The mass/count distinction in Nadëb

Karolin Obert
University of Texas at Austin, USA
karolinobert@utexas.edu
https://orcid.org/0000-0003-4612-0158

ABSTRACT: Languages differ with respect to if and how they categorize their nouns based on specific lexical or grammatical criteria. A well-studied example is the mass/count distinction, which groups nouns according to their ability to be counted or measured. Cross-linguistic comparison on this noun-categorization system provided evidence that the mass/count distinction is not a reflection of pre-linguistic perceptions, rather it is a language internal grammatical distinction showing how countability and measurability can be grammatically encoded on different nouns. This work focuses on how the mass/count distinction surfaces in the grammar of Nadëb (Naduhup family; ISO 639-3: mbj) – an endangered and under-described indigenous language of Northwest-Amazonia (Brazil). Results from Lima and Rothstein's (2020) "*The count/mass distinction questionnaire*" show that the ability (or inability) to be syntactically juxtaposed with a numeral expression is one of the cut-off points for the division of mass and count nouns in Nadëb. Moreover, I show that mass and count nouns combine with distinct sets of quantifiers and that the possibility of having a (semi-)suppletive plural form can also be considered a possible strategy in the assignment of Nadëb nouns to the count noun category.
KEYWORDS: Mass-count distinction; Noun categorization; Nominal number; Naduhup family

RESUMO: As línguas diferem umas das outras em relação a se, e, como, elas categorizam nomes a partir de critérios lexicais e gramaticais específicos. Um exemplo bastante estudado é a distinção entre nomes contáveis e massivos, que divide os nomes de acordo com sua capacidade de serem contados ou medidos. Comparações entre as línguas sobre esse sistema de categorização nominal mostraram que a distinção entre nomes contáveis e nomes massivos não é um reflexo de percepções pré-linguísticas, mas, sim, uma distinção gramatical interna das línguas que mostra como a contabilidade e a mensurabilidade podem ser codificadas gramaticalmente em diferentes tipos de nomes. O foco deste trabalho é analisar como a distinção entre nomes contáveis e massivos é codificada na gramática da língua Nadëb (família Naduhup; ISO 639-3: mbj) - uma língua indígena ameaçada e pouco descrita do Noroeste da Amazônia (Brasil). Os resultados da aplicação do "*The count/mass distinction questionnaire*", de Lima e Rothstein (2020), mostram que a possibilidade (ou impossibilidade) de um nome ocorrer sintaticamente justaposto a um numeral é um ponto central para a divisão dos nomes em contáveis e massivos em Nadëb. Além disso, mostro que nomes massivos e contáveis se combinam com conjuntos distintos de quantificadores, e que a possibilidade de ter uma forma (semi-)supletiva para indicar plural também pode ser considerada uma estratégia possível de atribuição de nomes à classe dos nomes contáveis em Nadëb.
PALAVRAS CHAVES: Nomes contáveis e nomes massivos; Categorização de nomes; Número nominal; Família linguística Naduhup

Introduction

It is a well-known fact that the grammatical strategies for counting distinct entities vary across languages; i.e., nouns denoting objects such as *chairs, cars* and *cups* are frequently counted using different grammatical resources than nouns denoting substances such as *mud, blood* and *sand*. The object nouns from the previous sentence could all be combined with a numeral (e.g. *five chairs; six cars* and *ten cups*) and can also be morphologically marked for number, yet these same strategies would produce ungrammatical utterances for the substance denoting nouns (*e.g. *five muds; *five bloods* and **ten sands*), at least in English. This compatibility or incompatibility of nouns and numerals has been described in the literature as the cut-off point for a language distinguishing *mass nouns* and *count nouns* (Chierchia 2015).

Rothstein (2017: 4) argues that mass nouns denote measurable entities that are usually not countable, while count nouns refer to individuals that can be counted.[1] This compatibility has often been related to number marking strategies, indicating that mass nouns are less prone to be marked for plural than count nouns. Based on these assumptions, Chierchia (2010) establishes a three-way typology of how languages can encode the mass/count distinction: classifier languages; number marking languages; and number neutral languages, with each type encoding this distinction differently in their grammars. Classifier languages (e.g., Mandarin) do not exhibit obligatory number marking, and distinguish mass nouns from count nouns through a distinct set of numeral classifiers. In number marking languages (e.g., English), the mass/count distinction is apparent through the distribution of singular and plural morphemes on nouns. In nominal number neutral languages, as Chierchia (ibid.) describes them, the mass/count distinction appears at the level of the distribution of numerals.

Applying this typology to data from Nadëb[2] (Naduhup family; ISO: mbj), a still under-described indigenous language spoken in Northwest Amazonia (Brazil), we will see that this language encodes the mass/count distinction in different parts of its grammar, showing properties of both a number marking language and a number neutral language. In this work, I will show that the mass/count distinction in Nadëb primarily surfaces in the direct syntactic juxtaposition of nouns and numerals, with count nouns combining directly with a numeral and mass nouns requiring a measure phrase to be quantified, indicating that Nadëb is number neutral language. However, Nadëb has a small set of nouns with (semi)-suppletive plural forms and exhibits sensibility to the mass/count distinction on determiners and quantifiers – characteristics described for number marking languages. Furthermore, observations on the mass/count distinction contribute intriguing facts to the description of Nadëb grammar, which deviates from the grammar of its sister languages (Dâw, Hup and Yuhup). Some examples of these interesting features include: the presence of a numeral system that goes beyond 'twenty'; the absence of a dedicated morphological marker for plural number on nouns, and the fact that number marking is only marginally registered on nouns but is richly evident in verbal constructions relating both nominal number, participant number, and event number, with complex interactions among these.

In what follows, I will present original field data based on Lima and Rothstein's (2020) "*The count/mass distinction questionnaire*" collected with Nadëb speakers from the Roçado community (Terra Indígena Uneiuxi) during November 2019 through January 2020. I will first introduce the Nadëb people and provide a brief overview of Nadëb grammar. Section 2 introduces the numeral system in Nadëb, followed by Section 3, which discusses the combinatorial possibilities of these numerals and the distinct semantic classes of nouns proposed in Lima and Rothstein's (2020) questionnaire. Section 4 focuses on nominal number marking strategies in Nadëb and addresses questions of verbal number as a mechanism for expressing nominal number in this language. Finally, in Section 5, I show how modifiers such as quantifiers and other determiners can partially indicate the membership of nouns to mass or count noun class in Nadëb.

---

[1] Recent research on Non-Indo-European languages such as Yudja (Tupi family) (see Lima 2014) provides evidence that both *mass* and *count-nouns* in that language can be combined with numerals without the need of a classifier or a measure phrase element.

1. Nadëb and its speakers

Nadëb is a member of the small Naduhup family of the northwest Brazilian Amazon (formerly classified as Makú; see Epps & Bolaños 2017), and is spoken between the middle Rio Negro and Japurá Rivers (see Map 1). Most of the approximately 600 speakers of Nadëb currently live along the Uneiuxi River and in the Paraná Boá-Boá region; this region forms one principal dialect area, with only minor phonological and lexical differences identified between the Uneiuxi and Boá-Boá varieties. A more profound dialectal division exists between these groups and the Nadëb of the Téa river to the west, but the speakers of the Téa dialect have all moved to riverine communities along the Rio Negro or joined the Uneiuxi/Boá-Boá communities.
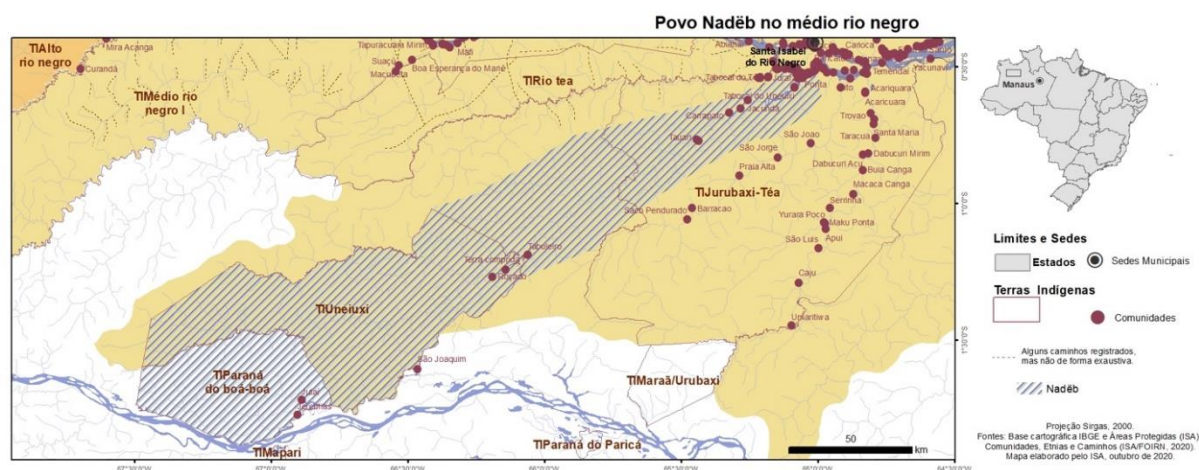
Map 1. Nadëb territory and Nadëb communities (blue shaded area)[3]

