Chapter 1

Unary/Binary-NEG Structures of NPIs and Reduplication in Bùlì

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Negative-sensitive items in Bùlì, a Mabia (Gur) language spoken in Ghana, exhibit a mixed behavior between NCIs and NPIs. Thus, Bùlì presents a counterexample to Vallduví's generalization. Adopting and extending the framework of Collins & Postal (2014) and Collins et al. (2017), we will show that the apparently mysterious mixed behavior of negative-sensitive items in Bùlì can be explained by articulating an unary-NEG structure and syntax of reduplication.

1 Diagnosing for NCIs and NPIs

Vallduví (1994) examined behaviors of negative-sensitive items such as *n*-words and minimizers in Catalan and Spanish and proposed four diagnostic tests (1a)–(1d) to distinguish Negative Concord Items (NCIs) and Negative Polarity Items (NPIs). Giannakidou (2000) further added clause-boundedness to the list. For example, *any* in (1) in English is diagnosed as NPI, while *n*-words in (2) in Spanish are considered to be NCI (see Ladusaw 1979, Haegeman & Zanuttini 1996, Haegeman 1995, Watanabe 2004, Giannakidou 2006, Giannakidou & Zeijlstra 2017, among others).

(1)   English

    a.   Did you see anyone?   (Question)

    b. * Anyone did not come.   (*Pre-negative subject position)

    c. * I didn't see almost anyone.   (*Modification by *almost*)

    d. * Anyone ~~(I didn't see)~~ . (as an answer to (1a))   (*Fragment answer)

    e. I don't say I saw anyone.   (Long-distance licensing)

(2)   Spanish (Vallduví 1994, Penka 2011)

    a. * ¿Quieres nada?
        2SG-want nothing
        'Do you want anything?'   (*Question)

    b. Nada   funciona.
        nothing 3SG-work
        'Nothing works.'   (Pre-negative subject position)

    c. ¿A quien has   visto?
        a who 2SG-PERF see
        'Who'd you see?'
        A (casi) nandie.
        a almost no.one
        '(Almost) no one.'   (Modification by *almost*/Fragment answer)

    d. * No dije   que había   nada   en el frogprífico.
        Neg said.1SG C   there.was.IND n-thing in the fridge
        'I didn't say that there was anything in the fridge.'
                              (*Long-distance licensing)

Table 1: NCI vs. NPI (Vallduví 1994, Giannakidou 2000)

	NCI	NPI
Non-negative	*	√
Pre-negative	√	*
Modifiability	√	*
Fragment Answer	√	*
Long-distance	*	√

    In this paper, we examine negative-sensitive items in Bùlì, a Mabia (Gur) language spoken in Ghana, and show that they exhibit a mixed behavior between NCIs and NPIs, resisting the dichotomy in Table 1.

2 The NCI-NPI Dichotomy Revisited

Contrary to the generalization in Table 1, NCIs and NPIs do not always show systematic behaviors cross-linguistically. For example, Korsah & Murphy (2017) show that negative-sensitive items in Gã behave like NCIs, but cannot be used as fragment answers (see also Collins et al. 2017 on Ewe and Hiraiwa (2019) on Okinawan).

   Negative-sensitive items in Bùlì, a Mabia (Gur) language spoken in Ghana, also exhibit a mixed behavior, but their distribution is different from those in Gã and Ewe, as shown in Table 2. They can appear in pre-negative subject position, patterning with NCIs in this respect, but they pattern with NPIs in that they are allowed in non-negative contexts, cannot be used as fragment answers, and are licensed long-distance (note that Bùlì lacks a straightforward counterpart of *almost* and hence modifiability of negative-sensitive items cannot be tested). Thus, Bùlì presents yet another counterexample to Vallduví's generalization.

