphologically grouped into the dynamic type, and some dynamic verbs such as *ma-ha?aoco* 'scold' are morphologically grouped into the stative type in Mantauran (Zeitoun 2000: 416). In fact, a similar mismatch is also occasionally found in the GO-LPIC in MC. *Qu* 'go' generally occurs with non-stative predicates, but exceptions like (82) exist. Also see Wuff's non-agentive examples in the QMC in English cited in 5.3.1 above.

(82) Ni   shou-ku   qu   ba!
     you   suffer-bitter go IMP
     'Be miserable!'

In many Formosan languages, degree words behave like stative verbs, and they also have a stative prefix, as seen in the Thao example in (83). Note the stativity agreement between the degree word and the adjective in such an example.

(83) Ma-thuaw   ma-tata   sa paini'an.   (Jean 2016: 125)
     STA-very   STA-hot   DET dish
     'The dish is very hot.'

Grammaticalization of stativity is also seen in other languages. In Abkhaz (a North-West Caucasian or Abkhaz-Adyge subgroup of Caucasian language), the indicative mood forms of

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[15] The shared properties of the QMC in English and the GO-LPIC in MC distinguish them from the GO and COME constructions in Zapotec (Anderson 2018), e.g., the Zapotec constructions do not entail agentivity.

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verbs vary depending on whether the verb is stative or dynamic, and the suffix –*wp* is a stative marker (Campbell & King 2013: 7). Moreover, Chichewa also has a stative suffix –*ik* or –*ek*, and verbs with such a suffix are incompatible with any agentive prepositional phrase (Dubinsky & Simango 1996). In Semitic languages, roots can show up in either stative or non-stative verbs, depending on the morphological forms: the morphological form $C_1aC_2aC_3$ (Pattern 1, P1) marks the stative reading, whereas the morphological form $niC_1C_2aC_3$ (P2) or $hitC_1aC_2C_2eC_3$ (P7) marks the nonstative reading. A few Hebrew examples are given in (84) (Arad 2005: 210).

(84)   Root   Stative verb   Nonstative verb (fall into a state; inchoative)

	Root	Stative verb	Nonstative verb (fall into a state; inchoative)
a.	√škb	šaxav (be lying, P1)	niškav (lie down, P2)
b.	√yšb	yašav (be sitting, P1)	hityašev (sit down, P7)
c.	√ʕmd	ʕamad (be standing, P1)	neʕemad (stand up, P2)
d.	√ʔhb	ʔahav (love, P1)	hitʔahev (fall in love, P7)

It is possible that St has a syntactic Agree relation with such stativity markers on verbs.[16]

5.3.3 Stativity and phi-features

The syntactic Agree between St and a predicate can also be seen in the morphological patterns of phi-features that correlate with stativity. We introduce this Agree strategy in this section. Stative and dynamic verbs can have different phi-feature inflection patterns. Dienst (2009, 2014: Ch. 5) lists as many as nine morphological contrasts between the two types of verbs in Kulina (spoken in the Brazilian states of Amazonas and Peru). Some of them are listed in (85).

(85) Phi-inflection patterns of stative and dynamic verbs in Kulina (Dienst 2009, 2014)

	dynamic verb	stative verb
a. person marking	inflecting dynamic verbs have a person prefix slot	inflecting stative verbs do not
b. plural marking	dynamic verbs have the subject plural markers *ke-* and *–mana*	the plural marker of stative verbs is *–khiri*
c. gender agreement	transitive dynamic verbs agree in gender with either their subject or their object	complement-taking stative verbs agree in gender with their subject

Importantly, the contrasts are beyond purely semantic considerations. Dienst (2009: 2) shows that for dynamics and statives, "the two categories are grammatical, not semantic, and some dynamic verbs, such as *pemi-* 'be hungry' and *pama-* 'be two', are semantically stative." We have addressed similar mismatches in 5.3.2.

The phi-feature contrast can be captured by the projection of StP. It is possible that the stativity feature and phi-features are bundled together on a verb, and St has an Agree relation with the stativity feature in the bundle.

