Unifying Dependent and Independent Numeral Reduplication in Newar

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Abstract

This paper presents new fieldwork data on reduplicated numerals in Newar (a.k.a. Nepal Bhasa), a Sino-Tibetan language with a rich numeral classifier system spoken primarily in the Kathmandu Valley region of Nepal. As in Hungarian (Farkas, 1997), Telugu (Balusu, 2006), and Kaqchikel (Henderson, 2014), among many other languages (Gil, 1982), reduplicated numerals in Newar signal distributivity, functioning as *dependent indefinites*. What sets the Newar case apart is that reduplication of the numeral 'one' can additionally be interpreted as a universal quantifier *without* a licensor. These *independent-universal* uses constitute an apparent violation of Gil's conjecture that reduplicated distributivity markers always mark the share rather than the key in a distributive relation. This paper offers a unified analysis of both uses, building on Henderson's (2014) Dynamic Plural Logic and incorporating the anaphoric co-indexing of Kuhn (2017). The key claim is that independent-universal uses arise when the share variable and the key variable are co-indexed, so that constraints normally imposed only on the key—atomicity and maximality—are inherited by the share, producing a universal interpretation exhausting the nominal domain.

1 Introduction

Reduplicated numerals in a genetically diverse set of languages have attracted attention for their intriguing combinatorics. In the Hungarian example (1), for example, the reduplicated numeral *egy-egy* 'one-one' in depends on a universal quantifier in subject position:

(1) Minden gyerek olvasott egy-egy / hét-hét könyvet.
every child read.PAST 1-1 7-7 book-ACC
'Each child read one/seven books.'
(Farkas, 1997)

Farkas (1997) observes that the indefinite "must have non-rigid reference," i.e., it must be within the scope of the universal. This is the sense in which such items are called **dependent indefinites**: their interpretation depends on a co-varying licensor.

In Kaqchikel (Henderson, 2014), reduplicated numerals likewise require licensing, and can be licensed by a plural or universal quantifier in the sentence, as in (2).

(2) K-onojel x-∅-ki-kano-j ju-jun wuj
E3P-all CP-A3S-E3P-search-SS one-one book
'All of them looked for a book [each].'
Example (3), with a first person singular rather than universal subject, is not acceptable:

(3) *X-e'-in-chäp ox-ox wäy
CP-A3P-E1S-handle three-three tortilla
(Intended: 'I handled groups of three tortillas.')

A pluractional morpheme on the verb can rescue this sentence, though; pluractional morphemes can also serve to license dependent indefinites in Kaqchikel.

(4) X-e'-in-tij-la ox-ox wäy
CP-A3P-E1S-eat-PLACT three-three tortilla
'I kept eating the tortillas in groups of three.'

In Telugu (Balusu, 2006), event-key readings are available without any overt pluractional morpheme. The reduplicated numeral in (5) admits a *participant-key* reading (each kid saw two monkeys), a *temporal-key* reading (each time), and a *spatial-key* reading (in each location):

(5) ii pilla-lu renDu renDu kootu-lu-ni cuus-ee-ru
these kid-PL 2 2 monkey-PL-ACC see-PAST-3PL
'These kids each / each time / in each location saw two monkeys.'

The latter two are both called *event-key* readings. Languages apparently differ as to whether event-key readings are available for reduplicated numerals in the absence of overt pluractional marking.

The present paper contributes to this emerging typology of reduplicated numerals using data from Newar, a Sino-Tibetan language of Nepal. A hint about their semantics comes from this dictionary entry for the numeral cha 'one':

(6) **छ cha,** num. one (with clf., meas.) e.g.: cha-gū one thing, cha-mha (var. chama) one person, cha-cā one night, cha-tā one kind; **छगू छगू cha-gū cha-gū,** each, for each (with inan. n.); **छम्ह छम्ह chamha chamha,** id. (with n.anim., n. hon.) (Kölver & Shresthacarya, 1994)

My fieldwork data confirms that Newar exhibits not only the familiar dependent-indefinite uses, but also exhibits what I call **independent-universal** ('each') uses. In the latter cases—restricted to the numeral 'one'—the reduplicated numeral does not require a licensor (and is in this sense 'independent'), and also carries a universal implication. Making use of Dynamic Plural Logic (van den Berg, 1996), this paper offers a way to unify the two uses, so that the independent-universal reading arises through co-indexing of the share and key variables.

