Countability in Ticuna[1]

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ABSTRACT: This study examines the mass-count distinction in Ticuna (isolate). Based on original field data, I show that mass and count nouns pattern apart in several grammatical domains. In the language's number system, I demonstrate that mass nouns are incompatible with both nominal and verbal plural marking. In the quantifier system, I show that Ticuna numerals and quantifiers combine only with nouns introduced by determiners, never with bare nouns. Despite this restriction, numerals and quantifiers remain sensitive to countability. Even when introduced by determiners, mass nouns cannot combine with numerals, nor with three of the six quantifiers available to count nouns.

KEYWORDS: Mass-count distinction; Number; Amazonian languages; Language isolates

RESUMEN: El presente estudio investiga la distinción entre nombres contables e incontables en Ticuna (lengua aislada). Basado en datos originales recogidos durante el trabajo de campo, muestro que los nombres contables e incontables se distinguen en una variedad de sistemas gramaticales. En el sistema numérico de esta lengua, explico que los nombres incontables son incompatibles con la marca del plural, tanto en el dominio verbal como en el nominal. En el sistema de los cuantificadores, demuestro que los numerales y cuantificadores sólo se combinan con nombres introducidos por determinantes, nunca con nombres escuetos. A pesar de esta restricción, los numerales y cuantificadores sí son sensibles a la contabilidad. Aunque sean introducidos por determinantes, los nombres incontables no se combinan con los numerales, tampoco con tres cuantificadores (de los seis del idioma) disponibles con nombres contables.

PALABRAS CLAVE: Nombres contables e incontables; Número; Lenguas amazónicas; Lenguas aisladas

1. Introduction

This article is a fieldwork-based descriptive study of countability, or the distinction between mass and count nouns, in Ticuna. Ticuna is an Indigenous language isolate spoken by 40,000 (Lewis et al. 2014) to 70,000 (Instituto Socio-Ambiental 2017) people, who live mostly along the main course of the Amazon/Solimões River in Brazil, Colombia, and Peru. The language provides robust evidence for the mass-count distinction. Ticuna count nouns are acceptable with numerals, plural marking, and the quantifiers equivalent to 'many,' 'few,' and 'how many?' Mass nouns, by contrast, are not acceptable in these environments, except under coercion to portion readings.

I collected the data which appears in this paper in the town of Cushillococha, Peru, in fieldwork between 2015 and 2019. Cushillococha is a titled Indigenous community with

~5,000 residents as of late 2019, nearly all of whom are ethnically Ticuna and speak Ticuna as their first and dominant language. Most data were collected during audio-recorded, bilingual (Ticuna-Spanish) elicitation interviews in speakers' homes. Three main language consultants provided the data on countability discussed here: Lilia Witancort Guerrero (a woman, aged in her late thirties), Yaneth Cándido Guerrero (a woman, late thirties), and Katia Salate Cándido (a woman, early twenties). Other data, not directly bearing on countability, was elicited from Sótil Suárez González (a man, early forties), Angel Bitancourt Serra (a man, early sixties), and Deoclesio Guerrero Gómez (a man, early seventies). All six of these consultants are also fluent L2 speakers of Spanish and have agreed to disclosure of their names.

In addition to elicited examples, some examples are from my corpus of transcribed recordings of Ticuna. The corpus consists of ~116,000 words, primarily of conversation, and is publicly available in the California Language Archive, along with my fieldnotes and recordings of the elicitation sessions (Skilton 2015-2018; Skilton & Bitancourt Serra 2018-2020; or see Skilton in press for a collection overview). All language examples use IPA transcription. Raised numerals in examples denote lexical tone; 5 represents the highest tone.

This paper is organized as follows. §2 provides general background information on the grammar of Ticuna. §3 describes nominal and verbal plural marking in the language. Following this general discussion of the plural, I then investigate the distribution of nominal and verbal plurals with mass vs. count nouns. In §4, I examine the language's numeral system, including the distribution of numerals with notional mass nouns vs. notional count nouns. Following the discussion of numerals, §5 details the language's system of quantifiers other than numerals. I show that three of the language's quantifiers combine only with count nouns, and three only with mass nouns. §6 explores container phrases, and §7 summarizes and concludes.

2. Language background

Ticuna displays noun class and a morphological distinction between alienable and inalienable nouns. Understanding noun class and the alienable-inalienable contrast is essential to understanding the syntax of noun phrases in the language. Therefore, I briefly describe both systems. Other background information about the language can be found in documentary works such as Montes (1995), Soares (2000), and Santos (2005). These works also include information about noun class and the alienable-inalienable contrast, but do not discuss countability.

Two shared syntactic behaviors define the word class of nouns. First, all Ticuna nouns can bear case marking (the language has nominative-accusative alignment and many oblique cases); second, all nouns can participate in possessive constructions. Verbs, in contrast, need nominalizing morphology in order to bear case marking or appear in possessive constructions.

In addition to participating in case marking and possession, all Ticuna nouns – including derived and borrowed nouns – are exhaustively divided into five noun classes. I label the noun classes with Roman numerals I through V. In the noun class typology of Corbett (1991), noun class assignment is predominantly semantic. That is, the noun class of a noun is determined mainly by properties of the nominal referent – such as size, material, and animacy – rather than by phonological properties of the noun. For example, nouns denoting very small objects (such as marbles and coins) usually belong to Class I; nouns denoting palm trees and objects made of palm wood usually belong to Class II; and nouns denoting animates (i.e., humans and animals of all species) never belong to Class III. Most noun phrase constituents – including determiners, demonstratives, third person pronouns, most quantifiers, and all relative clauses – agree in noun class with the head noun of their phrase.

While noun class assignment operates on a semantic basis, it is insensitive to the mass-count distinction. All four classes that contain inanimates contain both mass and count nouns.

Table 1 provides two example nouns for each class which contains inanimates: one notional mass noun, and one notional count noun. There is no example mass noun for Class V because Class V does not contain any inanimates (and to my knowledge, all mass nouns in Ticuna are inanimate). To the right of the example columns, the final column of Table 1 shows the form of the universal quantifier, a target of noun class agreement, for each class.

Table 1: Example mass and count nouns belonging to each noun class

Noun Class	Example Count Noun	Example Mass Noun	'All'
Class I	*kɨ³ʔtʃɨ¹* 'knife'	*di³ẽ³ru¹* 'money'	*gu⁵e³ma³*
Class II	*tʃe³ra¹* 'handsaw'	*ɲu³kɨ³ra¹* 'salt'	*gu⁵kɨ³ma³*
Class III	*ʎu³¹e³* 'canoe'	*tɨ³pa³ka¹* 'manioc starch'	*gu⁵ʔɨ⁵ne¹ma³*
Class IV	*ta³ra⁵* 'machete'	*u³i¹* 'manioc flour'	*gu⁵ʔɨ⁴ma³*
Class V	*pa⁴kɨ³* 'young woman'	n/a (no inanimates)	*gu̠¹kɨ³ma³*

Because Class IV is the largest and morphologically default noun class, this paper employs the Class IV form as the citation form for quantifiers and other targets of noun class agreement.

Crosscutting the division into noun classes, nouns are also divided into alienable and inalienable possession classes. As with noun class, a noun's status as syntactically alienable or inalienable can largely be predicted from properties of the referent. Almost all part terms (e.g., 'eye,' 'leaf,' 'wall'), most kinship and relationship terms (e.g. 'sister,' 'son,' 'companion'), and most non-part relational nouns (e.g., 'replacement,' 'price') are inalienable. Additionally, nouns denoting close personal possessions (e.g., 'hammock,' 'skirt'), features of the built environment ('house,' 'garden'), geographic features ('river,' 'lake'), and configurations ('mixture,' 'pile') also tend to be inalienable.

While these semantic factors predict the inalienable vs. alienable status of underived, native-vocabulary nouns, they do not predict inalienable vs. alienable status for the entire nominal lexicon. Derived nouns and nouns borrowed from other languages are always alienable, regardless of semantics. Thus, for example, the native-vocabulary Ticuna noun *na³tɨ⁴* 'father' is inalienable, but the apparently synonymous Spanish loan word *pa³pa⁵* 'father' is alienable. For this reason, I treat status as alienable or inalienable – like noun class – as a primarily morphosyntactic property of nouns, albeit one with a semantic basis.

