Nominal Reference in a Tiered Lexicon: A Semantic Account of Noun Classifiers in Two Amazonian Languages

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1 Introduction

- The term 'classifier' is used to describe morphosyntactically and semantically heterogeneous systems in Amazonian languages, to the point that it is unclear whether this term describes a single grammatical category[1]

- Máíhɨ̀kì (Tukanoan)[2] and Matsigenka (Arawak),[3] two unrelated and geographically disparate languages of Peruvian Amazonia, are exemplars of this heterogeneity

- Our goal here is to be more precise in delineating classifier systems in these two languages by examining more general semantic properties of the nominal lexicon

    - In particular, what is required of different nouns in these languages to establish reference?
    - We take as our starting point the notion – proposed by Chierchia (1998) – that languages differ with respect to the argumental or predicative status of bare nouns

- We find that elements that are usually described as classifiers can more usefully be described on a scale of nominal reference, taking into account animacy, alienability, and related phenomena

    - "Classifiers" in these languages are often elements that cannot refer on their own, hence their combining with other more referential elements
    - They tend to occupy strikingly similar semantic domains (e.g., part terms; see Table 6)

- For these two reasons scholars frequently overlook subtle differences in these elements' referential deficiency that may cause them to pattern morphosyntactically in different ways

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[1] We thank Lev Michael for hours of helpful conversation on the ideas presented here.

[2] Máíhɨ̀kì is a Western Tukanoan language spoken by approximately 80 people along the Algodón, Napo, Putumayo, Sucusari, and Yanayacu rivers of northern Peru. Data here were collected as part of the Máíhɨ̀kì Documentation Project (NSF BCS #1065621), and with support from a Parker Huang Undergraduate Travel Fellowship and two Oswalt Endangered Language Grants. Examples are cited from Stephanie Farmer's field notes (2010-2014) and from texts collected, transcribed, and parsed by Christine Beier, Lev Michael, Amalia Skilton, and Stephanie Farmer.

[3] Matsigenka is a Kampan Arawak language spoken by ~10,000 individuals in the Urubamba and Manú river basins of southeast Peru. The data on which this paper is based comes primarily from Vargas Pereira et al. (2013), a corpus of 170 texts digitized by Christine Beier and parsed in FieldWorks Language Explorer (FLEx) by Lev Michael and Zachary O'Hagan. Example sentences extracted from this corpus are labeled with a three-letter code corresponding to the text title and a sentence number.

1.1 Noun Categorization

- Many languages of the world categorize the nouns in their lexicon in some way

- (Aikhenvald 2003) provides a typology for noun categorization devices that differentiates between **gender**, **noun classifiers**, and **numeral classifiers**

- **Gender** systems:
    - exhibit agreement processes within the NP or with the predicate
    - are typically small, closed classes
    - may be based on semantics (e.g., animacy, sex)

- **Noun classifier** systems:
    - need not exhibit agreement processes
    - may be large, open classes
    - contain elements that may be "swapped out" to change the meaning of a given noun
    - may grammaticalize as markers of syntactic functions

- **Numeral classifier** systems:
    - contain classificatory elements that are contiguous to numerals
    - may be a large, open class
    - need not exhibit agreement
    - are typically based on semantics

- Both Máíh̀k̀ì and Matsigenka exhibit characteristics of all three types of systems.

- We focus on elements that in Aikhenvald's typology might be labeled "noun classifiers" but that pattern quite differently in the two languages

2   Chierchia (1998) & Types

- Chierchia (1998) proposes a typology of nominal reference, the 'Nominal Mapping Parameter'

- Languages differ as to whether their nominal projections are argumental or predicative
    - $[+arg, -pred]$: nouns are **argumental**, of type e (e.g., Mandarin), and refer to **kinds**
    - $[-arg, +pred]$: nouns are **predicative**, of type $\langle e, t \rangle$ (e.g., Italian), and are **properties**
    - $[+arg, +pred]$: nouns may be argumental or predicative, are of types e or $\langle e, t \rangle$ (e.g., English), and either refer to kinds or are properties

- Kinds & Properties:
    - "From an intuitive, pretheoretical point of view, kinds are generally seen as regularities that occur in nature. They are similar to individuals like you and me, but their spatiotemporal manifestations are typically 'discontinuous' "

- "To any natural property, like the property of being a dog, there corresponds a kind, viz. the dog-kind. Conversely, any natural kind will have a corresponding property (the property of belonging to that kind)"

- "What counts as kind is not set by grammar, but by the shared knowledge of a community of speakers. It thus varies, to a certain degree, with the context, and remains somewhat vague. Lexical nouns identify kinds. Complex nouns may or may not"
  (Chierchia 1998:348)

- Typeshifters:

  - Down-operator: takes a property and yields a kind
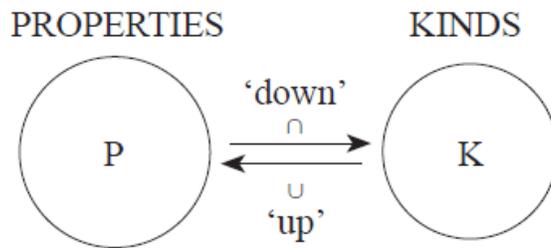 - Up-operator: takes a kind and yields a property

