Unifying Dependent and Independent Numeral Reduplication in Newar

This paper presents new fieldwork data on reduplicated numerals in Newar (a.k.a. Nepalbhasa), 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. One feature that sets the Newar case apart from previously studied ones is that a classifier is obligatorily reduplicated along with the numeral, as in *cha-mha cha-mha* 'one-CL.ANIM one-CL.ANIM'. Furthermore, while reduplicated numeral constructions can generally be considered 'dependent indefinites' in the sense that they must be in the scope of a universal quantifier, reduplication of the numeral 'one' can be interpreted on its own *as* a universal quantifier. The latter constitutes an apparent violation of *Gil's conjecture*, namely that reduplicated distributivity markers always mark the share rather than the key in a distributive relation. This paper offers a unified perspective on the dependent (indefinite) and independent (universal) uses, showing how both interpretations can arise under an analysis based on sequences.

The data were elicited in August-September 2025 through a series of interviews in the Kathmandu Valley region with native Newar speakers (six 2-hour sessions, usually with two speakers present). Written stimuli were presented on a screen via a slideshow in edit mode, and participants could type in the document. We started with found web examples, and then considered variations on them. Acceptability judgments were obtained via questions like 'Is this (still) a good sentence in Newar?' and semantic judgments were obtained by pairing a sentence with an image and asking 'Does the sentence match the picture?'

In ordinary cases, it is possible to replace reduplicated 'one' with reduplicated 'two' (note SOV word order; plural marking is generally optional and only occurs on animate nouns).

(1) जि काय्पिसं {छम्ह छम्ह, निम्हा निम्हा} न्या लात
ji kāy-pi-saṃ {cha-mha cha-mha, ni-mha ni-mha} nyā lāta
1sg son-pl-erg {1-clf 1-clf, 2-clf 2-clf} fish caught
'My sons caught {one, two} fish each.'

In other cases, *cha* 'one' cannot be replaced by *ni* 'two', and the interpretation is universal with respect to the noun associated with the reduplicated numeral:

(2) छगः छगः आखः मिले-जु
cha-gaḥ cha-gaḥ ākhaḥ mile-ju
1-clf 1-clf letter good-be
'Each letter is correct' [constructed example]

An analysis of this phenomenon firstly requires taking a stand on the issue of whether the classifier forms a constituent with the numeral (à la Krifka) or the noun (à la Chierchia). Morphologically, the classifier is a suffix on the numeral, which immediately suggests the former. The reduplication of the classifier along with the numeral supports this bracketing as well; the alternative would require a form of ellipsis with no overt counterpart: *ni-mha (*nyā) ni-mha nyā* 'two (*fish) two fish' (cf. Dékány 2024). For plain *ni-mha nyā* 'two-CLF.ANIM fish', I assume the following structure, where μ_D is the 'canonical measure' for dimension

D, $\mathsf{unit}(D)$ is the unit quantity for dimension D, $\mathsf{dim}(d)$ is the dimension for degree d, and $\#\mathsf{anim}$ is the cardinality dimension counting animate beings, following Coppock (2022):

(3) $[et\ [d\ [n$ two $]\ [nd$ -CL.ANIM $]\ ]\ [\langle d, et\rangle\ [\langle et, \langle d, et\rangle\rangle$ MEAS $]\ [et$ fish $]\ ]\ ]$
$\rightsquigarrow \lambda x\,.\,[\mu_{\#\mathsf{anim}}(x) = 2 \cdot \mathsf{unit}(\#\mathsf{anim}) \wedge {}^*\mathsf{fish}(x)]$

Now onto reduplication. Borrowing from Champollion's (2016) event-based analysis of distance-distributive *each*, I assume that the semantics of numeral reduplication is parameterized by a non-local thematic role that identifies the key in the distributive relation. For reference, here is a sample LF under that analysis:

(4) The boys $[vt$ caught $[vt\ \theta_{\text{THEME}}\ [$ three fish $]\ [$ each $\theta_{\text{AGENT}}\ ]\ ]\ ]$
where *each* $\rightsquigarrow \lambda\theta\lambda P\lambda\Theta\lambda e\,.\,e \in {}^*\lambda e'\,.\,[P(\Theta(e')) \wedge \mathsf{atom}(\theta(e'))]$

My proposed strategy for unifying the dependent (indefinite) and independent (universal) readings involves two key ideas. First, the semantics is given in terms of sequences, which must continue as long as possible. In the following, $\vec{E}$ and $\vec{X}$ are variables over n-tuples, and $\vec{\bigoplus}$ takes the sum of all the elements in a vector.

(5) REDUP $\rightsquigarrow \lambda\theta\lambda d\lambda G\lambda\Theta\lambda e\,.\,\exists\vec{E} = \langle e_1, ..., e_n\rangle[e = \vec{\bigoplus}(\vec{E})$
$\wedge\exists\vec{X} = \langle x_1, ..., x_n\rangle\,.\,\theta(e) = \vec{\bigoplus}(\vec{X}) \wedge \partial(\forall i, j : x_i \neq x_j)$
$\wedge\forall i \in \{1, 2, ..., n\}[G(\Theta(e_i)) = d \wedge \partial(\mathsf{card}(\mathsf{dim}(d)) \wedge \theta(e_i) = x_i \wedge \mathsf{atom}(x_i)]]$

In this lexical entry, n is a free parameter, subject to what I propose to call the *rule of inertia*: Continue the sequence as long as possible without contradiction.

The LF for 'My sons caught two-clf two-clf fish' looks like this:

(6) $[\ \theta_{\text{AGENT}}$ My sons $]\ [$ caught $[\ \theta_{\text{THEME}}\ [\ [\ [$ two CLF $]$ REDUP $]\ [$ MEAS fish $]\ ]\ ]$
$\rightsquigarrow \lambda e\,.\,\exists\vec{E} = \langle e_1, ..., e_n\rangle[e = \vec{\bigoplus}(\vec{E})$
$\wedge\exists\vec{X} = \langle x_1, ..., x_n\rangle\,.\,\theta(e) = \vec{\bigoplus}(\vec{X}) \wedge \partial(\forall i, j : x_i \neq x_j)$
$\wedge\forall i \in \{1, 2, ..., n\}[\mu_{\#\mathsf{anim}}(\mathsf{theme}(e_i)) = 2 \cdot \mathsf{unit}(\#\mathsf{anim}) \wedge {}^*\mathsf{fish}(\mathsf{theme}(e_i))$
$\wedge\partial(\mathsf{card}(\#\mathsf{fish})) \wedge \mathsf{agent}(e_i) = x_i \wedge \mathsf{atom}(x_i)]]$
$\wedge\mathsf{catch}(e) \wedge \mathsf{agent}(e) = \mathsf{my.sons}$

This sentence thus describes a catching event e performed by the speaker's sons made up of a series of events whose agents are atomic speaker-sons and whose themes are pairs of fish.

Key idea #2: To derive the independent (universal) readings, I assume that the local (Θ) and non-local (θ) thematic roles can be identical. 'One-cl one-cl letter is correct' then denotes an eventuality made up of a series of eventualities whose themes are atomic letters. The rule of inertia requires that this sequence continues for as long as there are letters left.

'One one' can mean 'every' in a number of other languages too (APiCS Online Chapter 34). More generally, this analysis offers a new lens on 'simultaneous distributivity' of the kind we see in French Sign Language (Kuhn & Aristodemo, 2017), Comox-Sliammon (Henderson, 2019), and Mandinka (Cisse & Coppock, 2023), a phenomenon where reduplication simultaneously marks the share and the key in a distributive relation. An approach to the semantics of reduplication based on sequences aligns with the repetitive hand gestures that Newar speakers make when using these constructions, and makes good on the compelling intuition that the semantics of reduplication is rooted iconically in the repetition of form.

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