Table 2: Cross-linguistic Variations

	NCI	NPI	Spanish	English	Gã	Bùlì
Non-negative	*	√	*	√	*	√
Pre-negative	√	*	√	*	√	√
Modifiability	√	*	√	*	*	N/A
Fragment Answer	√	*	√	*	*	*
Long-distance	*	√	*	√	*	√

   Adopting and extending the framework of Collins & Postal (2014) and Collins et al. (2017), we will show that the apparently mysterious mixed behavior of negative-sensitive items in Bùlì can be explained by articulating an unary-NEG structure and syntax of reduplication.

3 Negative-Sensitive Items in Bùlì

3.1 Morphosyntax of Negative-sensitive Items in Bùlì

Before examining each diagnostic test in Bùlì, let us first detail morphosyntactic properties of negative-sensitive items in Bùlì (see Akanlig-Pare 2005; 2014). Negative-sensitive items in Bùlì come in two varieties, a form based on reduplication of a noun class (NC) pronoun *wa/di/ka/ku/bu* and a suffix *-i* (e.g. *wāā-(ī*

)wāā-ī 'anyone') (hereafter *i*-suffixed reduplicated noun class pronouns: Table 3) and one based on reduplication of an indefinite ordinary noun (e.g. *nur nur* 'anyone/any person') (hereafter reduplicated indefinite nominals: Table 4)[1]. In nominal reduplication, just as in all compounds, coda of the preposed stem is deleted and hence partial reduplication results.

Table 3: Negative-sensitive Items in Bùlì

NC	Wh	NSI	Universal/FC	Existential	Relativizer
wa	wà-nà	wāā(-ī) wāā-ī	wāā-ī mééna	wāā-ī	-wāā-ī
di	dì-nà	dīī(-ī) dīī-ī	dīī-ī mééna	dīī-ī	-dīī-ī
ka	kà-nà	kāā(-ī) kāā-ī	kāā-ī mééna	kāā-ī	-kāā-ī
ku	kù-nà	kūū(-ī) kūū-ī	kūū-ī mééna	kūū-ī	-kūū-ī
bu	bù-nà	būū(-ī) būū-ī	būū-ī mééna	būū-ī	-būū-ī

Table 4: Reduplicated Indefinite Nominals in Bùlì

	Indefinite	NSI
person	núŕ	núŕ núŕ
child	bíík	bíí bíík
hen	kpīāk	kpīā kpīāk
house	yéŕ	yéŕ yéŕ

Examples (3) illustrate the use of these expressions with negation.[2]

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[1] We assume that a long vowel is purely phonological, but it could be an independent morpheme with its own function. We also leave open the source of the mid-tones for these items, as independent noun class pronouns have low tones.

[2] The sentence-final particle *ā* (also realized as *yā* or *wā* phonetically) appears post-object position in negative and question sentences. But it never appears when the object is followed by an adjunct.

(i) Bùlì
   Mí àn nyǎ wāā(-ī) wāā-ī (*ā) dèlā (*ā).
   1sg neg see nc-i   here nc-i here sfp

   'I did not see anyone here.'

   We assume it is more like a conjunct/disjunct marker and not a negative particle of a bipartite negation structure, unlike Ewe (see Collins et al. 2017). See Section 4.

(3) Bùlì

    a.   Mí àn nyǎ wāā(-ī) wāā-ī ā.
          1SG NEG see NC-i   NC-i SFP
          'I did not see anyone.'

    b.   Mí àn nyà núr   núŕ   ā.
          1SG NEG see person person SFP
          'I did not see anyone.'

Each of the morphemes (*wa/di/ka/ku/bu*) in Table 3 is a noun class pronoun. This is illustrated in the following example with *wa*.[3]

(4) Bùlì
    Àtìm nyà   Àmòàk, àlēgè, mí àn   nyǎ wà.
    Atim see.PERF Amoak but   1SG NEG see NC
    'Atim saw Amoak, but I did not see him.'

Following Hiraiwa et al. (2017), we assume that actual (in)definiteness of noun class pronouns is marked by tone and that the suffix *-i* is for marking indefiniteness SOME. This makes sense because *-i* also appears in existential quantifiers and relativizers.

(5) Bùlì
    Mí nyá wāā-ī.
    1SG see NC-i
    'I saw someone.'