Figure 1: Chierchia's 'up' and 'down' Operators

- Chierchia assumes that the type of bare nouns is uniform within a given language, but we argue that the lexicons of Máíhɨ̀kì and Matsigenka are tiered (i.e., portions of the lexicon have different NMP specifications)

- We analyze Máíhɨ̀kì as having three tiers of nominal reference:

  - Tier 1: $[+arg, -pred]$ (nouns are of type e)
  - Tier 2: $[+arg, +pred]$ (nouns may be of type e or $\langle e, t \rangle$)
  - Tier 3: $[-arg, +pred]$ (nouns are of type $\langle e, t \rangle$)

- We analyze Matsigenka as having two tiers: one which corresponds to Máíhɨ̀kì Tier 1, and another which corresponds to Máíhɨ̀kì Tier 3

- We identify typeshifting elements in each language that allow nouns to traverse the tiers

- We now review evidence from both languages for evidence of a tiered system of reference

  - We focus on the lower (less referential) tiers in each language, and propose that these are the likely source of classifier-like elements

3   Máíhɨ̀kì

- The Máíhɨ̀kì lexicon may be divided into three tiers:

  1. a $[+arg, -pred]$ tier, in which nouns are always argumental (of type e)

3

2. a $[+arg, +pred]$ tier, in which nouns may be either argumental (of type e) or predicative (of type $\langle e, t \rangle$)

3. a $[-arg, +pred]$ tier, in which properties (of type $\langle e, t \rangle$) do not have corresponding kinds, and therefore cannot be argumental unless first typeshifted

- Furthermore, the lexicon includes typeshifters (classifiers) of type $\langle \langle e, t \rangle, e \rangle$, which create new Tier 2 elements (new kinds)

3.1 Tier 1

- Tier 1 elements include most animate nouns in Máíhɨ̀kì

- Nouns of this tier take the object suffix -re in object position

(1) nà yáí**rè** sɨ́kàhɔ́gɨ́

 nà   yáí   -re   sɨ́kà   -hɔ́   -gɨ
 and.then jaguar -OBJ embrace -TEL -3.SG.PAST.DECL

 'And then he embraced the jaguar' (sj1.17.1)

- Tier 1 items take the plural suffix -na and trigger subject number agreement on the verb

(2) ɨ́mɨ̀**nà** téáhàyè yòò**yì** téá

 ɨ́mɨ̀ -na   téáhàyè yòò -yi   téá
 man -ANIM.SP.PL likewise work -3.PL.PRES.DECL also

 'The men work likewise' (ch1.27.1)

- Tier 1 items must be count

- Because bare Tier 1 items may appear as the arguments of verbs, we analyze them as $+arg$

3.2 Tier 2

- Elements of Tier 2 include most inanimate nouns

- These elements can appear alone (bare) as the arguments of verbs, as with *wèè* 'house' in (3)

(3) a. wèè úúhɨ́gɨ́
 wèè *úú   -hɨ   -gɨ*
 house burn.INTR -TEL -3.SG.MASC.PAST.DECL
 'the/a house burned down' (NMM.SJF.9feb2013)

 b. yì wèè bááyí
 *yì **wèè** báá -yi*
 I   house have -1SG.PRES.DECL
 'I have a house' (EMM.SJF.28jan2013)

- Tier 2 elements take the plural suffix -ma and do not trigger subject number agreement

4

(4) ókógàrà**mà** sánìh<u>èà</u>**gì**

ókógàrà -mà   sánì   -h<u>èà</u>   -gì
cloud   -INAN.SP.PL -TEL.PLACT -3.SG.PAST.DECL -3.SG.MASC.PAST.DECL

'The clouds have gone away' _(SJF.JMM.31jan2014)

- A Tier 2 element may appear as the possessum in a possessive construction

  (5)   a.   hánò yì **mì gónó** <u>ú</u>kúbí **mì wèè**

         hánò yì mì   gónó   <u>ú</u>kú -bì   mì   wèè
         now   I   your manioc.beer drink -1.SG.PAST.DECL your house

         'Now I drank your manioc beer in your house'

       b.   mì ígèrè yòòkò bàìkò **mì wèè** kátò?

         mì   ígè   -re   yòò -ko   bàì -ko   mì   wèè
         you what -NON.SUBJ do   -FEM.SG.SS.SIM live -FEM.SG.PRES.INTERR your house
         kátò?
         there

         'What do you do at your house?' _(lim.158.1)

- Tier 2 elements may be either mass or count

  − Mass nouns are distinguished from count nouns by their inability to take the specific plural suffix -ma and their inability to appear in numeral constructions