The fact that phi-feature contrasts are associated with the dependency for licensing subjects is familiar (e.g., in English, subjects move and have a phi-agreement with a finite Infl element). Phi-feature contrasts can also be associated with the dependency for licensing WH-operators, as seen in the Northern Italian dialect Fiorentino (Brandi and Cordin 1989):

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[16] A stative marker selects a stative verb or a root underspecified for stativity, but a stativizer forms a stative expression from a dynamic base (see Dubinsky & Simango 1996, Kratzer 2000, Michaelis 2011, Campbell & King 2013). In this paper, I do not discuss stativizers.

(86) Quante ragazze gli/*le ha/*hanno parlato con te
　　　how.many girls 3SG.M/3PLF have.3SG/have3PL spoken with you
　　　'How many girls (it) has spoken to you?' (Brandi & Cordin 1989: 124-125)

　　　Baier (2018: 1) states that in such an example, "the finite verb and preverbal subject clitic cannot register person, gender, and number features (3rd person feminine plural) of the wh-subject. Instead, they must appear in a 3rd person singular (masculine) default form." In this language, "full subject-verb agreement is obligatory when the subject is not extracted." "All that is necessary for the emergence of Anti-agreement is the presence of an Ā-feature on a DP that controls φ-agreement." (Baier 2018: 3) Similarly, van Urk's work on Dinka also shows that "Dinka C carries features driving Ā-movement as well as a φ-probe." (van Urk 2015: 106) We have seen that phi-features are also sensitive to stativity differences in Kulina. Thus, phi-features can be sensitive to various kinds of dependencies: the dependencies for licensing subjects, operators, and predicates. These possibilities show that phi-features can be bundled with other formal features, including the stativity feature, in syntax.[17]

　　　We have shown that like the formal properties of subjects and the formal properties of other kinds of elements, the stativity property of predicates can be bundled with phi-features. Importantly, overt stativity markers are found in predicates, not subjects, although the subject of a stative predicate is called a holder (Kratzer 1996: 123; based on Parsons 1990: 24). Thus, like a LP-Movement to derive a LPIC, these stativity-sensitive morphosyntactic phenomena are found in predicates. I thus conclude that in addition to the Move strategy, there is a non-Move (i.e., Agree) strategy to license the stativity feature of a predicate, cross-linguistically.

　　　In this section, I have shown that in some languages, St and a predicate have a stativity Agree relation, and nothing moves to SpecSt. As for the question why the LP-Movement is available in certain languages, I do not have an answer yet.

6 Conclusions

The paper has explained the existence of LPIC, in which any possible lexical core of a predicate (VP, AP, NP) deviates from its canonical position, in Mandarin Chinese. It has argued that in a LPIC, the deviated predicative expression has moved to its surface position, that the movement is connected to the stativity feature of predicates, that the stativity dependency between a low functional head in the clausal spine and a predicate is for licensing the predicate in syntax, parallel to the licensing of the formal features of subjects, and that the licensing can also be established by an obligatory predicate movement, with or without the raising of the subject, and by the Agree relation with the verbs that have a stativity morphology, without a predicate movement, cross-linguistically. The proposal made here also suggests that in the universal sequences of major functional projections of a clause, StP is projected between IP and vP.

Appendix: Other miscellaneous issues of LPI in MC
Appendix A: *Hen* vs. other degree words in Deg-LPI

This appendix proposes a unified account for two questions regarding degree expressions in MC. Question A, why does a Deg-LPIC not have a weak reading that is available in the canonical version? It has long been noted that *hen* may have a weak or the so-called bleached

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[17] We put aside a possible case contrast with respect to stativity on a nominal inside a predicate, e.g., in Korean (Jang & Kim 2001: 118), and Japanese (Travis 2010: 3), the object of a nonstative verb is accusative, but that of a stative verb is nominative in simple clauses (cf. Kishimoto 2019); in Spanish, an object pronoun is dative in a stative predicate, but accusative in agentive non-stative predicate (Arad 1999: 8); and in German, an object of a locative preposition is dative in a stative predicate, but accusative in a non-stative predicate, as shown in (i).

(i) a. Ich lege den Stift auf **den** Tisch. 　　b. Der Stift liegt auf **dem** Tisch.
　　　 I lay the pen on(to) the.M.**ACC** table 　　　　 the pen lies on the.M.**DAT** table
　　　 'I lay the pen on the table.' 　　　　　　　　　 'The pen lies on the table.