2 Background

2.1 The language

Newar (a.k.a. Nepal Bhasa or Newari) is a Sino-Tibetan language spoken primarily in the Kathmandu Valley region of Nepal. It is one of five Sino-Tibetan languages—alongside

Tamang, Gurung, Magar, and Limbu—that are recommended for official use at the province level in Nepal, along with six other regional languages that are Indo-Aryan like the national language Nepali (also known as Gorkhali). See Figure 1. Geographically, Newar is closely associated with the Kathmandu Valley; the Newar people are historically responsible for the iconic architecture in the cities of this region. Newar is an SOV language with a rich numeral classifier system; plural marking is generally optional and restricted to animate nouns. The language is commonly written in the Devanagari script.[1]

Figure 1: Minority languages recommended for official use at the province level in Nepal.

2.2 Fieldwork methodology

The data were elicited in August–September 2025 through six approximately two-hour sessions in the Kathmandu Valley region with native Newar speakers. Sessions were conducted with two speakers present simultaneously; this methodological choice enabled consultants to have a conversation and synthesize their views.

The fieldwork was carried out with the indispensable assistance of Dipak Tuladhar, language activist and founder of the Modern Newa English School in Kathmandu, who hosted the project, made introductions, assisted with translation, and contributed linguistic judgments.[2] Most other consultants were teachers or professors selected partly for their ability to write Newar in Devanagari.

[1]The romanization convention I adopt follows IAST, with two exceptions: the chandrabindu (nasalization of short vowels) is represented as *M* (e.g., छँ 'house' → *cheM*), and the anusvara as *ṃ*.

[2]In addition to the Modern Newa English School, Dipak Tuladhar also founded nine more pre-schools for Newar kids in the surrounding areas, and also very successfully lobbied municipal leaders in many areas throughout Nepal for a three-language policy (English, Nepali, and local language) that would help to

Sessions used written stimuli presented on a shared editable screen, allowing consultants to type corrections and alternative forms in real time. Semantic judgments were elicited by pairing sentences with images and asking 'Does this sentence match the picture?'; acceptability judgments via 'Is this a good sentence in Newar?' The approach moved from web-sourced attested examples toward systematically constructed variants.

3 Numeral reduplication in Newar: Two uses

3.1 Dependent indefinite uses

3.1.1 Participant-key uses

In ordinary distributive configurations, reduplicated numerals in Newar behave as dependent indefinites: they covary with a plural licensor. In (7), the reduplicated numeral *svamha svamha* '3-CLF.ANIM 3-CLF.ANIM' introduces the share, covarying with the speaker's sons (the implicit participant key):

(7) जि काय्पिसं स्वम्ह स्वम्ह न्याचात लात ।
ji kāy-pi-saṃ svamha svamha nyā-cā-ta lāta .
1SG son-PL-ERG 3-CLF 3-CLF fish-DIM-PL caught
'My sons caught three fish each.'

With a universal licensor (*phukka* 'every'), distributive concord obtains naturally:

(8) फुक्क मिसामस्तय्सं निम्ह निम्ह खिचातय्त म्व:ल्हुकल ।
phukka misāmas-ta-ysaṃ ni-mha ni-mha khicā-ta-yta mva:lhukala .
every girl-PL-ERG 2-CLF 2-CLF dog-PL-to bathed
'Every girl bathed two dogs each.'

(9) फुक्क मिसामस्तय्सं छम्ह छम्ह खिचायात म्व:ल्हुकल ।
phukka misāmas-ta-ysaṃ cha-mha cha-mha khicā-yāta mva:lhukala .
every girl-PL-ERG 1-CLF 1-CLF dog-to bathed
'Every girl bathed one dog each.'

Note the number agreement: in (8), the plural marker appears on the object noun 'dog', while in (9) it does not, tracking the numeral of the share.

3.1.2 Implicit participant key

Reduplicated numerals can also appear with an implicit participant key that is recoverable from context. The following example from Hale & Shrestha (2006, p. 95) contains no overt universal licensor; the key is a contextually salient group (the speakers):

preserve not only his own language, but also other minority languages of the country. To this end, he has developed curriculum materials not only for his own Nepal Bhasa but also curriculum materials for several other minority languages, in collaboration with language activists for other languages of Nepal.