Nadëb and its three sister languages (Hup, Yuhup, and Dâw) are spoken within the Upper and Middle Rio Negro region, that is considered a region of striking linguistic diversity with small-scale multilingualism, yet overall language maintenance with some contact-driven changes. According to Nimuendajú (1955), it is likely that the Naduhup family represents the earliest layer of the contemporary inhabitants that have traditionally occupied the interfluvial zones between major rivers and have maintained a hunting and gathering orientation in the region. Based on the current understanding of innovations in phonology, morphology, and lexicon, Nadëb appears to be the most divergent sister language within the Naduhup family (see Epps 2008; Epps & Bolaños 2017). One possible reason for this is the intense contact of Hup and Yuhup with Tukanoan languages in particular, while there is strong evidence for Arawakan influence on the Nadëb lexicon and grammar, such as the verbal person-marking prefixes (see Epps & Bolaños 2017; Epps & Obert forthcoming a)).

Nadëb displays some typologically interesting features both from an areal and a theoretical point of view. Of particular interest is Nadëb's preference for OAV constituent order, considered the default pattern for declarative clauses in the language (see Weir 1984), which is identified by Dryer's (2013) survey of constituent order as being highly unusual cross-linguistically. Furthermore, Nadëb is unusual among Naduhupan languages in that it is predominantly prefixing, with only marginal suffixation. An alternation between person marking prefixes and free pronouns encodes an ergative-absolutive morphological alignment system, differing from the other Nadahupan languages, which all exhibit nominative-accusative alignment.

---

[3] This map is a curtesy from the Instituto Socioambiental, São Paulo Brazil.

One grammatical characteristic of Nadëb that is central to this discussion is the absence of dedicated morphology for indicating nominal number, with the exception of a very small group of nouns that show semi-suppletive singular/plural allomorphy (see section 3). These allomorphs can differ phonologically by vocalic laryngealization, vowel length, by voicing of the final consonant; or they can be suppletive as shown in Table 1.

Table 1. Nadëb suppletive plural forms for count nouns

Gloss	SG	PL
man	*aj'yy*	*ajyy*
woman	*ỹnh*	*ỹỹnh*
offspring	*t'aah*	*taah*
child	*karapee*	*karepé*
tree	*baah*	*b'aah*
day	*adëb*	*täa*

However, the number distinction in Nadëb is richly evident in verbal morphology, with most Nadëb verbs having (semi-)suppletive variants that agree with the S or O argument and/or participant number and event number. Further verbal categories in Nadëb are primarily indicated through free post-verbal formatives indicating tense and aspect and are probably best understood as a result of earlier processes of root serialization.

The Nadëb noun phrase mirrors the language's head final preference providing a template in which nominal modifiers precede the head noun as exemplified in (1) for demonstratives; in (2) for possessive pronouns; and in (3) for numerals.[4]

(1) *hã*　*ỹỹ*　　*moowät*　**tii**　　*ỹỹnh*
　　ARG　1SG.NSUBJ　work　　DEM.PROX[5]　woman
　　'To me, this woman is a worker (this woman works (a lot)).'

(2) *ta-ba-wëënh*　　　**ta-hỹỹj**　　　*a-wëënh*　　*tame*
　　3SG-ADV-go.down.to.port　3SG.NSUBJ-brother　DFT.A-go.down.to.port　at.water
　　'His brother went down to the river.'

(3) *tsém*　*hẽ*　*Watom*　*ba-hapäh*　**tamawoob**　*hẽ*　*depaa*
　　yesterday　ADVZ　Watom　ADV-see　NMRL:3　ADVZ　paca
　　'Yesterday, Watom saw three pacas.'

---

[4] All examples in this work are written in the practical orthography showing the following phoneme-grapheme correspondences in Nadëb: /p/<p>; /b/ <b>; /t/<t>; /ɟ/ <ts>; /k/<k>; /g/<g>; /ʔ/<'>; /ʃ/ <s>; /h/<h>; /m/<m>; /n/<n>; /ɲ/<nh>; /ŋ/<ng>; /w/<w>; /j/<j>; /ɾ/ <r> and for vowels: /i/<i>; /ɨ/<y>; /u/ <u>; /e/<e>; /ɛ/<é>; /ə/ <ë>; /o/<o>; /ɔ/<ó>; /a/<a>; /ʌ/ <ä>.

[5] Abbreviations used in this work: 1, first person; 2, second person; 3 third person; ADV, adverbial prefix; ADVZ, adverbializer; ANPH, anaphoric pronoun; ARG, argument marker; APPL, applicative; CAUS, causative; CL, classifier; COMPL, completive aspect; DEM:PROX, proximate demonstrative; DFT.A, default verbal prefix a-; DFT.E, default verbal prefix e-; DIM, diminutive; DIST, distributive; EXCL, exclusive; INDF, indefinite pronoun; INCL, inclusive; INSTR, Instrumental; INTJ, interjection; LOC, generic locative marker; LOC/TEMP, locative/temporal marker; NMRL, numeral term; NSUBJ, non-subject person marker; SG, singular; PL, plural; PST, past; PFV, perfective aspect; PURP, purpose; REL, relativizer; UNIV.QUANT, universal quantifier; VERB.QNT, verbal quantifier.

Numeral terms and quantifiers in Nadëb do not necessarily have to be juxtaposed with the noun they modify and can be discontinuous from the rest of the noun phrase. In cases where the quantified NP appears as an O argument, for example, the numeral term occurs clause-initially followed by the A argument and verb, mirroring Nadëb's basic constituent order (OAV see Epps et al. 2021), while the modified noun is likely appositional as exemplified in (4).

(4) ***pewóp hẽ*** *Karol a-wong*　　　　　 *bëëh*　　 ***ta***　　 ***saroor paah***
　　 NMRL2 ADVZ Karol DFT.A-throw.away　 COMPL.PL　 3SG.NSUBJ　 clothes PST
　　 'Karol throws two (pieces) of her old clothes away.'

The ordering of distinct modifiers in a continuous Nadëb noun phrase appears to be fairly rigid, showing the following order as the most common one NP: (DEM-NMRL-POSS) N. Note that in both continuous and discontinuous NPs, the numeral term always precedes the noun it modifies (compare examples (3) and (4)). However, NPs possessed by a first-person singular possessor the possessive pronoun follows the noun (N POSS) as exemplified in (5).

(5) ***waa　 ỹỹ***　　　　　 *ỹ*　　 *a-wa*　 *bä*　　　 *maj'ĩ*　　 *sa-mahang*
　　 food　 1SG.NSUBJ　 1SG　 DFT.A-eat LOC/TEMP　 enemy.PL　 3PL.NSUBJ-among
　　 'I will eat my food [here] among my enemies.'