Syntactically, the defining characteristic of inalienable nouns is that they are unacceptable in isolation (1a). Instead, inalienable nouns must be possessed by an overt possessor, cliticizing to the last element of the possessor noun phrase and forming one prosodic word with it (1b, c). In contexts where an inalienable noun is not semantically possessed, such as (2), its morphological requirement for a possessor is filled by the default possessor (DFLT.POSS) morph *na⁴³ ~ na³¹*.

(1)   a.   *pa⁴te²e³
             *hat
             (Attempted reading: 'hat') (elicited)

        b.   Ka³ru¹ =pa⁴te²ʔe³
             Carlos =hat

             'Carlos' hat' (elicited)

    c.   ɟi²ma⁴   tʃo³¹ =ʔĩ³ ʎu̜¹ -ẽ⁴ẽ² =ki³   =pa⁴te²ʔe³
            DEM.ANA(II) 1SG =ACC learn -CAUS =NMLZ(II) =hat

            'the hat of the one (Class II) who teaches me' (elicited)[2]

(2)   ai³¹   ri¹   **na³¹**   =e³ʔĩ¹   ni⁴¹ĩ⁴
        jaguar(IV) TOP **DFLT.POSS** =wild.animal 3(IV)SBJ.COP

        'Jaguars are wild animals / The jaguar is a wild animal.' (elicited)

        In contrast to inalienable nouns, alienable nouns are acceptable in isolation (3a). Moreover, when alienable nouns are possessed, they do not encliticize to the possessor. Instead, the alienable possession marker =*a¹ri³* encliticizes to the last element of the possessor. The alienable noun follows the possession marker, forming an independent prosodic word separate from the possessor (3b, c).

(3)   a.   o̰¹ʔi⁵
            grandfather

            'grandfather, old man' (elicited)

    b.   Ka³ru¹ **=a¹ri³**   o̰¹ʔi⁵
            Carlos **=AL.POSS** grandfather

            'Carlos' grandfather' (elicited)

    c.   ɟi²ma⁴   ɟa³¹ti¹ tʃo³¹ =ʔĩ³ ʎu̜¹ -e⁴e² =ki³   **=a¹ri³** o̰¹ʔi⁵
            DEM.ANA(II) man(II) 1SG =ACC learn -CAUS =NMLZ(II) **=AL.POSS** grandfather

            'the grandfather of the man who teaches me' (elicited)

        As with noun class, the mass-count distinction **fails** to impact the division of nouns into alienable vs. inalienable. Rather, the alienable-inalienable distinction is relevant here mainly because some container terms are lexicalized as inalienable nouns (§6).

3. Plural marking

        Within this section, §3.1 provides an overview of nominal and verbal plural markers in Ticuna, and §3.2 discusses the distribution of plural marking with mass vs. count nouns.

3.1 Introduction to plural marking

3.1.1 Nominal plural

        There is only one marker of nominal number in Ticuna: the plural enclitic =*gɨ⁴*. I refer to this morph as an enclitic rather than a suffix because (a) it attaches to the final element of the noun phrase, with no concord between constituents, and (b) it appears on multiple word classes, including on verbs.

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[2] Examples use the Leipzig Glossing Rules and the following additional abbreviations: AL.POSS = alienable possession morpheme, ANA = anaphoric demonstrative, CLFI = classifier incorporation, COP = copula, DET = determiner, DFLT.POSS = default possessor morpheme, DIM = diminutive, DISTRIB = distributive enclitic, IBEN = intransitive beneficiary case, IMPF = imperfective, INFO = information-structural marker other than topic/focus, INVIS = invisible referent marker, NI = noun incorporation, NMLZ = nominalizer, PURP = purposive case, REM.PST = remote past, SC = subordinate clause type (inflection), SUB = subordinator.

The nominal plural *=gɨ⁴* is acceptable with nouns of all noun classes; with alienable and inalienable nouns; and with nouns of all positions on the animacy hierarchy. It can even appear on proper nouns, yielding an associative plural reading (which is also available with human common nouns).

(4) provides examples of *=gɨ⁴* on nouns of various positions on the animacy hierarchy. As (4) indicates, the nominal plural is optional on nouns of all animacy levels.

(4)　Context: I saw two lakes / chickens / people.

[na⁴=	ʔta⁴a²	**(=gɨ⁴)**	=ʔĩ³	/ o³ta⁵	**(=gɨ⁴)**	=ʔĩ³	/ duˡʔĩ³ʔĩ⁴	**(=gɨ⁴)**	=ʔĩ³	] tʃa³=	dau²
[DFLT.POSS=	lake	**(=PL)**	=ACC	/ chicken	**(=PL)**	=ACC	/ person	**(=PL)**	=ACC	] 1SG.SBJ=	see

'I saw lakes / chickens / people.' (elicited)

(5) provides a corpus example of the associative plural reading of *=gɨ⁴* on proper nouns.

(5)　
ɹe³a²	=ã⁴ma⁴ o̞ˡʔi⁵	**De³u¹**	**=gɨ⁴**	na⁴³	=gu²	pe⁴³	=gɨ⁵	=ʔ
DEM.DIST(IV)	=INVIS grandfather	**Deoclesio**	**=PL**	3(IV)	=LOC	live/sleep	=PL	=NMLZ:IV

ni⁴¹ʔĩ⁴	i⁴	Ma¹wɨ⁵ti⁴ĩ¹
3(IV)SBJ.COP	DET(IV)	place.name(IV)

'That (place), where Don **Deoclesio and his family** live, is (called) Ma¹wɨ⁵ti⁴ĩ¹.' (landscape description)

Although consultants judge the plural to be optional on human nouns, per (4), human nouns referring to pluralities essentially always bear the plural in corpus materials. By contrast, non-human animate nouns and inanimate nouns much less frequently bear the plural in the same materials.

It is not clear to me exactly what conditions the variable realization of the plural on non-human animate and inanimate nouns. However, some possibilities can be eliminated. Based on corpus examples, definiteness is **not** the key influence in the distribution of the nominal plural. Bare non-human nouns with plural reference occur in existential contexts; novel contexts, such as (6); and familiar contexts, such as (7). It is clear that the bare nouns in (6) and (7) refer to pluralities both contextually and because the enclitic *=gɨ⁴*, which on verbs marks the presence of a plural argument, appears on the verb in both examples.

(6)　Context: 'My father-in-law lived in the forest…'

ta³¹	=ʔĩ⁴	=ma	ga⁴	**nai³¹**	ti³¹ma²	=a¹ri³	ti³re¹	=wa⁵	na⁴ri³=	ʔi²	=gi⁴
big	=NMLZ(IV)	=INFO	DET.REMPST	**tree**(IV)	3(I)	=AL.POSS	port	=ALL	3(IV)SBJ=	stand.tree	=PL

'Large **trees** [no plural] stood [plural] in his port.' (landscape description)

(7)　Context: Describing a picture of two chameleons crawling into a pile of sand. Every previous sentence in the discourse has referred to these same chameleons.

ɲa⁴a²	**tʃe³ne³ma²**	i⁴	ɲu̞¹ʔma⁵	rɨ¹	na³¹ʔne³kɨ³	=te¹ʔe³	=wa⁵
DEM.PROX(IV)	**chameleon**(IV)	DET(IV)	now	TOP	sand	=powder	=ALL

na⁴=	ʎu³	=gi⁴
3(IV)SBJ=	arrive	=PL

'Now these **chameleons** [no plural] are arriving [plural] in the sand.' (storyboard)

To summarize, the nominal plural enclitic is compatible with all count nouns – regardless of their noun class, alienable/inalienable status, animacy, or humanness. The nominal plural has both canonical plural readings, available to all nouns, and associative plural readings, available to human nouns. The plural is optional: nouns without plural marking may still have plural reference. Additionally, bare nouns referring to pluralities can still trigger

plural morphology on verbs, indicating that they are marked as plural at some level of representation.