(10) थन चिचिखागु सां निखा निखा छेँ दु ।
thana ci-ci-khā-gu sāṃ ni-khā ni-khā cheM du .
here small-small-CLF-AGR though 2-CLF 2-CLF house be .
'Even if they are small, [we] have two houses each here.'

3.1.3 X-by-X uses

Reduplicated numerals in Newar need not be accompanied by a nominal; they can function adverbially. They do so unambiguously when accompanied by the postposition *yānā* 'by', yielding an 'X-by-X' reading. These are naturally characterized as event-key readings:

(11) छम्ह छम्ह याना दुने वा
cha-mha cha-mha yānā dune vā
1-CLF 1-CLF by in come
'They came in one by one.'

A speaker commented: "Not all together. One, and one. Small door, haha." Higher numerals are also possible:

(12) निम्ह निम्ह याना दुने वा
ni-mha ni-mha yānā dune vā
2-CLF 2-CLF by in come
'They came in two by two.'

The postposition *yānā* is optional in some cases but clearly marks these as adverbial uses.

Example (13) shows a reduplicated numeral with an overt universal and the postposition, meaning 'distribute one job to each person':

(13) सकसितं छगू छगू *(यानाः) ज्या इना बियादिसँ ।
saka-sitaṃ cha-gū cha-gū (yānāḥ) jyā inā biyādisaM .
every-to 1-CLF 1-CLF (by) work share/distribute
'Distribute one job to each person.'

Replacing the reduplicated numeral with a single non-reduplicated numeral while keeping *yānāḥ* is unacceptable: **saka-sitaṃ cha-gū yānāḥ jyā inā biyādisaM* is not a good sentence of Newar. We can draw from this that *yānāḥ* creates a context where reduplication is obligatory. Removing *yānāḥ* along with the reduplication does lead to an acceptable sentence, though:

(14) सकसितं छगू ज्या इना बियादिसँ ।
saka-sitaṃ cha-gū jyā inā biyādisaM .
every-to 1-CLF work share/distribute
'Distribute one job to each person.'

Here the non-reduplicated numeral presumably adheres to the noun.

3.1.4 Are reduplicated numerals adnominal?

The availability of adverbial X-by-X uses raises the question whether reduplicated numerals can also be adnominal. Two pieces of evidence suggest they can.

Word order. Like ordinary numerals, reduplicated numerals can appear either before or after the noun:

(15) a. सकसितं निगू निगू ज्या इना बियादिसँ ।
sakasitaṃ nigū nigū jyā ināṃ biyādisaṃ .
everyone 2-CLF 2-CLF work share give
'Give everyone two jobs each.'

b. सकसितं ज्या निगू निगू इना बियादिसँ ।
sakasitaṃ jyā nigū nigū ināṃ biyādisaṃ .
everyone work 2-CLF 2-CLF share give
(Post-nominal: "correct, not that natural, but correct.")

Non-reduplicated numerals in Newar also permit this post-nominal order (focus-related), so reduplicated numerals pattern with ordinary numerals in this respect.

Position relative to the subject. When the participant key is the subject, the reduplicated numeral associated with it cannot appear in the canonical pre-VP adverb position. In (16), placing *cha-mha cha-mha* between the subject and the verb is interpreted as an event-key (one-by-one) reading rather than a participant-key (each-brother) reading:

(16) ज्हिमि दाजुपिंन्सं छम्ह छम्ह जित शःताःहल ।
jhimi dājupiṃnsaṃ cha-mha cha-mha jita śaṭtāḥhala .
my brothers 1-CLF 1-CLF me-to called
(Comment: "You mean one by one calling? That's not what this means.")

Placing the reduplicated numeral *before* a non-possessed noun phrase—in a position where it can be adnominal to it—yields the intended participant-key reading:

(17) छम्ह छम्ह दाजुपिंन्सं जित शःताःहल ।
cha-mha cha-mha dājupiṃnsaṃ jita śaṭtāḥhala .
1-CLF 1-CLF brothers me-to called
(Comment: "This one is good. One calls, another calls. One by one.")

These facts, perhaps along with the fact that the dictionary entry for 'one' mentions that the reduplicated structure is accompanied by a noun, suggest that for subject-associated reduplicated numerals, an adnominal structure is required for the participant-key reading.

3.2 Independent universal uses

Alongside the familiar dependent-indefinite uses, Newar exhibits a strikingly different use in which no licensor is present and the reduplicated numeral is interpreted as a *universal quantifier* over the noun's domain. This use is restricted to the numeral 'one'.