2. Nadëb numerals

The numeral system of Nadëb has previously been described by Weir (1984: 103-104) as very simple, exhibiting only three lexical terms which could be considered numerals: *sét* 'one', *pewóp* 'two', and *tamawób~tamewób* 'three'. Weir describes numerical values above 'three' as being expressed by quantifiers such as *sedó* 'many/much' or *sahõnh* 'all'. Our recent fieldwork has also identified morphologically decomposable forms for the numerals 'four' through 'twenty', which are listed in Table 2. Some elders even provided terms up to 'sixty', using a productive strategy based on a base-five system for numerals above 'twenty'. Numeral terms from 'one' to 'three' are commonly followed by the adverbial marker *hẽ*, which frequently follows adverbial expressions in Nadëb. However, speakers sometimes omit the adverbial marker, and, at the time of this writing, it remains unclear under which circumstances the adverbializer may be omitted.

Ordinal numbers in Nadëb seem to be restricted to the terms *pooj* 'first' and *tasee* 'other' or 'next'. The term *pooj* is probably related to the temporal adverb *pooj ub* 'in the old days' (*ub* functions as and adverbial intensifier), which speakers use in order to refer the mythological past, i.e. a time that came first before the Nadëb people's existence.

Table 2. Nadëb numeral terms

Numeral	Form/Morphological composition				
1	*sét (hẽ)*				
2	*pewóp (hẽ)*				
3	*tamawób/tamewób (hẽ)*				
4	*ji*	*me-heet*	*péh*		
	INDF	with-point	type.of		
	'index finger'				
5	*ji*	*ma*	*poo*	*oow*	*péh*
	INDF	INSTR	nose?	thumb	type.of
	'thumb'				

6	*ji*	*ma*	*poo*	*oow*		**see**
	INDF	INSTR	nose?	thumb		other
	'The other thumb'					

7	*ji*	*me-heet*	*doo*	**see**
	INDF	with-point	NMLZ	other
	'The other index finger'			

8	*ji*	*me-heet*	*péh*	*pa-ga-hëng*	*doo*
	INDF	APPL-point.	type.of	DSTR-in-sit	NMLZ
	'middle finger'				

9	*ji*	*moo*	*s'ẽẽ*	*pa-ga-hëng*	*doo*
	INDF	hand	pinky	DIST-in-sit	NMLZ
	'ring finger'				

10	*ji*	*moo*	*sahõnh*	*hẽ*
	INDF	hand	UNIV.QUANT	ADVZ
	Lit. 'All the hands'			

11	*ji*	*tsyym*	*oow*
	INDF	foot	thumb
	Lit. 'the thumb of our foot'		

12	*ji*	*tsyym*	*oow*	*pa-ga-hëng*	*doo*
	INDF	foot	thumb	DIST-in-sit	NMLZ
	Lit. 'The one that is (sits) next to our thumb of the foot'				

13	*ji*	*tsyym*	*hóó*	*gó*	*ga-hëng*	*doo*
	INDF	foot	middle	in	in-sit	NMLZ
	Lit. 'The one who is sitting in the middle of our foot'					

14	*ji*	*tsyym*	*s'ẽẽ*	*pa⁶-ga-hëng*	*doo*
	INDF	foot	pinkie	DIST-in-sit	NMLZ
	Lit. 'The one who sits next to the pinkie toe'				

15	*ji*	*tsyym*	*sét*
	INDF	foot	NRML:1
	Lit.: 'one of our feet'		

16	*ji*	*tsyym*	*oow*		**see**
	INDF	foot	thumb		other
	Lit. The other big toe'				

17	*ji*	*tsyym*	*oow*	*pa-ga-hëng*	*doo*	**see**
	INDF	foot	thumb	DIST-in-sit	NMLZ	other
	Lit. 'The one that is (sits) next to our thumb of the foot'					

18	*ji*	*tsyym*	*hóó*	*gó*	*ga-hëng*	*doo*	*see*
	INDF	foot	middle	in	in-sit	NMLZ	other
	Lit. 'The one who is sitting in the middle of our foot'						

19	*ji*	*tsyym*	*s'ẽẽ*	*ga-hëng*	*doo*	*see*
	INDF	foot	pinkie	in-sit	NMLZ	other
	Lit.: 'The one that sits next to the other pinkie toe'					

20	*ji*	*tsyym*	*sahõnh*	*hẽ*
	INDF	foot	UNIV.QUANT	ADVZ
	Lit. 'All our feet'			

Epps (2006: 264) suggests that the terms for 'two' and 'three' among the other three Naduhup languages can be understood as retentions of metaphoric phrases from a common ancestor, i.e. the terms for 'two' correspond to 'eye quantity' while the terms for 'three' seem

to related to the three-lobed seed of a rubber tree. Weir (1984: 105) suggests that the Nadëb term *sét* 'one' is derived from the term for 'unity' or 'together'. The Nadëb terms *pewóp* 'two' and *tamawób/tamewób* 'three' contain the etymon *-wób/-wóp*, which may be related to the plural determiner *(ta)-wób* 'others'. Furthermore, there is a striking similarity to the universal quantifier *wap* 'all' in Dâw and the quantifying element *ʔap* in Hup (see Epps 2006; Martins 2004; Storto 2020). For the case of *pewóp* 'two', the syllable *pe-* in 'two' may be related to the verbal prefix *pe-/pa-*, which has distributive semantics according to our current understanding. Diachronically, this may have resulted from the incorporation of the postposition *pa* 'next to', indicating the notion of one entity being next to another one (see Weir 1986). Likewise, the term for 'three' *tamawób/tamewób* is may also be formed through the addition of the verbal prefixes *ta-* '3SG' and *ma-/me-* 'comitative' to the formative *wób,* which could be understood to have the literal meaning 'he/she is together with the others', associating one entity to a group of referents. Another possibility is to understand *tamawób/tamewób* as cognate to the corresponding terms in Nadëb's sister languages according to its phonological similarity; i.e. *mɔ́twaʔap* in Hup, *mutwáp* in Dâw and *mɔdɨg-w'ap* in Yuhup (see Epps 2006). Epps (2006: 264) convincingly shows that the etymology for the term for 'three' in Dâw, Hup and Yuhup can be traced back to the metaphor "rubber.tree-seed-quantity". For Nadëb, we could consequently imagine that *-ma-/-me-* in *tamawób/tamewób* could also be derived from the word for 'rubber tree' plus the quantifier *-wób* which has cognate forms in all Naduhup languages. In a further step, the term could have taken on the 3rd person singular possessive prefix *ta-* and undergone vowel harmony to result in the form *tamawób* (Epps p.c.). I consider both options as possibilities, but the source of this numeral cannot be determined definitively at this time.

Strategies for the quantification of individuals differ from strategies for the quantification of events in Nadëb. While individuals are counted via the juxtaposition of the numeral term (+ measuring element) and the respective noun, as in (6), events are counted in Nadëb happens using the juxtaposition of a numeral term and the phrase *nuu me* 'times', as in (7).

(6) **tamawob**   *hẽ*   *karepé*   *P'éé*   *hapäh*
     NMRL3   ADVZ   children   P'éé   see
     'P'éé saw three kids.'

(7) *pewop*   **nuu**   **me**   *ỹnh*   *wajaa* *wät*[7]
     NMRL2   [?   INSTR]   woman   run   PFV.SG
     NMRL2   times   woman   run   PFV.SG
     'The woman ran twice.'

Numeral expressions for quantities above 'three' are transparent and involve the terms for fingers and toes as shown in Table 2 above, which corresponds to what has been described for other Amazonian languages showing larger sets of numeral terms (see Epps & Salanova 2013). Nadëb numeral terms between 'four' and 'ten' involve the terms for the respective fingers starting with right index finger ('four') followed by the thumb ('five'), which is then followed by the thumb of one's other hand indicated through the modifier *see* 'other'. These numeral terms correspond to the counting gestures used by Nadëb speakers as shown in the set of photos illustrating counting gestures for numerals 'one' to 'ten'.

---

[7] The lexeme *nuu* in the event quantifier can possibly be related to the homophonous term *nuu* 'head' in Nadëb. Interestingly the same term also appears in the measure element *nuu jawyg* which is a correspondence for the word 'kilo' in Nadëb (see section 3 below).

