From phrasal movement to head movement

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Abstract In Shizhu and Zunyi, two closely related Southwestern Mandarin varieties, the noun that normally follows the classifier may move to a DP-initial position, yielding a definite reading. This paper examines this strategy in detail and argues that noun fronting involves NP-fronting in Shizhu but N-to-D head movement in Zunyi. From a diachronic perspective, I argue that the head-movement pattern in Zunyi is more innovative, having developed from an earlier stage in which noun fronting involved NP-raising. I thus conclude that phrasal movement may historically change into head movement, a type of change that, as I show, cannot be simply reduced to changes involving individual functional elements. I discuss additional cases exhibiting a historical shift in movement type, arguing that the change from phrasal movement to head movement should be recognized as an independent type of syntactic change in its own right. How this type of change can be understood within a general theory of syntactic change is also discussed.
Keywords: *Southwestern Mandarin, Shizhu, Zunyi, phrasal movement, head movement, historical syntax*

1 Introduction

Research in diachronic generative syntax has fruitfully uncovered recurring patterns of syntactic change across languages and constructions that are best understood in generative-theoretical terms. One such pattern is *Spec-to-head reanalysis*: A constituent occupying the specifier position of a functional head at an earlier stage may be reanalyzed as a functional head in its own right at a later stage of the language. Another pattern is *the loss of movement*: An element that previously underwent movement may subsequently lose this ability and be base-generated. Both patterns are now well known: They have been reported and discussed for various languages and constructions, from different perspectives (Roberts 1993, 2019, Rowlett 1998, Watanabe 2002, Roberts & Roussou 2003, van Gelderen 2004a,b, 2009, 2011, 2018, 2019, 2022, Jäger 2005, Willis 2007, Bácskai-Atkári & Dékány 2014, Haeberli & Ihsane 2016, Meelen 2020, Aldridge 2023, Wang 2024, among many others).

These two patterns (among other types of syntactic change) are often discussed together in the theoretical literature, concerning questions like why these patterns occur, why they are (arguably) unidirectional, and whether they can be deduced formally from the same principle(s). For example, van Gelderen (2004b and much subsequent work) argues that these patterns are accounted for by a number of 'Economy Principles' (less economical structures tend to become more economical ones); Dadan (2019) points out that both types of change involve *the loss of specifiers* (Spec-to-head reanalysis cancels a specifier position and the loss of (phrasal) movement likewise prevents one element from moving into a specifier position), and he argues that specifiers are generally dispreferred in the grammar, because they create phrase-phrase relations which involve additional (hence less economical) labeling steps, compared to head-phrase relations, according to Chomsky's (2013, 2015) Labeling Algorithm (see also van Gelderen 2018, 2019); Bošković (2021) further interprets the dispreference of specifiers as a general dispreference of symmetric structures in natural language (see also Di Sciullo 2015, 2017), so both types of change are conceptually expected.

In this paper, I address a type of syntactic diachrony that has received much less attention: *the reanalysis of phrasal movement as head movement* in the course of language change, and subsequently discuss its theoretical implications. I will suggest that this type of syntactic change is not that uncommon cross-linguistically, and propose that its underlying mechanism should be reducible to deeper principles, ideally ones that also underlie other types of syntactic change, such as Spec-to-head reanalysis and the loss of movement. A successful theory of syntactic change should be able to account for different types of change in a principled way, such that their differences are largely derived rather than stipulated as primitive. Based on this reasoning, I offer suggestions as to whether and how current theories of syntactic change should be reconsidered or refined, so that the change from phrasal movement to head movement can be understood in a natural and systematic manner.

I will illustrate the pattern primarily using data from Shizhu 石砬話 and Zunyi 遵義話, two understudied varieties of Southwestern Mandarin. In both dialects, the 'basic' order of DPs is Num > CLF > N (1), like most other Sinitic languages.[1] However, unlike most other Sinitic languages, a noun in both dialects can be fronted to the left periphery of that DP, resulting in a *definite* reading (2).[2] (In this paper I assume nominal arguments in Sinitic are DPs and largely put aside the DP/NP debate (Bošković 2008, 2012), though some comments will be given on the debate when necessary.)

[1] The Shizhu data used in this study are from my own fieldnotes with four native speakers between 2017 and 2019, using typical interview techniques; the Zunyi data are either drawn from descriptive works in Chinese (Hú 1989, 2010, Yè 2021) or constructed based on these descriptions, and they were all further confirmed by Yè Jìngtíng (p.c.).

[2] In transcribing Shizhu and Zunyi, I use a Pinyin-based system with some minor adjustments reflecting their slightly different phonologies. Tones are indicated via diacritics: ā, â, à, á, which map onto the Chao tone values 45, 313, 42, and 35 in Shizhu, and 55, 21, 53, and 12 in Zunyi (there is a strict one-to-one correspondence between the four tones of the two languages).

(1) a. 三支筆
sān-zī bî [Shizhu]
three-CLF pen
'three pens'

b. 三支筆
sān-zī biê [Zunyi]
three-CLF pen
'three pens' (Hú 2010:114)

(2) a. 筆（一）支
bî (yî)-zī [Shizhu]
pen one-CLF
'the pen'

b. 筆支
biê-zī [Zunyi]
pen-CLF
'the pen' (Hú 1989:124)

Though (2a) and (2b) look (somewhat) similar, I will show, based on a number of diagnostics, that the N-(Num)-CLF construction in Shizhu (2a) involves fronting of the full NP (i.e., it is phrasal movement), whereas the N-CLF construction in Zunyi (2b) involves the movement of N (i.e., it is head movement). I will then argue, from a diachronic perspective, that N-fronting in Zunyi, analyzed as a case of head movement, *used to* be a case of phrasal movement at a slightly earlier stage of the language. I will then show that this type of change is also attested elsewhere, particularly in the *li*-construction in Serbo-Croatian (Bošković 2001, 2021) and in *wh*-fronting in Early Middle Chinese (Aldridge 2023), and potentially also in some other areas to be suggested later in this paper. I thus conclude that phrasal movement may get reanalyzed as head movement, as a type of syntactic change, while the reverse development remains unattested.

This paper is organized as follows. Section 2 describes noun-initial DPs in Shizhu and Zunyi, focusing on the differences between the two noun-fronting strategies despite their many similarities. Section 3 presents a synchronic analysis of the two strategies, arguing that noun-initial DPs in Shizhu involve NP-fronting, whereas the corresponding order in Zunyi is derived via head movement. I show how this difference in movement type accounts for the various differences in behavior between the two varieties discussed in Section 2. Section 4 turns to diachrony, arguing that the head-movement pattern in Zunyi is an innovation that arose through a reanalysis of NP-raising in the recent history of the language. I further argue that this shift in movement type constitutes an independent type of syntactic change in its own right, one that is not straightforwardly reducible to a change in functional elements. I discuss the implications of this proposal for our understanding of syntactic change. Section 5 shows that this type of change may recur across languages and domains by providing additional cases that can likewise be characterized as shifts from phrasal movement to head movement. Section 6 concludes the paper and briefly discusses the status of head movement in current syntactic theory.

2 N(P)-fronting strategies in Shizhu and Zunyi: Similarities and differences

Southwestern Mandarin (henceforth SWM) is a young branch of Mandarin Chinese mainly spoken in Southwest China. While the geographical distribution of SWM is huge, its internal diversity is relatively limited, in that all of its modern varieties are highly mutually intelligible. Shizhu and Zunyi are two subdialects of SWM spoken in geographically proximate areas (Shizhu is primarily spoken in southeastern Chongqing, and Zunyi in northern Guizhou). DP-internal N(P)-fronting is a regional property of the SWM dialects of the Shizhu-Zunyi region, with Shizhu and Zunyi being the two varieties for which the relevant data are most readily available. Within Chinese, DP-internal N(P)-fronting is not attested outside the Shizhu-Zunyi region.[3]

This section provides a description of Shizhu N-Num-CLFs and Zunyi N-CLFs. It will be pointed out that, though both are definite constructions, they manifest a number of intriguing syntactic and semantic differences which call for a principled explanation. I provide the explanation in Section 3.

2.1 N-(Num)-CLFs as definite constructions

We have seen in (1) and (2) that the two SWM dialects use DP-internal constituent-order alternation to encode referentiality: Num > CLF > N is associated with indefiniteness and N > (Num) > CLF is associated with definiteness. The data in (3–6) illustrate this observation further: Left-dislocating the noun is indeed associated with definiteness in both Shizhu and Zunyi:

(3) *Zhangsan bought a book and a pen$_i$ ...*

a. 筆（一）支很貴。

[Bî (yî)-zī$_i$] hè guí. [Shizhu]

pen one-CLF very expensive

'The pen$_i$ is expensive.'

b. 鋼筆支一點都不好寫。

[Gāngbiê-zī$_i$] yê-diàn dōu bê hào-xì. [Zunyi]

fountain.pen-CLF one-CLF.bit DOU NEG good-write

'The pen$_i$ is not easy to write at all.' (Yè 2021:437)

(4) a. #筆（一）支我買嗵；筆（一）支我沒買。

#[Bî (yî)-zī] ngò mài=dâ; [bî (yî)-zī] ngò mēi=mài. [Shizhu]

pen one-CLF 1 buy=PFV pen one-CLF 1 NEG.PFV=buy

Intended: '#The pen, I have bought; the pen, I haven't.'

[3] Outside Sinitic, definiteness-related DP-internal N(P)-fronting is also attested in Bangla (Bhattacharya 1999), Asamiya (Dasgupta & Ghosh 2007), and Ika (Frank 1990). I leave a more general study of this type of phenomenon to future research (see Chén 2022 for relevant discussion). See Dayal 2012, Simpson & Syed 2016, and Syed & Simpson 2017 for recent theoretical discussion of N(P)-fronting in Bangla.

b. #鋼筆支我買了；鋼筆支我沒買。
#[Gāngbiê-zī] ngò mài=lô; [gāngbiê-zī] ngò mēi=mài. [Zunyi]
fountain.pen-CLF 1 buy=PFV fountain.pen-CLF 1 NEG.PFV=buy
Intended: =(4a)

(5) a. ??臺上坐起演員（一）個。
??Tâi=sáng zó=qì [yànyuân (yî)-gó]. [Shizhu]
stage=on sit=CONT actor one-CLF
Intended: '??On the stage sits the actor.'
b. ??臺上坐起演員個。
??Tâi=sáng zó=qì [yànyuân-gó]. [Zunyi]
stage=on sit=CONT actor-CLF
Intended: = (5a) (Yè 2021:438)

(6) a. 臺上坐起（(一）個）演員。
Tâi=sáng zó=qì [((yî)-gó) yànyuân]. [Shizhu]
stage=on sit=CONT one-CLF actor
'On the stage sits an actor.'
b. 臺上坐起（(一）個）演員。
Tâi=sáng zó=qì [((yê)-gó) yànyuân]. [Zunyi]
stage=on sit=CONT one-CLF actor
'On the stage sits an actor.'

(3) shows that N-(Num)-CLFs in Shizhu and Zunyi may occur naturally in an anaphoric context (a typical definite context). (4) shows that N-(Num)-CLFs induce a uniqueness presupposition: The phrases in the brackets all presuppose that there is a unique pen in the context (comparable to English DPs with the definite article *the*), so both (4a) and (4b) are semantically contradictory. As further shown in (5), placing N-(Num)-CLFs postverbally in an existential construction leads to infelicity, due to a typical definiteness effect—as in (6), only indefinites may occur in this position (in Mandarin Chinese, bare nouns can be non-definite and (Num)-CLF-Ns are obligatorily non-definite expressions; see Cheng & Sybesma 1999). (3–6) thus demonstrate that DP-internal N(P)-fronting in Shizhu and Zunyi constitutes a dedicated strategy for expressing definiteness (for detailed descriptions of the constructions in question, see also Chén & Shèng 2023 for Shizhu and Yè 2021 for Zunyi).