(6) Bùlì
    Àtìm nyà [nùrú-wāā-ī àlē dà   mángò lǎ].
    Atim see person-NC-i C   buy mango Dem
    'Atim saw the person who bought a mango.'

Reduplication is obligatory for negative-sensitive items (7a)–(7b). Without reduplication, *waa-i* functions as an existential quantifier that is not negative-sensitive (7c)–(7d).

(7) Bùlì

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[3] We leave it open whether the pronoun *wa* itself in (4) is a noun class pronoun or a noun class marker with a null pronoun [NCP *wa* [NP ∅]].

a. * Mí nyá wāā(-ī) wāā-ī.
    1SG see NC-i   NC-i
    'I saw someone.'

b. Mí àn   nyǎ wāā(-ī) wāā-ī ā.
    1SG NEG see NC-i   NC-i SFP
    'I din't see anyone.'

c. Mí nyá wāā-ī.
    1SG see someone
    'I saw someone.'

d. Mí àn   nyǎ wāā-ī   ā.
    1SG NEG see someone SFP
    'I didn't see someone/anyone.'

With this in mind, let us examine syntactic distribution of negative-sensitive items in Bùlì.[4]

3.2 Are Negative-Sensitive Items in Bùlì NCIs or NPIs?

Both *i*-suffixed reduplicated noun class pronouns and reduplicated indefinite nominals in Bùlì are negative-sensitive items because they cannot appear in positive declarative clauses. On the other hand, the fact that they can be licensed in questions indicate that they are so-called weak NPIs (van der Wouden 1997).

(8) Bùlì

a. Mí *(àn) nyǎ wāā(-ī) wāā-ī ā.
    1SG NEG see NC-i   NC-i SFP
    'I did not see anyone.'   (*Positive declaratives)

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[4] There is another form *bà bāā-ī*, which can only be used in plural noun class pronouns and expresses a partitive meaning 'some of X'.

(i) Bùlì
  a. Mí nyá bà/*wà bāā-ī.
      1SG see NG.PL   NC.PL-i
      'I saw some of them.'
  b. * Mí nyá wà/bà wāā-ī.
      1SG see NC   NC-i
      'I saw some of them.'

b. Fí   nyá wāā(-ī) wāā-ī â:?
2SG see   NC-i   NC-i   SFP
'Did you see anyone?'   (Question)

(9) Bùlì

a. Mí *(àn) nyà núŕ   núŕ   ā.
1SG NEG see person person SFP
'I did not see anyone.'   (*Positive declaratives)

b. Fí   nyá núŕ   núŕ   â:?
2SG see person person SFP
'Did you see anyone?'   (Question)

As expected, being weak NPIs, they cannot appear as fragment answer, in response to a question like *Who did you see?* or *Did you see anyone?*[5]

(10) Bùlì
* Wāā(-ī) wāā-ī (ā).
NC-i   NC-i   SFP
'No one.'   (*Fragment Answer)

(11) Bùlì
* Núŕ   núŕ   (ā).
person person SFP
'No one.'   (*Fragment Answer)

Finally, they can be licensed by a non-clausemate negation.

(12) Bùlì
Mí kàn pōlī/wēēnī [àyǐn mí nyá wāā(-ī) wāā-ī ā].
1SG NEG think/say C   1SG saw NC-i   NC-i   SFP
'I don't think/will not say that I saw anyone.'   (Long-distance licensing)

(13)   Bùlì

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[5] There are some speakers who allow for such fragment answers in Bùlì (Abdul-Razak Sulemana p.c.). Those speakers may be interpreting the NPIs in (10)–(11) as NCIs (see Section 4). They also tend to require the sentence-final particle *a* in fragment answers, while the first author and other speakers find fragment answers ungrammatical, irrespective of *a*, as (10–(11) show. We leave the issue for future research.

Mí kàn pōlī/wēēnī [àyǐn mí nyá núɍ   núɍ   ā].
1SG NEG think/say C   1SG saw person person SFP

'I don't think/will not say that I saw any person.'