  (6)   a.   *hàsòmà

         hàsò   -ma
         manioc -INAN.SP.PL

         attempted: 'some/the maniocs' _(NMM.SJF.24jan2013)

       b.   *ókómà

         ókó   -ma
         water -INAN.SP.PL

         attempted: 'some/the waters' _(NMM.SJF.24jan2013)

       c.   wèmà

         wè   -ma
         house -INAN.SP.PL

         'some/the houses' _(HMR.SJF.17jan2013)

       d.   h<u>í</u>tìmà

         h<u>í</u>tì -ma
         hand -INAN.SP.PL

         'some/the hands' _(amn.85.1)

- Because Tier 2 elements may surface bare as the arguments of verbs, we propose that they may be of type e

- Because they may take noun classifier suffixes (discussed below), we propose that they may also be predicates of type $\langle e, t \rangle$

3.3 Tier 3

- Tier 3 elements are characterized by their inability to surface bare as the arguments of verbs
  - verbal roots
  - numeral roots
  - adjectival roots
  - certain nominal roots

- Verbal roots may be differentiated from nominal roots in that they may take verbal inflection

  (7) hérérè bɨárò óó **kwàkòyì**

héré -re	*bɨá*	*-ro*	*óó*	*kwàkò -yi*
peel -SS.SEQ	enormous	-CL:concave	plantain	cook -1.PL.PRES.DECL

  'After peeling, we cook the plantain in an enormous pot' (jal.46.1)

- Verb roots may also be nominalized via a classifying suffix, as below

  (8) àyò, **kwàkòrò** ñíòyì

àyò,	*kwàkò -ro*	*ñíò -yi*
sister	cook -CL:concave	set -1.SG.FUT.DECL

  'Sister, I'm going to set the cooking pot down.' (sja.28.1)

- Adjectival and numeral roots must take a classifying suffix in order to surface as a nominal argument of a verb

  (9) a. máhèìrò ɨ́ɨchí

máhèì -ro	*ɨ́ɨchí*
red -CL:concave	give

  'Give me the red pot' (SJF.LTN.9feb2013)

  b. **tèrò kíórò háírò** bááyí

tè -rò	*kíó -ro*	*háí -ro*	*báá -yi*
one -CL:concave	metal -CL:concave	big -CL:concave	have -1SG.PRES.DECL

  'I have one big metal pot' (NMM.SJF.8feb2013)

- In addition to adjectival, numeral, and verbal roots, Tier 2 elements also include many body parts and other part terms, shown below in Table 1

- Crucially, these part terms may not be possessed

  (10) *yì ch<u>óó</u>

yì	*ch<u>óó</u>*
my	head

  (attempted: 'my head')

6

Table 1: Tier 3 Part Terms

Form	Meaning
ch<u>óó</u>	head
h<u>èè</u>	thigh
k<u>áá</u>	branch
kótì	chest
tárá	bone
tɨká	stick
túrí	room
<u>ú</u>ké	nose
yòò	mouth

- Tier 3 elements also exhibit characteristics of a mass/count distinction

    - A subset of Tier 3 elements are made singular or plural via *-bɨ* and *-ma*, respectively

(11) a. dáà kíúrɨ máítà **ch<u>óó</u>bɨ** hóòyò

    dáà   kíú   -rɨ   máí =tà   ch<u>óó</u> -bɨ   hóò
    bring metal -CL:manufactured we =INFO head -SING break.open

    -yo
    -1.PL.FUT.DECL

    'Bring a machete; we're going to break open the head' (EMR.SJF.27jun2013)

  b. háíkò **ch<u>óó</u>mà** néèrè ñíòrè...

    háíkò ch<u>óó</u> -ma   néè -re   ñíò -re
    tapir head -INAN.SP.PL make -SS.SEQ set -SS.SEQ

    'after putting down the tapir heads...' (fie.25.1)

  c. ...íí **kótìbɨ** tòtèyèrèh<u>ó</u>yì

    íí kótì -bɨ   tòtè   yèrè   -h<u>ó</u> -yi
    his chest -SING pierce.PLACT tear.PLACT -TEL -1.SG.FUT.DECL

    'I will rip open his chest (with arrows)' (mbd 151.1)

- When these nouns are made singular or plural, they assume the properties of Tier 2 nouns

    - They may now be possessed (11); the singular, *-bɨ*-marked form may refer to a kind

- A striking characteristic of *-bɨ* is that it does not pick out a single member of a kind, as the defining characteristic of Tier 3 elements is that there **is** no kind associated with the property in question

    - Instead, it picks out the canonical entity associated with that property
    - *-ma* picks out multiple of those entities

7

- For instance, the Tier 3 predicate *sáyí* means something like 'bristled', and *sáyíbɨ* and *sáyímà* mean 'a broom' and 'multiple brooms', respectively

- Because Tier 3 elements can never appear bare as the arguments of verbs and must be type-shifted in order to become referential, we analyze them as $[-arg, +pred]$

3.4 Typeshifters

- Máíhɨ̀kì has a repertoire of classificatory suffixes that may combine with predicates of type $\langle e, t \rangle$ to yield new kinds; we propose that their type is therefore $\langle \langle e, t \rangle, e \rangle$