2.2 Occurrence of numerals

Shizhu N-Num-CLFs and Zunyi N-CLFs also manifest a number of interesting differences. The first difference to be addressed here, which is already noticeable from the above examples, is that an overt numeral

can only occur in Shizhu N-Num-CLFs, but not in Zunyi N-CLFs. This is further illustrated in (7):

(7) a. 筆（一/兩）支 [Shizhu]
bî (yî/liàng)-zī
pen one/two-CLF
'the pen/the two pens'

b. 筆（*一/*兩）支 [Zunyi]
biê (*yê/*liàng)-zī
pen one/two-CLF
'the pen'

A numeral is strictly not allowed in the Zunyi N-CLF (7b) (Yè 2021), and this construction is always singular.[4] Note also that even in Shizhu, when the N-Num-CLF construction receives a singular reading, in which case the expected numeral is *yî* 'one', the occurrence of the (overt) numeral is *optional*, and in natural speech dropping it is highly frequent (*one*-drop is in fact the default option).[5] The use of numerals other than *yî* 'one' in N-Num-CLFs is in fact also not frequent in natural speech.

The difference between Shizhu N-(Num)-CLFs and Zunyi N-CLFs regarding the presence/absence of numerals is represented in Table 1:

Dialect	N-CLFs	N-Num-CLFs
Shizhu	✓	✓
Zunyi	✓	✗

Table 1: Numerals in N(P)-fronting constructions in Shizhu and Zunyi

Hence, the distribution of Shizhu N-(Num)-CLFs and that of Zunyi N-CLFs largely overlap (again, in most cases in naturally occurring speech, Shizhu also uses N-CLFs without an overt numeral), but still, the Shizhu N-(Num)-CLF has a wider distribution than the Zunyi N-CLF, as the former may be used in all contexts where the Zunyi N-CLF may be used, but not vice versa (see further below on this).

2.3 Occurrence of adjectives

Another difference between Shizhu N-(Num)-CLFs and Zunyi N-CLFs is that an adjective can occur with a Shizhu N-(Num)-CLF, but strictly cannot with a Zunyi N-CLF. This is exemplified in (8):

[4] To express a plural definite like 'the pens,' one may use the so-called plural classifier *-xī* in Zunyi, as in *biê-xī* 'pen-CLF.PL', but it is not clear if such phrases involve the same type of N-CLF constructions discussed in the main text, as *-xī* appears to have many properties not shared by the other 'canonical' classifiers (see, e.g., Xiong & Huang 2020, for discussion of *-xī* in Chengdu, which may also be extended to *-xī* in other SWM varieties). Note that *-xī* may be suffixed to a noun to yield a plural definite in most if not all SWM varieties, including those that do not generally have DP-internal N(P)-fronting strategies. Since there are many SWM dialects that have N-*xī* but not definite N-CLF in general (Zunyi is thus quite 'special' in this respect), I put *xī* aside in this paper. See also Chén 2020 for an analysis of *xī* as a D head in SWM.

[5] *One*-drop is in fact a highly frequent phenomenon in SWM that is independent of N(P)-fronting, as it is also attested in 'normal' indefinite (Num)-CLF-NP phrases. See Chén 2025 for relevant discussion of *one*-drop based on data from SWM varieties that lack N(P)-fronting in general.

(8) a. 白的衣服（一/兩）件

bê=dî yīfû (yî/liàng)-jián [Shizhu]

white=DE coat (one/two)-CLF

'the white coat/the two white coats'

b. *白的衣服件

*bâe=lē yīfê-jián [Zunyi]

white=DE coat-CLF (Yè 2021:438)

In (8a), it is the adjective *plus* the noun *bê=dî yīfû* 'white coat(s)', rather than simply the noun *yīfû* 'coat(s)', that receives a definite reading. (9) provides another example, where *hông=dî sū yî-bèn* red=DE book one-CLF 'the red book' is used contrastively, as opposed to 'the blue book'. In other words, *hông=dî sū yî-bèn* presupposes that there is one unique red book prominent in the context; it does not presuppose that there is a unique book (there may be books in other colors).

(9) 紅的書一本我買噠；藍的書一本沒買。

[Hông=dî sū yî-bèn] ngò mài=dâ; [lân=dî sū yî-bèn] mēi mài.

red=DE book one-CLF 1 buy=PFV blue=DE book one-CLF NEG.PFV buy

'I bought *the red book*; I didn't buy *the blue book*.' [Shizhu]

Regarding adjectives, we again observe that the distribution of the Shizhu N-Num-CLF is wider than that of the Zunyi N-CLF. While both may occur bare (in which case no significant functional difference is observed), only the former may tolerate the presence of an adjective in that DP.

2.4 Occurrence of possessors

The third difference between Shizhu N-Num-CLFs and Zunyi N-CLFs concerns the presence/absence of possessors, regarding which, unlike adjectives, the difference between the two constructions is not whether possessors may occur within an N(P)-fronted DP, but rather how that DP is interpreted. First, (10) shows that, in terms of grammaticality, both Shizhu N-Num-CLFs and Zunyi N-CLFs tolerate a possessor:

(10) a. 我的衣服（一/兩）件

ngò=dî yīfû (yî/liàng)-jián [Shizhu]

1=DE coat (one/two)-CLF

'my coat/my two coats'

b. 我的衣服件

ngò=lē yīfê-jián [Zunyi]

1=DE coat-CLF

'my coat' (Yè 2021:438)

However, the interpretations of (10a) and (10b) are different. Consider (11):

(11) a. 我的衣服（一）件比那件衣服好看。
[Ngò=dî yīfû (yî)-jián$_i$] bì [lá-jián yīfû$_j$] hào-kán. [Shizhu]
1=DE coat (one)-CLF compare that-CLF coat good-look
'My coat$_i$ looks better than that coat$_j$.'

b. #我的衣服件比阿件衣服好看。
#[Ngò=lē yīfê-jián$_i$] bì [ā-jián yīfê$_j$] hào-kán. [Zunyi]
1=DE coat-CLF compare that-CLF coat good-look
'#The coat$_i$, which is mine, looks better than that coat$_j$.' (Yè 2021:438)

(11a) is a natural expression in Shizhu. The possessed N-Num-CLF is definite, implying that there is *a unique coat that belongs to the speaker*. Since the construction in question does not presuppose that there is only one coat in the context as a whole (there may be coats that are not the speaker's), the possessed N-Num-CLF may therefore be contrasted with an expression referring to a different coat identifiable in the context. In contrast, (11b) is not felicitous in Zunyi. While there is nothing ungrammatical about the possessed N-CLF itself (as in (10b)), the construction crucially implies that there is *a unique coat* in the context, and that unique coat belongs to the speaker. In other words, the possessor here must receive a non-restrictive reading—*ngò=lē yīfê-jián* 1=DE coat-CLF may roughly be translated into English as 'the coat, which is mine.' Hence, this construction cannot be used to contrast with an expression that refers to a different coat.

In sum, the distributions of the possessed N-(Num)-CLFs in the two dialects stand in a subset-superset relation: Shizhu Poss-N-(Num)-CLFs can be used in all situations in which Zunyi Poss-N-CLFs can be used, but not vice versa. This is illustrated in Table 2 (COATS and MYCOATS are understood as sets, the latter being a subset of the former):

Dialect	**Construction**	$\lvert\text{COATS}\rvert = 1$ $\lvert\text{MYCOATS}\rvert = 1$	$\lvert\text{COATS}\rvert > 1$ $\lvert\text{MYCOATS}\rvert = 1$	$\lvert\text{COATS}\rvert > 1$ $\lvert\text{MYCOATS}\rvert > 1$
Shizhu	my coat (one)-CLF (10a)	✓	✓	✗
Zunyi	my coat-CLF (10b)	✓	✗	✗

Table 2: Shizhu Poss-N-(Num)-CLFs vs. Zunyi Poss-N-CLFs

First, when there is exactly one coat in the context and that coat belongs to the speaker ($\lvert\text{COATS}\rvert = \lvert\text{MYCOATS}\rvert = 1$), both (10a) in Shizhu and (10b) in Zunyi may be used to refer to that unique coat. Second, when there is more than one coat belonging to the speaker in the context ($\lvert\text{COATS}\rvert \geq \lvert\text{MYCOATS}\rvert > 1$), neither (10a) in Shizhu nor (10b) in Zunyi may be used felicitously, because these constructions are singular and definite, and their uniqueness presupposition cannot be satisfied in this context. Finally, and importantly, in contexts where there is exactly one coat belonging to the speaker but there are also other

coats (|COATS| > |MYCOATS| = 1), only (10a) in Shizhu but not (10b) in Zunyi may be used. This is because the uniqueness presupposition of (10a) in Shizhu is satisfied by |MYCOATS|, whereas (10b) in Zunyi requires that the number of coats in the whole context (i.e., |COATS|) be exactly one, not just the number of coats of the speaker's.

Hence, we observe that, for Shizhu, adjectives and possessors behave in a parallel manner: These DP-internal modifiers may both occur with N-(Num)-CLFs, and they are both within the scope of the uniqueness presupposition (see (9) and (11a)). The situation in Zunyi is somewhat more complex: Only a possessor, but not an adjective, may occur with the N-CLF; moreover, when a possessor is present within a noun-fronted DP—which must be definite—it lies outside the scope of the uniqueness presupposition, as illustrated in (11b).

2.5 Summary

This section has shown that in both Shizhu and Zunyi, a noun may get fronted within a DP, yielding an N > (Num) > CLF order and resulting in a definite reading. Furthermore, we have seen that although the noun-fronting strategies in the two SWM varieties look similar to some extent, they show a number of interesting differences, as summarized in Table 3:

Dialect	N-CLF	N-Num-CLF	Adj-N-CLF	Poss-N-CLF
Shizhu	✓	✓	✓	✓*
Zunyi	✓	✗	✗	✓*

* The two have semantic nuances (as summarized in Table 2)

Table 3: Shizhu N-(Num)-CLFs vs. Zunyi N-CLFs

The next section provides a synchronic analysis that captures all these differences between Shizhu N-(Num)-CLFs and Zunyi N-CLFs. In addition, one important observation so far is that the distribution of Shizhu N-(Num)-CLFs is strictly wider than that of Zunyi N-CLFs (i.e., the former may be used in all situations where the latter may be used, but not the other way around). We return to this in Section 4, where we discuss how the two constructions should be connected diachronically.

3 Synchrony: Shizhu NP movement vs Zunyi N-to-D movement

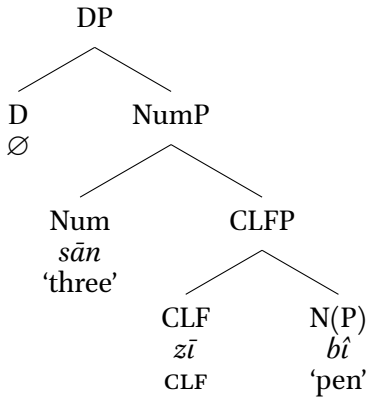
3.1 Basic assumptions

I assume that (12) is the nominal structure shared by Shizhu and Zunyi, and arguably all Sinitic languages, where (i) the D layer is always projected (at least for those that are referential), and (ii) the numeral and the classifier are separate heads (C.-C. J. Tang 1990:413–414, Li 1998, Huang et al. 2009:285–306, Huang 2015, S.-W. Tang 2019:63–84, among many others; see further below for some complication):

(12) $[_{DP}$ D $[_{NumP}$ Numeral $[_{CLFP}$ Classifier $[_{NP}$ Noun]]]]

Thus, a DP with the basic Num > CLF > N order like the one in (1a) may be analyzed as in (13) (assuming, standardly, that structural hierarchy consistently maps into left-to-right linear order, à la Kayne 1994):

(13)



In (13), the D is necessarily occupied by a null element for this indefinite nominal (as D is by assumption the locus of reference and is always projected).[6] Typical overt D elements include demonstratives, pronouns, and proper names (Huang et al. 2009:300). A detailed discussion of these elements is beyond the scope of this paper.

