Numerals and classifiers. Most numerals in Spoken Persian nominals must be followed by (i) a true classifier (abbreviated TCL, viz. *tā*), or (ii) a sortal/measure classifier (abbreviated MCL, e.g. *šāxe* 'branch,' *ja'be* 'box') and allow both an MCL and TCL to be present only if the TCL precedes the MCL (1b). However, the numeral *yek* 'one' is unexpectedly incompatible with TCLs, and may appear as a bare numeral, i.e. without any classifiers (1a). Nouns in both cases are marked singular (except where the plural marker takes on other functions, cf. Ghomeshi 2003; Shirzad & Darzi 2023:154).

(1) a. *ye(k) (*tā) (šāxe) gol*
one TCL MCL flower
'one flower'

b. *do (tā) šāxe gol(*-hā)*
*do *(tā) gol(*-hā)*
two TCL MCL flower(-PL)
'two flowers'

The incompatibility of TCLs and *yek* is not simply due to the singular semantics of the numeral 'one', and the optionality of MCLs with *yek* is not because it can be parsed as an indefinite article. Both explanations can be ruled out by an underreported fact about this paradigm: the distribution of *yek* shown above is shared with all conjoined numerals with *yek* in the ones place, e.g. *si-o-yek* (lit. 'thirty-and-one'). Regardless of the internal structure of such conjunctions, the external distribution shows that these numerals differ formally from others. We thus separate numerals into *Type-I numeral*s (with the *yek* distribution, 1a) and *Type-II numerals* (1b).

The distributions of classifiers and numerals in (1) raises the question of what their structural relationship is to the rest of the nominal. Much prior work has suggested that numerals, MCLs, and TCLs are all heads on the nominal spine (Gebhardt 2009; Shirzad & Darzi 2023, a.o.). This would suggest that these *numeral + classifier complexes* (NCCs) are not constituents, but rather form constituents with the modified nouns. Some widely unnoticed facts militate against this conclusion, e.g. that NCCs can serve as fragment answers, and more strikingly, that spoken Persian permits left-branch extraction (LBE) of NCCs, where the rest of the nominal remains *in situ* (2). Note that the numeral here may be information-structurally marked, suggesting pied-piping of the classifier.

(2) [*ye(k) ja'be*]$_i$ *man har ruz* [____$_i$ *širini*] *mi-xor-am*
one MCL 1SG every day sweet DUR-eat:PRS-1SG
'I eat *one* box of sweets every day.'

If NCCs are moveable constituents, what is the status of the bare Type-I numerals (1a)? Whereas these numerals do not need a classifier, without one, they curiously cannot undergo LBE (3):

(3) **ye(k)*$_i$ *man har ruz* [____$_i$ *širini*] *mi-xor-am*
one 1SG every day sweet DUR-eat:PRS-1SG
Intended: 'I eat *one* sweet every day.'

Below, we propose an account of the variability in numeral–classifier compatibility (1) and in the availability of LBE (2-3) in terms of the interaction of selection and projection in the syntax.

Assumptions. We assume that Merge is licensed by checking matching features under sisterhood (Chomsky 1995; Adger 2003; Heck & Müller 2007; Zeijlstra 2020, a.m.o.). Critically, following Zyman (submitted) and *Author* (2025), we assume that selectional features are separated into those that trigger projection of the selecting element (c-selection of complements and specifiers by heads, 4a) and those that do not (selection of hosts by adjuncts, 4b).

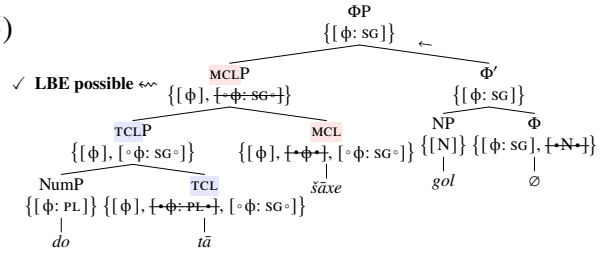
(4) a. If α bears [•*f*•] and β bears [*f*], then {α, β} inherits only α's other features.
b. If α bears [◦*f*◦] and β bears [*f*], then {α, β} inherits only β's features.