Table 2: Máíhɨ̀kì Noun Classifiers

Form	Meaning
-ñaka	pointy things
-ogu	stout, hollow cylinders
-da	bodies of water
-deo	round, shallow and concave things
-yia	oblong things
-yo	slender sticks; digits

(12) a. hàsòyíà

    hàsò -yia

    manioc -CL:oblong

    'manioc tuber' (TIER 2 + CLASSIFIER)

  b. tótòdèò

    tótò -deo

    clay -CL:shallow.disc

    'clay dish' (TIER 2 + CLASSIFIER)

  c. tóyáñàkà

    tóyá -ñaka

    write -CL:pointy

    'pencil' (TIER 3 + CLASSIFIER)

3.5 Count Nouns as Classifiers

- Elements of Tiers 2 and 3 may have a typeshifting ability as well; they are 'repeater' classifiers

(13) a. chóóbɨ yàrìchò

    chóó -bɨ   yàrì -cho

    head -SING small -CL:head

    'a/the small head'

  b. túrìbɨ tètúrì

túrì -b*ɨ* *tè* -*turi*
room -SING one -CL:enclosure

'one room'

3.6 Máíh̰ɨ̀kì Summary

- The Máíh̰ɨ̀kì lexicon may be divided into three tiers: $[+arg, -pred]$, $[+arg, +pred]$, and $[-arg, +pred]$

- These tiers are sensitive to animacy/inanimacy and mass/count distinctions

- What would likely be called "noun classifiers" in Aikhenvald's typology are the count nouns of Tiers 2 and 3, plus the typeshifters which may no longer be considered roots

Table 3: Summary of Nominal Reference in Máíh̰ɨ̀kì

Count	NMP Value	Type(s)		
Tier 1	$[+arg, -pred]$	e		
Tier 2	$[+arg, +pred]$	e	$\langle e, t \rangle$	$\langle \langle e, t \rangle, e \rangle$
Tier 3	$[-arg, +pred]$		$\langle e, t \rangle$	$\langle \langle e, t \rangle, e \rangle$
Classifier	-			$\langle \langle e, t \rangle, e \rangle$
Mass	NMP Value	Type(s)		
Tier 1	-	-		
Tier 2	$[+arg, +pred]$	e	$\langle e, t \rangle$	
Tier 3	$[-arg, +pred]$	$\langle e, t \rangle$		
Classifier	-	-		

4 Matsigenka

- The nominal lexicon is exhaustively categorized along three axes, each with two values
  - Gender [±feminine]: subjects & objects cross-referenced on verbs; possessors cross-referenced on possessums; nominal heads cross-referenced on adjectival modifiers
  - Animacy [±animate]: positive existential verb; nominal heads cross-referenced on numeral and adjectival modifiers; certain interrogative pronouns
  - **Alienability** [±alienable]: different morphological behavior confined to the NP in possessed and non-possessed contexts

- The domain of alienability in Matsigenka can be schematized as in Figure 2

- The domain of alienability lends itself to description in terms of two 'tiers':

  1. Alienable nouns: $[+arg, -pred]$, argumental, kinds
  2. Inalienable nouns: $[-arg, +pred]$, predicative, properties

- Furthermore, the lexicon includes typeshifters of various sorts, more than Máíh̰ɨ̀kì (§4.3)

- The division between tiers in Máíh̰ɨ̀kì is more sensitive to animacy, whereas in Matsigenka is sensitive solely to alienability
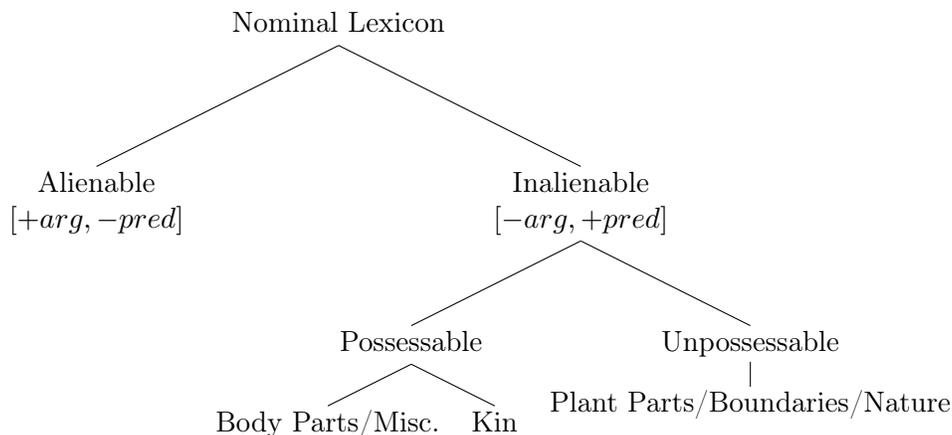
Figure 2: Matsigenka Alienable & Inalienable Nouns

4.1 Tier 1: Alienable Nouns

- Generally speaking, alienable nouns in Matsigenka include all non-kin animates, certain kin terms, flora and fauna species, and certain manufactured objects (e.g., baskets)