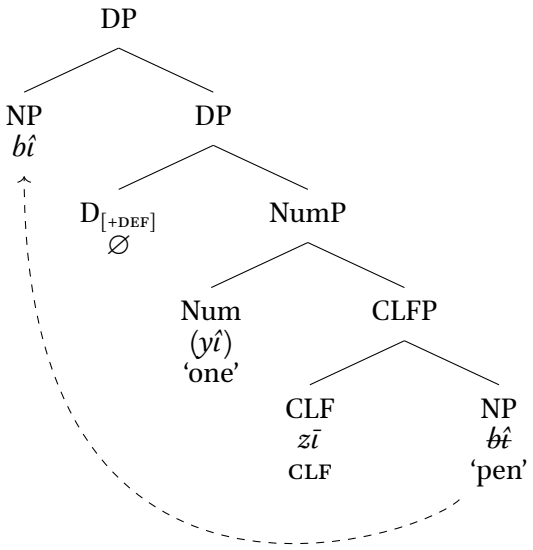
Note that although (12) is a familiar one, it is not uncontroversial. Some scholars question the existence of DP in Chinese (e.g., Cheng & Sybesma 1999, Bošković & Hsieh 2013); some take a weaker stance and argue that not all referential nominals are DPs in Chinese (Li & Bisang 2012); others have different opinions concerning the positions of numerals and classifiers (e.g., Krifka 1995, Hsieh 2008, Chén 2024, Wang 2024). There may also be Sinitic-internal variation in nominal structure. I will largely leave all these debates aside and continue to assume (12), because the core of the analysis developed below does not hinge on them (adopting certain alternatives to (12) may affect some technical details of the analysis, and I will occasionally comment on such issues in some footnotes below).

3.2 Basics of the analysis and the restrictions on numerals

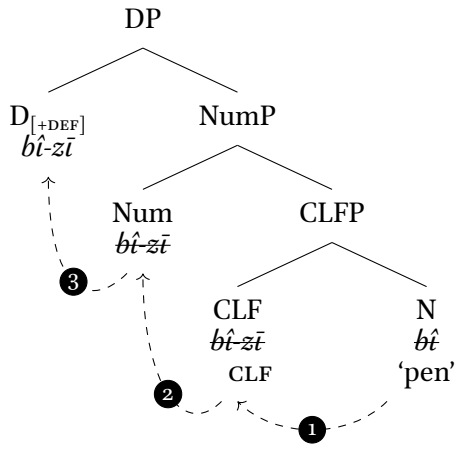
I propose that both Shizhu N-(Num)-CLFs and Zunyi N-CLFs involve a D head with a [+DEF] feature, which is responsible for the definite interpretation at LF. This feature triggers the fronting of the noun (or a projection containing it) in syntax. Specifically, for Shizhu N-(Num)-CLFs, I argue that the moving element is NP, which undergoes fronting into SpecDP, and for Zunyi N-CLFs, I suggest that it is the N head that is moved—the noun undergoes head movement to D. The two cases are illustrated in (14a) and (14b), respectively:

[6] Besides individual-denoting, Li (1998) shows that Num-CLF-Ns in Chinese may also be quantity-denoting (she discusses 'Standard' Chinese though similar observations can be made for SWM), in which case she argues that the D layer is absent. I leave aside these cases in the present study.

(14) a. *bî (yî)-zī* pen (one)-CLF (Shizhu (2a))



b. *bî-zī* pen-CLF (Zunyi (2b))



One immediately noticeable difference between (14a) and (14b) is that the proposed head-movement steps in (14b) are strictly local: This follows from familiar locality constraints on head movement (e.g., the HMC; Travis 1984). The noun first moves to CLF, where the classifier is suffixed to it, yielding the expected N > CLF order (Step 1 in (14b)). The N-CLF cluster (as a complex head) then moves to Num (Step 2), and then to D (Step 3), step by step. By contrast, in (14a) I assume that the NP moves to SpecDP in one fell swoop, as phrasal movement may in principle be long-distance and there is no empirical evidence for intermediate steps in Shizhu NP-fronting.[7] Another difference is that I label the element that merges with CLF as NP in (14a) and as N in (14b). While the moving units here are by definition NP and N, respectively, this categorial distinction (as well as the distinction between head and phrasal movement, the core of the current analysis) may raise interesting issues associated with our current understanding of (bare) phrase structures (Chomsky 1995a,b), to be further discussed in Section 6. I put them aside for the moment.

Based on (14), we are now ready to capture all the differences between Shizhu N-(Num)-CLFs and Zunyi N-CLFs observed in Section 2. First, Shizhu N-(Num)-CLFs allow an overt numeral whereas Zunyi N-CLFs do not (Subsection 2.2). I suggest that an overt numeral in Zunyi would block the head movement of the N-CLF cluster (i.e., Step 2 in (14b)). The movement can neither (i) skip the numeral/Num head, for reasons of locality (e.g., the HMC), nor (ii) carry it. If the N-CLF cluster merges with an overt numeral, thereby forming a complex head, one would expect either an N > CLF > Num or a Num > N > CLF order, because the numeral in principle should not intervene between N and CLF once they have formed a complex head (cf. Baker 1985). Neither order, however, is well-formed at PF: Cardinals in Chi-

[7] Simpson & Syed (2016) and Syed & Simpson (2017) propose an NP-raising analysis of Bangla DP that is similar to (14a). For them, the movement of NP must also proceed through SpecNumP before it reaches SpecDP, due to the PIC, because they argue that NumP (= their QP) is a phase. Nothing crucial in our discussion will hinge on the potential phasehood of NumP (cf. fn.11).

nese must form a phonological unit with a classifier that immediately follows them.[8] Hence, the numeral in Num must be covert (thus it is exempt from the aforementioned PF constraint). I follow Huang 2015 and Zhang 2019 in assuming that there is an empty numeral in Chinese which is interpreted as 'one' (see also Chén 2025 for relevant discussion of 'one' in (general) SWM). This explains why the Zunyi N-CLF construction is always singular.

I should note that definite N-CLFs in Zunyi are comparable to the better-known definite CLF-N structures widely attested in many other Chinese languages, including (varieties of) Yue/Cantonese and Wu (Cheng & Sybesma 2005, Simpson et al. 2011, Li & Bisang 2012, among others; see Shèng 2017 for a typological survey). For example, in (15), the CLF-N phrase in the subject position receives a definite reading:

(15) 隻狗今日特別聽話。

[Zek^{3} gau^{2}] gam^{1}jat^{6} dak^{6}bit^{6} teng^{1}waa^{6}. [Cantonese]

CLF dog today special obedient

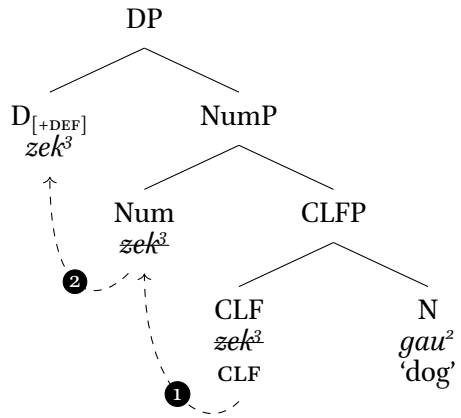
'The dog is especially obedient today.' (Cheng & Sybesma 1999:511)

Constructions like these are traditionally called bare classifier phrases, as the classifier here shows up without an (overt) numeral. Like N-CLFs in Zunyi, the definite CLF-N phrase does not allow an overt numeral and it invariably receives a singular interpretation.[9] An obvious difference between such definite CLF-N constructions and Zunyi N-CLFs, however, is the relative order of the classifier and the noun. While the 'base' CLF > N order is kept in definite CLF-Ns, it is flipped in Zunyi N-CLFs, and we have accounted for the latter by saying that the noun (first) moves up to CLF (Step 1 in (14b)), where the classifier is suffixed to it, before the N-CLF cluster further moves to D. For the definite CLF-N in (15), then, we can still adopt (13) as the basic DP structure, and say that it involves the movement of CLF to D, triggered by [+DEF] on D:

[8] It is sometimes suggested that the Chinese numeral is not a head but a specifier: They are located in SpecNumP rather than Num, the latter consistently being phonologically null (Li 1999, Chén 2024). If this structural analysis is adopted, Num will never block the movement of CLF-N cluster to D, which then crosses the numeral in SpecNumP and yields an N > CLF > Num order. As stated in the main text, this surface order is ill-formed at PF.

[9] See however fn.4 on plural classifiers in SWM. Note that plural classifiers are generally found in Chinese languages, and they may participate in definite CLF-Ns. I ignore them in the main text.

(16) *zek³ gau²* CLF dog (Cantonese (15))



(16) is different from (14b) in that the movement starts from CLF rather than N (Step 1 in (14b) is missing here). Similar to (14b), an overt numeral would block CLF-to-D in (16); only a null numeral is permissible on Num (see above for this empty element). Note that (16) is by no means a new analysis of definite CLF-Ns: It is proposed in various works like Simpson 2005, Wu & Bodomo 2009, and Li & Bisang 2012. What I would like to emphasize here is that (16) resembles our independently motivated head-movement account of Zunyi N-CLFs (14b); I take this to be a desirable result, as we have seen that the two constructions share a lot of similarities. The only difference is that head movement in the Zunyi N-CLF starts from N, hence resulting in the reversed N > CLF order.[10]

Unlike N-CLFs in Zunyi or definite CLF-Ns (in many Chinese dialects), an overt numeral may occur in Shizhu N-(Num)-CLFs. According to the NP-fronting account (14a), the movement involved here is phrasal, so the numeral as a head has no intervening effect on the former, as expected.[11]

3.3 Accounting for the distribution of adjectives and possessors

The second difference between Shizhu N-(Num)-CLFs and Zunyi N-CLFs is that only the former allows an adjectival modifier (Subsection 2.3). This can be straightforwardly captured by the proposal in (14): Only NP-raising but not N-to-D head movement may carry an adjective. Following S.-W. Tang (2006)

[10] CLF-to-D movement is usually considered necessary for definite CLF-NPs if they are DPs (as we assume in the main text). Some scholars argue against the universality of DP and suggest that definite CLF-NPs are just CLFPs (nothing beyond CLFP is projected; see Cheng & Sybesma 1999, 2005). If so, no movement is involved in the definite CLF-NP (both the classifier and the noun stay in situ), and its definite interpretation is irrelevant to the D head with the [+DEF] feature as proposed in the main text. The reading may still be achieved; for example, Cheng & Sybesma (1999, 2005) suggest that lexical classifiers in CLF may function as the ι operator (functionally equivalent to definite articles as D heads in DP languages).

A non-DP analysis seems also possible for Zunyi N-CLFs. However, movement must still happen in the Zunyi case, as the N > CLF order needs to be explained. Under this alternative, one at least needs to posit N-to-CLF movement (i.e., Step 1 in (14b), with everything beyond CLFP being absent). The core of the analysis of Zunyi N-CLFs, namely they (in contrast to Shizhu N-(Num)-CLFs) involve head movement, is thus still kept under the non-DP analysis.