3.1.2 Verbal plural

Ticuna has at least five morphosyntactic constructions which index plural argument number on verbs: the verbal plural enclitic $=gi^4$ PL, the verbal plural suffix $-e^3$ PL (for syntactically unaccusative verbs), the verbal distributive enclitic $=tʃi^1gi^1$ DISTRIB, argument number alternations in the form of directional suffixes, and argument number alternations in verb roots. In this discussion, I consider only the last of these constructions: suppletion of verb roots based on argument number.

Number alternations in verb roots are relevant to the areal focus of this volume because they are attested in many language families present in Brazil, including Tupi (Lima 2017: 1625n6), Macro-Jê (Bardagil Mas 2018: 29), Panoan (Neely 2019: 336), Naduhup (Obert, this volume), and Tukanoan (Farmer 2015: 57-60). They are also relevant to the substantive focus, as Wilhelm (2006, 2008) observes that acceptability with 'inherently plural verbs' tracks the mass-count distinction in Dëne Sųłiné (a Dene [Athabaskan] language spoken in Canada).

In Ticuna, number-alternating verb roots belong to a larger system of classificatory verbs, which can classify the internal argument of the verb in terms of animacy or shape (e.g., mu^2 'put:AnimO' vs. i^{43} 'put:InamSgO' vs. $we̱^1$ 'put:1-Dimensional.O') as well as number (nu^4 'put:InamPlO'). This system strongly resembles the system of classificatory verb roots in Dene languages such as Diné/Navajo (Fernald & Willie 2001, citing Willie 2000) and Dëne Sųłiné (Wilhelm 2008).

Number alternations occur primarily in intransitive verbs of motion and posture and transitive verbs of caused motion. The alternations distinguish only two number categories: singular and plural. They track the number of the subject for intransitive verbs (8), but the number of the object for transitive verbs (9a). Plural subjects do not license the plural forms for transitives (9b). Plural event number (multiple occurrences of the same event with the same participants) also does not license the plural forms.

(8)　nu²a² ta⁴　[ta⁴ri³=　　**tʃo⁴³**　　 / * ta⁴ri³=　　　**ʔa̱ṳ¹**　　　]
　　here　FUT [1EXCL.SBJ= **stay:PlS** / * 1EXCL.SBJ= **stay:SgS**]

　　'We will stay [PlS / *SgS] here.' (elicited)

(9)　a.　Bi³tu⁵　　　ri¹　ta²ʔre⁴ i⁴　　　o³ta⁵　　[ni⁴=　　**ma̱¹**　　 / 　na⁴=　　 **dai¹**　　]
　　　　Victoria(IV) TOP two　DET(IV) chicken(IV) [3(IV)SBJ= **kill:SgO** / 3(IV)SBJ= **kill:PlO**]

　　　　'Victoria killed [SgO / PlO] two chickens.' (elicited) [Sg A > Pl O]

　　b.　wi⁴³ʔi⁴ i⁴　　　wo³ka¹　[ti⁴=　　**ma̱¹**　　=gi⁴ / * ti⁴=　　**dai¹**　　=gi⁴]
　　　　one　DET(IV) cow(IV) [1EXCL.SBJ= **kill:SgO** =PL / * 1EXCL.SBJ= **kill:PlO** =PL]

　　　　'We killed [SgO / *PlO] one cow.' (elicited) [Pl A > Sg O]

If the internal argument of a number-alternating verb is first or second-person plural, then it is obligatory to use the plural form of the verb, as shown by (8). If the internal argument is third person plural, on the other hand, either the singular or the plural form of the root is acceptable, per (9a). This holds for both non-human internal arguments, as in (9a), and human ones. Thus, the 'SgO/SgS' forms of these roots would be more accurately labeled number-neutral or underspecified. The 'PlO/PlS' forms, on the other hand, are specifically plural.

While the plural argument in (9b) happens to be quantified by a numeral, the plural forms of alternating roots do not require their arguments to be quantified or bear the nominal plural. Bare nouns referring to pluralities also license the plural forms. (10) demonstrates this: the PlO form of the verb 'transport' is acceptable even though the object, *tʃo⁴³ʔni⁵* 'fish,' lacks the nominal plural.

(10)   Context: I want you to bring me several (dead) fishes.

nu²a² ti³¹ =ʔĩ³ [na¹= ʎe⁴³   / na¹= **na⁴**   ] ɟa⁴ tʃo⁴³ʔni⁵
here 3(I) =ACC [IMP= **transport:InamSgO** / IMP= **transport:InamPlO**] DET(I) fish(I)

'Bring the fishes [SgO / PlO] here.' (elicited)

3.2 Plural and the Mass-Count distinction

Acceptability with the plural is a clear test for distinguishing mass and count nouns in Ticuna. Mass nouns are unacceptable with the nominal plural. Additionally, for verbs which participate in number alternations, plural forms are unacceptable if the licensing argument is mass. Thus, both nominal and verbal plural marking are sensitive to the mass-count distinction.

3.2.1 Mass Nouns are incompatible with the nominal plural

Notional mass nouns are not compatible with the nominal plural enclitic *=gi⁴* (11). Attempts to combine the nominal plural with mass nouns were always rejected by one consultant (LWG) and rejected in all but one case by another (KSC). The third consultant, YCG, accepted all of my examples of plurals on mass nouns. However, in every case she made comments indicating coercion to a portion reading (analogous to the comments in 13 below).

(11)   # ɟu³ki³ra¹ =gi⁴ =ʔĩ³ tʃa³= dau²
       # **salt**   =**PL** =ACC 1SG.SBJ= see

(Attempted: I saw **salts**.) (Rejected by KSC and LWG.)

When consultants did accept plurals on mass nouns, they always made comments indicating that the pluralized mass noun referred to a set of portions of the substance, as in the comments on (12) and (13). Additional questioning showed that pluralized mass nouns do not refer to large quantities of the substance – that is, pluralized mass nouns are not 'plurals of abundance' (Doron & Müller 2013).

(12)   **u³i¹**   =**gi⁴** =ʔĩ³ tʃa³= dau²
       manioc.flour =**PL** =ACC 1SG.SBJ= see

'I saw **manioc flours**.'

LWG's comment: 'The flour was in bags.'

AHS: 'What if you saw a batch of manioc flour on the toasting griddle?' [plural of abundance reading]

LWG: 'No.'

(13)   **de⁴³ʔa⁵**   **=gi⁴**   =ʔĩ³   tʃa³=   dau²
         water   **=PL**   =ACC   1SG.SBJ=   see

'I saw **waters**.'

KSC's comment: 'This would make sense if you saw many tanks of water.'

AHS: 'What if you saw a lot of water in the lake?' [plural of abundance reading]

KSC: 'No.'

(11) - (13) suggest the generalization that mass nouns may not occur with the plural except on a coerced portion reading. In order to test this generalization, I searched my corpus of Ticuna for tokens of four nouns ('water,' 'money,' 'manioc flour,' and 'salt') that seemed likely to be frequent and that I knew, from examples like (11) - (13), to be judged unacceptable with the plural in elicited data.

The corpus contained 87 tokens of 'water,' 48 of 'money,' 29 of 'manioc flour,' and 12 of 'salt,' giving a total of 176. Of the 176 tokens of these mass nouns, three tokens were marked with the plural – two tokens of *u³i¹* 'manioc flour' and one of *di³ẽ³ru¹* 'money.' (14) is a corpus example of *u³i¹* 'manioc flour' with the plural.