- The defining criterion for alienable nouns in Matsigenka is that they can surface without any additional morphology – which we will refer to as 'bare' – as in (14)

  (14) ...inpankitakera shinki.

   | *i-* | *n-* | *panki* | *-t* | *-ak* | *-e* | *=ra* | **shinki** |
   | 3mS- | IRR- | plant | -EPC | -PERF | -IRR.I | =SUB | corn |

   '...first he should plant corn...' (isb13)

- When verbal object enclitics are absent, the interpretation of bare alienable nouns is as a kind, as exemplified in (14), and also in (15)

  (15) Naro nogavintsata ... shima, kemari, osheto ...

   | *naro* | *n-* | *og* | *-a* | *-vintsa* | *-t* | *-a* | **shima** | **kemari** | **osheto** | **maniro** |
   | 1.PRON | 1S- | eat | -EPV | -INCL | -EPC | -REAL.A | fish | tapir | howler.monkey | deer |

   SPANISH: 'A mí me gustan ... pescado, sachavaca, mono, venado...'
   ENGLISH: 'I like [i.e., to eat] ... fish, tapir, monkey, deer...' (mto25)

- When alienable nouns are possessed, they exhibit a possessive prefix and an allomorph of the alienable possession suffix *-ne* ~ *-te* A.P, as in (16)

  - *-ne* occurs with two-syllable roots, while *-te* occurs with three-syllable ones
  - Root-initial /p/ and /k/ voice when possessed, independent of the (in)alienable status of the root in question

10

(16) a. ...tononkavagetake oshinkine.   DISYLLABIC

    tononk -*a*   -*vage* -*t*   -*ak*   -*i*   =Ø **o-**   *shinki* **-ne**
    grind   -EPV -DUR -EPC -PERF -REAL.I =3S 3fP- corn   -A.P

    '...grinding her corn.' (art32)

    b. gaigaririra imarankete   TRISYLLABIC

    og   -*a*   -*ig*   -*a*   =*ri*   =*rira* **i-**   *maranke* **-te**
    eat -EPV -PL -REAL.A =3mO =REL 3mP- snake   -A.P

    'those who eat their snakes' (ine4)

- Alienable nouns are pluralized directly – i.e., without additional morphology – with either the 'specific plural' -*egi* or the 'kind plural' =*page*[4]

(17) a. ...ipaigakerira virakochaegi.   SPECIFIC PLURAL

    i-   *p*   -*a*   -*ig* -*ak*   -*i*   =*ri*   =*ra*   *virakocha* **-egi**
    3mS- give -EPC -PL -PERF -REAL.I =3mO =SUB white.man -PL:SPEC

    '...and they gave them [i.e., Matsigenka women] to the white men.' (iim13)

    b. ...ganiri ishigaiga shimapage.   KIND PLURAL

    ga   =*niri*   *i-*   *shig*   -*a*   -*ig* -*a*   *shima* =**page**
    NEG:IRR =PURP:IRR 3mS- escape -EPV -PL -REAL.A fish   =PL:KIND

    '...so that the fish do not escape.' (ikg8)

4.2   Tier 2: Inalienable Nouns

- Matsigenka Tier 2 consists of inalienable nouns and corresponds to Máíhìkì Tier 3

- Unlike alienable nouns, inalienable nouns cannot surface bare, but must receive additional morphological "assistance" of some sort

- One subclass of inalienable nouns – body parts, certain kin terms, and certain manufactured objects (e.g., houses, canoes) – may be "assisted" via possession, as in (18) (see Figure 2)

    – When possessed, they do **not** receive the alienable possession suffix -*ne* ∼ -*te*

(18)   ...ovashi opotakotanakero ovanko.

    ovashi *o-*   *po*   -*t*   -*ako*   -*t*   -*an* -*ak*   -*i*   =*ro* **o-**   *panko*
    then   3fS- burn -EPC -APPL:INDR -EPC -ABL -PERF -REAL.I =3fO 3fP- house

    '...then she set fire to her house.' (art42)

- The same subclass is differentiated by whether its members may be made alienable via the "alienating" suffix -*(n)tsi*, which derives a kind

    – Roots of two syllables take -*tsi*, while roots of three or more syllables take -*ntsi*

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[4]Unlike -*egi*, =*page* is analyzed as a second-position clitic with respect to the noun phrase, as it attaches to prenominal adjectival modifiers when present.