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meaning (Li & Thompson 1981: 143, 340). Depending on the context, it may have either a strong or a weak reading in the canonical (87a), but a strong one only in the LPIC in (87b).

(87) a. Axin   hen gao.   b. Axin   gao de   hen.
         Axin   very tall   Axin   tall DE very
          Strong: 'Axin is very tall.'   Strong: 'Axin is very tall.'
          Weak: 'Axin is tall.' (*hen* must not be stressed)

Following Zhang (2019b), I assume that a degree word is able to focus an element, in addition to being able to rule out a comparative reading of a gradable expression (see Liu 2010, Grano 2012, and L. Zhang 2019 for various proposals to explain the latter function). In the absence of a Deg-LPI, two positions are available for *hen*, as shown in (88a) and (88b).

(88) a. [IP sbj….[StP [vP<sbj> [DegP *hen* XP
     b. [IP sbj….[StP [St' *hen* [vP<sbj> [DegP <*hen*> XP
     c. [IP sbj   ….   [StP XP [St' *de* [vP<sbj> [DegP *hen* <XP>
                                                              LP-Movement

If *hen* remains in situ, as in (88a), it heads a DegP and c-commands and focalizes a gradable XP. In this case, a strong reading of *hen* appears. I assume that *hen* is also able to move to St, as in (88b). In this high position, it scopes the whole predication, which includes (the lower copy of) the subject, and thus focalizes the whole predication, rather than the gradable XP. In this case, a weak reading of *hen* appears. I assume that the raising of *hen* is a syntactic head movement, which may have interpretation effect (Harizanov & Gribanova 2019). In the presence of a Deg-LPI, however, St is realized by *de* and *hen* remains in DegP (assuming that the merger of *de* is preferred to the raising of *hen* in satisfying DEPP), as shown in (88c). When *hen* remains in DegP, as in (88a), it focuses the gradable expression and has a strong reading only, and thus the inversion necessarily gives the strong reading. This answers question A.

In any case, an LP-Movement is not driven by any semantic motivation. Rather, the observed obligatory strong reading of *hen* in a Deg-LPIC is a by-product of the merger of *de* in the construction. The presence of *de* rules out a structure that has a weak reading of *hen*.

Question B: why cannot other degree words be stranded by LPI, as shown by (89b)?

(89) a. Axin   chao   gaoxing.   b. *Axin   gaoxing de   chao.
         Axin   super   glad   Axin   glad   DE   super
         'Axin is super glad.'

Different from *hen*, other degree words such as *ting*, *chao, te, xiangdang,* and *feichang* never have a weak reading. One account for the difference is that they never move to St. Cross-linguistically, degree words can select a gradable XP, as the head of DegP, or be an adjunct of a gradable XP (Neeleman et al. 2004; Berghoff & Bylinina 2020). I assume that unlike *hen*, some other degree words in Chinese are adjuncts of a gradable XP, rather than the head of DegP. They can saturate the d argument of the gradable XP in semantics, without projecting DegP in syntax. Thus, first, they may not occur with another degree word, as shown in (90), since the d argument of the same gradable expression can be saturated only once. Their presence also rules out a comparative reading of the gradable expression (see Liu 2010, Grano 2012, and L. Zhang 2019 for various accounts for the obligatory presence of a degree word with a grable adjective in certain constructions but not others). Since such degree words are not head elements, they never move to St, and thus they never have a weak reading.

(90) *Axin   hen chao   gaoxing.
      Axin   very super   glad

Second, like some adjuncts, such degree words are never stranded, as seen in (89b). Instead, some of them may be able to move together with the stative XP to SpecStP (cf. the movement of *da bendan* 'big fool' in (15b)), with the *de*-support at St, as seen in (91). The structure of (91b) is (91c). This answers question B. Thus, both questions are linked to the head movement possibility of a degree word. ((91a) is adapted from Lü 1999: 161) and (91b) is from Jing Gao, p.c.)