(14)   Talking about how Caballococha (provincial capital) did not have a market in the old days. When Ticuna people arrived from their houses to town, they would sit down next to the church. Then,

   a.   *i⁵na¹ʎu³ẽ⁴ẽ³gi⁵ʔĩ⁴, ɹe⁵ma² na³¹ʔka̠¹ na⁴ta⁴e³gi⁴,*

      i⁵=   na¹=   ʎu³ẽ⁴ẽ³ =gi⁵ =ʔĩ⁴   ɹe⁵ma²   na³¹ =ʔka̠¹ na⁴=   ta⁴e³ =gi⁴
      IMPF=   3(IV).SBJ.SC=   wait   =PL =SUB   there(ANA.REMPST)   3(IV) =PURP 3(IV)SBJ= buy   =PL

      'They would wait and (the townspeople) would buy (their produce) there,'

   b.   *i⁴ u³i¹gi⁴ ri¹ po³ʔi⁵gi⁴ ɹe⁴ma⁴ã¹ki² ni⁴¹ʔĩ⁴.*

      i⁴   **u³i¹**   **=gi⁴** ri¹   po³ʔi⁵   =gi⁴ ɹe⁴ma⁴ã¹ki²   ni⁴¹ʔĩ⁴
      DET(IV)   **manioc.flour**(IV)   **=PL**   and   plantain =PL   thus(ANA.REMPST)   3(IV)SBJ.COP

      'Like that (they would sell) **manioc flours** and plantains.' (landscape description)

Given the imperfective aspect marking on the predicate in (14a) and the fact that manioc flour is conventionally sold in packaged portions, (14b) supports a reading conveying that people habitually sold multiple individual portions of manioc flour. This is a portion reading – the same kind of reading which we saw licensing plurals on mass nouns in (12) and (13). The same is true of the other two examples of pluralized mass nouns in the corpus, one of which describes exactly the same eventuality as (14b) and one of which (with 'money') describes multiple events involving different portions of money.

Thus, corpus data about pluralized mass nouns is consistent with elicited data. Mass nouns very rarely occur with the plural in actual language use, and when they do, context always supports a portion reading.

3.2.2 Mass Nouns are incompatible with plural verbs

Notional mass nouns are also incompatible with the plural forms of number-alternating verb roots. As with the nominal plural, consultants mostly rejected sentences, such as (15), which combined mass noun objects with the PlO forms of number-alternating transitive verbs.

(15)   Context: I dropped off a quantity of manioc starch. It was not packaged in bags or containers.
       # ti³pa³ka¹   ŋe⁵ma²   tʃa³=   **wo¹**
       # manioc.starch there(ANA) 1SG.SBJ= **discard:PlO**

       (Attempted: I left the manioc starches there.)

When consultants did accept sentences where mass noun objects combined with the PlO forms of number-alternating verbs, they invariably made comments indicating a reading of the mass noun object as referring to a plurality of portions of the substance, as in (16).

(16)   ?   de⁴³ʔa⁵   nu²a²   na¹=   **na⁴**
       ?   water   here   IMP=   **transport:InamPlO**

       'Bring the waters here.' (elicited)
       YCG's comment: 'You could say this if the water was in bags.'

Consultants repaired structures like (15) and (16) in two ways. Sometimes, they simply changed the PlO form of the alternating verb to the SgO form, as in (17). At other times, consultants repaired these structures by retaining the PlO form of the verb but employing a container phrase rather than a bare mass noun object. I return to this strategy in the discussion of container phrases (§6).

(17)   de⁴³ʔa⁵ nu²a² na¹= **ʎe⁴³**
       water   here IMP= **transport:InamSgO**

       'Bring the water here.' (elicited)

Thus, despite the other similarities between Ticuna's classificatory verbs and those of Dene languages, the language's number-alternating verb roots do not behave like those of Dëne Sųłiné with respect to combination with mass nouns. In Dëne Sųłiné, the plural alternants of classificatory verbs do not combine with mass nouns, but neither do the singular alternants. Instead, Dëne Sųłiné mass nouns combine with classificatory verbs unique to mass arguments (Wilhelm 2006: 439). Ticuna, on the other hand, does not make this distinction between count and mass objects in its system of classificatory verbs. Instead, the language simply combines mass nouns with the singular/number-neutral forms of alternating verbs, treating them – for purposes of the classificatory verb system – like singular count nouns.

3.3 Number marking: Summary

Ticuna displays extensive marking of number in both nominal and verbal domains. In the nominal domain, there is a single, optional plural enclitic which is compatible with all count nouns, regardless of animacy, alienability, or noun class. This enclitic is not, however, compatible with notional mass nouns. Similarly, verbs participate in root alternations tracking argument number. Count arguments can license the plural alternants of number-alternating verbs, even if they do not bear the nominal plural. Mass arguments, on the other hand, cannot license the plural forms of alternating verbs. Thus, acceptability with plural marking, whether on the noun itself or on the predicate, clearly distinguishes mass and count nouns.

4. Numerals

I begin this section by introducing the numeral system of Ticuna (§4.1). I then discuss the distribution of numerals with mass vs. count nouns (§4.2).

4.1 Numerals and their syntax

The Ticuna speakers consulted for this study (and Cushillococha Ticuna speakers in general) only use two numerals of Ticuna origin: *wɨ⁴³ʔi⁴* 'one' and *ta²ʔre⁴* 'two.' While they also know higher numerals of Ticuna origin equivalent to 'three' through 'ten,' in practice Cushillococha people generally use Spanish numerals for all quantities above two. Therefore, this section focuses only on the equivalents of 'one' and 'two.'[3]

Neither *wɨ⁴³ʔi⁴* 'one' nor *ta²ʔre⁴* 'two' can combine directly with **any** noun, whether mass or count. Instead, numerals – and in fact, all quantifiers in Ticuna – must combine with a noun that is introduced by a determiner. This is shown by (18), where omitting the determiner *ɟa⁴* leads to ungrammaticality.

(18) ta²ʔre⁴ ***(ɟa⁴)**   wo³ru³a¹ ti³¹ =ʔi³   tʃa³=   dau²
      two   ***(DET(I))** mirror(I) 3(I) =ACC 1SG.SBJ= see

‘I saw two ***(DET)** mirrors.’ (elicited)

While determiners are obligatory with all quantifiers, including numerals, I do not analyze them as numeral classifiers. This reflects three key properties of the determiners.

First, while determiners are obligatory in quantifier phrases, they are also obligatory in many environments that do not involve quantification. For example, all postverbal noun phrases – whether or not they contain quantifiers – must be introduced by determiners. Thus, a determiner must introduce the postverbal subject *wo³ru³a¹* 'mirror' in (19), even though it is not quantified. As such, determiners do not have the syntactic distribution of numeral classifiers.

(19) ta⁴=   me⁴³ ***(ɟa⁴)**   wo³ru³a¹
      3(I)SBJ= good ***(DET(I))** mirror(I)

‘The ***(DET)** mirror is good / ***(DET)** Mirrors are good.’ (elicited)

Second, the determiners obligatorily introduce some classes of nouns which cross-linguistically fail to occur with classifiers, such as first and second person pronouns. (20), where a determiner must introduce the first-person inclusive pronoun *ɟi¹e²ma⁴*, demonstrates that the obligatoriness of determiners in quantifier phrases extends to pronouns. Determiners' compatibility with first and second person pronouns represents additional evidence that determiners do not have the syntactic distribution of numeral classifiers.

(20) gu⁵ʔe²ma³ ***(a⁴)**   ɟi¹e²ma⁴ ti⁴=   me³¹kɨ³ma³
      all(I)   ***(DET(I))** 1INCL   1INCL.SBJ= good.character

‘All of ***(DET)** us are morally good.’ (elicited)

Third, there are only two determiners. One, which I gloss as DET and which has the forms *(ɟ)a⁴* (noun class I/II) ∼ *(ɟ)a¹* (III) ∼ *i⁴* (IV/V), can introduce nouns in any environment.

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[3] An additional motivation for this focus is that 'one' and 'two' are monomorphemic, while all higher Ticuna numerals are morphologically complex. *To¹ma⁵ɛ¹pɨ³* 'three' is derived from a cranberry morph *to¹ma⁵* and the productive suffix *-ɛ¹pɨ³* 'quantity,' and *ã³gi⁴mɨ¹kɨ³* 'four' can be parsed as a verb meaning 'they have companions' (*<ã³=gi⁴=mɨ¹kɨ³* 'have=pl=companion'), a common etymology in Northwestern Amazonia (cf. Epps 2013). The numerals 'five' through 'ten' are derived from the word meaning 'hand,' and 'eleven' through 'twenty' are derived from the word meaning 'foot.' Anderson (1962: 163-164) provides further detail on the native-vocabulary numeral system.