[11] If one analyzes numerals as a specifier rather than a head (see fn.8), they may need to state separately that NP-to-SpecDP raising in Shizhu should not be blocked by the numeral in SpecNumP. This may be in conflict with Simpson & Syed's (2016) and Syed & Simpson's (2017) proposal that SpecNumP is a phase edge (briefly mentioned in fn.7; they report that some numerals do block the raising of NP in Bangla DPs). Pursuing this topic further in this paper would take us too far afield.

and Cheung (2012) on Mandarin, I assume that SWM adjectives are left-adjoined to NP (the base order concerning adjectives is CLF > Adj > N in Chinese; see Subsection 3.4 for further discussion). As in (17), the NP containing the AdjP as a whole moves into SpecDP, yielding the Adj > N > (Num) > CLF order:[12]

(17) $[_{DP}\ [_{NP}\ [_{AdjP}\ \textit{bê=dî}]\ \textit{yīfû}]_i\ D_{[+DEF]}\ [_{NumP}\ (\textit{yî})\ [_{CLP}\ \textit{-jián}\ \sout{[_{NP}\ [_{AdjP}\ \textit{bê=dî}]\ \textit{yīfû}]_i}\ ]]]$
[Shizhu Adj-N-(Num)-CLFs]

The NP-adjoined AdjP cannot be fronted in Zunyi N-CLFs, which involve head movement (14b). Adj-N-CLFs are thus not possible in Zunyi.[13]

We now examine the third difference between Shizhu N-(Num)-CLFs and Zunyi N-CLFs, which regards the interpretation of possessors. The crucial data (11) are repeated below as (18):

(18) a. 我的衣服（一）件比那件衣服好看。
[Ngò=dî yīfû (yî)-jián$_i$] bì [lá-jián yīfû$_j$] hào-kán. [Shizhu]
1=DE coat (one)-CLF compare that-CLF coat good-look
'My coat$_i$ looks better than that coat$_j$.'

b. #我的衣服件比阿件衣服好看。
#[Ngò=lē yīfê-jián$_i$] bì [ā-jián yīfê$_j$] hào-kán. [Zunyi]
1=DE coat-CLF compare that-CLF coat good-look
'#The coat$_i$, which is mine, looks better than that coat$_j$.' (Yè 2021:438)

As established in Subsection 2.4, the possessor contributes to the uniqueness presupposition in (18a) but not in (18b), so the subject Poss-N-(Num)-CLF (18a) presupposes the uniqueness of a coat belonging to the speaker, whereas the subject Poss-N-CLF in (18b) presupposes the uniqueness of a coat (so the whole sentence is infelicitous). I argue that this difference straightforwardly follows from the current proposal that the subject in (18a) involves NP-raising while the subject in (18b) involves N-to-D movement. As-

[12] Alternatively, we can treat the AdjP as located in a specifier position of a functional projection right above NP (see, e.g., Cinque 2010, Zhang 2015):

(i) $[_{DP}\ D_{[+DEF]}\ [_{NumP}\ [_{CLFP}\ [_{FP}\ AdjP\ [_{NP}\ N]]]]]$

In (i), the definite D triggers the movement of FP (so the moving element is slightly larger than NP in Shizhu N-(Num)-CLFs), so both the adjective and the noun are fronted. For our current purposes, there is no fundamental difference between (i) and the adjunction approach in (17).

[13] Stranding an adjective in its in-situ position after the classifier is also not possible, in both Shizhu N-(Num)-CLFs and Zunyi N-CLFs. That is, neither (ia) nor (ib) is grammatical:

(i) a. *衣服（一/兩）件白 (的)
*yīfû (yî/liàng)-jián bê(=dî) [Shizhu]
coat (one/two)-CLF white=DE

b. *衣服件白 (的)
*yīfê-jián bâe(=lē) [Zunyi]
coat-CLF white=DE

I leave (i) aside for the moment as Shizhu N-(Num)-CLFs and Zunyi N-CLFs behave alike in this respect. See fn.20 on how they are ruled out.

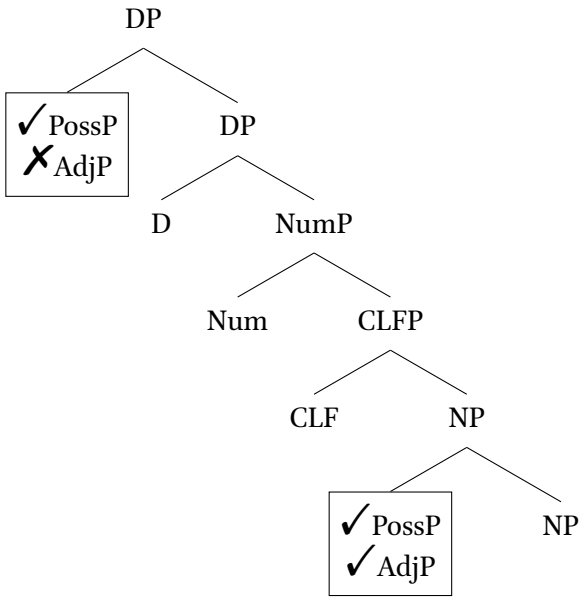
suming that possessors, like adjectives, may also be left-adjoined to NP in Shizhu and Zunyi (see further below), we expect that these possessors may be pied-piped via NP-raising but not via N-to-D movement. Thus, (19) is a possible derivation of the subject in (18a), but the Zunyi Poss-N-CLF as in (18b) cannot be derived in the same way (I use the label PossP for the phrase projected by the possessor, not for a DP-intermediate functional projection that dominates NP):

(19) $[_{DP}\ [_{NP}\ [_{PossP}\ ngò{=}dî]\ yīfû]_i\ D_{[+DEF]}\ [_{NumP}\ (yî)\ [_{CLP}\ jián\ \sout{[_{NP}\ [_{PossP}\ ngò{=}dî]\ yīfû]_i}\ ]]]$

[Shizhu Poss-N-(Num)-CLFs]

The question is then how the subject in (18b) is derived (recall that the Poss-N-CLF phrase is by itself grammatical in Zunyi, unlike Adj-N-CLFs). I argue that the possessor is base-generated in the DP-initial position in the Zunyi Poss-N-CLF. More generally, I suggest that possessors in SWM may be left-adjoined not only to NP, but also to DP, and only the latter option is available for the possessor in the Zunyi Poss-N-CLF: It is adjoined to the DP. Adjectives, by contrast, can only be NP-adjoined. This structural difference between (the base-generated positions of) adjectives and possessors is illustrated in (20):

(20)



Thus, the Zunyi Poss-N-CLF as in (18b) involves the derivation in (21), where the noun undergoes head movement to D, with the possessor left-adjoined to DP:[14]

[14] Like adjectives (see fn.13), it is also not possible to strand an NP-adjoined possessor in N(P)-fronting constructions in both Shizhu and Zunyi; both (ia) and (ib) are ungrammatical:

(i) a. *衣服（一/兩）件我(的)
*yīfû (yî/liàng)-jián ngò(=dî) [Shizhu]
coat (one/two)-CLF 1=DE

b. *衣服件我(的)
*yīfê-jián ngò(=lē) [Zunyi]
coat-CLF 1=DE

See fn.20 for more discussion.

(21) $[_{DP}\ [_{PossP}\ ngò{=}l\bar{e}]\ [_{DP}\ y\bar{\imath}f\hat{e}\text{-}ji\acute{a}n\text{-}D_{[+DEF]}\ [_{NumP}\ \sout{y\bar{\imath}f\hat{e}\text{-}ji\acute{a}n}\ [_{CLP}\ \sout{y\bar{\imath}f\hat{e}\text{-}ji\acute{a}n}\ [_{NP}\ \sout{y\bar{\imath}f\hat{e}}\ ]]]]]$ [Zunyi Poss-N-CLFs]

Why is the possessor interpreted differently in (19) and (21) (repeated below with only the relevant labels)? As shown above, the possessor participates in the uniqueness presupposition in (22a) but not in (22b):

(22) a. $[_{DP}\ [_{NP}\ \text{POSS-N}\ ]_i\ D\ [_{NumP}\ \ldots\ \sout{[_{NP}\ \text{POSS-N}\ ]_i}\ ]]$ [Shizhu]

b. $[_{DP}\ \text{POSS-}\ [_{DP}\ \text{N-CLF-D}\ [_{NumP}\ \ldots\ \sout{\text{N}}\ ]]]$ [Zunyi]

I assume that for the relevant constructions, a definite reading is realized at the syntax-semantics interface by [+DEF] on D. More specifically, a checked [+DEF] feature is realized as the ι operator at LF, and the scope of ι corresponds to the c-commanding domain of D, i.e., its complement. Since only in (22a) but not in (22b) does the complement of D contain (a copy of) the possessor, we expect that ι scopes over the possessor in (22a) but not in (22b), which is indeed the case given the discussion in Subsection 2.4. Hence, the interpretative difference between Shizhu Poss-N-(Num)-CLFs and Zunyi Poss-N-CLFs is accounted for.

We have seen that Shizhu and Zunyi differ not in the syntax of their possessors, but in the strategies they use to front nouns within a DP. Thus, although a possessor can be base-generated low (as an adjunct to NP) in both languages, such a low possessor, like adjectives (which are always low; see above), is compatible with Shizhu NP-to-SpecDP movement but not with Zunyi N-to-D movement. The former, unlike the latter, can pied-pipe the possessor. Thus, the Zunyi Poss-N-CLF must involve a possessor base-generated high in the structure (as an adjunct to DP), whereas the possessor in the Shizhu Poss-N-(Num)-CLF may be base-generated low and fronted along with the noun via phrasal movement. Crucially, only a low possessor may occur in the scope of D/the ι operator—this is possible in Shizhu Poss-N-(Num)-CLFs but not in Zunyi Poss-N-CLFs. There is nothing wrong with a low possessor per se in Zunyi; the point is simply that the occurrence of an adjunct to NP (be it an adjective or a possessor) and N-to-D movement cannot co-occur within the same DP (see fn.13 and fn.14 on the ban on stranded adjectives and possessors).[15]

To account for the different behaviors of adjectives and possessors, I have proposed (20): Adjectives

[15] By contrast, a high, DP-adjoined possessor is in principle compatible with Shizhu N-(Num)-CLFs. That is, in addition to (22a), a Shizhu Poss-N-(Num)-CLF may also involve the derivation in (i), where the noun gets fronted via NP movement and the possessor is base-generated:

(i) $[_{DP}\ \text{Poss-}\ [\ \text{NP}_i\ D\ [_{NumP}\ \ldots\ \sout{\text{NP}}_i\ ]]]$ [Shizhu]

I assume that (i) is indeed a possible structure in Shizhu, with the same interpretation as the Zunyi Poss-N-CLFs; that is, the NP that includes the noun but excludes the possessor satisfies the uniqueness presupposition. This interpretation is indeed available for Shizhu Poss-N-(Num)-CLFs. Recall from Table 2 that Shizhu Poss-N-(Num)-CLFs have a wider distribution than Zunyi Poss-N-CLFs, so any reading available for the latter should also be available for the former. (i) may thus be used in some, but not all, of the contexts in which Shizhu Poss-N-(Num)-CLFs occur. Since it does not give rise to any undesirable interpretations, its availability does not pose a problem for our analysis.

can only be adjoined to NP, whereas possessors may be adjoined either to NP or to DP. Given that adjectives and possessors do exhibit different behaviors, there must be *some* difference between them; the question is whether (20) is indeed the correct way of characterizing this difference. It would therefore be desirable to find independent evidence in support of (20), and I turn to this in the next subsection.

3.4 Adjectives vs. possessors

Partee (2006) observes that possessors in Mandarin do not induce a uniqueness presupposition. Her data are from Putonghua/'Standard' Chinese (≈ Beijing Mandarin), but the observation holds for Shizhu and Zunyi as well (Chinese languages probably show no variation in this respect; Bošković (2012) claims that this is a general property of languages that lack definite articles). The Shizhu data in (23) illustrate this (in this subsection, I only use Shizhu data when there is no relevant difference between Shizhu and Zunyi, while the Zunyi counterparts of those examples were also checked with a native speaker; see fn.1):

(23) a. 張三的三件毛衣
Zāngsān=dî sān-jián mâoyī [Poss > Num > CLF > N]
Zhangsan=DE three-CLF sweater
lit. 'Zhangsan's three sweaters'

b. 三件張三的毛衣
sān-jián Zāngsān=dî mâoyī [Num > CLF > Poss > N]
three-CLF Zhangsan=DE sweater
'three sweaters of Zhangsan's'

Both (23a) and (23b) may be used in contexts in which Zhangsan has more than three sweaters (so the English translation of (23a) is at best imprecise, as *Zhangsan's three sweaters* in English does imply that Zhangsan has exactly three sweaters). Now consider adjectives, which show similar constituent-order flexibility as possessors do:

(24) a. 紅的三件毛衣
hông=dî sān-jián mâoyī [Adj > Num > CLF > N]
red=DE three-CLF sweater
lit. 'red three sweaters'

b. 三件紅的毛衣
sān-jián hông=dî mâoyī [Num > CLF > Adj > N]
three-CLF red=DE sweater
'three red sweaters'

Like post-classifier possessors (23b), post-classifier adjectives (24b) do not induce a uniqueness presupposition—this is unsurprising, as both (23b) and (24b) are simply indefinite ((24b) may be used in contexts in which there are more than three red sweaters). However, crucially, contrary to DP-initial pos-

sessives (23a), the adjective in (24a) does presuppose the uniqueness of the three red sweaters—(24a) is necessarily a definite expression.[16] The contrast between (23a) and (24a) is illustrated in (25):

(25) a. 張三的三件毛衣落嗵；他還有兩件。
[Zāngsān=dî sān-jián mâoyī] lô=dâ; tā hâi yòu liàng-jián.
Zhangsan=DE three-CLF sweater lose=PFV 3 still have two-CLF
'Three sweaters of Zhangsan's were lost; he has two left.'

b. #紅的三件毛衣落嗵；還有兩件紅的。
#[Hông=dî sān-jián mâoyī] lô=dâ; hâi yòu liàng-jián hông=dî.
red=DE three-CLF sweater lose=PFV still have two-CLF red=DE
'#The three red sweaters were lost; there are two red [sweaters] left.'