(91) a.   Ta   {ting/chao}   gaoxing de.   b.   Axin   guai   gaoxing *(de).
         he   very/super   glad   DE   Axin   quite   glad   DE
         'He is {very/super} glad.'   'Axin is quite glad.'
  c.   [$_{IP}$ sbj….[$_{StP}$ [*guai*-XP] [$_{St'}$ *de* [$_{vP}$<sbj> <*guai*-XP>]

Note that the presence of the *de*-support correlates with the presence of a LPI, as seen in (91); and the absence of the *de*-support correlates with the absence of a LPI, as seen in (89a). The alternation of (89a) and (91a) indicates the LPI is optional. However, *de* is obligatory in (91b), indicating that the LPI is obligatory in the *guai*-construction.

Also note that all uses of *de* are enclitics and they have different written forms depending on the context (Lü 1999: 156), an issue we do not discuss here. Moreover, the clause-final *de* in (91) is not in construal with any copula, since no copula is allowed (e.g., *Ta shi ting gaoxing de*). Thus, any analyses of the *de* in the *shi…de* construction do not apply here (e.g., J. Huang's 1982 tense-aspect operator analysis). In my analysis, this use of *de* parallels to the clause-final *qu* in a GO-LPIC. In both constructions, the clause-final functional element heads StP.

The differences between *hen* and other degree words may reflect their different grammaticalization stages. An adjunct can be grammaticalized into a selecting head element (van Geldern 2011: 41). Plausibally, *hen* has been grammaticalized into a Deg head element, whereas other degree words still remain as syntactic adjuncts of gradable expressions.[18]

Appendix B: Restrictions on the CL-LPI
In this appendix, we discuss some constraints on CL-LPIC in MC. The first one is the ban of a bare CL in CL-LPI. Consider the following contrast:

(92) a.   Axin   shi (yi) ge   bendan.   b.   Axin   shi bendan *(yi)   ge.
         Axin   be one CL fool   Axin   be fool   one   CL
         a & b: 'Axin is a fool.'

It is well-known that if a CL is not left-next to a numeral or demonstrative, it has to be left-next to an overt head element, such as a verb or preposition in MC (Lü 1990 [1944]: 170). In (92b), if *yi* is absent, this rule is violated, and thus the unacceptability is expected.

The second restriction is that only class nouns that express evaluative properties can undergo LPI. Geist (2019) distinguishes class nouns, e.g., those denote 'man', 'genius', 'hero', 'coward', from role nouns, e.g., those denote 'teacher' and 'president', in copular construcitons. The former expresses subsets of humans, inherent properties, evaluative properties, etc., and the latter expresses a particular role in society (e.g., professions, functions, nationalities). In most European languages, the former is not a bare singular noun, but the latter is.

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[18] Unlike other degree words, *hen* 'very' alone can answer questions by many young Taiwanese (Yu-yun Wang & Wei-wen Liao, p.c.). This could mean that *hen* behaves like an auxiliary, such as *shi* 'be'.

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(93) a. Lea ist ein Genie.   b. Lea ist   Lehrerin.   [German]
         Lea is   a   genius   Lea is   teacher
         'Lea is a genius.'   'Lea is a teacher.'

    Geist shows that if a nomnal predicate is not a bare noun, it can have either a class or role reading, but if a nomnal predicate is a bare noun, it has a role reading only, in many languages. Also, when a role noun occurs with an article, it can be coerced to have a class reading. My observation is that no role noun may be inverted, and thus nouns like *laoshi* 'teacher' and *zongtong* 'president' are ruled out in CL-LPICs. However, a role noun can be coerced to have a class reading in a CL-LPIC. In (94a), in the presense of the adverb *wanquan* 'completely', the noun *jiating-funü* 'house-wife' has a class noun reading, denoting certain generally assumed sterotypical properties of a housewife (e.g., narrow-mindedness). This is also true of the CL-LPIC in (94b). But when one wants to be a housewife, she wants to play the social role of a housewife. In this case, *jiating-funü* has a role reading only. This meaning can be expressed in the canonical construction in (95a), but not the CL-LPIC in (95b).