This gives us probes for Merge, notated [•*f*•] and [◦*f*◦] — which, when discharged, result in different projection profiles — and goals, notated [*f*]. Following Preminger (2014) and Newman (2021), a.o., we assume that probes for Merge/Agree must be used where possible, but may unproblematically fail elsewhere. Finally, following Zeijlstra (2020), we assume that probes and goals for Merge may optionally be specified for subfeatures/values, similar to those for Agree.

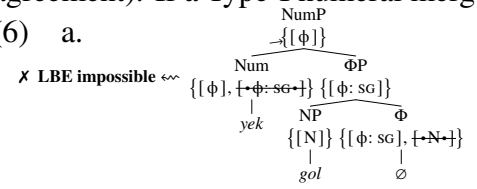
Type-II analysis. With these assumptions, we analyze NCCs as adjoining to a functional Φ-shell (cf. Bale et al. 2019) whose head bears the feature [ϕ: SG], in complementary distribution with the head spelled out as the plural marker (bearing [ϕ: PL], person values are orthogonal here). Type-II numerals themselves bear only [ϕ: PL], and ΦP bears no probes, so classifiers are used to connect the two. TCLs bear an unvalued [ϕ] and can select Type-II numerals as complements using a probe [•ϕ: PL•]. MCLs also bear [ϕ], but bear the unspecified probe [•ϕ•]. The lack of a value crucially allows MCLs to merge either with a Type-II numeral (with [ϕ: PL]) *or* with a TCL (with [ϕ]). Both MCLs and TCLs also bear the probe [◦ϕ: SG◦], which allows them to adjoin to the Φ-shell. As [◦ϕ: SG◦] prevents classifiers from projecting (4b), NCCs become subconstituents of ΦP, and can undergo LBE (2). We stipulate that classifiers are linearized rightward (like the DOM marker *rā* and the plural *-hā*); as MCLs can select TCLs as complements but not *vice versa*, this then correctly predicts that TCLs must precede MCLs if they co-occur; this derivation is sketched in (5).

Type-I analysis. Type-I numerals show a different distribution: they are compatible with MCLs but do not require them, and are altogether incompatible with TCLs. On this approach, they differ featurally from Type-II numerals in two ways. First, they bear the underspecified feature [ϕ], making them suitable complements for MCLs with [•ϕ•] (6b), but not for TCLs, which have the more specified probe [•ϕ: PL•]. In other words, the unvalued ϕ — which gives MCLs the flexibility to select either Type-II numerals or TCLs — also renders Type-I numerals incompatible with TCLs. Second, we reason that they also bear their own probe [•ϕ: SG•], which generates an alternate structure where the numeral selects ΦP as its complement and projects its own [ϕ] feature (6a). This solves two problems at once: first, a classifier is no longer necessary, and second, the numeral now forms a constituent with ΦP, correctly ruling out LBE (see 3). This structure can then be targeted by any Merge/Agree probe for ϕ-features (both [ϕ: SG] and [ϕ] control 3SG/default verb agreement, *modulo* semantic agreement). If a Type-I numeral merges with an MCL, [•ϕ: SG•] is simply not used, as in (6b).

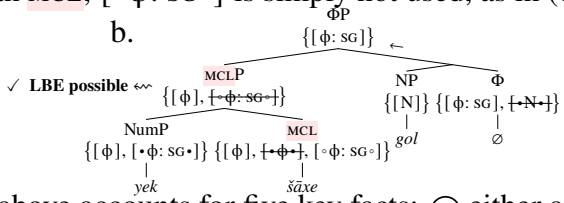
(5)



(6) a.



b.



Discussion. In summary, the featural analysis above accounts for five key facts: ① either a TCL or an MCL must be present for Type-II numerals to be licensed; ② if both are present, then the TCL must precede the MCL; ③ NCCs are constituents which can undergo LBE; ④ Type-I numerals do not require a classifier, but may be followed only by an MCL; ⑤ In the absence of an MCL, LBE of a Type-I numeral is impossible. Zooming out, the approach taken here is to model overlapping distributions using feature values and projectional differences in lieu of arbitrary probes/goals for every category (e.g. [TCL], [MCL], etc.). A good result of this is that [ϕ] may project from the numeral rather than ΦP, which naturally blocks LBE without otherwise affecting the distribution of the nominal. More broadly, since LBE itself is essentially counterfed by projection, this also raises

the prospect that typologically, projectional variation of the kind anticipated by this analysis may contribute to variability in which adnominal elements can undergo LBE within a given language.

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