Example (18) comes from an article about the development of the printing press; the reduplicated numeral translates naturally as 'each':

(18) छपं-छपं सफू ल्ह्यय्त अप्वः ई काइगु ।
chapaṃ-chapaṃ saphū lhyayta apvaḥ ī kāigu .
1.CLF-1.CLF book copy-INF much time take
'It takes much time to copy each book.'

Example (19) comes from an article on personal essay writing, characterizing the extreme intimacy with which the writer describes their inner world:

(19) च्वमिं छगू छगू सत्य खँ च्वइ ।
cvamiṃ cha-gū cha-gū satya khaM cvi .
writer 1-CLF 1-CLF true matter write
'The writer will write each truth.'

Example (20) is an attested sentence about learning to write, where a student writes each letter of the alphabet:

(20) दकले न्हापां छगः छगः आखः च्वयेगु ।
dakale nhāpāṃ cha-gaḥ cha-gaḥ ākhaḥ cvayegu .
first of all 1-CLF 1-CLF letter write
'First, write each letter.'

The post-nominal order is also acceptable here:

(21) दकले न्हापां आखः छगः छगः च्वयेगु ।
dakale nhāpāṃ ākhaḥ cha-gaḥ cha-gaḥ cvayegu .
first of all letter 1-CLF 1-CLF write

Hence these appear to be adnominal uses.

Such uses can also be found in subject position, even with stative predicates like 'be correct':

(22) छगः छगः आखः मिले-जु ।
cha-gaḥ cha-gaḥ ākhaḥ mile-ju .
1-CLF 1-CLF letter good-be
'Each letter is correct.'

Asked if (22) was possible in Newar, Dipak Tuladhar responded, "Yes, that's possible," and added: "More particularly going." In other words, this sentence conveys the idea of an evaluation process that goes letter by letter.

3.2.1 Restriction to numeral 'one'

Unlike dependent-indefinite uses, independent-universal uses do not allow substitution of 'one' by higher numerals. Compare (23) to (19), and (24) to (22).

(23) *च्वमिं निगू निगू सत्य खँ च्वइ ।
cvamiṃ ni-gū ni-gū satya khaM cvi .
writer 2-CLF 2-CLF true matter write
(Intended: 'The writer will write each (pair of) truths.')

(24) *निगः निगः आखः मिले-जु ।
ni-gaḥ ni-gaḥ ākhaḥ mile-ju .
2-CLF 2-CLF letter good-be
(Intended: 'Each (pair of) letters is correct.')

The analysis in Section 4 aims to capture the restriction of the independent-universal use to the numeral 'one'.

3.2.2 Typological note

The independent-universal use of reduplicated 'one' is not unique to Newar. The Atlas of Pidgin and Creole Language Structures (APiCS Online, Ch. 34) documents 'one-one' meaning 'every' in several languages, including Angolar, Tok Pisin, and Sango. Justin Royer (p.c.) reports that many Mayan languages exhibit a similar construction. A possibly related phenomenon is the reduplicated singular nominal in Mandinka (Cisse & Coppock, 2023), where *musu-woo-musu* 'woman-DIST-woman' universally quantifies over women:

(25) Musu-woo-musu ye kini taboo noo le
woman-DIST-woman PRED rice cooking know PERF
'Each woman knows how to cook rice.'

These parallels suggest a broader pattern in which morphological reduplication of 'one' (or singular nominals) can give rise to universal readings.

3.3 Summary: Two uses

The two uses of reduplicated numerals in Newar are summarized in Table 1.

Dependent indefinite	**Independent universal**
Requires a plural licensor	Grammatically independent
Understood as **indefinite**	Understood as **universal**
'one' **can** be replaced by 'two'	'one' **cannot** be replaced by 'two'

Table 1: Two uses of reduplicated numerals in Newar

4 Analysis

4.1 Main idea

The proposed analysis rests on the observation that a reduplicated numeral involves two variables: a **share** variable y and a **key** variable x. In dependent-indefinite uses, these are distinct but anaphorically linked: y is licensed by x, which is provided by the external licensor. In independent-universal uses, the two variables are co-indexed ($x = y$).

- Dependent: Every^{x} girl bathed two-two$^{y}_{x}$ dogs.