- Kin terms may not be made alienable in this way[5]
- All other nouns of this subclass may, as shown for *panko* 'house' in (19)

(19)   ...ovashi intsimankaigakerora pankotsi.

ovashi	*i-*	*n-*	*tsimank*	*-a*	*-ig*	*-ak*	*-e*	*=ro*	*=ra*	*panko*	**-tsi**
thus	3mS-	IRR-	shade	-EPV	-PL	-PERF	-IRR.I	=3fO	=SUB	house	-ALIEN

'...thus they will shade the house.' (ova19)

- Unlike alienable nouns, inalienable nouns may not be pluralized without additional morphological assistance, which may take the form of possession, as in (20)

(20)   a.   Ipokaigai ivankoegiku...   SPECIFIC PLURAL

i-	*pok*	*-a*	*-ig*	*-a*	*-i*	**i-**	*panko*	**-egi**	*=ku*
3mS-	come	-EPV	-PL	-REG	-REAL.I	3mP-	house	-PL:SPEC	=LOC

SPANISH: 'Volvieron a sus casa...'
ENGLISH: 'They returned to their houses...' (ine37)

b.   ...ikiageiganaira ivankopageku.   KIND PLURAL

i-	*ki*	*-a*	*-ge*	*-ig*	*-an*	*-a*	*-i*	*=ra*	**i-**	*panko*	**=page**
3mS-	enter	-EPV	-DISTR	-PL	-ABL	-REG	-REAL.I	=SUB	3mP-	house	=PL:KIND

=ku
=LOC

SPANISH: '...[escuchó muchas voces de varias personas] entrando a sus casas.'
ENGLISH: '...[he heard many voices of various people] entering their houses.' (ktr34)

- Derived alienable nouns behave morphosyntactically like inherently alienable ones (21)

  - When possessed, they take *-ne* ~ *-te* (21a); and they may be pluralized directly (21b,c)

(21)   a.   ...viroegiratyo gaigiri novatsatsite!   POSSESSION

viro	*-egi*	*=ratyo*	*ag*	*-a*	*-ig*	*-i*	*=ri*	**no-**	*patsa*	**-tsi**	**-te**
2.PRON	-PL:SPEC	=REALZ	take	-EPV	-PL	-REAL.I	=3mO	1P-	meat	-ALIEN	-A.P

'...you were the ones that took my meat!' (spn17)

b.   ...onti yakipaigiri ivatsatsiegite...   SPECIFIC PLURAL

o-	*nti*	*i-*	*akipa*	*-ig*	*-i*	*=ri*	*i-*	*patsa*	**-tsi**	**-egi**	*-te*
3fS-	COP	3mS-	wrap.in.leaf	-PL	-REAL.I	=3mO	3mP-	meat	-ALIEN	-PL:SPEC	-A.P

SPANISH: '...los envolvían en hojas a sus presas...'
ENGLISH: '...they wrapped their meats in leaves [i.e., before pots]...' (yvk1)

c.   ...yakisaviigirira ivatsatsitepage.   KIND PLURAL

i-	*akisa*	*-pi*	*-ig*	*-i*	*=ri*	*=ra*	*i-*	*patsa*	**-tsi**	*-te*	**=page**
3mS-	conserve	-CL	-PL	-REAL.I	=3mO	=SUB	3mP-	meat	-ALIEN	-A.P	=PL:KIND

SPANISH: '...sabían poner en paca sus carnes.'
ENGLISH: '...they knew how to put their meats in bamboo.' (yvv1)

Table 4: Some Matsigenka (In)alienable Nouns

	Alienable	Inalienable
Bare	grammatical	ungrammatical
-(n)tsi	ungrammatical	grammatical
Possession	PREFIX- ... *-ne* ∼ *-te*	PREFIX-
Pluralization	yes	no

- A different subclass of inalienable nouns cannot be possessed nor be made alienable via *-(n)tsi*

    - Plant parts, e.g., *tsego* 'branch', *poa* 'trunk', *tsa* 'liana'
    - Boundary terms, e.g., *tsiti* 'beginning', *yashi* 'end', *nanpina* 'side'
    - Natural phenomena, e.g., *a* 'water', *tishi* 'mountain'

- Nevertheless, two morphosyntactic properties are characteristic of inalienable nouns of this subclass that are not characteristic of the subclass just discussed

- First, kinds are derived from them via the prefixation of "dummy" *o-* (22)

    - Importantly, dummy *o-*, unlike real possessive *o-* (see (18)), does not induce voicing

(22)   a.   ...onanpinaku onti ventsaenkankicha otega...

   o-   **nanpina** *=ku*   *o-*   *nti*   *oventsaenk* *-ankich*   *-a*   *o-*   **tega**
   DMY- side   =LOC 3fS- COP line.up   -SUBJ.FOC -REAL.A DMY- flower

   '...along the side there were flowers lined up...' (mae3)

   b.   ...ogari okana inti itomiegi.

   o- oga *=ri*   *o-*   **kana** *i-*   *nti* *i-*   *tomi -egi*
   3f- DEM =CNTR DMY- bunch 3mS- COP 3mP- son   -PL:SPEC

   '...the bunches are the children.' (par9)

   c.   ...irogoigakerora otsantsa...

   i-   *r-*   *ogo*   *-ig* *-ak*   *-e*   *=ro* *=ra* *o-*   **tsantsa**
   3mS- IRR- measure -PL -PERF -IRR.I =3fO =SUB DMY- length

   '...[they will begin by] measuring it lengthwise...' (ova24)

- Second, they may form the head of a compound involving an alienable noun (23)