Numeral 1 Numeral 2 Numeral 3

Numeral 4 Numeral 5 Numeral 6

Numeral 7 Numeral 8 Numeral 9

Numeral 10

While the term for 'ten' is understood as 'all of our hands', the terms for 'eleven' to 'nineteen' follow the same logic for the toes, while 'twenty' is analogously indicated through 'all of our feet', as listed in Table 2. Above 'twenty', numbers are only counted by fives. Numbers above 'twenty' up to 'forty' count the hands and feet of the interlocutor (additional to the hands and feet of the speaker), using the second person possessive prefix *a-* as shown in (8) and (9). Numbers above 'forty' up to 'sixty' involve counting the hands and feet of another person, using the third person possessive prefix *ta-,* such as in (10) and (11). Thus, the numerals for 'twenty', 'forty', and 'sixty' are distinguished only by the possessor.

(8) ***a****-moo* *see* *sét* *hẽ*
     2SG-hand hand NMRL1 ADVZ
     'twenty-five'
     Lit.: 'One of your hands'

(9) **a**-moo   **a**-tsyym   sahõnh   hẽ
     2SG-hand   2SG-foot   UNIV.QUANT   ADVZ
     'forty'
     Lit.: 'All your hands and your feet'

(10) **ta**-moo   sét   hẽ
     3SG-hand   NRML1   ADVZ
     'forty-five'
     Lit.: 'One of his/her hands'

(11) **ta**-tsyym   see
     3SG-foot   other
     'fifty-five'
     Lit.: 'His/her other foot'

The existence of this more complex numeral system in Nadëb raises questions with respect to its emergence for several reasons. First, it deviates from its sister languages with respect to its attested upper limit and the fact that the numerals 'one' and 'two' are formed through a different strategy, as described above. While Dâw numerals beyond 'three' are indicated through a tally system using a 'fraternal' expression (i.e. 'having/not having a sibling'), Hup and Yuhup also show a finger-based for numbers up to 'twenty' (see Martins 2004; Epps 2006; Epps et al. 2012). Second, it deviates from broader generalizations about numeral systems among Amazonian hunter-gatherer groups, for which only the isolate Huaorani (Ecuador) has been reported to have a numeral system that goes beyond 20 (Epps et al. 2012: 51). According to Comrie (2005), processes of elaboration and change in numeral systems are fast and often motivated by contact and innovation, and can consequently be motivated by social and cultural practices. More specifically, many authors have noted that limits of numeral systems may be correlated with social structure and subsistence patterns. Evidence from some Amazonian groups, including Nadëb's sister languages, suggests that smaller hunter-gatherer societies are prone to show low-limit systems (see Epps et al. 2012).[8] Contact as an impulse for the development of a larger numeral system appears to be a possibility in Nadëb, since Nadëb, in contrast to its sister languages, is reported to have sustained significant interactions and long-term contact with more agricultural Arawakan groups in the past (see Epps & Obert forthcoming a)). There is clear evidence for Arawakan contact effects in both Nadëb's grammar and lexicon, but we cannot tell to what extent this numeral system has been adopted from extinct Arawakan languages from the Middle Rio Negro region. However, the overall difficulty of reconstructing numeral terms in the Naduhup family and the distribution of similar counting strategies across the region suggests that all Naduhup languages, including Nadëb, acquired this strategy via contact and trade with their neighbors. The emergence of a numeral system with higher upper limits could consequently be understood as being related to the acquisition of horticultural skills and activities through that contact, or through trade with other indigenous and non-indigenous groups. Today, this system can only be recalled by older Nadëb speakers and is not in use among younger speakers, who generally know how to count up to 'ten' using the Nadëb system, but prefer to use borrowed numeral terms from Portuguese. Finally, more investigation is needed in order to understand the kinds of contexts where older generations of Nadëb speakers needed to make reference to higher quantities.

---

[8] However, as Epps et al.'s (2012) survey of numeral systems among hunter-gatherer languages from distinct parts of the world provided evidence that there is a *tendency* for smaller systems among hunter-gatherer languages but that subsistence practices should not be understood as a predictor of a specific numeral system.

3. What can be counted and what can be measured in Nadëb?

Lima and Rothstein's (2020) questionnaire involves the elicitation of several nouns belonging to the following three groups: *notional count nouns* (humans; animals; artifacts; fruits and vegetables), *count/object-mass nouns* (aggregates), and *notional mass nouns* (liquid/natural/concrete/granulated substances) in order to verify if and how numerals can be combined with nouns from each of these groups and to verify how the mass/count distinction surfaces in an individual language.

Our results show a clear distinction between the group of notional count nouns and notional mass nouns. All notional count nouns in Nadëb can be directly combined with numeral terms, as in (12) and (13), while notional mass nouns require a measure or container phrase in order to be quantified by numerals, as illustrated in (14) and (15). Examples (12) and (14) show that the counted or measured nouns are not marked for plural number when combined with a numeral or a numeral term + measure phrase, which has been identified by Chierchia as a property of number neutral languages (2015: 108). However, if a noun shows suppletive singular/plural allomorphy, as in (13) (*ajyy* 'men' vs. *aj'yy* 'man'), the plural allomorph of is obligatory when quantified by a numeral term above 'one', which aligns more closely with the properties of number marking languages.

(12)   *tsém*   *hẽ*   *Watom*   *ba-hapäh*   **tamawób**   **hẽ**   **depaa**
            yesterday   ADVZ   Watom   ADV-see   NMRL3   ADVZ   paca
            'Yesterday, Watom saw three pacas.'

(13)   *naga*   *hẽ*   **tamawób**   **hẽ**   **ajyy**   *gawaj'aah*
            today   ADVZ   NMRL3   ADVZ   men   hunt.PL
            'Today three man hunted.'

(14)   **tamawób**   **hẽ**   **sareej** **kajahar**   *ããh*   *e-ëëk*   *jëng*
            NMRL2   ADVZ   pot   manioc.porridge   1PL.excl   DFT.E-drink   VERB.QNT
            'We drank three pots of manioc porridge.'

(15)   ***tamawób**   **hẽ**   **kajahar**   *ããh*   *e-ëëk*   *jëng*
            NMRL2   ADVZ   manioc.porridge   1PL.excl   DFT.E-drink   VERB.QNT
            Intended translation: 'We drank three manioc porridges.'

Accordingly, count and mass nouns in Nadëb exhibit distinct morphosyntactic and lexical properties that we will briefly address at this point. To begin with, the most crucial morphosyntactic cut-off point between these classes of nouns is whether they require a measure phrase to be quantified or not. In other words, nouns from semantic classes that fall under Lima and Rothstein's notional count noun group can be directly quantified with numerals, and nouns from the notional mass noun group require a measure phrase to be quantified with numerals. Most Nadëb measure phrases are semantically transparent and employ count nouns denoting objects for measurements of liquid, granulated, or natural substances. Some examples of these units of measurement include *sareej* 'pot' as in (14); *raat* 'can' (Portuguese loan *lata*) as in (16); *hood* 'container' (such as plate, cup, bowl, bottle); and *ëk* 'cuia' as in (17). For concrete substances such as meat, Nadëb speakers made use of the partitive noun *bäh* 'piece of' in order to license quantification with a numeral, as illustrated in (18). When referring to non-indigenous products (e.g., rice and beans) that are sold in standard units (e.g., packages of one kilo), Nadëb speakers used the measure phrase *ta nuu jawyg* which has the literal meaning 'his/her/its heavy head' and is used by speakers to refer to a kilogram, as in (19). Except for the partitive construction, where a partitive noun follows the head noun, as in (18), all other

measure phrases precede the head noun of the NP, as seen in (16), (17) and (19). Our best understanding at this time is that numerals may be discontinuous from both count noun phrases and measure phrases with a mass noun. Nevertheless, the syntax, semantics, and pragmatics of discontinuous NPs in Nadëb merits further research.

(16) | ***tamewób*** | ***hẽ*** | ***raat*** | ***masuuk*** | *re-sõnh* |
| --- | --- | --- | --- | --- |
| NMRL2 | ADVZ | can | manioc.flour | 3PL-roast |

‘They roasted two cans (latas) of manioc flour.’[9]

(17) | *P´éé* | *manaa* | ***pewóp*** | ***hẽ*** | ***ëk*** | *naëng* |
| --- | --- | --- | --- | --- | --- |
| P’éé | bring | NMRL2 | ADVZ | cuia | water |

‘P’éé brought two cuias of water.’