The other, which I gloss as DET.REMPST and which has the invariant form *ga⁴*, can introduce nouns only in clauses with remote past temporal reference (part of a broader nominal tense phenomenon in the language; see Soares 2017). As suggested by the presence of just two determiners, the determiners do not classify nouns by shape or other physical properties; therefore, they also lack the semantics expected for numeral classifiers.

To summarize, the determiners of Ticuna do not have the syntactic distribution, semantics, or numerosity typical of numeral classifiers, including in other Amazonian languages (Seifart 2005; Seifart & Payne 2007). Consequently, rather than treat the determiners as classifiers, I assume that they are part of an obligatory structure which is necessary to license all nouns, like the determiners of Salish languages (Davis et al. 2014: e199-e204). That is, the function of Ticuna determiners is exclusively syntactic. They are not definite or indefinite articles; in fact, they make no semantic contribution to the noun phrase except conveying the noun class of the following noun. To the extent that determiners do not appear with all nouns (e.g., they cannot appear in preverbal object noun phrases unless they are quantified), I assume that their under-realization has phonological motivations, driven by the determiners' prosodic status as enclitics to the preceding word.

4.2 Numerals are incompatible with Mass Nouns

While numerals cannot combine directly with any noun, the distribution of numerals still diagnoses the count-mass distinction. Combining a numeral with a determiner complemented by a count noun is always acceptable, whether the count noun is human (21a), nonhuman animate (21b), or inanimate (18). Nouns that combine with numerals normally do not bear the nominal plural, as shown by the absence of the plural *=gɨ⁴* in (18) and (21).

(21) a. na⁴= ŋe²ʔma⁴ i⁴ ta²ʔre⁴ i⁴ **ʎe³ʔti²ʔɨ̃⁴**
          3(IV).SBJ= be.in.place DET(IV) two DET(IV) **young.man**(IV)

          'Two **young men** are there.' (storyboard)

      b. ta²ʔre⁴ i⁴ **tʃo⁴³ʔni⁵** =ʔɨ̃³ tʃa³= dau²
          two   DET(IV) **fish**(IV) =ACC 1SG.SBJ= see

          'I saw two **fish**.' (elicited)

By contrast, consultants almost invariably rejected attempts to combine a numeral with a determiner complemented by a mass noun, such as (22).

(22) # ta²ʔre⁴ i⁴ **u³i¹** =ʔɨ̃³ tʃa³= dau²
      # two   DET(IV) **manioc.flour**(IV) =ACC 1SG.SBJ= see

      (Attempted: I saw two **manioc flours**.)

Whenever consultants accepted structures like (22), they always made comments indicating a reading of the mass noun as denoting a culturally conventional portion of the substance. For instance, the consultant's comment in (23) offers two different examples of this portion reading of the mass noun *ka³pe⁴* 'coffee.'

(23) ta²ʔre⁴ ɟa⁴ **ka³pe⁴** nu²a² pe³= ʎe⁴³ a³ʔ =ru⁵ɨ̃¹
      two   DET(II) **coffee**(II) here 2PL= transport:InamSgO drink =PURP

      'Y'all bring two **coffees** here, to drink.' (elicited)

      KSC's comment: 'You could say this to order two cups or two packets of (instant) coffee.'

The portion reading of (23) is not so prominent as to make this sentence unquestionably acceptable. While KSC accepted (23) on the portion reading indicated by her comment, another consultant – LWG – rejected it completely, requiring a container phrase (§6) to allow a portion reading.

The portion reading appears to be the only licit reading available to mass nouns combining with numerals. Consultants rejected attempts to use the structure in (22) and (23) to quantify kinds of the substance. Instead, they preferred to employ an enclitic equivalent to English *kind*, as shown in (24).[4]

(24)   a.   Context: I sell two kinds of salt in my store: iodized and non-iodized.

            # tʃo³¹ =ʔɨ̃⁵   na⁴=   ɟi²ma⁴ ɟa⁴   ta²ʔre⁴ ɟa⁴   **ɟu³ki³ra¹**
            # 1SG =IBEN 3(II).SBJ= exist(II) DET(II) two   DET(II) **salt(II)**

            (Attempted: I have two **salts** i.e. kinds of salt.)

            LWG's comment: 'This means you have two bags of the same kind of salt' [portion reading].

    b.   Consultant's correction of (24a):

            tʃo³¹ =ʔɨ̃⁵   na⁴=   ɟi²ma⁴ ɟa⁴   ta²ʔre⁴ **=ra³ɨ̃³** =ki³   ɟa⁴   **ɟu³ki³ra¹**
            1sg =IBEN 3(II).SBJ= exist(II) DET(II) two   **=kind** =NMLZ(II) DET(II) **salt(II)**

            'I have two **kinds** of salt.' [with enclitic 'kind']

The universal quantifier *wɨ⁴³ʔi⁴tʃi¹gɨ¹* 'every' is derived from the numeral *wɨ⁴³ʔi⁴* 'one' with the distributive enclitic *=tʃi¹gɨ¹*. Like numerals, *wɨ⁴³ʔi⁴tʃi¹gɨ¹* 'every' cannot combine with determiners that introduce mass nouns (25).

(25)   #   **wi⁴³ʔi⁴tʃi¹gi¹** a⁴   ɟu³ki³ra¹ =ʔɨ̃³   tʃa³=   dau²
            #   **every**   DET(II) salt(II) =ACC 1SG.SBJ= see

            (Attempted: I saw/examined **every** salt.)

4.3 Numerals: Interim summary

Ticuna numerals do not combine directly with either mass or count nouns. Instead, numerals – and all other quantifiers – must combine with a noun introduced by a determiner. When this requirement is met, mass and count nouns **do** contrast in acceptability with numerals. Numerals can combine with determiners that introduce count nouns. They cannot combine with determiners that introduce mass nouns, except on coerced portion readings of the mass noun.

5. Quantifiers other than numerals

Other than numerals and numeral-derived quantifiers like 'every,' Ticuna displays at least six quantifiers which can quantify count nouns. Two quantifiers are strong (i.e., cannot appear in the pivot of an existential; Milsark 1974): *gu⁵ʔɨ̃⁴(ma³)* 'all' and *nɨ³¹ma²ʔɨ̃⁴* 'partitive some.' The other four quantifiers are weak (can appear in the pivot of an existential): *mu¹ʔɨ̃⁴(ma³)* 'many,' *no³¹ʔre⁵* 'few,' *ta²ʔu²ʔɨ̃⁴* 'none,' and *ɲu¹ʔre⁵* 'how many?' All of these quantifiers, except for *no³¹ʔre⁵* 'few' and *ɲu¹ʔre⁵* 'how many?', display obligatory noun class

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[4] I do not have data about whether numerals combining with mass nouns can also be read as quantifying over minimal parts of the noun (e.g., whether (24) is acceptable with the reading 'I saw two grains of salt').

agreement with their complement noun. Like numerals, Ticuna quantifiers always combine with nouns introduced by determiners, never with bare nouns.

Five of the six quantifiers either are transparently derived from nominalizations of verb roots, or can also be used (with no additional morphology) as existential/quantificational verbs.[5] Table 2 shows the verb roots corresponding to each of the quantifiers just introduced.

Table 2: Count noun quantifiers and related verbs

Quantifier	Related Verb	Quantifier's Relationship to Verb
gu⁵ʔĩ⁴ma³ 'all'	*gu̱¹* 'run out; be finished'	Nominalization of verb
mu¹ʔĩ⁴ma³ 'many'	*mu⁴* 'exist many; be numerous'	Nominalization of verb
no³¹ʔre⁵ 'few'	*no³¹ʔre⁵* 'exist few; be few'	Identical to verb
ta²ʔu²ʔĩ⁴ 'none'	*tau²ʔ* 'negative existential'	Nominalization of verb
ɲu̱¹ʔre⁵ 'how many?'	*ɲu̱¹ʔre⁵* 'how many are there?'	Identical to verb

(26) demonstrates that all of the quantifiers just listed are compatible with count nouns. As with numerals, nouns which combine with quantifiers usually do not bear the nominal plural enclitic; for example, none of the nouns in (26) display it.