- Independent: One-one$^{x}_{x}$ letter is correct.

The co-indexing causes constraints normally imposed only on the key (universality via maximization; atomicity) to be inherited by the share, and the domain of quantification is determined by the nominal restriction that the share would ordinarily receive.

4.2 Framework: Dynamic Plural Logic

Two distinct levels of cardinality are at play in the semantics of reduplicated numerals. In a case like *Every girl bathed one-one dog*, there's a smaller, inner level involving only one dog, or one dog at a time. So there is a sense in which the dogs being described are singular. Yet at a higher, or outer level, there are multiple dogs involved.

This type of dual-cardinality phenomenon can be modeled in a framework where truth is relative not to single assignment functions, but sets of assignments ("matrices"). Having multiple assignment functions creates two levels at which cardinality can be evaluated: **domain cardinality** and **evaluation-cardinality**. For instance, x is **domain-singular** if, in every assignment in the matrix, x maps to an atom. It is possible to be domain-singular but evaluation-plural; x is **evaluation-plural** if the set of values x takes across all assignments has cardinality > 1.

For illustration, consider three types of assignment set for a variable x:

x	
$student_1$	← evaluation-plural, domain-singular
$student_2$	

x	
$student_1 \oplus student_2$	← evaluation-singular, domain-plural

x	
$student_1$	← evaluation-singular, domain-singular
$student_1$	

In the first case, x is evaluation-plural because it takes on two values across the two assignments, but it is domain-singular, because at any given assignment, the value it takes on is atomic. In the second case, x is mapped to a plurality of individuals within a single assignment, and hence is domain-plural, but it is evaluation-singular because there is only one value that it takes on overall. Finally, the third example illustrates a case where x is both domain-singular and evaluation-singular, as there is only one value total that x takes on over the course of its series of evaluations, and that value is always atomic.

Dynamic Plural Logic (DPlL), due originally to van den Berg (1996), is a framework in which truth is relative to sets of assignments. Following Henderson (2014), who builds on Brasoveanu & Farkas (2011), I use it here to model the meanings of sentences with reduplicated numerals. According to Henderson (2014), *Every^{x} student hugged one-one^{y} dog*, is true relative to a set of assignments H like this:

$R(x_1, \ldots, x_n)$	R holds of $x_1, \ldots, x_n$ in every row
$[x]$	introduces x by random assignment
$\mathsf{one}(x)$	x is atomic in every row (domain-singular)
$\mathsf{two}(x)$	x contains exactly 2 atoms in every row
$x > 1$	x takes more than 1 distinct value across rows (eval.-plural)
$\delta(\phi)$	distributivity: evaluates ϕ row by row
$\overline{\phi}$	post-supposition: delays evaluation of ϕ
$\mathsf{max}(x)$	eliminates matrices with non-maximal coverage for x

Table 2: Formal devices used in the analysis

$$H = \begin{array}{|c|c|c|} \hline x & y & e \\ \hline student_1 & dog_1 & hug_1 \\ \hline student_2 & dog_2 & hug_2 \\ \hline student_3 & dog_3 & hug_3 \\ \hline \end{array}$$

Here, y (the 'dog' variable) is domain-singular, but evaluation-plural, as required by *one-one*^{y}.

The formal devices I make use of are summarized informally in Table 2; see Henderson 2014 for the formal definitions of all but max, which is defined slightly differently here. Rather than taking a scope formula, as in $\mathsf{max}^x(\phi)$, it simply maximizes with respect to the full set of constraints that have accumulated on x so far. My definition of $\mathsf{max}(x)$ is as follows:

- **Definition: Maximization**
  $\langle G, H \rangle \models \mathsf{max}(x)$ iff
  - $H(x) \subseteq G(x)$, and
  - there is no H' with $H'(x) \subseteq G(x)$ and $H(x) \subsetneq H'(x)$,

where $H(x) = \{h(x) : h \in H\}$. In plain terms: H covers as many distinct values of x as possible (relative to G).

In a small departure from Henderson (2014), I adopt the assumption from Kuhn (2017) that reduplicated numerals are anaphorically linked to their licensor. This assumption is motivated by the fact that, as Kuhn (2017) shows, ASL overtly represents the dependency between a dependent indefinite and its licensor via spatial co-indexing. The dependency will therefore be modelled as a formal link between the share variable and the key variable, written $n\text{-}n^y_x$, where x is the key and y is the share.