(25a) is felicitous, as the subject of its first clause does not imply that Zhangsan has exactly three sweaters, as mentioned above. (25b), by contrast, is infelicitous: The subject of its first clause strictly implies that there are exactly three red sweaters in the context.

The suggestion, then, is that the DP-initial adjective in (24a) is not base-generated there. Rather, it involves the now-familiar [+DEF] feature on D, which may trigger the movement of a low adjective. That is, an adjective may first be merged as an adjunct to NP and then move to SpecDP to check D's [+DEF] feature. This analysis of adjective-fronting bears an obvious resemblance to our analysis of N(P)-fronting in Shizhu and Zunyi, discussed in the preceding sections. However, definiteness-related adjective-fronting is much more widespread than N(P)-fronting. As noted at the beginning of Section 2, the latter is attested only in the Shizhu-Zunyi region, whereas adjective-fronting is attested in most SWM varieties, not just in Shizhu and Zunyi (I have consulted speakers of various SWM varieties concerning (23) and (24), and the same judgments have been consistently reported across these varieties). I defer a more detailed discussion of the relation between adjective fronting (in SWM generally) and N(P)-fronting (in Shizhu and Zunyi) to Section 4.

Since the DP-initial possessor in (23a) is not associated with uniqueness, it does not necessarily involve a low base-generation position *plus* raising triggered by [+DEF].[17] Specifically, given the proposal in (20), the possessor in (23a) is base-generated as an adjunct to DP (see immediately below), and this option is crucially not available for adjectives. Now we can make the following prediction: If (i) a high

[16] In fact, following Yang 2005, Partee (2006) claims that (the counterpart of) (23a) is definite even though it does not carry a uniqueness presupposition (she suggests that (23a) involves a different notion of definiteness). I put this interesting debate aside in this paper and continue to view uniqueness as *the* prerequisite for definiteness.

[17] Technically, like adjectives, a possessor may also be generated low in the structure and undergo the same kind of fronting triggered by [+DEF] on D. This option may also yield (23a), in which case it may only be used in contexts in which Zhangsan has exactly three sweaters. Since (23a) can indeed be used in such contexts, possessor-fronting as an option for (23a) cannot be ruled out. What is important for present purposes is the conclusion that a DP-initial adjective must have moved there, whereas a DP-initial possessor need not involve movement (the base-generation option for DP-initial possessors is necessary to capture the full distribution of (23a)). Note also that, as shown in Subsection 3.3 (see (19)), in Shizhu, a possessor adjoined to NP may also raise to SpecDP along with the noun, via NP-fronting.

possessor may be left-adjoined to DP and a high adjective must be in SpecDP, while a low possessor and a low adjective are both adjuncts to NP, and (ii) the adjuncts of a projection XP should be structurally higher than and linearly precede SpecXP (26) (assuming that right-adjunction is not allowed), we expect that a high possessor must linearly precede a high adjective, while there should be no such restriction for low possessors and adjectives. This prediction is borne out, as in (27–28):

(26) $[_{XP}$ adjunct $[_{XP}$ specifier $[_{X'}$ X [...]]]]

(27) a. 三件張三的紅的毛衣
sān-jián Zāngsān=dî hông=dî mâoyī [✓Poss > Adj]
three-CLF Zhangsan=DE red=DE sweater

b. ?三件紅的張三的毛衣
?sān-jián hông=dî Zāngsān=dî mâoyī [✓Adj > Poss]
three-CLF red=DE Zhangsan=DE sweater

(28) a. 張三的紅的三件毛衣
Zāngsān=dî hông=dî sān-jián mâoyī [✓Poss > Adj]
Zhangsan=DE red=DE three-CLF sweater

b. ?*紅的張三的三件毛衣
?*hông=dî Zāngsān=dî sān-jián mâoyī [✗Adj > Poss]
red=DE Zhangsan=DE three-CLF sweater

While both (27a) and (28a), with the Poss > Adj order, are grammatical, the Adj > Poss order is possible only if the two modifiers follow the classifier, as in (27b), in which case they are both adjuncts to NP. (28b) is ruled out because the adjunct > specifier order is fixed, as stated in (26). Hence, we have found independent evidence for the different merge positions of adjectives and possessors in Shizhu and Zunyi, and in fact in SWM more generally. The proposal in (20) thus provides a crucial component of our account of the different behavior of Shizhu N-(Num)-CLFs and Zunyi N-CLFs with respect to adjectives and possessors, respectively.

4 Diachrony: The genesis of N(P)-fronting

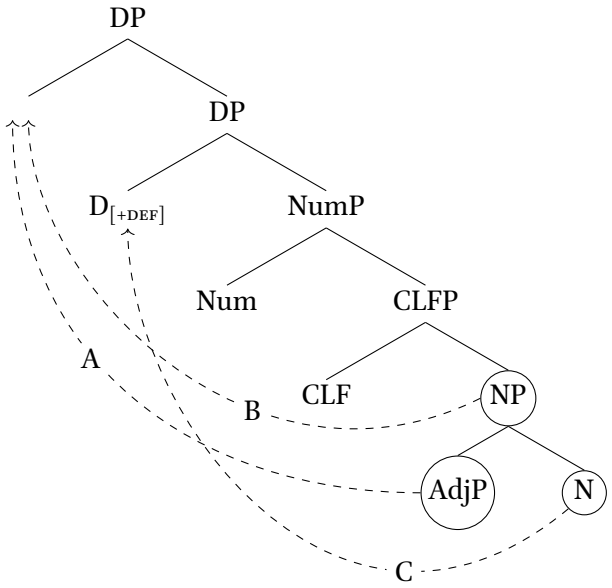
The last section showed that Shizhu N-(Num)-CLFs involve NP-fronting, while Zunyi N-CLFs result from N-to-D head movement. This section discusses the two constructions from a diachronic perspective. I first briefly discuss the historical origin of NP-raising (in Shizhu and arguably also in pre-modern Zunyi) in Subsection 4.1, to provide a fuller picture of the history of noun-fronting in SWM.I will then argue in Subsection 4.2 that the Zunyi-style N-to-D movement is historically derived from NP-to-SpecDP movement as attested in Shizhu. That is, Zunyi once exhibited a Shizhu-style NP-fronting strategy, which has now become a case of head movement. Finally, Subsection 4.3 explores the conceptual motivation for

this change in movement type and considers how it relates to the broader question of what motivates syntactic change in general.

4.1 The origin of Shizhu NP-fronting

Besides the movement of NP to SpecDP in Shizhu and the movement of N to D in Zunyi, in Subsection 3.4 we identified a third type of DP-internal movement in SWM: The fronting of an NP-adjoined adjective, which I also analyzed as movement into SpecDP. While adjective-fronting is widespread in various SWM varieties (no SWM dialects that I know of lack it), not just in the Shizhu-Zunyi region where N(P)-fronting is attested, the resemblance between adjective-fronting and N(P)-fronting is worth mentioning. In fact, I will argue below that NP-fronting in Shizhu results from an analogically motivated reanalysis of adjective-fronting. Consider (29), where all three types of movement (NP-fronting, N-to-D, and adjective-fronting) are represented:

(29)



SWM varieties allow different operations in (29), but none of them allow all three. This is summarized in Table 4, where 'general' SWM refers to the SWM varieties spoken outside the Shizhu-Zunyi region:

Dialect	Operation A (AdjP-fronting)	Operation B (NP-fronting)	Operation C (N-to-D)
'General' SWM	✓	✗	✗
Shizhu	✓	✓	✗
Zunyi	✓	✗	✓

Table 4: Availability of fronting strategies in SWM

While 'general' SWM allows AdjP-fronting, Shizhu allows NP-fronting in addition to that (the Zunyi case is discussed in the next subsection). As expected, both (30a) and (30b) are possible in Shizhu, but other SWM dialects tolerate only (counterparts of) the latter:

(30) a. (%) 白的衣服兩件

(%) bê=dî yīfû liàng-jián ~~bê=dî~~ ~~yīfû~~ [NP-fronting]

white=DE coat two-CLF white=DE coat

'the two white coats'

b. 白的兩件衣服

bê=dî liàng-jián ~~bê=dî~~ yīfû [AdjP-fronting]

white=DE two-CLF white=DE coat

'the two white coats'

Now, like other Chinese languages, SWM also allows NP-ellipsis (≈ traditional N'-ellipsis; see, e.g., Saito et al. 2008 and S.-W. Tang 2011). Interestingly, NP-ellipsis and fronting of the adjective may occur in the same DP:

(31) 白的一件

bê=dî yî-jián

white=DE one-CLF

'the white [one]'

In fact, DPs with a fronted adjective are quite frequently attested in natural speech with the modified noun elided. For example, in (32), most SWM speakers I consulted (including all the Shizhu consultants) find the bracketed DP awkward if the noun is overt. The intuition behind this judgment is that the bracketed DP is grammatical both with and without an overt noun, but in this context, pronouncing the noun results in some informational redundancy and is therefore dispreferred:

(32) 張三給我五本書；我喜歡紅的兩本 (?(?) 書)。

Zāngsān sóng ngò wù-bèn sū; ngò xìhuān [$_{DP}$ hông=dî liàng-bèn (?(?)sū)].

Zhangsan give 1 five-CLF book 1 like red=DE two–CLF book

'Zhangsan gave me five books; I like the two red [books].'

How is (31) derived? In 'general' SWM, it clearly involves NP ellipsis *plus* AdjP-fronting (33a) (note that ellipsis necessarily targets a lower segment of the NP here, since the NP-adjoined adjective is not elided along with the noun). However, an alternative derivation is available in Shizhu: Ellipsis and movement into SpecDP may target two different segments of the same NP. The former targets a lower segment that excludes the NP-adjoined adjective, while the latter targets a higher segment that crucially includes it. This alternative is illustrated in (33b). For ease of exposition, below I label the lower segment of the NP that excludes the adjective simply as N, since it contains only the noun:

(33) a. $[_{DP}\ AdjP_i\ D_{[+DEF]}\ [\ \ldots\ [_{NP}\ \sout{AdjP_i\ N}]]]$ [N-ellipsis + AdjP-fronting]

b. $[_{DP}\ [_{NP}\ AdjP\ \sout{N}\ ]_i\ D_{[+DEF]}\ [\ \ldots\ \sout{[_{NP}\ AdjP\ N\ ]_i}]]$ [N-ellipsis + NP-fronting]

Since the noun is covert in both (33a) and (33b), either of them may derive (31), and both strategies are readily available in Shizhu. Furthermore, I suggest that it is exactly this kind of structural ambiguity that provides a bridging context for syntactic reanalysis (for general discussion, see Hock 1986, Harris & Campbell 1995:61–96, Meisel et al. 2013:73–95, among others). Under this scenario, a phrase like (31) would originally have involved only the derivation in (33a). In Shizhu, however, such expressions could subsequently be reanalyzed as involving (33b), thereby making NP-fronting independently available. N-Num-CLFs thus arose in Shizhu, independently of the presence of an adjective in the DP. Note that the Shizhu case has to be innovative relative to the general SWM case: If it were the other way around, one would need to posit that the loss of NP-fronting independently happened multiple times in different regions within the huge SWM-speaking area.