(Long-distance licensing)

All of these diagnostics corroborate evidence that negative-sensitive items in Bùlì are weak NPIs. However, they also pattern with NCIs in that they can appear in subject position (followed by sentential negation).

(14) Bùlì
      Wāā(-ī) wāā-ī àn   chěng Wīāgā.
      NC-i   NC-i NEG go   Wiaga
      'No one went to Wiaga.'   (Pre-negative subject position)

(15) Bùlì
      Núɍ   núɍ   àn   chěng Wīāgā.
      person person NEG go   Wiaga
      'No one went to Wiaga.'   (Pre-negative subject position)

In the discussion below, we offer a theoretical analysis for the apparently mixed behaviors in the framework of Collins & Postal (2014). We focus on *i*-suffixed reduplicated noun class pronouns, as basically the same analysis is available for reduplicated indefinite nominals, too.

4 Syntax of Pre-Negative Subject NPIs and (Partial) Reduplication

Collins & Postal (2014) and Collins et al. (2017) propose that NPIs come in two varieties. One has a unary-NEG structure and the other has a binary-NEG structure.

(16) a. [[NEG1 SOME] NP]   (strong NPIs/NCIs)
      b. [[NEG1 [NEG2 SOME]] NP]   (weak NPIs)

They observe that *ke*-NPIs in Ewe are NCIs/strong NPIs because they cannot be licensed in questions or at long-distance. However, unlike *any*-NPIs in English, they can appear in subject position (with sentential negation).

(17) a. Ewe (Collins et al. 2017)

Ame   áɖéké mé-vá   nyě-aƒé-me   o.
person any   NEG1-come 1SG-house-inside NEG2

'Nobody came to my house.'   (Pre-negative subject position)

b. English (Collins et al. 2017)
* Anybody didn't come to my house.   (Pre-negative subject position)

They argue that the reason why the English sentence in (17b) is ungrammatical, is because it has the derivation in (18). NEG1 raises to sentential negation position out of the NPI, while the remnant NPI raises to subject position.

(18) [$_{DP2}$ [<NEG1> SOME] body] did NEG1 [$_{VP}$ come <DP2> to my house]

Here, the higher occurrence of NPI DP2 c-commands the raised copy of NEG1. Thus, they propose condition (19), which prohibits such a structural relation.

(19) The Remnant Raising Condition (Collins et al. 2017)
If M = [$_{DP}$ [$_D$<NEGx> SOME] NP], then no occurrence of M
c-commands an occurrence of NEGx.

In contrast, they propose that *ke* is a copy of the original NEG and argue that the Ewe example in (17a) does not violate (19) "since a copy NEG, cNEG1 rather than <NEG1> fills the original position of NEG1 in DP2. In effect, the copy NEG allows the structure to avoid a violation of (19), just as resumptive pronouns in certain English cases allow a structure to avoid a violation of island constraints." (Collins et al. 2017). The derivation of (17a) is given in (20).

(20) Ewe (Collins et al. 2017)

[Ame   áɖé-ké]   mé-vá   <DP2> nyě-aƒé-me   o.
person SOME-cNEG1 NEG1-come   1SG-house-inside NEG2

'Nobody came to my house.'   (Pre-negative subject position)

But their analysis is challenged by Bùlì. This is because there is no copy NEG, cNEG1 in the original position of NEG1 in DP2 that avoids a violation of (19).

(21) Bùlì

Wāā(-ī) wāā-ī àn   chěng Wīāgā. (=(14))
NC-i   NC-i NEG go   Wiaga

'No one went to Wiaga.'   (Pre-negative subject position)

Nevertheless, we argue that Collins et al's analysis, once we articulate substructures that reduplication targets in Bùlì, provides a principle account for the apparently mysterious behavior. To see this, first recall that NPIs in Bùlì are necessarily reduplicated.

(22) Bùlì
Mí àn nyǎ wāā(-ī) wāā-ī ā.
1SG NEG see NC-i NC-i SFP
'I did not see anyone.'

(23) Bùlì
Mí nyá wāā-ī.
1SG see NC-i
'I saw someone.'