4.3 General schema

I propose the following translation schema for a reduplicated numeral $n\text{-}n^y_x$ followed by a noun ϕ in the context of a scope formula ψ:

- **Lexical entry for reduplicated numerals**
  $[n\text{-}n^{y}_{x}\ \phi][\psi]\ \rightsquigarrow$
  $[y]\ \wedge\ \phi(y)\ \wedge\ n(y)\ \wedge\ \overline{y > 1}$
  $\wedge\ \mathsf{one}(x)\ \wedge\ \mathsf{max}(x)$
  $\wedge\ \psi$

In words: the share variable y is introduced, restricted by the nominal predicate ϕ, and required to have domain cardinality n; a post-supposition requires y to be evaluation-plural. Separately, the key variable x is required to be domain-singular (atomicity) and is maximized.

The critical consequence is:

- When $x \neq y$ (dependent-indefinite): $\mathsf{max}(x)$ is vacuous if x is already being managed by an external universal or distributivity operator. The share picks up its nominal restriction from ϕ while covarying with the key.
- When $x = y$ (independent-universal): atomicity and maximization apply to the same variable that received its nominal restriction from ϕ. The result is a universal quantifier exhausting the ϕ-domain.

4.4 Worked examples

4.4.1 Dependent indefinite: indefinite plural licensor

Three^{x} *students saw two-two*$^{y}_{x}$ *zebras*:

$[x] \wedge \mathsf{student}(x) \wedge |x| = 3$
$\wedge\ [y] \wedge \mathsf{zebra}(y) \wedge \mathsf{two}(y) \wedge \overline{y > 1}$
$\wedge\ \mathsf{one}(x) \wedge \mathsf{max}(x)$ (max vacuous)
$\wedge\ \mathsf{see}(x, y)$

$\Rightarrow$

x	y
$student_1$	$zebra_1 \oplus zebra_2$
$student_2$	$zebra_3 \oplus zebra_4$
$student_3$	$zebra_5 \oplus zebra_6$

Here y is domain-plural (pairs of zebras) and evaluation-plural (different pairs for different students), satisfying the post-supposition.

4.4.2 Dependent indefinite: universal licensor

Every^{x} *student saw two-two*$^{y}_{x}$ *zebras*:

$[x] \wedge \mathsf{student}(x) \wedge \mathsf{max}(x)$
$\wedge\ \delta\big([y] \wedge \mathsf{zebra}(y) \wedge \mathsf{two}(y) \wedge \overline{y > 1}$
$\quad \wedge\ \mathsf{one}(x) \wedge \mathsf{max}(x)\}$ (both vacuous inside δ)
$\quad \wedge\ \mathsf{see}(x, y)\big)$

The distributivity operator δ splits the matrix row by row, evaluates the scope formula for each individual student, and collects the resulting rows. The post-supposition then checks that y is evaluation-plural across all rows.

4.4.3 Independent universal

One-one$^{x}_{x}$ *letter is correct* (here $x = y$):

$[x] \wedge \mathsf{letter}(x) \wedge \mathsf{one}(x) \wedge \overline{x > 1}$
$\wedge\ \mathsf{one}(x) \wedge \mathsf{max}(x)$ (max is NOT vacuous!)
$\wedge\ \mathsf{correct}(x)$

$\Rightarrow$

x
$letter_1$
$letter_2$
$letter_3$
$\vdots$

Maximization requires that every letter appear in the matrix. Domain-singularity (from $\mathsf{one}(x)$) requires each row to contain exactly one letter. The result: one letter per row, all letters represented. The scope formula applies the predicate 'correct' to x in every row, yielding 'every letter is correct.'

4.4.4 Why 'two-two' cannot be independent-universal

We can now derive the result that reduplicated numerals greater than one do not have independent-universal uses, based on a clash with the atomicity requirement imposed on the key variable.

**Two-two*$^{x}_{x}$ *letter is correct* ($x = y$):

$[x] \wedge \mathsf{letter}(x) \wedge \mathsf{two}(x) \wedge \overline{x > 1}$
$\wedge\ \mathsf{one}(x) \wedge \mathsf{max}(x)$ **(clash!)**

When $x = y$, the nominal cardinality predicate $\mathsf{two}(x)$ (requiring two atoms per row) directly conflicts with the atomicity requirement $\mathsf{one}(x)$ from the key. The conjunction is necessarily false, predicting that the sentence is unacceptable—as observed in (24). This result generalizes: for any numeral $n > 1$, co-indexing x and y produces a clash. The independent-universal use is therefore structurally restricted to the numeral 'one.'