(26) a. ni³¹ =ʔĩ³ tʃa³= dau² ɟa¹ [gu⁵ʔĩ⁵ne¹ma³ / ni³¹ma²ne¹ / mu¹ʔĩ⁵ne¹ma³ /
3(III) =ACC 1SG.SBJ= see DET(III) [all(III) / SOME(III) / many(III) /
no³¹re⁵] ɟa¹ u³ku¹
few] DET(III) needle(III)
'I saw all of the needles / some of the needles / many needles / a few needles.' (elicited)

b. **ta²ʔu⁵ne¹ma³** ɟa¹ u³ku¹ =ʔĩ³ tʃa³= dau²
none(III) DET(III) needle =ACC 1SG.SBJ= see

'I saw **no** needles.' (elicited)

c. **ɲu̱¹ʔre⁵** ɟa¹ u³ku¹ ɟa¹ ni³¹ = ʔĩ³ ku¹= dau² =ʔĩ⁵ne¹
how.many DET(III) needle(III) DET(III) 3(III) =ACC 2SG.SBJ.SC= see =NMLZ(III)

'**How many** needles did you see?' (elicited)

Of the six quantifiers which are compatible with count nouns, three quantifiers – *gu⁵ʔĩ⁴(ma³)* 'all,' *ta²ʔu²ʔĩ⁴* 'none,' and *ni³¹ma²ʔĩ⁴* 'partitive some' – are also compatible with mass nouns (27).

(27) a. **gu⁵ʔĩ⁴ma³** i⁴ de⁴³ʔa⁵ ri¹ na⁴= ga̱u¹ =tʃi⁴i³
all(IV) DET(IV) water(IV) TOP 3(IV)SBJ= cold =CLFI:liquid

'**All** of the water is cold.' (elicited)

b. **ta²ʔu²ʔĩ⁴** i⁴ de⁴³ʔa⁵ ri¹ na⁴= nai⁴ =tʃi⁴i³
none(IV) DET(IV) water(IV) TOP 3(IV)SBJ= hot =CLFI:liquid

'**None** of the water is hot.' (elicited)

c. Context: You mixed white and yellow manioc flour together.

ni³¹ma²ʔĩ⁴ i⁴ u³i¹ ri¹ na⁴= tʃo̱¹
SOME(IV) DET(IV) manioc.flour(IV) TOP 3(IV)SBJ= white

'**Some** of the manioc flour is white.' (elicited)

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[5] The only quantifier which is not related to a verb is *ni³¹ma²ʔĩ⁴* 'partitive some,' which is derived from the third person pronoun.

The other three quantifiers which combine with count nouns – *mu¹ʔĩ⁴(ma³)* 'many,' *no³¹ʔre⁵* 'few,' and *ɲu̱¹ʔre⁵* 'how many?' – are not acceptable with mass nouns. Instead, these three quantifiers alternate with quantifiers which are specific to mass nouns. I now discuss each of the three count noun-specific quantifiers and their mass noun equivalents.

5.1 *mu¹ʔĩ⁴(ma³)* 'many'

(28) demonstrates that the quantifier *mu¹ʔĩ⁴(ma³)* 'many' is not acceptable with mass nouns, except on the coerced portion reading represented by the comment.

(28) # **mu¹ki³ma³** ɟa⁴   na³¹=   gɨ¹
      # **many**(II)   DET(II)   DFLT.POSS=   blood(II)

(Attempted: **many** bloods)
LWG's comment: 'But a lab tech could say this, talking about many test tubes of blood.'

Instead of *mu¹ʔĩ⁴(ma³)* 'many,' mass nouns are quantified with the quantifier *ta³¹ʔĩ⁴* 'a lot.' Like 'many,' *ta³¹ʔĩ⁴* 'a lot' undergoes noun class agreement. In (29), it appears in the form for noun class II.

(29) **ta³¹ki³**   ɟa⁴   na³¹=   gɨ¹
      a.lot/big(II)   DET(II)   DFLT.POSS=   blood(II)

'**a lot** of blood' (elicited)

With count nouns, *ta³¹ʔĩ⁴* 'a lot' is not interpreted as a quantifier – even when it occurs in the prenominal position usually reserved for quantifiers, as in (30). Rather, when used to modify a count noun, the item means 'big': that is, it is interpreted as a property concept term conveying size.

(30) **ta³¹ʔĩ⁴**   i⁴   du¹ĩ³ʔĩ⁴
      a.lot/big(IV) det(IV) person(IV)

'a **big, i.e. fat,** person'

Not: 'a lot of people' (elicited)

Morphologically, *ta³¹ʔĩ⁴* 'a lot, big' is a nominalization of the verb root *ta⁴³*. This verb root may also be used as a predicate. When predicated of a count noun, *ta⁴³* is simply a stative verb meaning 'be big.' By contrast, when predicated of a mass noun, *ta⁴³* is interpreted as a quantificational existential verb meaning 'be abundant,' as shown in (31).

(31) Context: Describing a flood.

      na⁴=   **ta⁴³**   =ʔɨ⁵tʃi² i⁴   de⁴³ʔa⁵
      3(IV)SBJ= **a.lot/big** =really DET(IV) water(IV)

'**There was a lot** of water.' (landscape description)

Parallel to *ta³¹ʔĩ⁴* 'a lot, big,' the count noun-specific quantifier *mu¹ʔĩ⁴(ma³)* 'many' is also a nominalization, derived from the verb root *mu⁴* 'be numerous' (cf. Table 2). This verb, like the verb *ta⁴³* 'be abundant,' also functions as a quantificational existential verb. While *ta⁴³*

'be abundant' selects a mass noun subject, *mu⁴* 'be numerous' selects a count noun subject (32).

(32) Context: Describing what Cushillococha's fish stocks were like in the 1960s-1970s.

    to³ma³ka³tʃi¹   =gi⁴ ri¹ na⁴=   **mu⁴**
    Colossoma.macropomum(IV) =PL TOP 3(IV)SBJ= **many**

'**There were many** tambaqui fish.' (text: 'When I was a child')

Thus, the mass noun-specific quantifier *ta³¹ʔĩ⁴* 'a lot' and its verbal root *ta⁴³* 'be big, be abundant' behave exactly parallel to the count noun-specific quantifier *mu¹ʔĩ⁴* 'many' and its verbal root *mu⁴* 'be numerous.' In each pair, the derived form functions as a noun phrase quantifier, and the underived (verb root) form acts as a quantificational existential verb.

5.2 *no³¹ʔre⁵* 'few'

Just like *mu¹ʔĩ⁴(ma³)* 'many,' *no³¹ʔre⁵* 'few' is unacceptable with mass nouns (33), except if the mass noun is coerced to a portion reading, as indicated by the comment.

(33) # **no³¹re⁵ki³** ɟa⁴   ɟu³ki³ra¹
    # **few**(II)   DET(II) salt(II)

(Attempted: **a few** salts)

LWG's comment: 'But you could say this if someone asked you how many bags of salt you had.'

Instead of *no³¹ʔre⁵* 'few,' mass nouns are quantified with *i⁵¹ra³ʔĩ⁴* 'a little' (34).

(34) **i⁵¹ra³ki³**   ɟa⁴   ɟu³ki³ra¹
    a.little/small(II) det(II) salt(II)

'**a little bit** of salt' (elicited)

The quantifier *i⁵¹ra³ʔĩ⁴* 'a little,' exactly like its mass-quantifying counterpart *ta³¹ʔĩ⁴* 'a lot,' is derived from a lexical verb. This verb root is *i⁵¹ra¹*. When the verb *i⁵¹ra¹* is predicated of a count noun or used to modify a count noun, it is read as a property concept 'be small.' It does not yield a quantificational reading, even when it occurs prenominally, in the syntactic position where a quantifier would appear (35).

