Misalignment between Syntax and Phonology: Evidence from Mandarin Chinese

Overview This work presents new empirical evidence from Mandarin Chinese to show that there exist drastic mismatches between syntactical and phonological domains, for Bonet *et al.* (2019) *among others*. It focuses on the tonal behaviours of the negator *bu4* (不) in a specific construction, revealing that sandhi effects can be triggered even in a highly unlocal configuration.

***Bu4* as a Sandhi Element** Mandarin Chinese is a language that has four tones. *Bu4*, which is used for negation, is a sandhi element whose tone is dependent on the tone of the following contents. As shown in (1), it has Tone 2 before Tone 4, and preserves Tone 4 in other circumstances. Note that this sandhi is *lexically-mark* (Chen 2000). *Bu4* "cloth" with the identical underlying form does not have its tone changed to Tone 2 before Tone 4, seen in (2).

(1) a.

bu4 hui1	bu4 hui2	bu4 hui3	**bu2** hui4
NEG wave	NEG return	NEG destroy	NEG will

b. [NEG] ⇒ /bu2/ / _Tone 4

⇒ /bu4/ / Elsewhere

(2) **Bu4**/*Bu2 **hui4** henkuai fulan.
cloth will immediately decay.
'The cloth will immediately decay.'

The NNN Construction *Bu4* has a special use. In (3), the negator *bu4* does not negate the propositional contents, but instead adds a mood similar (not exactly) to what "innit" expresses in English. *Bu4* is optionally followed by the copula *shi4*. It might be a relatively new colloquial phenomenon since not all speakers would like the omission of *shi4*.[1] Call *bu4* in such constructions N(on) N(egative) N(egator).

(3) Ta **bu** (shi) hui qu Shouer ma.
he NNN COP will go Seoul PRT
'He will go to Seoul, innit.'

There is convincing evidence that the NNN construction is biclausal (Zhang 2023). No matter whether the copula is there or not, there is always a cleft (a CopP and a CP projection) between the NNN and the propositional contents. I list one piece of evidence here.[2] In Mandarin, two negators cannot appear consecutively as seen in (4a), the reason being a Neg head cannot select another NegP in syntax (Collins 2018). However, a NNN plus a regular negator is felicitous, displayed in (4b), suggesting at the syntactic unlocality between the NNN and its following parts (AdjP here). The syntactic structure proposed by Zhang of such NNN constructions is shown in (5), where the NNN projects a NegP, below which is a CopP whose head *shi* is often silenced, and the proposition lies in the lower CP.

(4) a. *Ta **bu** **bu** kaixin. (*Reg.Neg+Reg.Neg)
he NEG NEG happy
Intended: 'He isn't not happy.'

b. Ta **bu** **bu** kaixin ma. (^{OK}NNN+Reg.Neg)
he NNN NEG happy PRT
'He is not happy, innit'

(5) [$_{CP}$ . . . SUBJECT **[$_{NegP}$ *bu* [$_{CopP}$ ~~*shi*~~** . . . [$_{CP}$ PROPOSITION]]]]

Puzzle - NNN has Optional Sandhi Given the unlocality of the NNN construction in syntax, it is puzzling that the sandhi can still be triggered on the NNN when a Tone 4 follows it. (3) is repeated

[1] Most people I consulted that are ∼ early 20 yrs old agree that the copula after an NNN is always unnecessary, and for some cases no copula is even preferred. A generational gap might exist with respect to this particular use of *bu4*.

[2] Other evidence includes impotence of licensing NPIs and compatibility of PPIs, *etc*.

below in (6) with the copula removed. The NNN *can* have Tone 2 before *hui4*.[3] This immediately poses a difficulty to direct correspondence between syntax and phonology under PIC since CP is a strong phase (Citko 2014) and *bu4* should not have been able to see the phonology embedded in it.

(6) Ta ^{OK}**bu4**/^{OK}**bu2** [$_{CP}$ **hui4** qu Shouer] ma.
he NNN will go Seoul PRT
'He will go to Seoul, innit.'

The unlocality can be made severer whilst still triggering the sandhi effects on the NNN. In an NNN construction with the lower CP being a copular predication, that copula in the lower CP can also be silent, as seen in (7). Now look at sentence (8) (CPr=relative clause), where *zai*4 who is deeply embedded can still feed the tone sandhi of *bu4*.

(7) Zhe bu (shi) [$_{CP}$ (shi) Zhangsan] ma.
this NNN COP COP Z. PRT
'This is Zhangsan, innit.'

(8) Zhe ^{OK}**bu4**/^{OK}**bu2** ~~shi~~ [$_{CP}$ ~~shi~~ {$_{NP_2}$ [$_{CPr_2}$ {$_{NP_1}$ [$_{CPr_1}$ **zai4** zhongxue de] shihou}
this NNN at middle.school DE time
women yiqi kan-guo de] na bu dianying}] ma
we together watch-ASP DE that CL film PRT
'It is the film that we've watched together in middleschool time, innit.'

Note that the puzzle is stated as two-fold. The sandhi on *bu4 can* trigger in an unlocal way, but the presence of phases does put some obstacles to the establishment of sandhi. Absence of sandhi in local contexts such as (1) is horrible, whilst in (6) and (8), you can *either* have sandhi *or* not have it.

However, one thing is fore sure. *Bu4* and its subsequent syllable have to be in a Head-Complement relation in order for the sandhi to happen. If they are in a Spec-Head relation, the sandhi does not apply. In (9) (the whole *vP* after *bu4* is silent, licensed by the adverb *pian*) where *bu4* and the verb *rang4* is in a Spec-Head relation, the sandhi must not happen.

(9) Contexts: The mom tells the son to do his homework.
[$_{CP}$ Erzi pian **bu4**/***bu2** ~~*v*P~~] **rang4** mama hen shengqi.
son just NEG make mom very angry
'That the son just does not (do his homework) makes the mom very angry.'

Conclusions The abstract presents evidence from Mandarin that shows misalignment between syntax and phonology. Sandhi effects can be triggered in highly-unlocal environments on the negator *bu4* so long as *bu4* and its following parts are in a Head-Comp relation. It provides empirical support for the claim that syntax and prosody is misaligned. It leaves to be desired an analysis that pins down the determining factors (*e.g.* prosody) for the sandhi to happen in sentences such as (6) and (8). This abstract points out that the NNN *can* have sandhi, but it is inaccurate in saying that this sandhi is *optional*. How this optionality can be dispensed with requires further research.

Selected References

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[3]The sandhi could not have been effected by the silent *shi4*. If *hui4* is replaced by a non-Tone 4, then *bu2* is infelicitous. The sandhi of *bu4* must be fed by overt phonology. Yet in fast speech, *bu2* and *shi4* might merge into *bur2*. One native speaker (that does not like the omission of *shi4* after an NNN) says that her NNN always has Tone 2 and that she feels *bu2* and *shi4* is "merged together" when *shi4* is not pronounced separately. For speakers that like the omission of *shi4*, the contrast between **bu2* and ^{OK}*bu4* before a non-Tone 4 is clear.