5 Classifiers

A complication that does not arise in the Hungarian or Telugu cases is that Newar numerals obligatorily carry classifiers, and these classifiers are reduplicated *together with* the numeral: the pattern is [num-cl] [num-cl] noun (e.g., *cha-mha cha-mha khicā* 'one-CLF.ANIM one-CLF.ANIM dog'), not *[num] [num]-cl noun. This raises questions both about the syntax of numeral-classifier constructions and about how classifiers integrate into the analysis above.

5.1 Krifka vs. Chierchia syntax

Two competing syntactic structures have been proposed for numeral-classifier constructions (Chierchia, 1998; Krifka, 1989):

Under the Chierchia syntax, the classifier and noun form a constituent to the exclusion of the numeral. Under the Krifka syntax, the numeral and classifier form a constituent.

For Chol, Bale et al. (2019) advocate Krifka-syntax ([num clf] noun) on several grounds, including that numeral+classifier constituents can be coordinated:

(26) cha'-tyikil ux-tyikil kixtyañu (Chol)
two-CLF three-CLF person
'few people'

Dékány (2024) offers rebuttals to each of their arguments. In the case of coordination, she pointing to the possibility of an analysis with Chierchia-syntax (num [clf noun]) with ellipsis of *kixtyañu* 'person'. Indeed, she puts forth the bold proposal that the Chierchia syntax is in fact universal. I believe that Newar provides a clear case of a language with Krifka-like constituency.

5.2 Arguments for Krifka syntax in Newar

Argument 1: Reduplication constituency. The first argument in favor of a Krifka-like syntax (or morphosyntax) in Newar is based on the reduplication construction itself. The classifier is reduplicated as a unit *with* the numeral, not separately. This is a classic constituency test: if [num cl] forms a constituent, its reduplication as a block is expected.

A rebuttal in the style of Dékány (2024) would not be applicable here. The Chierchia alternative would require ellipsis of the noun in the first conjunct—a pattern without any independent motivation in Newar. The putatively elided noun cannot be made overt; compare (7) to (27).

(27) *जि काय्पिसं स्वम्ह न्या स्वम्ह न्या लात ।
ji kāypisaṃ svamha nyā svamha nyā lāta .
1sg son-pl-erg 3-clf fish 3-clf fish caught

Argument 2: Morphological irregularity. For most classifiers, the numeral 'one' (*cha-*) precedes the classifier: *cha-ghau* 'one hour,' *cha-nhu* 'one day,' and so on. However, certain classifier-numeral combinations with 'one' invert the order:[3]

Classifier	Regular 'two', 'three'	Irregular 'one'
ला (*lā*) 'month'	*ni-lā, sva-lā, …*	*lā-chi* (not **cha-lā*)
दँ (*daṃ*) 'year'	*ni-daṃ, sva-daṃ, …*	*daṃ-chi* (not **cha-daṃ*)

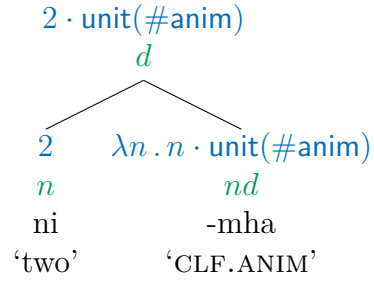
Lexical blocking of this kind is a signature of morphological constituency: the [num cl] complex is a word in a morphological paradigm. (Not to mention the orthography, which does not include a space between the numeral and the classifier.) The classifier is by all appearances a suffix that adheres to the numeral, in accordance with Krifka syntax.

[3]This information is based on the Newar language materials developed by Dipak Tuladhar for use in pre-school classrooms, and confirmed through speaker interviews.