(18) | ***ji*** | ***me-heet*** | ***péh*** | ***ta*** | ***dab*** | ***bäh*** | ***ãã*** | ***tä*** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| [INDF | APPL:INSTR-point | type.of] | 3SG.NSUBJ | meat | piece | 1PL.excl | CL:food |
| NMRL4 | | | 3SG.NSUBJ | meat | piece | 1PL.excl | CL:food |

‘We have four pieces of meat’
Lit.: ‘Four pieces of meat is our food.’[10]

(19) | ***pewóp hẽ*** | ***ta*** | ***nuu*** | ***jawyg*** | ***kamaan*** | ***ỹ*** | *e-tsëë* | *wät* |
| --- | --- | --- | --- | --- | --- | --- | --- |
| NMRL2 ADVZ | [3SG. NSUBJ | head | be.heavy] | bean | 1SG | DFT.E-buy | PFV.SG |
| NMRL2 ADVZ | [kilo] | | | bean | 1SG | DFT.E-buy | PFV.SG |

‘I bought two kilos of beans.’

Moreover, the existence of suppletive singular/plural allomorphs corresponds to the mass/count distinction in Nadëb: while singular/plural allomorphy is attested for count nouns (see Table 1 above), it has not been attested for any Nadëb mass nouns at this time.

As we will discuss in detail in Section 5, count and mass nouns in Nadëb can also be identified by the quantifiers they can combine with. Some of them do not reflect the mass/count distinction per se but intersect with respect to other semantic parameters such as liquid vs. non-liquid. For example, quantifiers like *aeh* ‘be big’ are restricted to liquid substances, a subset of mass nouns in Nadëb.

With respect to lexical features, Nadëb nouns also exhibit distinct properties which help to predict whether a noun is mass or count. Prototypical count nouns in Nadëb can be either animate or inanimate, while mass nouns tend to denote inanimate referents. Physical properties of the referents also play a crucial role for this classification. Thus, Nadëb count nouns correspond to Chiercha’s (2015:2) description in that these are endowed with natural boundaries, are cohesive, and maintain their identity after collision with other objects. Mass nouns, in contrast, may have less rigid boundaries as they usually denote homogenous substances (i.e. liquids; natural substances such as mud or sand). They can also differ with respect to size, if we imagine substances that are parts of the local topography such as bodies of water or large amounts of sand at the riverbanks.

Finally, we will briefly address the class of *count/object mass nouns* in Nadëb, which includes nouns denoting aggregates or so-called superordinate nouns such as *clothes, furniture, tools,* etc. Such nouns behave morphosyntactically as mass nouns in some languages, such as English, yet they can denote individuable entities (see Chierchia 2010’s discussion on fake mass nouns for more details). While eliciting nouns from that class, Nadëb speakers expressed

---

[9] The term *lata* ‘can’ is a regional measure term for a bucket with a volume of approximately 20 liters.
[10] The pronoun *ta* ‘3SG.NSUBJ’ is used here to indicate obligatory possession of the noun *dab* ‘meat’.

difficulties in providing native nouns that directly corresponded to the meanings of most of the suggested nouns, with the exception of the expressions for 'clothes' *saroor,* 'shoes' *tsyym sun*, 'food that is meat' *tä,* and 'food that is not meat' *waa.* While the terms for 'clothes' and 'shoes' pattern like count nouns in that they can be combined directly with numerals, as in (20), both *tä* 'meat food' and *waa* 'non-meat food' function as possessive classifiers in Nadëb and always co-occur with a noun specifying the type or substance of the food in possessive contexts (see Obert and Epps forthcoming b)). Whether these NPs pattern as mass or count nouns depends on the class of count nouns (as in the case of bananas) or mass nouns (as in the case of granulated substances like manioc flour) that the classifiers combine with. In example (21) the classifier *tä* specifies the count noun *tah'yyb* 'fish', licensing the combination with a numeral term in contexts of possession (Epps & Obert forthcoming b)). In (22), in contrast, no classifier is required since there is no possession involved, and the quantification of the mass noun is realized using the measure phrase *hood.*

(20)   ***pewóp hẽ***   ***ta***   ***saroor*** *paah*   *Karol*   *a-wong*   *bëëh*
        NMRL2 ADVZ   3SG   clothes   PST   Karol   DFT.A-throw.away   COMPL.PL
        'Karol throws two (pieces) of her old clothes away.'

(21)   *pewóp*   *hẽ*   ***tah'yyb***   *a*   ***tä***
        NMRL2   ADVZ   fish   2SG.NSUBJ   CL:food
        'You have two fishes'
        Lit.: 'Two fishes are your food.'

(22)   *Esten*   *manaa*   ***pewóp***   ***hẽ***   ***hood***   ***masuuk***
        Esten   bring   NMRL2   ADVZ   container   manioc.flour
        'Esten brought two bags of manioc flour.'

A number of nouns in the questionnaire, including items such as furniture and tools for fishing and hunting, were translated as complex phrases by Nadëb speakers. Syntactically, these analyzable as nominalizations, as evidenced by the clause-final element *doo* as illustrated in (23) through (25). Speakers expressed difficulties in counting these nouns, and some explained that they were unsure of the degree of acceptability of these nouns for other speakers.

(23)   *ji*   *moo*   *moowät*   *doo*
        INDF   hand   work   REL
        'tools'

(24)   *ji*   *me-tën*   *doo*
        INDF   APPL:INSTR-play. instrument   REL
        'instruments'

(25)   *ji*   *ge-me-hỹỹ*   *doo*
        INDF   APPL:INSTR -blow   REL
        'blow instruments'

      In sum, terms denoting aggregates are seldom attested in Nadëb, and it remains unclear if terms for 'clothes' and 'shoes', for example, allow for the individuation of units, and it is consequently questionable if Nadëb exhibits an object-mass noun class at all.

4. Number marking strategies and the mass/count distinction

In this section, we focus on the number marking resources of Nadëb grammar in order to observe possible correspondences with the count/mass distinction. As discussed earlier, number marking on nouns in Nadëb is marginal, and is restricted to a small set of singular/plural suppletive allomorphs for a subset of count nouns. Unlike its sisters, Nadëb has no dedicated morphological marker for plural number on nouns. Except for the small class of nouns with singular/plural suppletive allomorphy, bare nouns in Nadëb are unmarked for number.

Number is exposed in the nominal modifiers *tasee* 'other' and *tawób* 'others'. These modifiers may directly precede the noun they modify, as in (26), or the 3rd person singular prefix *ta-* can also be substituted by the noun that it modifies itself as illustrated in (27) and (28). Example (26) shows that *ta-wób* is used when the noun is nominally plural, and (27) shows the use of *see* when it is nominally singular. For the case of unquantified mass nouns, as in (28), speakers prefer the use of the singular form *see,* suggesting that number is underspecified for mass nouns.

(26) *ti   a-näng   **ta-wób**   panyyg*
  ANPH   DFT.A-exist   3SG-other.PL   story
  'There are other stories.'

(27) ***panyyg   see   ta-tii***
  story   other.SG   3SG-ANPH
  'This one is another story.'

(28) *hahŷỹh   **masuuk**   **see***
  DEM.PROX   manioc.flour   other
  'This is another (mount of) manioc flour.'

There is further evidence for number-marking distinctions on demonstratives, which merit more investigation, but number-marking distinctions on interrogative pronominal elements has not been attested in Nadëb at this time.

In contrast to the scarcity of number marking on nouns, number marking is richly evident in verbal constructions, an observation which has also been made, to a lesser extent, for Nadëb's sister languages. Most verbs in Nadëb exhibit pairs of distinct singular and plural allomorphs that agree with absolutive (S/O) arguments. These variants tend to differ by glottalization, vowel length, and/or voicing of the final consonant, but these patterns are not easily predictable. Analogously to singular/plural allomorphy in Nadëb nouns, verbs can also have fully suppletive forms, which are most robustly attested among posture and positional verbs, as illustrated in examples (29) and (30).

(29) *a-sëëg   **gä***
  DFT.A-get.up   lie.in.hammock.SG
  'He got up and lay in the hammock.'

(30) *a-s'ëëg   **j'eenh***
  DFT.A-go.up.PL   lie.in.hammock.PL
  'They got up and lay in the hammock.'