Without reduplication, *NC-i* only has an existential quantifier reading. We assume the following structure for existential quantifiers such as 'somebody'. Bùlì is head-initial and NCP raises to the specifier of DP (see Hiraiwa et al. 2017 for relevant discussion on DP-internal word order).

(24) $[_{DP} [_{NCP} [_{NC}$ wāā$]] [_{D}$ -ī$]$ t$_{NCP}]$ (Existential quantifier)

This, in turn, suggests that reduplicated indefinite noun class pronouns in Bùlì contain an odd number of NEGs when they behave as an NCI, co-occurring with sentential negation, while they contain an even number of NEGs when they behave as a weak NPI. Suppose, then, that an unary-NEG structure can be articulated as in Table 5. Note that NEG structurally c-commands SOME. We assume that NEG is a null affix and undergoes affix-hopping to *waa*.

Table 5: A binary-NEG structure in Bùlì

10
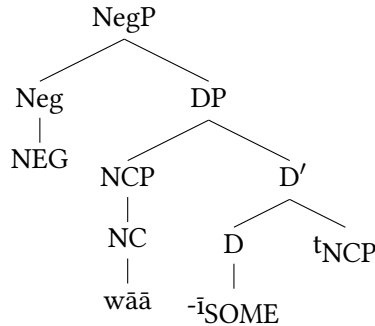
Now, suppose reduplication targets NCP before affix-hopping. Then we get the partially reduplicated structure in (25).

(25)   [[_{NCP} wāā] [_{NegP} NEG wāā -ī]]

If reduplication targets DP *before* affix-hopping, then we get the partially reduplicated structure in (26).

(26)   [[_{DP} wāā -ī] [_{NegP} NEG wāā -ī]]

Both (25) and (26) have an unary-NEG structure. This makes them an NCI and explains why they can appear in pre-negative subject position in Bùlì ((14)–(15)) This is because NEG is deeply embedded within the reduplicated indefinite noun class pronouns, just as such subject NPIs are grammatical in English (the data cited from Boeckx 2000: 362 and Bošković 2002: 179).

(27)   a.   [Pictures of anyone/*someone] did not seem [*t* to be available].
        b.   [Pictures of any linguist] seem to no psychologist [*t* to be pretty].

On the other hand, suppose that reduplication *after* affix-hopping of Neg to NC. Then we get partially reduplicated structure (28) or (29), depending on whether NCP or DP is targeted by reduplication.

(28)   [[_{NCP} wāā-NEG] [_{NegP} NEG wāā -ī]]

(29)   [[_{DP} wāā-NEG -ī] [_{NegP} NEG wāā -ī]]

As a result, both (28) and (29) have a binary-NEG structure. Assuming that the two NEGs cancel out each other (Collins et al. 2017, Watanabe 2004), they behave as weak NPIs. Thus, interaction of reduplication and affix-hopping of NEG correctly explains why NPIs in Bùlì can be licensed by questions ((8)–(9)) and non-clause-mate negation ((12)–(13)), but are unable to occur as fragment answer ((10)–(11)).

One piece of supporting evidence that *i*-suffixed reduplicated noun class pronouns have a binary-NEG structure comes from the fact that they can be replaced by an existential quantifier *waa-i*.

(30)   Bùlì
        Fí   nyá wāā-ī â:?
        2SG see NC-i   SFP
        'Did you see anyone?'   (Question)

(31) Bùlì
    Mí kàn pōlī/wēēnī àyǐn mí nyá wāā(-ī) wāā-ī ā.
    1SG NEG think/say C 1SG saw NC-i NC-i SFP
    'I don't think/will not say that I saw anyone.'

                    (Long-distance licensing)

(32) Bùlì
    Wāā(-ī) wāā-ī àn chěng Wīāgā.
    NC-i NC-i NEG go Wiaga
    'No one went to Wiaga.'   (Pre-negative subject position)

5 Parameter

Collins et al. (2017) propose a parameter that allows/disallows binary-NEG (Type 2) nominal NPIs. English allows, but Ewe doesn't allow, a binary-NEG structure. They also suggest an implicational relation that a language having binary-NEG nominal NPIs will also have unary-NEG nominal NPIs.