4.2 From Shizhu NP-fronting to Zunyi N-to-D

If NP-raising in Shizhu is innovative relative to 'general' SWM, which exhibits only AdjP-raising, it is equally reasonable to regard N-to-D head movement in Zunyi as a further development of this innovation, as it appears to represent an even greater departure from the 'original' pattern (see further below). In other words, the Shizhu NP-(Num)-CLF and the Zunyi N-CLF are unlikely to have developed independently; rather, they are historically related. More specifically, I propose that there was a relatively recent stage at which Zunyi exhibited the same type of NP-fronting as Shizhu, but that this strategy subsequently developed into head movement in Zunyi. Given that these N(P)-fronting strategies are attested only in the geographically contiguous Shizhu-Zunyi region, it would be difficult to treat the Shizhu and Zunyi patterns as independent developments from a diachronic perspective.[18]

The Shizhu-to-Zunyi change can also be understood in terms of potential structural ambiguity in bridging contexts. As shown in Section 2 (see especially Table 3), while Shizhu N-(Num)-CLFs and Zunyi N-CLFs show a number of systematic differences, in many cases the surface form in both varieties is simply a noun-classifier sequence (recall that an overt numeral is also often absent in Shizhu N-(Num)-CLFs). Suppose that a child acquiring N(P)-fronting takes such bare noun-classifier sequences as the primary input and disregards the more 'marginal' cases in which, e.g., N(P)-fronting cooccurs with an adjective, or with a possessor in specific contexts (see Subsection 2.4), because these cases are not frequent or salient.

[18] Xiè (2012) reports that Wuchuan, another SWM dialect geographically close to Zunyi, also permits N(P)-fronting. In most of Xiè's (2012) examples, there is no overt numeral, but when an overt numeral is present, it is invariably *yî* 'one'. I tentatively suggest that the Wuchuan pattern may represent an intermediate stage between the Shizhu and Zunyi patterns: While Zunyi N-CLFs do not allow an overt numeral and Shizhu N-(Num)-CLFs do (see Subsection 2.2), the numeral in Wuchuan N-(Num)-CLFs is restricted to 'one' when overt. Whether this interpretation is correct must await further investigation. Nevertheless, the possibility of intermediate patterns in this region is expected under the present proposal that the different N(P)-fronting strategies instantiate a single family of operations historically. Given the limited data available for Wuchuan, I leave a fuller investigation of this pattern to future research.

The child may then reanalyze the underlying mechanism of N(P)-fronting as N-to-D head movement, rather than phrasal movement of NP.

In other words, the Shizhu-to-Zunyi change could have arisen when evidence unambiguously favoring an NP-fronting analysis became not salient enough in the acquisition input, allowing learners to reinterpret noun-fronting as N-to-D movement. What remains to be answered, then, is what motivates this reanalysis: There should be a reason for head movement to be preferred over phrasal movement, so that when analytical ambiguity arises, the child chooses the former rather than the latter. At first glance, there may be a straightforward answer to this: Suppose that historical change is driven by economy so that, everything else being equal, more economical derivations are always chosen in the course of language acquisition; what we then need to state is that head movement is more economical than phrasal movement—this is independently proposed in a number of works in synchronic syntax, e.g., Donati 2006, Coon 2010 (cf. Roberts 2010). Because head movement in general carries less material than phrasal movement (à la Chomsky 1995b), it is plausible to suggest that the former is preferably chosen by children, unless there is clear evidence in the input that forces them to choose the latter.

If the change from phrasal movement to head movement as a type of diachronic change is indeed conceptually well-motivated, as argued above (see Section 5 for more cases), one may be willing to compare it with better-studied types of syntactic change, such as the loss of movement and Spec-to-head reanalysis, mentioned in Section 1. Although details differ, most proposals concerning the underlying driving force of these changes share the consensus that they are generally driven by certain economy considerations (see Section 1 for references). Specifically, less economical elements tend to become more economical ones in the process of language change. However, for the proposed Shizhu-to-Zunyi change, economy considerations do *not* actually apply to a specific element in the grammar, which makes this kind of change less similar to Spec-to-head reanalysis or the loss of movement. For Spec-to-head reanalysis, it literally involves a phrasal element becoming a head, with the latter being more economical than the former in some way. For example, van Gelderen (2022:52–54) argues that the frequent change from a demonstrative to a definite article involves a reanalysis from a phrasal element in SpecDP to a head element on D. She further argues that this change involves the loss of a deictic feature; we could thus in this sense say that a definite article is featurally simpler than a demonstrative.

For the loss of movement, likewise, one may consider that it involves the loss of certain features on either the goal or the probe, or both, that were responsible for the lost movement (assuming, standardly, that movement is invariably feature-driven, as in Chomsky 1995b and much subsequent work). Thus, the loss of movement may also be understood as the loss of certain features. Again, this kind of change may be viewed as a kind of simplification or economization.

The Shizhu-to-Zunyi change is different. I have argued that (i) SWM AdjP-fronting, (ii) Shizhu-style NP-fronting, as well as (iii) N-to-D movement in Zunyi are all triggered by a [+DEF] feature on D, but this cannot be the full story, as no SWM dialects allow all of these operations (see Table 4)—this means

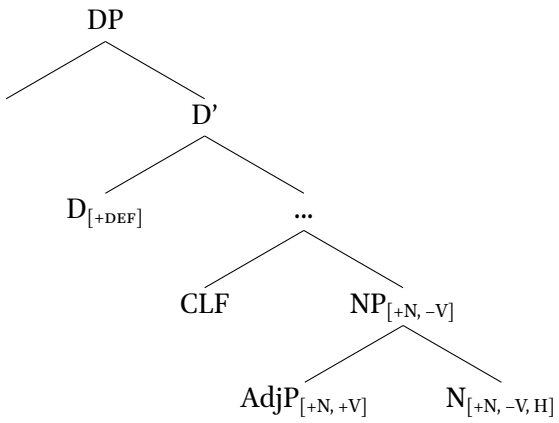
that for all the SWM dialects, their Ds are 'picky' in different ways such that only specific categories may establish a featural relation with D and consequently move to the DP domain. In 'general' SWM the relevant category is AdjP, in Shizhu the categories are AdjP and NP, and in Zunyi they are AdjP and N. Hence, the relevant Ds in SWM must be further relativized; that is, they must carry category-sensitive features in addition to [+DEF]. Specifically, I propose the featural specifications in (34) for the definite Ds in 'general' SWM, Shizhu, and Zunyi (see further below):

(34) a. [+DEF ∧ +V] 'general' SWM definite D
b. [+DEF ∧ +N] Shizhu definite D
c. [+DEF ∧ (+V ∨ H)] Zunyi definite D

In any of the SWM dialects, an element in the c-command domain of a definite D may Agree with D only if it carries the features specified in (34). They may further move to D or SpecDP once the Agree relation is established. Further, I assume that nouns involve the categorial features [+N, –V] while adjectives involve [+N, +V], as in Chomsky & Lasnik 1977 (see Huang et al. 2009:10–13, 21–26 for Chinese). Hence, the definite D in 'general' SWM may only attract an element that carries [+V] (34a), which a noun or an NP lacks, so only adjectives may move. The definite D in Shizhu, by contrast, may Agree with both nouns and adjectives, since both carry [+N], so both AdjP-fronting and NP-fronting are available (I also assume that either AdjP or N(P) may optionally bear an interpretable [+DEF] feature).

How about Zunyi? We have seen above that the definite D in Zunyi may attract (i) an AdjP or (ii) a nominal element only if the nominal is a head. Thus, there must be a way for the Zunyi definite D to distinguish a head from any non-minimal projections. I propose that any head carries an H (= head) feature, and once the head projects, H is deleted, so H is absent on any non-minimal projections. As represented in (35), the head noun carries H, which gets deleted once the noun merges with the adjective:

(35)



As stated in (34c), the Zunyi definite D Agrees with an element with either +V or H.[19] This means that in (35), it may Agree with either the AdjP or the N, but crucially not with NP. Thus, the Zunyi pattern

[19] I assume in (34) that the featural specification on a probe may involve either logical conjunction or disjunction; see Roversi 2020, Hammerly 2024.

discussed in the previous sections is captured by the current formulation.[20]

I argued above that the Shizhu pattern is innovative compared to the 'general' SWM pattern, and that the Zunyi pattern represents a further innovation historically derived from the Shizhu pattern. If we focus on the evolution of the definite D, we can identify the following path of change:

(36) $D_{[+\text{DEF} \wedge +\text{V}]}$ ⇒ $D_{[+\text{DEF} \wedge +\text{N}]}$ ⇒ $D_{[+\text{DEF} \wedge (+\text{V} \vee \text{H})]}$
'general' SWM Shizhu Zunyi

Clearly, (36) per se, especially the second Shizhu-to-Zunyi step, does not involve simplification or economization in any familiar sense. The most innovative Zunyi D is featurally a more complex element than the definite D in Shizhu. Note that this conclusion does not rely on the specific formulation of the Ds in question as in (34), because the Zunyi pattern is *descriptively* more complex: You may front either an adjective or a noun, but the latter operation is more restrictive (for example, fronting a noun in Zunyi requires the absence of an overt numeral, as reported in Subsection 2.2, while no such restrictions exist if an adjective is fronted). Thus, the DP-internal fronting pattern in Zunyi is by its nature disjunctive (cf. fn.19).

However, we clearly do not want to conclude that economy considerations do not play a role in the Shizhu-to-Zunyi change. What the above discussion suggests is that the Shizhu-to-Zunyi change may not be best understood directly from the perspective of the change of the definite D as in (36). Instead, the change is a shift in movement type in its own right: Phrasal movement has been reanalyzed as head movement. I have suggested above that there are good reasons to consider head movement more economical than phrasal movement, everything else being equal. Thus, syntactic change need not involve the simplification of individual linguistic elements, such as functional heads or their featural specifications. It may instead involve a change in the nature of a syntactic operation—in the present case, a reduction in the size of the moving constituent. In fact, this kind of change, itself being economy-motivated, may result in certain complications of the grammar (e.g., the change of D in (36)). The next subsec-

[20] The present proposal also captures an observation made in fn.13 (see also fn.14), namely that in both Shizhu and Zunyi, an adjective cannot be stranded after the classifier if the noun is fronted. For Shizhu, the probing by D will necessarily encounter the higher segment of the nominal phrase (NP in (35)) before it encounters the lower segment N. The definite D may therefore establish a featural relation with NP but not N, due to a standard intervention effect, and consequently, the fronting of the noun will necessarily pied-pipe the adjective adjoined to NP. The situation is slightly more complex in Zunyi, where NP, lacking H, is not an eligible goal for D. I suggest that NP acts as a *defective intervener* in Zunyi. A defective intervener is defined here as an element whose features may partially satisfy a probe, such that an Agree relation cannot be established between the probe and the intervener, but the intervener nevertheless prevents the probe from Agreeing with any element c-commanded or dominated by the intervener. While exploring this idea further would take us too far afield, I should note that this kind of defective intervention effect is famously found with dative DPs in Icelandic. See Chomsky 2000, Bobaljik 2008, Preminger 2014:129–175, Poole 2016, among many others, for discussion.

Note also that AdjP and NP should not be (defective) interveners for each other (assuming that the interpretable [+DEF] feature on AdjP and NP is optional, depending on their semantics). Otherwise, either AdjP-fronting or NP-fronting should be systematically blocked, contrary to the Shizhu facts. I simply assume that AdjP and NP are equidistant from D, because they are dominated by the same set of maximal projections (cf. Chomsky's (1986) discussion of exclusion). Informally speaking, AdjP, as an adjunct to NP, is sufficiently 'edgy' to escape the NP.