(35) a. *i⁵¹ra³ʔĩ⁴ i⁴ ĩ³¹a¹ne¹a³ki¹wa⁵ ri¹,*
       i⁵¹ra³ʔĩ⁴   i⁴   ĩ³¹a¹ne¹   -a³ki¹ =wa⁵ ri¹
       a.little/small(IV) DET(IV) town(IV) -DIM =ALL TOP

     In a **small** town (**not**: in a few towns),

    b. *wi⁴³ʔi⁴ i⁴ ã³ɛ¹ga³ki³ du¹ĩ³ʔĩ⁴gi⁴kạ¹ ŋe³ma²gu² ri¹, gu⁵ʔĩ⁴ma³ i⁵na⁴ʎu³gi⁴.*
       wi⁴³ʔi⁴ i⁴   ã³ɛ¹ga³ki³   du¹ĩ³ʔĩ⁴ =gi⁴ =kạ¹ 0=   ŋe³ma² =gu² ri¹
       one   DET(IV) leader(IV) person =PL =PURP 3(IV)SBJ.SC= call.for =SUB TOP
       gu⁵ʔĩ⁴ma³ i⁵=   na⁴=   ʎu³ =gi⁴
       all(IV)   IMPF=   3(IV)SBJ= arrive =PL

     When a political leader calls the people (to have a community meeting), everyone comes.
     (But in bigger towns, they don't.) (text: 'Living in a small town')

But while *i⁵¹ra¹* means 'small' when it modifies or is predicated of a count noun, it functions as a quantificational existential verb 'be little, i.e., not be abundant' when predicated of a mass noun (36).

(36)　Context: Describing a stream at the height of dry season.

na⁴ʔ=　　　**i⁵¹ra¹**　　　=ʔi⁵tʃi² i⁴　　　de⁴³ʔa⁵
3(IV)SBJ= **a.little/small** =really DET(IV) water(IV)

'**There's very little** water.' (yard description)

Thus, the quantifier *i⁵¹ra³ʔĩ⁴* 'a little' exhibits the same pattern as the quantifier *ta³¹ʔĩ⁴* 'a lot' with respect to the contrast between mass and count nouns. Both items express quantification when combined with mass nouns, but size when combined with count nouns. Furthermore, this contrast extends to the verb roots from which the items are derived. The verb roots *i⁵¹ra¹* 'be small, little (quantity)' and *ta⁴³* 'be big, abundant' behave as quantificational existential verbs with mass subjects, but express size with count subjects.

5.3 *ɲu̱¹ʔre⁵* 'how many?'

The interrogative quantifier *ɲu̱¹ʔre⁵* 'how many?' is also incompatible with mass nouns (37a). As with other quantifiers, coercion to a portion reading renders the item acceptable with mass nouns, per (37b).[6]

(37)　**ɲu̱¹ʔre⁵**　i⁴　　　de⁴³ʔa⁵　　na⁴=　　balde　　=gu²?
how.many DET(IV) water(IV) 3(IV)SBJ= Sp:bucket =LOC

'**How many** waters are in the bucket?' (elicited)

a.　Unacceptable if the bucket is filled with uncontained water [volume reading of mass noun]

b.　Acceptable if the bucket is filled with individual bottles of water [portion reading of mass noun]

In lieu of *ɲu̱¹ʔre⁵* 'how many?' questions about the quantity of mass nouns are asked with the quantifier *(na³)ɲu̱¹ra³ĩ³ʔĩ⁴* 'how much?' as in (38).

(38)　Context: A bucket is filled with uncontained water.

na³ɲu̱¹ra³ĩ³ʔĩ⁴ i⁴　　　de⁴³ʔa⁵　　na⁴=　　ŋe²ʔma⁴ i⁴　　balde　　=wa⁵
how.much(IV) DET(IV) water(IV) 3(IV)SBJ= be.in.place DET(IV) Sp:bucket =ALL

'**How much** water is in the bucket?' (elicited)

The quantifier *(na³)ɲu̱¹ra³ĩ³ʔĩ⁴* 'how much?' is a nominalized form of the interrogative verb *ɲu̱¹ʔra³ĩ¹* 'what size?' This predicate is used to ask about physical properties of count nouns – most prominently size, but also color, as in (39).

(39)　Context: Parent holding up marble to child.

da³¹ʔe²　　　ta⁴=　　**ɲu̱¹ʔra³ĩ¹**
DEM.PROX(I) 3(I)SBJ= **be.what.size/color**

'**What color** is this one?' (conversation)

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[6] I lack data about whether coercion of the mass noun to a partitive reading – for example, a scenario in (37) where the bucket is filled with the contents of many individual bottles of water – also allows *ɲu̱¹ʔre⁵* 'how many?' to combine with mass nouns.

The quantifier *(na³)ɲɯ¹ʔra³ɨ̃³ʔɨ̃⁴* 'how much?' and the interrogative verb *ɲɯ¹ʔra³ɨ̃¹* 'what size?' are not derived from *ɲɯ¹ʔre⁵* 'how many?' Rather, all three items are derived from the interrogative formative *ɲɯ¹ʔ*, which also appears in interrogative words that are not involved in quantification, such as *ɲɯ¹ʔgu²* 'when?'

5.4 Quantifiers: Interim summary

Ticuna has six quantifiers, other than numerals, which can combine with count nouns. Three of these quantifiers are also compatible with mass nouns, and three – the equivalents to 'many,' 'few,' and 'how many?' – are not. Exactly as we saw with plural marking and numerals, combining 'many,' 'few,' and 'how many?' with mass nouns is unacceptable, except under coerced portion readings of the mass noun.

Each quantifier which fails to combine with mass nouns has a counterpart quantifier which combines only with mass nouns. The count noun-specific quantifier *mu¹ʔɨ̃⁴(ma³)* 'many' corresponds to the mass noun-specific quantifier *ta³¹ʔɨ̃⁴* 'a lot.' Likewise, count *no³¹ʔre⁵* 'few' corresponds to mass *i⁵¹ra³ʔɨ̃⁴* 'a little,' and count *ɲɯ¹ʔre⁵* 'how many?' corresponds to *(na³)ɲɯ¹ʔra³ɨ̃³ʔɨ̃⁴* 'how much?' The mass noun-specific quantifiers are grammatically acceptable with count nouns, but with count nouns, they do not convey quantification. Instead, they are interpreted as property concept terms with size-related meanings, such as 'big' and 'small.' Thus, both unacceptability with count noun-specific quantifiers and acceptability with (quantificational readings of) mass noun-specific quantifiers represent diagnostics of the mass-count distinction in Ticuna.

6. Container phrases

Contemporary Ticuna does not have native-vocabulary units of measure such as *quart* or *kilo*. Instead, speakers express measurement using container terms. I call these constructions 'container phrases,' but it would be equally accurate to label them 'measure phrases.'

Ticuna container phrases with mass nouns behave like count noun phrases for the purposes of plural marking, compatibility with numerals, and compatibility with count noun-specific quantifiers. For example, when LWG rejected the use of a numeral with a mass noun in (40a), she suggested two different constructions with numerals quantifying container phrases, (40b) and (40c), as better alternatives.

(40b) and (c) demonstrate two different possible structures which Ticuna container phrases can display. Which structure appears in a particular container phrase is determined by the alienable vs. inalienable status of the container term. In (40b), the container-denoting noun *we³ɨ̃¹* 'straight-sided container' is inalienable. As a result, it must be morphologically possessed by the numeral *ta²ʔre⁴* 'two.' In (40c), the container-denoting noun *ta³tʃãũ¹* 'bowl' (from Spanish *tazón* 'bowl') is alienable. Consequently, it appears as a free word rather than a possessum. Whether the container term is inalienable (40b) or alienable (40c), it appears before the noun, in the syntactic position typical of quantifiers.[7]

(40) a. # ta²ʔre⁴ i⁴ **de⁴³ʔa⁵** =ʔɨ̃³ tʃa³= dau²
          # two DET(IV) **water(IV)** =ACC 1SG.SBJ= see

          (Attempted: I saw two **waters**.)