(23)   a.   ...ovashi oshitati pariantipana.

   ovashi o- *shita*   *-t* *-i*   *parianti* **-pana**
   then   3fS- place.ground.cover -EPC -REAL.I plantain -broad.leaf

   '...and then she laid out plantain leaves on the ground.' (okm25)

---

[5]We take the inability of kin terms to be made alienable to derive from their inherent relationality (e.g., one is never a son without being someone's son).

b. ...agashitakitirira kamagarinivenkiki...

o-	ag	-ashi	-t	-aki	-t	-i	=ri	=ra	kamagarini	**-venkiki**
3fS-	fetch	-INT	-EPC	-AM:DIST	-EPC	-REAL.I	=3mO	=SUB	demon	-sedge

'...[she ran] to fetch demon sedge...' (art38)

c. Naguteta kamonasanpi...

n-	ag	-u	-t	-e	=ta	kamona	**-sanpi**
1S-	fetch	-RET	-EPC	-IRR.E	=INT	palm.sp.	-firewood

'I will go fetch firewood from the *kamona* palm...' (kts29)

4.3 Types & Typeshifters

- The types of the morphological elements described so far are summarized below

  - Alienable nouns $= e$
    * They are inherently argumental and denote kinds
  - Possessable inalienable nouns $= \langle e, t \rangle$
    * They are inherently predicative and are properties
  - Unpossessable inalienable nouns $= \langle e, e \rangle$
    * They combine in a compound with an argumental, alienable noun denoting a kind, returning an argumental, alienable noun denoting a kind
  - *-ne* $\sim$ *-te* $= \langle e, \langle e, t \rangle \rangle$ (up-operator)
    * It combines with an argumental, alienable noun denoting a kind, returning a predicative, inalienable noun that is a property (i.e., that can then be possessed)
  - Possessive prefixes and *-(n)tsi* $= \langle \langle e, t \rangle, e \rangle$ (down-operators)
    * They combine with a predicative, inalienable noun that is a property, returning an argumental, alienable noun denoting a kind
  - Dummy *o-* $= \langle \langle e, e \rangle, e \rangle$ (down-operator)
    * It combines with a "special" inalienable noun of type $\langle e, e \rangle$, returning an argumental, alienable noun denoting a kind

- Inalienable nouns are of two types in Matsigenka, $\langle e, t \rangle$ and $\langle e, e \rangle$, there is a single up-operator, and there are three morphological down-operators of two semantic types (Figure 3)
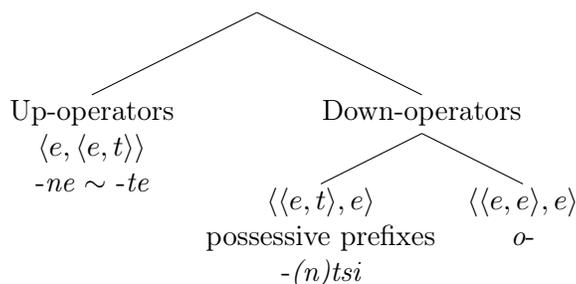

Figure 3: Typology of Matsigenka Typeshifters

- Unlike in Máíhɨ̀kì , Matsigenka's typeshifters consist of three morphemes

14

- $-ne \sim$ *-te*, *-(n)tsi*, and *o-*
- None of these exhibit any obvious nominal or classifier-like semantics (see below)

- Matsigenka provides important evidence for the validity of typeshifters in Chierchia's ontology, since they are morphologically overt

Table 5: Summary of Nominal Reference in Matsigenka

	NMP Value	Type
Tier 1	$[+arg, -pred]$	e
Tier 2	$[-arg, +pred]$	$\langle e, t \rangle$
-ne $\sim$ -te	-	$\langle e, \langle e, t \rangle \rangle$
Poss. Pre.	-	$\langle \langle e, t \rangle, e \rangle$
-(n)tsi	-	$\langle \langle e, t \rangle, e \rangle$
Dummy *o-*	-	$\langle \langle e, e \rangle, e \rangle$

4.4 Where are the classifiers in Matsigenka?

- Systems like that in Matsigenka have been described as 'multiplier classifier' systems, e.g., for closely related Nanti (Michael 2008:332-339)

  - In this framework, the compounds in (23) are analyzed as involving 'noun classifiers' (see also Michael (2013:164-165) and Shepard (1997))
  - We have seen that these compounds derive new referents, hence the 'derivational' function of classifiers in systems such as this
    * This is opposed to a 'classificatory' function, by which classifiers indicate spatio-configurational properties of referents instead of deriving new referents
  - This begs the question: are there morphosyntactic environments in which some element is classificatory instead of derivational in Matsigenka?