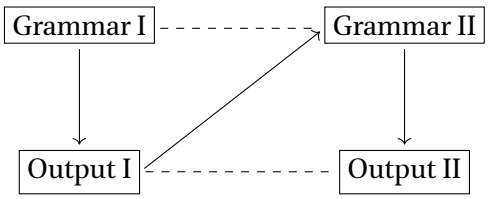
tion provides a more general discussion of the change from phrasal movement to head movement, also comparing it further with the two aforementioned better-studied change types, namely Spec-to-head reanalysis and the loss of movement.

4.3 The unit of syntactic reanalysis

In this section, I have argued that N-to-D movement in Zunyi is historically derived from NP-to-SpecDP movement as we saw in modern Shizhu, and importantly, this change from phrasal movement to head movement involves the entire derivation/structure, rather than a single syntactic element. As shown in (36), the movement-triggering head has in fact become more complex after the change. I take this increased complexity to be a byproduct of the change, if we assume that syntactic change should in general have a motivation.

While changes of this kind appear to have received relatively little attention in the literature, I suggest that this is in fact what happens more generally. Suppose that syntactic reanalysis typically occurs during language acquisition (Lightfoot 1979, 1991, Roberts 1993, Ringe & Eska 2013, Stanford 2015, among many others). The child selects a grammar compatible with the primary linguistic data (PLD; Chomsky 1965). As illustrated in (37) (adapted from Andersen 1973:767), what the child directly 'sees' is not the grammar of the older generation (Grammar I), but a finite sample of form-meaning pairs produced by that grammar (Output I). The relation between Grammar I and Grammar II is thus indirect: Grammar I generates Output I, while Grammar II is the child's independent analysis of that input. Grammar II may largely resemble Grammar I, since both are compatible with Output I, but there is no logical necessity for the two grammars to be identical. Assuming that economy considerations play a central role in language acquisition, the child may select the most economical grammar compatible with Output I. Such a grammar must account for the observed input, but it need not generate all the expressions that Grammar I could in principle produce. Reanalysis or historical change can be characterized in terms of a difference between Grammar I and Grammar II; it does not imply that any individual speaker's grammar has changed over the course of their lifetime.

(37)



Consider the Shizhu-to-Zunyi change again. What the child observes in PLD includes a number of DPs (as form-meaning pairs) that are formally noun-initial and semantically definite. The child's task is to determine the best way to derive them. Suppose that the child already knows the basic order of DPs is Num > CLF > N, and they assume that the noun-initial order results from movement of a constituent containing the noun. The child thus needs to figure out the size of the moving element (see also Section 6).

Recall that head movement is arguably the most economical choice because it carries the least material and thus is preferred (see Subsection 4.2). As a result, the child would favor the head-movement option in the absence of sufficiently compelling evidence for phrasal movement. In other words, the Shizhu-to-Zunyi change occurs when evidence favoring a phrasal-movement analysis of definite noun-initial DPs becomes less robust, for example, because relevant constructions become less frequent (these data include N-Num-CLFs where the numeral is overt, as well as Adj-N-(Num)-CLFs; see Sections 2 and 3).

Hence, the Shizhu-to-Zunyi change, understood as a change from phrasal movement to head movement, involves a reanalysis of the derivation of noun-initial DPs, which are larger than single linguistic units.[21] Importantly, if the above discussion of the mechanism of language change is on the right track, we should expect that other types of change may also involve elements that are larger than single linguistic units. I suggest that this is indeed the case. For instance, let us consider Dadan's (2019) unified account of Spec-to-head reanalysis and the loss of movement. Dadan (2019) compares {H, XP} and {XP, YP} configurations and points out that the latter involves additional steps for labeling—this follows Chomsky (2013), who argues that while {H, XP} as a head-phrase relation may be immediately labeled as H, the labeling of {XP, YP} (a phrase-phrase relation) is more complex: Either (i) XP and YP undergo feature sharing so that the shared feature may provide a label, or (ii) any of the two phrases moves away so that the remaining phrase labels the configuration. Dadan (2019) concludes that {H, XP} is a more economical configuration than {XP, YP}, and as a result, specifiers which consistently create a {XP, YP} configuration tend to be lost in language change. Hence, Spec-to-head reanalysis and the loss of movement are both well motivated, as they involve the loss of a specifier.

Now, the change from phrasal movement to head movement also involves the loss of a specifier, so it seems to be largely compatible with Dadan's (2019) analysis (in previous sections, I simply suggested that head movement carries less material and is thus preferred—I leave this technical difference aside). However, as argued above, the Shizhu-to-Zunyi change concerns how a constituent containing a noun moves; the N(P) itself, as a lexical category, remains unchanged after the reanalysis. By contrast, Dadan's (2019) original discussion focuses on the loss of specifiers from the perspective of individual syntactic units. Nevertheless, his approach is clearly *contextual*: To account for the loss of a specifier, one must consider the context in which it occurs (this is in fact a logical necessity, since the notion of a specifier is defined configurationally).

I suggest that specifier loss in general should be viewed as a byproduct of the reanalysis of a larger syntactic configuration. This applies not only to the change from phrasal movement to head movement (as discussed above), but also to Spec-to-head reanalysis and the loss of movement. Suppose that a child

[21] Children who (re)analyzed noun-initial DPs as head movement also ignored AdjP-fronting during this process, as AdjP-fronting is necessarily phrasal. Notably, AdjP-fronting (now attested in all SWM varieties) was not lost after the reanalysis but has been treated as a slightly different operation triggered by the same D (34c). This suggests that economy in the process of language change concerns neither single linguistic units (as suggested in the main text) nor the whole grammatical system, but something in between. In other words, the scale of economy is neither totally local nor totally global.

is trying to determine the best analysis for a certain natural class of phrases. For reasons of economy, the child prefers to analyze these phrases as involving {H, XP} rather than {XP, YP} configurations, unless there is sufficient evidence for the latter. Once these phrases (previously analyzed as {XP, YP}) are reanalyzed as {H, XP} by a new generation of learners, we may consequently observe a change at their left edge, manifested in different cases as Spec-to-head reanalysis, the loss of movement, or a change from phrasal movement to head movement. In this sense, specifier loss is not itself the locus of reanalysis, but rather an observable consequence of the reanalysis of a larger syntactic configuration.

The current perspective thus allows us to unify these distinct types of change by shifting our attention to larger syntactic units (cf. fn.21). Changes in smaller elements are often concomitant effects of the reanalysis of larger units. Although these changes often indeed involve simplification or increased economy at the level of individual elements, this is not always the case: As we saw in the preceding subsections, some elements may in fact become more complex or less economical as a result of the reanalysis (e.g., D in (36)).

5 Additional cases

This paper has analyzed the Shizhu-to-Zunyi change as a change from phrasal movement to head movement. I have also argued that this type of change is conceptually well-motivated, with economy considerations playing an important role, as in other, better-studied types of syntactic change. Now, if the present study is on the right track, we expect changes from phrasal movement to head movement to recur in other languages and domains. I suggest that this is indeed the case and present additional case studies in this section. Subsection 5.1 reports Bošković's (2001, 2021) study of the *li*-construction in Serbo-Croatian, which involves a case of head movement that was historically reanalyzed from phrasal movement. Subsection 5.2 examines an indeterminate stage concerning the loss of *wh*-movement in the history of Chinese, which Aldridge (2023) argues involves *wh*-head movement, a case which can also be viewed as a historical shift of movement type. Finally, Subsection 5.3 briefly discusses verb-initial order in Mayan languages, suggesting that the change from phrasal movement to head movement may also be involved in the history of Mayan.

5.1 The *li*-construction in Serbo-Croatian

This subsection introduces Bošković's (2001, 2021) discussion of the *li*-construction in Serbo-Croatian (SC), which clearly involves a change from phrasal movement to head movement. The Q/focus marker *li* in SC is a second-position clitic. As in (38a), its host can be a phonological word *novu* 'new.' However, (38b) shows that *li* cannot follow an unambiguously phrasal element:

(38) a. [Novu] li kuću prodaje? [SC]
new Q house sells
'Is he selling the new house?'

b. *[Novu kuću] li prodaje? [SC]
new house Q sells (Bošković 2021)

By contrast, *li* in Bulgarian (cognate to SC *li*) behaves differently, in that its host can be a phrasal element:

(39) [Novata kŭšta] li prodade? [Bulgarian]
new.the house Q sold
'Did he sell the new house?' (Bošković 2021)

Bošković (2001) argues that in both SC and Bulgarian, *li* is a C head which attracts a lower element to move to a position to the left of *li*, serving as the host of *li* at PF. However, while in Bulgarian, a non-minimal projection may participate in the movement and move into SpecCP (39), in SC, the movement in question is a case of head movement (38), the fronted element being not in SpecCP but left-adjoined to C, as suggested by Bošković (2001). The head movement vs phrasal movement distinction between SC and Bulgarian *li* is further supported by the sluicing data in (40):

(40) a. *[Novu] li ~~kuću~~ ~~prodaje~~? [SC]
new Q house sells
'Is he selling the new house?'

b. [Novata kŭšta] li ~~prodade~~? [Bulgarian]
new.the house Q sold (Bošković 2021)

Following Lobeck (1990) and Saito & Murasugi (1990), Bošković (2001) assumes that sluicing as a kind of ellipsis must be licensed via a Spec-head relation. In the Bulgarian example (40b), sluicing is possible because the fronted nominal phrase is in SpecCP and Agrees with *li* in C. In the SC example (40a), by contrast, the clause-initial element *novu* 'new' is moved there via head movement and is not located in SpecCP, so there is no relevant Spec-head relation that may license sluicing. (40a) is thus ruled out.

From a diachronic perspective, Bošković (2021) argues that the head movement associated with *li* in SC is an innovation. First, *li* in Croatian Church Slavonic behaved like *li* in modern Bulgarian in that its host could be a non-minimal projection (see Mihaljević 1997). Second, Bošković (2001) notes that the relevant use of the *li*-construction sounds archaic in modern SC. On this analysis, *li* as a C head in SC used to trigger phrasal movement to SpecCP at an earlier historical stage, but this operation has since been replaced by head movement. While it is possible to view this change as involving a change in the properties of the particle *li* itself (Bošković (2001) suggests that *li* in modern SC is 'defective' in that it can no longer support a specifier), following the discussion in Subsection 4.3, I suggest that the change is more directly understood as a shift of movement type, similar to the Shizhu-to-Zunyi change.

5.2 *Wh*-movement in Early Middle Chinese

Another case of the change from phrasal movement to head movement is found in the history of *wh*-fronting in Early Middle Chinese (EMC) of the 1st century BCE, as discussed by Aldridge (2023). To begin with, it is well-known that Late Archaic Chinese (LAC; 5th–3rd centuries BCE) was a *wh*-fronting language (Feng 1996, Aldridge 2010, 2023, among many others):[22]

(41) 吾誰欺？欺天乎？

ŋo dʑiui$_i$ kʰiə __$_i$? kʰiə tʰen ɦo? [LAC; *Analects*, Zihan]

1 who deceive deceive heaven Q

'Who do I deceive? Do [I] deceive the heavens?'

(42) 王何卿之問也？

ɦiuaŋ [ɦa kʰɣiaŋ]$_i$ tɕiə miunH __$_i$ jiaX? [LAC; *Mencius*, Wanzhang 2]

king what minister GEN ask COP

'What minister is Your Majesty asking about?'

The second sentence in (41) shows that SVO was the basic order of LAC. However, as (42) and the first sentence in (41) illustrate, when the object is a *wh*-element, it has to move to a preverbal position, yielding an SOV order. The landing site of this movement is identified by Aldridge (2010, 2023) as a focus position at the edge of vP.

This *wh*-fronting strategy was gradually lost in the history of Chinese (which then became a *wh*-in-situ language). Interestingly, while *wh*-fronting was still attested in EMC, it was much more restricted. First, in EMC, while monomorphemic *wh*-objects still move (43), polymorphemic *wh*-objects must stay in situ (44), unlike those in LAC (42):

(43) 公何患於齊？

kuŋ ɦa$_i$ ɦɣuanH __$_i$ ʔio dzei? [EMC; *Zhanguoce*, Zhongshan]

lord what fear from Qi

'What does the lord fear from Qi?'