Agreement for number with the S argument in intransitive clauses is exemplified in (31) and (32). Transitive verbs in Nadëb can have a single form for both singular and plural A arguments such as in (33) and (34), where both singular and plural A referents are weaving a single basket. However, number allomorphy in transitive verbs is sensitive to the number of the O argument, as in example (35), where each person of the group was working on their own basket, with plural number for the O argument (*arook* 'basket') indicated by the plural allomorph of the verb *ek'ëëh* 'to weave a basket'.

(31) *ỹ*   ***a-hyng***
      1SG   DFT.A-go.downriver.SG
      'I go downriver.'

(32) *ër*   ***a-hyk***
      1PL.incl   DFT.A-go.downriver.PL
      'We are going downriver.'

(33) *arook*   *ỹ*   ***e-këë***
      basket   1SG   DFT.E-weave.basket.SG
      'I am weaving a basket.'

(34) *arook*   *ããh*   ***e-këë***
      basket   1PL.excl   DFT.E-weave.basket.SG
      'We are weaving a basket.' (everyone is working on only one basket)

(35) *arook*   *ããh*   ***e-k'ëëh***
      basket   1PL.excl   DFT.E-weave.basket.PL
      'We are weaving baskets.' (everyone is working on his/her own basket)

Number alternations are also observed in post-verbal aspect markers, which historically developed from posture and motion verbs. These markers show suppletive pairs indicating number of the S/A or O argument, as in the agreement of the perfective aspect marker with the S argument of the intransitive clause in (36), and with the O argument of the transitive clauses in examples (37) and (38).

(36) *pewop*   *ỹỹnh*   ***waj'aa***   ***bong***
      two   women   run.PL   PFV.PL
      'Two women ran.'

(37) *Daniel*   *hapäh*   ***wät***   *sét*   *hẽ*   *maruus*
      Daniel   see   PFV.SG   NMRL1   ADVZ   girl
      'Daniel saw one girl.'

(38) *tiikä*   *te-**ts'ëë***   ***bong***   *ta*   *j'ooh*   *hã*
      then   3SG-divide.PL   PFV.PL   3SG.NSUBJ   cousin   ARG
      'Then he divided (the tools) with his cousin.'

The choice between the singular/plural allomorph of the verb in transitive clauses seems also to interact with the status of the object noun as either a mass or a count noun. For the case of bare mass nouns, i.e. those which appear without a numeral term, quantifier, or modifier in the NP, the singular allomorph of the aspectual marker appears, as illustrated in (39). Utterances

using the plural forms of aspectual markers with a mass noun object are considered infelicitous by Nadëb speakers as demonstrated in (40). In contrast, quantifying a mass noun with a numeral term + a measure phrase or other plural-marked modifiers in object position triggers the plural variant of the aspectual marker, as in (41).

(39) *Daniel*   **hapäh**   **wät**   *tasyyj*
     Daniel   see   PFV.SG   oil
     'Daniel saw the oil.'

(40) **Daniel*   **hapäh bong**   *tasyyj*
     Daniel   see   PFV.PL   oil
     Intended translation: 'Daniel saw the oils.'

(41) *Daniel*   **hapäh**   **bong**   **hajõng**   **hood**   *tasyyj*
     Daniel   see   PFV.PL   many   container   oil
     'Daniel saw many bottles of oil.'

Weir (1984) argues that Nadëb lacks a class of adjectives and suggests analyzing property concept terms as intransitive stative verbs. Weir's analysis seems plausible since words with attributive semantics in our corpus exhibit verbal properties, including: taking verbal morphology such as person prefixes among others; occupying the syntactic position in the clause corresponding to the locus of the verbal predicate; and showing a high incidence of suppletive singular-plural pairs. Again, bare mass nouns in subject position require the singular form of the attributive verb as exemplified in (42), while bare count nouns trigger either the singular or plural verb forms indicating the notional number of the S argument, as shown in (43) and (44).

(42) **ma-eh**   *naëng*
     ?-be.big   water
     'There is a lot of rain.'
     Lit.: 'The water is big.'

(43) **a-eh**   *ta*   *gëëw*
     DFT.A-be.big   3SG.NSUBJ   manioc.garden
     'Her manioc garden is big.'

(44) **e-wëëh**   *ta*   *gëëw*
     DFT.E-be.big.PL   3SG.NSUBJ   manioc.garden
     'Her manioc gardens are big.'

5. Quantification and the mass/count distinction

In this section, we discuss the question of how the usage of distinct nominal quantifiers in Nadëb corresponds to the mass/count distinction. The initial task of Lima & Rothstein's questionnaire aims to identify nominal quantifiers which could possibly contrast volume and cardinality and whether there is a restriction on the distribution of quantifiers with respect to different types of nouns (notional count/notional mass nouns). The set of Nadëb quantifiers are presented in Table 3.

Table 3. Nadëb quantifiers

Quantifier	Possible etymology	Semantic noun classes; mass/count nouns compatibility
sédó 'much/many'	*sét* 'one'; Weir (1984) 'unity'; *doo* 'NMLZ' or -*see* 'other'	Combines with all semantic classes (as suggested in Lima & Rothstein's 2020 questionnaire) ✓**mass/count nouns**
aeh 'a lot' 'be big'	*aeh* 'be big'	Only combines with liquids ✓**mass nouns**
hajõng 'many'	*?*	More related to count nouns and seems to be interchangeable with *sédó* in some contexts ✓**count nouns**
pewópits 'a few' 'a (little) bit'	*pewóp* 'two' + *its* 'diminutive suffix' or *pe-wób-its* DSTR-others-DIM	Combines with all semantic classes of the list except for granulated substances ✓**mass/count nouns**
bähan'yyts 'a (little) bit'	?	Combines with nouns denoting liquids and granulated substances ✓**mass nouns**

Most quantifiers were collected using example sentences proposed by the authors, which include the quantification of a notional count noun (*marakaaw* 'turtle') and a notional mass noun (*naëng* 'water') as exemplified in (45) through (48). This data set shows that Nadëb exhibits distinct quantifiers for expressing the notions of 'much/many' and 'a lot/a little' depending on whether the quantified noun belongs to the mass or count noun class. However, this distinction is not as clear-cut as it appears at first glance, since some quantifiers are restricted to a specific class of mass nouns, such as *aeh* 'much' which only quantifies liquids in its function as a nominal modifier. Other quantifiers such as *pewópits* 'a few', in contrast, can combine with both mass and count nouns (see examples (55)-(58) below) with the exception of granulated substances. In other words, Nadëb quantifiers are sensitive to more fine-grained attributes of nouns that go beyond the mass count distinction.

(45) **sédó**   *marakaaw*   *tamii*   *me*
      many   turtle   in.water   LOC
      'There are many turtles in the river.'

(46) **ma-eh**   *naëng* *h'ooh* *bëëh*
      ?-be.big   water canoe lie.down.PL
      'There is a lot of water in the canoe.'

(47) **pewóp-its**   *marakaaw*   *tamii*   *me*
      [NMRL2-DIM]   turtle   in.water   LOC
      a.few   turtle   in.water   LOC
      'There are a few turtles in the river.'

(48) **bähan'yyts** naëng ta hood gó
     little water 3SG container in
     'There is little water in the bottle.'

Table 3 lists three quantifiers indicating positive quantities, namely *hajõng* 'many'; *sédó* 'much/many', and *aeh* 'much', which differ with respect to their distribution with different sub-classes of Nadëb nouns. Examples (49) and (50) show the use of *hajõng* to quantify a count noun and a measuring element (*sareej* 'pot'), respectively. In contrast, the absence of a measure phrase, as in (51), triggers the quantifier *aeh* 'much' in order to quantify the bare mass noun, which denotes a liquid.[11] The usage of *aeh* is restricted to this semantic subclass of mass nouns in Nadëb, and other mass nouns are preferably quantified through the strategy of using *hajõng* + a measure phrase, as illustrated in (50).

(49) **hajõng** ta-moo ta-ts'ëk
     many 3SG.NSUBJ-arm 3SG-cross.waterway.PL
     'He crossed many rivers (tributaries).'