- Inalienable nouns also appear in numerals, adjectives, and verbs, with a classificatory function

  - In our corpus, inalienable nouns in compounds never exhibit a classificatory function

(24) a. ...ipavakeri paponaniro irakipare.   NUMERAL

     i-   *p*   *-av*   *-ak*   *-i*   *=ri*   *pa* **-pona**   *-niro* *ir-* **akipare**
     3mS- give -TRNS -PERF -REAL.I =3mO one -CL:bundle -ANIM 3mP- *patarashca*

     '...he gave him a [grub-filled] *patarashca*.' (kps19)

    b. ...taekatsavagetankicha maranke.   VERB

     ontaek *-a*   **-tsa**   *-vage* *-t*   *-ankich*   *-a*   **maranke**
     pile.up -EPV -CL:liana.like -DUR -EPC -SUBJ.FOC -REAL.A snake

     '...and there were many snakes piled up around the edge.' (mrn50)

- An inalienable noun in this context may classify a noun that is formally identical to it

(25) ...onti itsotegati otegapage.

o-	*nti*	*i-*	*tso*	**-tega**	*-t*	*-i*	*o-*	**tega**	*=page*
3mS-	COP	3mS-	suck	-CL:flower	-EPC	-REAL.I	DMY-	flower	=PL:KIND

'...it lives sucking flowers [i.e., a hummingbird].' (opt15)

- However, inalienable nouns in numerals and verbs may also exhibit a derivational function

(26) a. ...yovenatainiri panakitiro igirimashi.   NUMERAL

i-	*ovena*	*-t*	*-a*	*-i*	*=ni*	*=ri*	*pa*	**-naki**	*-tiro*	*i-*
3mS-	bore	-EPC	-REG	-REAL.I	=APPL:BEN	=3mO	one	-CL(?):hole	-INAN	3mP-

girimashi
nose

'...he bored out one nostril.' (mt1.22)

b. ...okurigiigapaakero shinki...   VERB

o-	*kurig*	**-ki**	*-ig*	*-apa*	*-ak*	*-i*	*=ro*	**shinki**
3fS-	pull.off	-CL(?):seed	-PL	-ALL	-PERF	-REAL.I	=3fO	corn

'...they pulled off the kernels of corn...' (mgr11)

- The correlation between morphosyntactic distribution and either derivational or classificatory function requires further research (elicitation)

  – However, we find no reason to analyze noun classifiers *per se* as classifiers

- We suspect that the semantic type of truly classificatory elements in Matsigenka ((24)-(25)) is distinct from those discussed until this point

  – Thus homophonous morphemes may be of different semantic types (see (25))

5 Summary & Conclusions

- Máíh̯ḭkì and Matsigenka have strikingly dissimilar "classifier" systems, although some elements in both languages might be given the same label in Aikhenvald's typology

- We posit that it has been tempting to treat these phenomena under the same umbrella, particularly in Amazonian languages, for two main reasons:

  – these elements occupy similar semantic spaces
  – these elements are semantically dependent, and therefore rarely surface alone

- We have shown that a type-theoretic approach to these elements may help to explain the way they pattern crosslinguistically or within a given language

- In particular, the notion of a tiered lexicon, sensitive to distinctions in animacy, can provide insight into the origins and idiosyncracies of a classifier-like system within a language

- Question for discussion: would it be more useful to abandon the term 'classifier' and instead develop a typology of referentially deficient nouns?

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Table 6: Overlap in non-Tier 1 elements in Máíh̶̀k̶̀ and Matsigenka

Máíh̶̀k̶̀	Matsigenka	Máíh̶̀k̶̀ meaning	Matsigenka Meaning
gúhí	ai	tooth	tooth
híti̶	ako	hand, arm	hand, arm
-raka	ani	fluid	fluid
áá	anigaki	heart	heart
kòhè	anotare	placenta	placenta
-ti̶o	anporetsa	intestines	intestines
bíkó	enka	air, smoke	air, smoke, power
góhé	gatsareki	testicles	testicle
gáhò	genpita	ear	ear
chíkà	gereto	knee, knot in wood	knee, bamboo joint
úkè	girimashi	nose	nose
náñà	gishi	hair	hair
gí̶ò	giti	foot	foot
-hu	kana	bunch	bunch
-ga	ki	seed, small fruit	seed, small fruit
tí̶ká	kii	stick	stick
sání	konpi	tip	tip
gànì	meshina	skin, hide	skin
sóhó	moguto	navel	navel
góhé	naki	hole	hole
gúnù	nanpina	side	side
kótí	negi	chest	chest
ñákò	oki	eye	eye
wèè	panko	house	house
-seu	pari	root, machine	root
hóyì, hóyò	pira	domesticated animal	domesticated animal
-tu	poa	thick cylinder	thick cylinder
hí̶kò	rishi	tail	tail
sánú	seguto	inside part	inside part
hàò	shi	leaf	leaf
-me	shitsa	vein, rope	vein, root, tenticle
-ti̶i̶	tamako	flat part, forehead	forehead
hárá	tega	flower	flower
hété	tishita	back	back
kúkà	tsaki	waist	waist
ñáhè	tsano	neck	neck
-yigo	tsantsa	length	length
káá	tsego	branch	branch
yòò	vagante	mouth	mouth
tótó	ventaki	scale, roof panel, plank	fish scale
ákà	vire	snare	snare