5.3 Compositional semantics of the classifier

Under the Krifka syntax, I analyze classifiers as suffixes of type $\langle n, d\rangle$ that combine with a numeral to yield a degree:

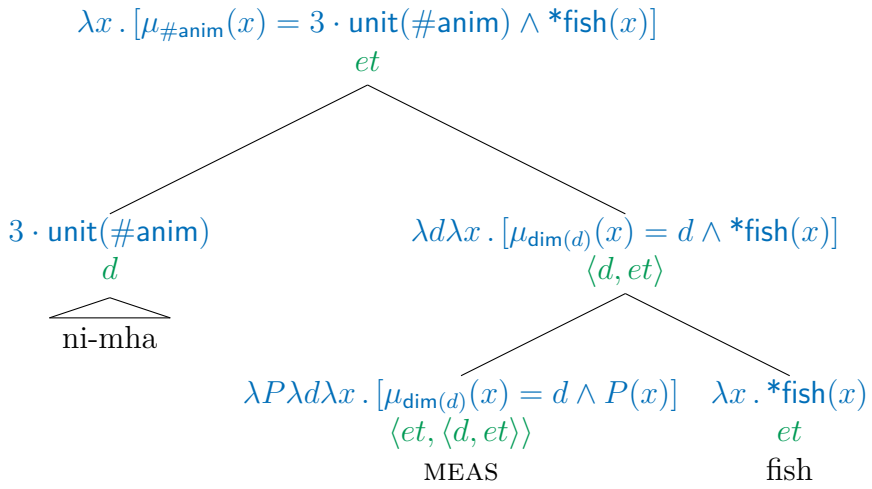
(28)



Following Coppock (2022), I assume a dimension-centric quantity calculus (Raposo, 2018, 2019) enriched by a set of cardinality dimensions. $\#\mathsf{anim}$ is the cardinality dimension counting animate individuals. $\mathsf{unit}(D)$ is the unit quantity for dimension D. A sortal classifier denotes the unit quantity for the corresponding cardinality dimension. This quantity can be multiplied by the scalar quantity denoted by the numeral to produce another degree of the same dimension.

The classifier-numeral complex then combines with the noun via a MEAS head (Coppock, 2022):

(29)



where μ_D is the 'canonical measure' for dimension D.

Incorporating classifiers into the DPlL analysis requires additionally relativizing the domain-cardinality predicate (e.g., $\mathsf{two}(y)$) to the specific classifier employed, so that the cardinality is counted along the relevant dimension rather than an absolute count of atoms. This extension should be straightforward but I set it aside for future work.

6 Conclusion

6.1 Summary

This paper has documented two uses of reduplicated numerals in Newar and argued for a unified analysis in Dynamic Plural Logic:

- **Dependent-indefinite uses**: The reduplicated numeral requires a plural or universal licensor, covaries with it, and can involve any numeral. The share variable y and key variable x are distinct but anaphorically linked (n-n^y_x). Atomicity and maximization on x are vacuous when x is managed by an external operator.
- **Independent-universal uses**: No licensor is required. The share and key are co-indexed (n-n^x_x, where $x = y$). Maximization is no longer vacuous and exhausts the ϕ-domain, producing a universal interpretation.
- **Restriction to 'one'**: When $x = y$, the domain-cardinality predicate of the numeral (e.g., $\mathsf{two}(x)$) clashes with the atomicity requirement $\mathsf{one}(x)$ from the key, for any numeral other than 'one'. The independent-universal reading is therefore structurally confined to the numeral 'one.'

6.2 Outlook

Several threads remain for future work. First, the analysis needs to be extended to incorporate classifiers fully: the domain-cardinality predicate must be relativized to the specific dimension picked out by the classifier, and a compositional integration of the static classifier semantics with the DPlL framework must be developed. Second, a fully compositional implementation of the schema in Section 4.3—perhaps using Plural Compositional DRT (Brasoveanu & Farkas, 2011) or a scope-based approach following Kuhn (2017)—is needed.

More broadly, this case is an instance of **simultaneous distributivity**: a single morphological element simultaneously marks both the share and the key in a distributive relation. Related phenomena appear in Mandinka X-woo-X constructions (Cisse & Coppock, 2023), French Sign Language (Kuhn & Aristodemo, 2017), and Comox-Sliammon (Henderson, 2019). The present unified analysis may extend to these cases. The convergent appearance of 'one-one = every' in Newar, numerous Mayan languages, and various other languages also invites a broader typological investigation.

As argued for Mandinka by Cisse & Coppock (2023), the analysis dissolves what might appear to be a violation of Gil's conjecture (Gil, 1982)—that reduplicated distributivity markers always mark the share. In the independent-universal case, the reduplicated element marks *both* share and key simultaneously.

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