(44) 關東有何變？

kɣuan-tuŋ ɦiəuX [ɦa pɣienH]? [EMC; *Shiji*, Fansui/Caize Liezhuan]

border-east have what change

'What is happening on the eastern frontier?'

Second, Aldridge (2023) observes that while *wh*-fronting could be long-distance in LAC (45–46), it was no longer the case in EMC (47–48):

[22] Following Jacques's (2022) practice, I transcribe both LAC and EMC data in Middle Chinese (3rd–6th centuries CE), the earliest stage of Chinese whose phonological system is fully reliably reconstructed. The letters H and X are used for the Qùshēng and Shǎngshēng tones, respectively.

(45) 吾誰敢怨？

ŋo dʑiui$_i$ kamX [ʔiuan __$_i$]? [LAC; *Zuozhuan* Zhao 27]

1 who dare resent

'Who do I dare to resent?'

(46) 公誰欲相？

kuŋ dʑiui$_i$ jiok [siaŋH __$_i$]? [LAC; *Lüshi Chunqiu* 1.4]

lord who want make.prime.minister

'My lord, who do you want to appoint prime minister?'

(47) 吾敢誰怨？

ŋo kamX [dʑiui$_i$ ʔiuan __$_i$]? [EMC; *Shiji* Wu Taibo Shijia]

1 dare who resent

'Who do I dare to resent?'

(48) 諸君欲誰立？

tɕio kiun jiok [dʑiui$_i$ lip __$_i$]? [EMC; *Shiji* Zhao Shijia]

all gentleman want who stand

'Gentlemen, who do you want to place (on the throne)?'

Assuming that (45–48) are all biclausal structures, (45–46) show that a *wh*-object in LAC may move into a higher clause, whereas in EMC (47–48), *wh*-objects stay in their own clauses. (Another possibility is that (45–48) involve restructuring constructions, in which case the conclusion is similarly that *wh*-fronting in LAC may occur at a distance while it is quite local in EMC.) This is particularly clear in (45) and (47), which form a minimal pair.

Based on the above facts, Aldridge (2023) argues that *wh*-fronting in LAC involved phrasal movement but was reanalyzed as head movement in EMC. This straightforwardly explains (i) why unambiguously phrasal *wh*-objects cannot be fronted in EMC (44), and (ii) why *wh*-fronting in EMC cannot be long-distance (47–48), unlike in LAC (45–46), given that head movement is generally considered a local operation. In sum, *wh*-fronting in EMC provides another case of a change from phrasal movement to head movement. This stage may also be understood as an intermediate step in the eventual loss of *wh*-fronting in Chinese.

5.3 Verb first in Mayan: A conjecture

We have seen in this section two additional cases involving a change from phrasal movement to head movement. These cases should suffice to illustrate that such shifts in movement type constitute a conceptually well-motivated and recurring type of syntactic change, attested across different languages and empirical domains. Nevertheless, this type of change appears to be less commonly documented than

certain other types of syntactic change, particularly Spec-to-head reanalysis and the loss of movement. I suggest that this may be largely due to a practical difficulty: Identifying head movement itself is often far from straightforward, and uncontroversial cases are relatively rare in the literature (see also the discussion below). This difficulty is further compounded by the fact that the very existence of head movement in narrow syntax has been called into question since Chomsky 2001 and remains a matter of debate (see also Section 6). It is therefore unsurprising that clear cases in which head movement can be shown to have historically developed from phrasal movement are even harder to establish. Against this background, much of the discussion below is necessarily speculative and is best understood as a research agenda rather than a definitive analysis, given the considerable analytical indeterminacy involved. The hope is that, once the change from phrasal movement to head movement is recognized as an independent type of syntactic change, more cases of this sort will be identified, and this perspective may also shed new light on some longstanding problems by providing an alternative way of approaching them.

What I would like to consider here is the derivation of verb-initial order (V1) in Mayan. It has been debated in the literature how V1 in Mayan languages is formally derived. One major approach is that V1 is derived via the head movement of the verb to a higher position in the clause, say T or C; another is that the order involves the fronting of a phrasal constituent that contains the verb. See Clemens & Polinsky 2017 for a recent overview on V1 in general, which also summarizes a number of other approaches which I cannot consider below. First, Coon (2010) examines V1 in Ch'ol Mayan, arguing that it involves vP moving into SpecTP. Specifically, Ch'ol Mayan is VOS if the object is a bare NP and VSO if the object bears a determiner and thus a full DP.[23] As in (49), the subject is base-generated in SpecVoiceP above vP and the object is base-generated within VP. Crucially, NP objects stay in situ (49a) while DP objects must move out of vP to a position lower than the subject prior to vP-fronting, which Coon (2010) labels AbsP (49b) (this follows Massam's (2001) work on Niuean). In other words, VSO order in Ch'ol results from object shift combined with remnant vP movement:

(49) a. $[_{\text{TP}}\ [_{\text{vP}}\ \text{verb NP-}\textit{obj}\ ]_i\ \text{T}\ [_{\text{VoiceP}}\ \textit{subj}\ \sout{[_{\text{vP}}\ \text{verb NP-}\textit{obj}\ ]_i}]]$ [VOS with an NP object]

b. $[_{\text{TP}}\ [_{\text{vP}}\ \text{verb}\ \sout{\text{DP-}\textit{obj}_j}\ ]_i\ \text{T}\ [_{\text{VoiceP}}\ \textit{subj}\ [_{\text{AbsP}}\ \text{DP-}\textit{obj}_j\ \sout{[_{\text{vP}}\ \text{verb DP-}\textit{obj}_j\ ]_i}]]]$ [VSO with a DP object]

An alternative analysis is offered by Clemens & Coon (2018), who argue that V1 in Mayan in general should result from the head movement of V to a position above the subject (they also primarily concentrate on Ch'ol facts). This directly derives VSO order, while for VOS, they propose that it involves prosodic reordering between the subject and the object at PF.

Now, Mayan languages can in fact be divided into two groups in terms of basic word order (England 1991): Those that show VSO/VOS order alternation (like Ch'ol) and those that are strictly VSO (e.g., Q'anjob'al). Although I will not evaluate the head-movement and vP-fronting analyses of Mayan V1 in any

[23] Coon (2010) assumes that in Ch'ol, nominals are NPs without a determiner while they are DPs if they bear a determiner. This is compatible with Bošković's (2008) NP/DP parameter, in which sense Ch'ol is a 'dynamic' DP language.

detail here, it is worth noting, as already pointed out by Coon (2023), that the two approaches have different strengths concerning the two groups of Mayan languages: On the one hand, the head-movement analysis readily accounts for rigid VSO, but it may require additional mechanisms to derive VOS order (for Clemens & Coon (2018) it is PF reordering; scrambling might be another possibility, as in Otsuka 2005 for VSO/VOS alternation in Tongan). On the other hand, the vP-movement analysis captures alternating VSO/VOS easily, deriving the two orders from the distinct positions of NP and DP objects, respectively, which are independently motivated (see Coon 2010); however, extending this to languages with rigid VSO order is less straightforward, as it seems to require the object to move out of the vP in every case.

My speculation here is simply that the two approaches are both correct, but by and large for different languages: Rigid VSO order is derived via the head movement of V, whereas alternating VSO/VOS in general involves vP-fronting. This fits well with Coon's (2023) note just summarized, avoiding the potential complications that the two approaches may face—each approach is simply suited to a different group. Furthermore, it is important to note that Proto-Mayan was alternating VSO/VOS (Norman & Campbell 1978, Campbell & Kaufman 1985), and rigid VSO attested in some modern varieties is an innovation (England 1991)—under the hypothesis proposed here, this suggests that Proto-Mayan employed vP-fronting and the strategy then became the head movement of V in some of its descendant languages, which now only allow VSO. Thus, the change from phrasal movement to head movement appears to have happened in the derivation of V1 in the history of Mayan. Whether this hypothesis is on the right track remains to be seen in further research. Note that some previous work has attempted to provide a unified analysis of Mayan V1 (cf. Clemens & Coon 2018), though I suggest that there is no a priori reason to presuppose that the Mayan languages share a unified syntax for V1 (e.g., Little 2020:169–180). This point is especially clear once we admit that movement types may shift diachronically, as the current paper has attempted to show. From this new perspective, future research should examine whether rigid VSO and alternating VSO/VOS in Mayan indeed have different syntax concerning movement type.[24]

In sum, while more research is needed to identify additional cases that involve shifts of movement type, it is clear that the change from phrasal movement to head movement is attested across different languages and syntactic domains and is not limited to the Shizhu-to-Zunyi development. These cases, especially the two discussed in Subsections 5.1 and 5.2, provide further empirical support for this type of syntactic change.

[24]A similar possibility arises with V1 in Austronesian, which also remains a controversial issue. In particular, Otsuka (2005) compares Niuean and Tongan, two closely related Polynesian languages, and argues that V1 in Niuean involves VP-fronting (following Massam 2001), whereas V1 in Tongan is derived via V-to-T head movement. If this analysis is correct, and if the change from phrasal movement to head movement is unidirectional in the sense that the reverse change is generally not expected to occur, we predict that Tongan V1 represents a more innovative syntactic derivation than Niuean V1. Whether this prediction is borne out also remains an open question for future research.

6 Concluding remarks

This paper has provided a detailed comparative analysis of the N(P)-fronting constructions in Shizhu and Zunyi, two closely related Southwestern Mandarin varieties. Synchronically, I argued that Shizhu NP-(Num)-CLFs involve NP movement to SpecDP, a case of phrasal movement, whereas Zunyi N-CLFs result from N-to-D head movement. Diachronically, I suggested that the Zunyi pattern is more innovative: noun-fronting in Zunyi originally involved NP-raising, as it does in present-day Shizhu, but has since been reanalyzed as a case of head movement. The proposed Shizhu-to-Zunyi change thus represents a shift in movement type, whereby phrasal movement is historically reanalyzed as head movement. I argued that this should be recognized as an independent type of syntactic change, one that cannot be reduced to other types of change, such as changes involving individual functional elements. The theoretical implications of this finding were also discussed. Finally, I examined additional cases from other languages and syntactic domains that similarly involve a historical shift from phrasal movement to head movement.

I have assumed throughout this paper that head movement is an independent movement type in syntax. Although the theoretical status of head movement has been debated since Chomsky 2001, the Shizhu-Zunyi contrast examined here seems difficult to account for without recognizing head movement as part of narrow syntax. In particular, noun-fronting in Zunyi behaves differently from that in Shizhu, which unambiguously involves phrasal movement. Importantly, the proposed N-to-D movement in Zunyi has semantic consequences (it is associated with definiteness), suggesting that it must take place in narrow syntax (see also Roberts 2010). Furthermore, the contrast between head movement and phrasal movement cannot simply be reduced to a difference in the size of the moving element, as one might expect under Chomsky's (1995a) Bare Phrase Structure, where there is no fundamental distinction between X and a non-minimal projection of X. Although a bare noun should invariably count as both a minimal and a maximal projection under Bare Phrase Structure, we have seen that the fronting of a bare noun in Shizhu and Zunyi is subject to different locality conditions. This suggests that the distinction between the two operations cannot be characterized solely in terms of the size of the moving element. Recall also that I posited a 'head feature' H on the movement-triggering D in Zunyi. One possibility that might be worth exploring is that H plays a role in determining the type of movement involved: Movement associated with H counts as head movement. Many questions remain open, but if this proposal is on the right track, it implies that the strongest version of Bare Phrase Structure may not hold; in particular, X and a non-minimal projection of X may not necessarily have the identical features, as the grammar must have a way of distinguishing heads from phrases.

Abbreviations

1 = first person, 3 = third person, CLF = classifier, CONT = continuous, COP = copula, GEN = genitive, NEG =

negative, PFV = perfective, PL = plural, Q = question particle.

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