(94) a. Ta   wanquan   shi yi ge   jiating-funü.   (canonical)
         she completely   be   one CL   house-wife
    b. Ta   wanquan   shi jiating-funü   yi   ge.   (CL-LPIC)
         she completely   be   house-wife   one CL
         a & b: 'She is a housewife completely.' (negative judgment)
(95) a. Ta   cizhi-hou   yao zuo yi ge   jiating-funü.   (canonical)
         she resign-after   wantbe   one CL   house-wife
         'After retirement, she wants to be a housewife.' (neutral)
    b. *Ta ci-zhi-hou   yao zuo jiating-funü yi   ge.   (CL-LPIC)
          she resign-after   wantbe   house-wife one   CL

    We can see that the canonical construction is unmarked, and the CL-LPIC is marked in MC. The latter does not create any new meaning beyond those of the canonical construction. Thus, between the two readings of predicative nominals, in the German-like languages, a class reading cannot be expressed in a bare noun predicate (*He is *(a) fool*), but in MC, a role reading cannot be expressed in a CL-LPIC. Thus, the bare form of predicative nominals is semantically constrained in the former, but the marked word order of predicative nominals is semantically constrained in the latter. Moreover, bare noun is also an unmarked form of predicate in MC (*Axin shi* {*laoshi/bendan*} 'Axin is a {teacher/fool'}. A comparison of nominal predicates in copular constructions in the languages are summarized in (96).

(96) a.

German nominal predicate	Role reading	Class reading
non-bare	✓	✓
bare noun	✓	

b.

Mandarin nominal predicate	Role reading	Class reading
non-bare	✓	✓
bare noun	✓	✓
CL-LPIC		✓

    If the movement of *yi* in a CL-LPIC (3.4) correlates with a certain semantic effect, the movement, like that of *hen* in a Deg-LPIC (Appendix A), can be a syntactic head movment (see Harizanov & Gribanova 2019). But a thorough study of the issue needs another project.[19]

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[19]A nominal predicate with *yī gè* needs a copula (Tang 1998: 192), seen in (ia), but in a CL-LPIC, the copula is optional in examples like (ib), but still obligatory in examples like (93b). Beyond this observation, I have nothing to say about the variations. I will not persue the issue further.

Appendix C: Pre-VP *qu* and double *qu* constructions
In §1, I have argued that post-VP *qu* is not a verb, and stated that a pre-VP *qu* is ambiguous: it may have the same status as the post-VP *qu*, and it can also be a control verb. Now we elaborate the control verb use of the pre-VP *qu*.

First, like control verbs such as *jixu* 'continue', the control verb use of *qu* allows the verb in its complement to have an aspect suffix. This parallelism is shown in (97) ((97b) is from Lu 1985: 24 (4a)) . An aspect marker may occur with a verb in a nonfinite clause, as well as a finite clause in MC, as in other languages (Li 1990: 19, Grano 2017: 269).

(97) a. Wo xijixu kan-<u>zhe</u> shu. b. Gangcai wo qu kan-<u>le</u> chang dianying.
      I continue read-PRG book   just.now I go see-PRF CL movie
      'I continued to read a book.'   'I saw a movie just now.'

Second, like other aspectual control verbs, the control verb use of the pre-VP *qu* can be modified. In (98a), *tingzhi* 'stop' is modified by *guyi* 'deliberately', and in (98b), *qu* is also modified by *guyi*.

(98) a. Wo guyi tingzhi gen ta shuohua.
      I deliberately stop to he speak
      'I deliberately stopped speaking to him.'
   b. Wo guyi qu gen ta shuohua.
      I deliberately go to he speak
      'I deliberately go to speak to him.'

Third, *qu* in this use does not have to be phonologically weak (cf. Zhu 1982: 166).

One more difference between the control verb use of the pre-VP *qu* and the post-VP *qu* is that in certain contexts, the former can be replaced with *lai* 'come', without any change of the meaning, as seen in (99) (Zhu 1982: 166). If the pre-VP *qu* and *lai* are used as prospective control verbs, their exchangeable possibility is explained, since in this use, they care about time only. In contrast, as stated in §1, the post-VP *qu* encodes that the event denoted by the VP is away from the deictic center, whereas the post-VP *lai* encodes that the event denoted by the VP is towards the deictic center. The different translations of (3b) and (4b) show the contrast.

(99) yao anzhao zhuanye de xingzhi {lai/qu} jinxing gaizu.
     should according.to field DE property come/go do reform
     'One should make a reform according to the properties of the field.'