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[7] I do not have data on whether examples like (40b) and (40c) allow only interpretations involving concrete containers, or also interpretations referring to the quantities characteristic of those containers.

b. ta²ʔre⁴ **=we³ɨ̃¹**   i⁴   de⁴³ʔa⁵   =ʔĩ³ tʃa³=   dau²
    two   **=straight.sided.container** DET(IV) water(IV) =ACC 1SG.SBJ= see

'I saw two **tanks** of water.' (LWG's first volunteered correction to 40a.)

c. ta²ʔre⁴ i⁴   **ta³tʃã̃ũ¹** =ã³ku¹   i⁴   de⁴³ʔa⁵   =ʔĩ³ tʃa³=   dau²
    two   DET(IV) **bowl**   =contents DET(IV) water(IV) =ACC 1SG.SBJ= see

'I saw two **bowls**/bowlfuls of water.' (LWG's second volunteered correction to 40a.)

What is interesting about container terms in Ticuna is that they are not limited to the noun phrase. Rather, container terms can also undergo incorporation into the verb phrase, provided that the verb and container term meet the language's general morphosyntactic requirements for noun incorporation (e.g., the container term must be inalienable).

When a verb incorporates a container term, the container term appears as an enclitic to the verb and no longer appears on the mass-denoting noun phrase, as shown in (41).

(41) nu²a² na³=   na⁴   ***(=pi¹ʔĩ³)** ɟa⁴   ɟu³ki³ra¹
      here IMP>3OBJ= transport:InamPlO ***(=NI:bag)** DET(II) salt(II)

'Bring two **bags** of salt here.' (elicited)

Even though the container term is incorporated into the verb in (41), rather than appearing in the noun phrase, the mass noun object still behaves as count for purposes of plural marking. That is, the verb of the clause, which displays root alternations for number, appears in the plural form – a structure which would normally be unacceptable with a mass object (§3.2).

7. Conclusion

Evidence for the mass-count distinction is abundant in Ticuna. In the language's system of plural marking, mass nouns are incompatible with both nominal and verbal plurals (§3). In the quantifier system, mass nouns cannot combine with numerals (§4), nor with three of the six quantifiers available to count nouns. Instead, mass nouns combine with three quantifiers which select only mass nouns (§5). Combining mass nouns with plural marking, numerals, and count noun-specific quantifiers requires either the use of a container phrase (§6), or coercion of the mass noun to a portion reading (examples 12, 13, 23, a.o.).

For reasons of space, this paper did not discuss all forms of number marking and quantification which exist in Ticuna, particularly in the richly lexicalized domain of verbal number. Future research should examine whether number markers which were not described in this study – such as verbal plural enclitics and number-alternating verb suffixes – also systematically distinguish between mass and count arguments.

Last, data collected for this study provided no evidence for further countability distinctions within the class of nouns, such as a distinction between true and 'fake' or aggregate mass nouns. While only a limited number of nouns were tested, all substance-denoting nouns tested patterned together on criteria diagnosing the mass-count distinction, and all individual-denoting nouns patterned apart. Thus, future work should also examine whether Ticuna truly lacks aggregate mass nouns, as some nouns not explored in this study – for example, *pa³ni³* 'letter (document), written material' – behave as aggregate mass nouns in other languages.

References

Anderson, Doris (1962). *Conversational Ticuna*. Yarinacocha, Peru: SIL.

Bardagil Mas, Bernat (2018). *Case and agreement in Panará* (Doctoral dissertation). University of Groningen. https://www.lotpublications.nl/Documents/511_fulltext.pdf

Corbett, Greville (1991). *Gender*. Cambridge: Cambridge University Press.

Davis, Henry; Carrie Gillon & Lisa Matthewson (2014). How to investigate linguistic diversity: Lessons from the Pacific Northwest. *Language* 90(4): e180-e226. https://doi.org/10.1353/lan.2014.0076

Doron, Edit & Ana Müller (2013). The cognitive basis of the mass-count distinction: Evidence from bare nouns. In Patricia Cabredo Hofherr & Anne Zribi-Hertz (eds.), *Cross-linguistic studies on noun phrase structure and reference*, pp. 73-101. Leiden: Brill.

Epps, Patience (2013). Inheritance, calquing, or independent innovation? Reconstructing morphological complexity in Amazonian numerals. *Journal of Language Contact* 6(2): 329-357. https://doi.org/10.1163/19552629-00602007

Farmer, Stephanie (2015). *Establishing reference in Máíhĩki* (Doctor of Philosophy in Linguistics). Berkeley: University of California. https://escholarship.org/uc/item/0rn709mg

Fernald, Theodore B. & MaryAnn Willie (2001). Navajo classification and coercion. In *Proceedings of Semantics of Underrepresented Languages in the Americas*, pp. 47–52. Amherst: Graduate Linguistics Students Association. Instituto Socio-Ambiental (2017). Introdução: Ticuna. https://pib.socioambiental.org/pt/povo/ticuna

Lewis, M. Paul; Gary F. Simons & Charles D. Fennig (eds.) (2014). *Ethnologue: Languages of the world*. Dallas: SIL International 17th edn.

Lima, Suzi (2017). On the acquisition of distributivity in Yudja. *Revista de Estudos da Linguagem* 25(3): 1613-1646. http://dx.doi.org/10.17851/2237-2083.25.3.1613-1646

Milsark, Gary Lee (1974). *Existential sentences in English* (Doctoral dissertation). Massachusetts Institute of Technology. https://doi.org/10.4324/9781315856728

Montes Rodríguez, María Emilia (1995). *Tonología de la lengua ticuna (Amacayacu)*. Bogotá: Universidad de los Andes.

Neely, Kelsey C. (2019). *The linguistic expression of affective stance in Yaminawa (Pano, Peru)* (Doctor of Philosophy in Linguistics). Berkeley: University of California. https://escholarship.org/uc/item/4h38f3cg

Santos, Abel (2005). *Hacia una dialectología ticuna del Trapecio Amazónico colombiano* (MA thesis). Universidad Nacional de Colombia, Sede Amazonas. https://repositorio.unal.edu.co/handle/unal/9728

Seifart, Frank (2005). *The structure and use of shape-based noun classes in Miraña* (*North West Amazon*) (PhD Thesis). Nijmegen: Radboud University Nijmegen. http://hdl.handle.net/11858/00-001M-0000-0013-1E5B-0

Seifart, Frank & Doris L. Payne (2007). Nominal classification in the North West Amazon: Issues in areal diffusion and typological characterization. *International Journal of American Linguistics* 73(4): 381–387. https://doi.org/10.1086/523770

Skilton, Amalia (2015-2018). *Ticuna elicitation and texts. Survey of California and Other Indian Languages*. University of California, Berkeley, Collection 2015-06. http://dx.doi.org/doi:10.7297/X29P2ZPJ

Skilton, Amalia (in press). Ticuna (tca) language documentation: A guide to materials in the California Language Archive. *Language Documentation & Conservation*.

Skilton, Amalia & Angel Bitancourt Serra (2018-2020). *Ticuna conversations. Survey of California and Other Indian Languages*. University of California, Berkeley, Collection 2018-19. http://dx.doi.org/doi:10.7297/X2F769QD

Soares, Marília Facó (2000). *O suprassegmental em tikuna e a teoria fonológica*. Investigaçãode aspectos da sintaxe Tikuna, vol. 1. Campinas, SP.: Editora da UNICAMP.

Soares, Marília Facó (2017). A análise de tempo em Ticuna (Tikuna) revisitada: Questões sobre anáfora temporal e sequenciamento temporal. *Revista Linguíʃtica* 13(2): 263-285. http://dx.doi.org/10.31513/linguistica.2017.v13n2a14035

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

Wilhelm, Andrea (2008). Bare nouns and number in Dëne Sųłiné. *Natural Language Semantics* 16(1): 39-68. https://doi.org/10.1007/s11050-007-9024-9

Willie, MaryAnn (2000). Individual- and stage-level predication and the Navajo classificatory verbs. In Andrew Carnie; Eloise Jelinek & MaryAnn Willie (eds.), *Papers in honor of Ken Hale*, pp. 39-50. Cambridge: MIT Working Papers in Endangered and Less Familiar Languages.