Bùlì allows an unary-NEG structure underlyingly, and a binary-NEG structure is derived through reduplication by copying NEG. Thus, our analysis provides support for the implicational relation in that a binary-NEG structure is structurally based on a unary-NEG structure. We leave it for future research to investigate whether there are other types of NPIs in Bùlì. Reduplication is not an unfamiliar strategy for forming negative-sensitive items cross-linguistically. It is observed in Vietnamese, Ainu, Yoruba, Malagasy, etc. (Haspelmath 1997). According to Haspelmath (1997: 179), however, no languages that use partial reduplication were in his sample. Bùlì, in this respect, offers a case of NPIs with partial reduplication.

One remaining important question is what reduplication is employed for. For one thing, reduplication is required in order to obtain two copies of NEG required for weak NPIs. From this viewpoint, it is important to point out that universal quantifiers/free choice items in Bùlì do not rely on reduplication (see Table 4). For another thing, Haspelmath (1997) conjectures that reduplication is used to express distributive plurality. We concur with his conjecture. In Bùlì, the form *waa-i* consists of a singular noun class pronoun and an indefiniteness marker. This is necessarily interpreted as singular. But NPIs are often considered to yield distributivity. It is not unnatural to think that reduplication is used (as a means of domain widening (Kadmon & Landman 1993) to yield required distributivity.

To summarize, we have proposed the following ingredients that compose NPIs in Bùlì.

(33)   Ingredients of NPIs in Bùlì

    a.   Indefiniteness SOME: -*i* (with noun class pronouns) or -∅ (with ordinary nouns)

    b.   Negation NEG: -∅

    c.   Neg-copying: reduplication

    d.   Distributivity/Pluraity: reduplication

6 Conclusion

Reduplicated indefinite noun class pronouns and reduplicated nominals in Bùlì behave as NPIs in that they can appear in non-negative contexts and can be licensed at a long-distance. On the other hand, they behave as if they were NCIs in that they can appear in pre-negative subject position. We have argued that the mixed behavior can be explained if we articulate an unary/binary-NEG structure proposed in Collins & Postal (2014) and Collins et al. (2017) and understand which part of the structure reduplication targets.

There are remaining questions that must be answered in future studies. First, the existential quantifier *wāā-ī* cannot come in subject position in the absence of sentential negation (cf. (7c)). Instead, it is necessary to nominalize *waa-i* by prefixing *a-*.

(34)   Bùlì

    a.   Wāā-ī *(àn) chěng Wīāgā.
        NC-i   NEG   go   Wiaga
        'Someone didn't go to Wiaga/No one went to Wiaga.'

    b.   Ā-wāā-ī chèng Wīāgā.
        HM-NC-i go   Wiaga
        'Someone went to Wiaga.'

It is also interesting and puzzling that the sentence-final particle *a* is missing when the NPI appears in subject position. We don't have a good account for these at this moment.

Second, NPIs in Bùlì, while they can be licensed in questions, are not licensed in conditionals (see Collins et al. 2017 for a similar observation in Ewe).

(35) Bùlì
  * Fì   dàn   nyà wāā(-ī) wāā-ī, wēēnī àtè ǹ   wōm.
    2sg cond see nc-i   nc-i   tell   C 1sg hear
  'If you see anyone, please let me know '   (Conditional)

In contrast, an existential quantifier *waa-i* can also appear in conditionals. This discrepancy needs to be explained, too.

(36) Bùlì
  Fì   dàn   nyà wāā-ī, wēēnī àtè ǹ   wōm.
  2sg cond see nc-i   tell   C 1sg hear
  'If you see anyone, please let me know '   (Conditional)

Abbreviations

c=complementizer; fc=free choice; hm=human; nc=noun class pronoun; NEG=negation; perf=perfective; pl=plural; sfp=sentence-final particle; sg=singular

Acknowledgements

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