The control verb use of *qu* and the auxiliary use of *qu* share one property that distinguishes them from motion verbs: neither has an aspect suffix (N. Zhang 2003: 179, 188), as seen in (100).

(100) a. Axin qu {*-guo/*-le/*-zhe} du na ben shu le.
       Axin go -EXP/-PRF/-PRG read that CL book PRT
    b. Axin du na ben shu qu {*-guo/*-le/*-zhe} le.
       Axin read that CL book go -EXP/-PRF/-PRG PRT
       a & b: 'Axin has gone to read that book.'

(i) a. Axin *(shi)yī gè bèndàn.   b. Axin (shi) bèndàn yī gè.
   Axin be one CL fool   Axin be fool one CL
   'Axin is a fool.'   'Axin is a fool.'

The post-VP *qu* rejects an aspect suffix because it is not a verb. The pre-VP *qu* rejects an aspect suffix (Tang 1979) because it patterns with some other control verbs such as *shefa* 'try', and *zhunbei* 'prepare', which also disallow an aspect suffix, as seen in (101).

(101) Axin   kaishi (*-le)   du   na ben shu   le.
       Axin   start-PRF   read that CL book   PRT
       'Axin has started to read that book.'

The contrast between (5) and (97b), with respect to the possible presence of an aspect suffix on the co-occurring verb, the contrast between (6) and (98b), with respect to modification possibility, and the weak phonological form in contrast to the non-weak phonological form, and the contrast with respect to the obligatory neutral tone clearly distinguish the post-VP *qu*, which is never a verb, from the control verb use of the pre-VP *qu* from. Because of this contrast, the pre-VP *qu* and the post-VP *qu* do not form a movement chain (contra N. Zhang 2003).

Another issue related to GO-LPI is that a VP may occur between two *qu*s or two *lai*s, as in (102) (Chao1968: 480; Zhu 1982: 166).

(102) a. Axin   qu <u>mai shu</u> qu le.   b.   Axin lai <u>mai   shu</u> lai   le.
          Axin   go buy book go PRT   Axin come buy   book come PRT
          'Axin has gone to buy books.'   'Axin has come to buy books.'

What is the constituency of such predicates? In (103a), GO-LPI occurs inside the complement clause of the first *qu*, which can be a control verb. This is an embedded LPI. In (103b), the whole [*qu* VP] is inverted to the left of the matrix *qu*. This is a matrix LPI.

(103)   a.   [*qu* [VP *qu*]]   b.   [[*qu* VP] *qu*]

One way to distinguish the two choices is to check whether the verb in the VP may have an aspect suffix. Recall that post-VP *qu* rejects an aspect suffix with the co-occurring verb, but a control verb does not. In (103a), the VP is in construal with the *qu* to its right, and thus it should disallow an aspect suffix; but in (103b), the VP is in construal with the *qu* to its left, and thus is should allow as aspect suffix. The unacceptability of (104) shows that (103a) is right.

(104)   *Axin   qu <u>mai-{zhe/le/guo}   shu</u>   qu le.
           Axin   go   buy-PRG/PRF/EXP book   go   PRT

We thus claim that when a VP is both preceded by a *qu* and followed by a *qu*, the first *qu* must be a control verb. This claim is compatible with the general rule that for the same VP, it cannot have two identical functional elements, considering that the post-VP *qu* is always a functional element (§1). Our claim is also compatible with the following fact. In a double-*qu* construction, the pre-VP *qu* may be changed into *lai* in certain cases while still keeping the meaning unchanged, as shown in (105), whereas this is impossible for the post-VP *qu* (Lu 1985: 31). The two examples in (105) are similar to the one in (99).

(105) a. Wo {lai/qu} peibushi qu.   (Lu 1985: 31)
          I   come/go apology go
          'I'll go to apology.'

b. Zhe shir   hai   dei you nin {lai/qu} gen dahuor shuo   qu.
   this matter rather   need by you come/go to people explain go
   'This matter needs you to explain it to the people.'

Our claim is also compatible with our observation that in a LPI, it is a lexical predicate that is inverted (2.2). In the rejected choice (103b), the intended inverted part is the complement of the control verb, and this part is a nonfinite clause, rather than a VP.

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