(50) **hajõng** **sareej** ỹnh moowät **wäng** **bëëh**
     many pot woman work pataua juice
     'The woman made many pots of pataua juice.'

(51) ỹnh moowät **a-eh** **wäng** bëëh
     woman work DFT.A-be.big pataua juice
     'The woman made a lot of pataua juice.'

The quantifier *sédó* 'much/many' is interesting in that it combines with both mass and count nouns, resulting in distinct interpretations related to individuable units belonging to one group or not. For example, when it is combined with count nouns, as in (52), it refers to several entities that are part of larger group such as animals occurring in swarms. In contrast, when it is combined with mass nouns, as in (53), the interpretation is that there are several portions of the substance denotated by the mass nouns. Thus, example (53) describes a scene in which several drops of blood were found grouped on the ground, while in (54) speakers described a puddle of blood. Accordingly, the quantifier *sédó* 'a lot' has the function of individuating substances that fall under the group of mass nouns, while when combined with counts nouns it describes quantities of a priori countable referents that are conceived of as entities within a larger unit. This usage is probably related to the etymology of *séd* that Weir (1984: 105) describes as being 'unity' or 'together' which is also the lexical source for the numeral term 'one'. In the function as quantifier for mass nouns, it probably refers to single units of liquids forming a cluster in a bounded area.

(52) **sédó** ta maam
     a.lot 3SG mosquito.spec
     'There were many of its (the moon's) mosquitos.'

---

[11] Comparing examples (42), (46) and (54) to (51) show that the quantifier *aeh* 'a lot/be big' can be marked by the verbal prefix *ma-,* which in those examples could be interpreted to have a locative or instrumental function. According to Weir (1986), many of the verbal prefixes in Nadëb derive historically from incorporated postpositions indicating oblique roles (locative, comitative, instrumental) or are related to processes of subordination. In the examples where *ma-* appears prefixed it is possible that it functions to indicate a locative notion that is specifically related to water or liquids. However, it remains unclear while this is absent in example (51). Further investigation is needed in order to understand if *ma-* would lead to a felicitous sentence in (51) or when eliminated in the remaining examples.

(53) ỹ   hapäh   **sédó**   majyyw   habä
      1SG   see   a.lot   blood   here
      'I see many (drops of) blood here.'

(54) ỹ   hapäh   **ma-eh**   majyyw   habä
      1SG   see   ?-be.big   blood   here
      'I see a lot of (a puddle of) blood here.'

Negative quantities in Nadëb are broadly expressed through the quantifier *pewópits* '(a) few' which is used with both mass and count nouns in Nadëb. When quantifying count nouns, as in (55), or aggregates, as in (56), speakers make reference to relatively small accumulations of individual entities which may, but do not necessarily have to, form a unit. When this quantifier is preposed to mass nouns denoting liquids, it remains unclear if *pewópits* denotes either a small group of individual portions of the liquid or a small quantity of the liquid, as illustrated in (57) and (58).

(55) **pewóp-its**   nadëb   dah   karepé   ji   me-heet   péh
      [NMRL2-DIM]   nadëb.person   INTJ   children   [INDF   with-point   type.of]
      few   nadëb.person   INTJ   children   NMRL4
      'There were only a few Nadëb (here in the community), four children.'

(56) ỹ   hapäh   **pewóp-its**   saroor   habä
      1SG   see   [NMRL2-DIM]   clothes   here
      1SG   see   few   clothes   here
      'I see a few clothes here.'

(57) ỹ   hapäh   **pewóp-its**   kamaan   habä
      1SG   see   [NMRL2-DIM]   bean   here
      1SG   see   few   bean   here
      'I see a few beans here.'

(58) ỹ   hapäh   **pewóp-its**   majyyw   habä
      1SG   see   [NMRL2-DIM]   blood   here
      1SG   see   few   blood   here
      'I see a little bit of blood here.'

Furthermore, *pewópits* cannot be combined with nouns denoting granulated substances. In these cases, Nadëb speakers proposed the term *bähan'yyts* which refers to a very small quantity of a finely granulated substance, as in (59). When combined with other mass nouns such as liquids, as in (60), or grains, as in (61), the interpretation is strictly related to the relative size of an entity which is in these cases conceived as small by speakers. The lexical source of *bähan'yyts* remains unclear until this point, however it may derive from a verb for the fact of showing the verbal prefix *ha-*. Note that the term for 'small' in Nadëb is *nadëëd* and thus not a likely source for this quantifier.

(59) ỹ   **hapäh**   **bähan'yyts**   masuuk   habä
      1SG   see   little   manioc.flour   here
      'I see a bit of manioc flour here.'

(60) **bähan'yyts**   naëng   ta   hood   gó
      little   water   3SG.NSUBJ   container   in
      'There is little water in the bottle.'

(61) ỹ   hapäh   **bähan'yyts**   kamaan   habä
      1SG   see   little   bean   here
      'I see small beans here.'

Besides the quantifiers mentioned in Table 3 above, Nadëb has additional quantifying elements with loci in other parts of the Nadëb grammar. Their correlation with the mass/count distinction in the language, however, still needs further investigation. These elements include the universal quantifier *sahõnh (hẽ),* the verbal quantifier *jëng,* the distributive prefix *pa-* and the obligatorily possessed partitive noun *(ta)-uuh* 'a part of X'.

The universal quantifier functions as a modifier in (62) expressing the notion of 'all of X', and as a pronoun referring to the notions of 'everything' or 'everybody' as in (63) and (64), respectively. In both (63) and (64), *sahõnh* occurs in combination with the adverbializer *hẽ* indicating an adverbial function in comparison to (62), where it functions as modifier. As a modifier, *sahõnh (hẽ)* has a collective reading rather than a distributive one. Distributive meanings, in contrast, are expressed by the distributive verbal prefix *pa-*. This prefix indicates multiple referents distributed in space and quantifies over both S arguments, as in (65), and O arguments, as in (66). In both examples, the occurrence of *pa-* triggers a plural reading of the S argument without the need for a quantifier.

(62) **sahõnh**   **soo**   *poo*   *ge-soom*   *jëng*
      UNIV.QUANT   woodpecker   nose   APPL:in-poison   VERB.QUANT
      'He poisoned all the woodpeckers.'

(63) ỹ   hapäh   **sahõnh**   **hē**
      1SG   see   UNIV.QUANT   ADVZ
      'I know everything.'

(64) ti   **sahõnh**   ra-kata   bëëh   ta-ti   **sahõnh**   **hẽ**
      ANPH   UNIV.QUANT   3PL-get.together CMPL.PL   3SG.-ANPH   UNIV.QUANT   ADVZ
      'And then everybody got together, all of them.'

(65) tatyyt n'aa   ha   saroor   **pa-däk**
      rope   PURP   LOC   clothes   DIST-be.attached.SG
      'The (items of) clothing is hanging on the washing line (alongside others).'

(66) ỹ   **pa**-da-däk   saroor   ta-tyyt   n'aa   ha
      1SG   DSTR-CAUS-attach   clothes   3SG.NSUBJ-rope   purpose   LOC
      'I hang the clothes on the washing line.'

The post-verbal quantifier *jëng,* which may have developed diachronically from the homophonous verb 'return', primarily quantifies O arguments. In this function, *jëng* implies that all of the O argument is entirely affected by the action expressed by V as illustrated in (67). Our corpus shows that both universal quantifier and verbal quantifier co-occur in sentences.

(67) **sahõnh hẽ**   ra-be-hõg   **jëng**   ta   dab
      all   ADVZ   3PL-ADV-cut.meat   VERB.QNT   3SG.NSUBJ   meat
      'They cut all the meat from their companion.'

The partitive noun, in contrast, refers to smaller quantities as illustrated in (68) and (69), and can combine with either mass or count nouns to indicate a small portion of the respective

noun. In our corpus, it is most prominent with nouns related to food. Its compatibility with nouns from other semantic classes remains to be investigated in future work.

(68) *ma-karẽn*   ***masuuk-uuh****?*
      2SG-want   manioc.flour-part.of
      'Do you want a part of the manioc flour?'

(69) *ma-karẽn*   ***ta***   ***dab-uuh****?*
      2SG-want   3SG.NSUBJ   meat-part.of
      'Do you want a part of the meat?'

In sum, this section provided evidence that some quantifiers provide evidence for distinguishing mass nouns from count nouns in Nadëb. However, these quantifiers are often sensitive to inherent properties of the respective nouns and therefore their distribution varies within the classes of mass and count nouns. In other words, none single quantifier in Nadëb is able the draw a clear distinction between the class of mass nouns and count nouns, as the words 'much' and 'many' can do in English. Indeed, some of these quantifiers are used with both noun classes, but result in different interpretations with respect to quantity based on the noun class. Furthermore, we have seen that verbal morphology, such as the verbal quantifier *jëng* and the distributive prefix *pa-,* can be used to quantify arguments. However, the distribution of these verbal patterns with respect to the classes of mass and count nouns is not entirely understood.

5. Conclusions

In this paper, I have shown how Nadëb encodes the distinction between mass and count nouns in its grammar and lexicon. First, we saw that Nadëb has mass nouns and count nouns of which only the latter can be quantified directly by numerals. Mass nouns, on the other hand, cannot be quantified by a numeral and require a preceding measuring element to license such quantification. Since Nadëb shows no obligatory number marking on most nouns, with the exception of the small class of semi-suppletive singular/plural allomorphs for some count nouns, Nadëb nouns should be best interpreted as unspecified for number. The existence of a class of nouns showing this singular/plural allomorphy could suggest traits of a number marking language. However, since these variants form a very small group among Nadëb nouns it cannot be considered a grammatical device responsible for distinguishing a general count noun from a mass noun class.

The lack of number marking on most nouns seems to be compensated in the grammar by verbal agreement in number with S and O arguments through singular/plural verbal root allomorphy. I have shown that this is another locus where the mass/count distinction can surface in Nadëb: while count nouns in O position can be arguments of both singular and plural verbal root variants, mass nouns are always arguments of the singular inflection. Verb roots in Nadëb can thus be best understood as an additional count environment. This is similar to the Denë (Athapaskan, Northern Canada) case, for which Wilhelm (2006) suggests that verbal roots, as opposed to functional elements, reveal whether nouns pertain to the mass or count class. Such patterns can, according to Wilhelm, be understood as being rooted in semantic compatibility, not syntactic derivation, implying that countability might be an inherent lexical property of nouns.

Furthermore, we have seen that the verbal complex in Nadëb holds many clues related to participant number and quantification; however, these do not seem to correlate strongly with the mass/count distinction. In other words, the verbal quantifier *jëng*, for example, can quantify

either S or O arguments when comprised of either mass and count nouns. However, the correlations between the indication of participant number marked through verbal morphology and the mass/count distinction advocates for future research.

Another locus of the mass/count distinction is related to the compatibility of a given noun with certain quantifiers in Nadëb. I have shown that the selection of certain quantifiers does not clearly rely on the distinction between mass and count nouns, but on more fine-grained properties of the specific semantic sub-classes. We have seen that the combination of certain quantifiers with both mass and count nouns leads to distinct readings related to individuality.

In sum, the exploration of the mass/count distinction in Nadëb has shown that it best fits the pattern of number neutral languages according to Chierchia (2010), since the distinction surfaces mainly in the distribution of numerals. In addition, resources in the Nadëb grammar show that the verbal complex is also a central source for encoding this distinction. Nadëb therefore presents an intriguing case of a language with distinct loci for the mass/count distinction in its grammar that goes beyond the prototypical environment of the noun phrase.

_____

References

Chierchia, Gennaro (2010). Mass nouns, vagueness and semantic variation. *Synthese* 174(1): 99–149. https://doi.org/10.1007/s11229-009-9686-6

Chierchia, Gennaro (2015). How universal is the mass/count distinction? Three grammars of counting. In Li Simpson; W.D. Tsai (eds.), *Chinese Syntax in a Cross-linguistic Perspective*, pp. 147-175. Oxford: Oxford University Press.

Comrie, Bernard (2005). Endangered numeral systems. In Jan Wohlgemuth; Tyko Dirksmeyer (eds.), *Bedrohte Vielfalt: Aspekte des Sprach(en)tods*, pp. 203-230. Berlin: Weissensee Verlag.

Dryer, Matthew S. (2013). Order of Subject, Object and Verb. In Mathew S. Dryer; Martin Haspelmath (eds.), *The World Atlas of Language Structures Online*. Leipzig: Max Planck Institute for Evolutionary Anthropology. https://wals.info/

Epps, Patience (2006). Growing a numeral system: The historical development of numerals in an Amazonian language family. *Diachronica* 23(2): 259-288. https://doi.org/10.1075/dia.23.2.03epp

Epps, Patience (2008). *A grammar of Hup*. Berlin/ New York: Mouton Grammar Library 43. https://doi.org/10.1515/9783110199079

Epps, Patience; Bowern, Claire; Hansen, Cynthia; Hill, Jane; Jason Zentz (2012). On numeral complexity in hunter-gatherer languages. *Linguistic Typology* 16: 39-107. https://doi.org/10.1515/lity-2012-0002

Epps, Patience; Salanova, Andrés Pablo (2013). The languages of Amazonia. *Tipití: Journal of the Society for the Anthropology of Lowland South America* 11(1): 1-28. https://digitalcommons.trinity.edu/tipiti/vol11/iss1/1

Epps, Patience; Bolaños, Katherine (2017). Reconsidering the "Makú" language family of Northwest Amazonia. *International journal of American Linguistics* 83(3): 467–507. https://doi.org/10.1086/691586

Epps, Patience; Luedke, Emily; Obert, Karolin; Simmons, Mark J. (2021). *Constituent disorder? Community perspectives on sentence structure in Nadëb*. Paper presented at 23rd WAIL, UC Santa Barbara.

Epps, Patience; Obert, Karolin (forthcoming a)). Linguistic clues to hunter-gatherer histories: the Naduhup peoples of northwest Amazonia. *Journal of Hunter-Gather Research*.

Epps, Patience; Obert, Karolin (forthcoming b)). Naduhup languages and the typology of nominal classification. *Cadernos de Etnolinguistica*.

Lima, Suzi (2014). *The grammar of individuation and counting* (MA Thesis in Linguistics). Amherst: University of Massachusetts. https://scholarworks.umass.edu/dissertations_2/109

Lima, Suzi; Rothstein, Susan (2020). A typology of the mass/count distinction in Brazil and its relevance for mass/count theories. *Linguistic Variation* 20(2): 174-218. https://doi.org/10.1075/lv.00015.lim

Martins, Silvana A. 2004. *Fonologia e gramática Dâw.* Amsterdam: LOT. https://www.lotpublications.nl/fonologia-e-gramatica-daw-tomo-ii-fonologia-e-gramatica-daw

Nimuendajú, Curt (1955). Reconhecimento dos rios Icána, Ayarí, e Uaupés, março a julho de 1927: Apontamentos linguísticos. *Journal de la Société des Américanistes* (44)1: 149-178.

Rothstein, Susan (2017). *Semantics for counting and measuring* (Key Topics in Semantics and Pragmatics). Cambridge: Cambridge University Press. https://doi.org/10.1017/9780511734830

Storto, Luciana (2020). Count and mass nouns in Dâw. Special issue, Suzi Lima (ed.), A typology of the mass/count distinction in Brazil and its relevance for mass/count theories'. *Language and Linguistic Compass* 20(2): 219-229.

Weir, E. M. Helen (1984). *A negação e outros tópicos da gramática Nadëb.* (MA Thesis in Linguistics). Campinas: Universidade Estadual de Campinas. http://repositorio.unicamp.br/jspui/handle/REPOSIP/270761

Weir, E. M. Helen (1986). Footprints of yesterday's syntax: Diachronic Development of certain verb prefixes in an OSV language (Nadëb). *Lingua* 68 (4): 291-316. https://doi.org/10.1016/0024-3841(86)90014-8

Wilhelm, Andrea (2006). Count and mass nouns in Dëne Sułıné. In David Montero Baumer; Michael Scanlon (eds.), *Proceedings of the 25th West Coast Conference on Formal Linguistics*, pp. 435-443. Somerville, MA: Cascadilla Proceedings Project.