Counting mass nouns in Guébie *

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1   Introduction

In this presentation, we investigate the countability properties of nouns in Guébie, an Eastern Kru language spoken in Southwest Côte d'Ivoire.

- **Observation:** Guébie distinguishes three core categories of noun, based on number marking.

- **Proposal:** We adopt a mereological model based on properties of cumulativity and divisibility to account for the behavior of these nouns.

    - We also discuss evidence for further gradability in the two mass noun categories, which plays into recent observations about gradability in countability more generally (e.g. Grimm 2012b).

- **Typological contribution:** We situate Guébie's system in the emerging typology of countability distinctions cross-linguistically.

- Background on Guébie:

    ▷ Number of speakers: ∼7,000
    ▷ One remaining monolingual speaker
    ▷ Most Guébie speakers speak French, many also speak other neighboring Kru languages.
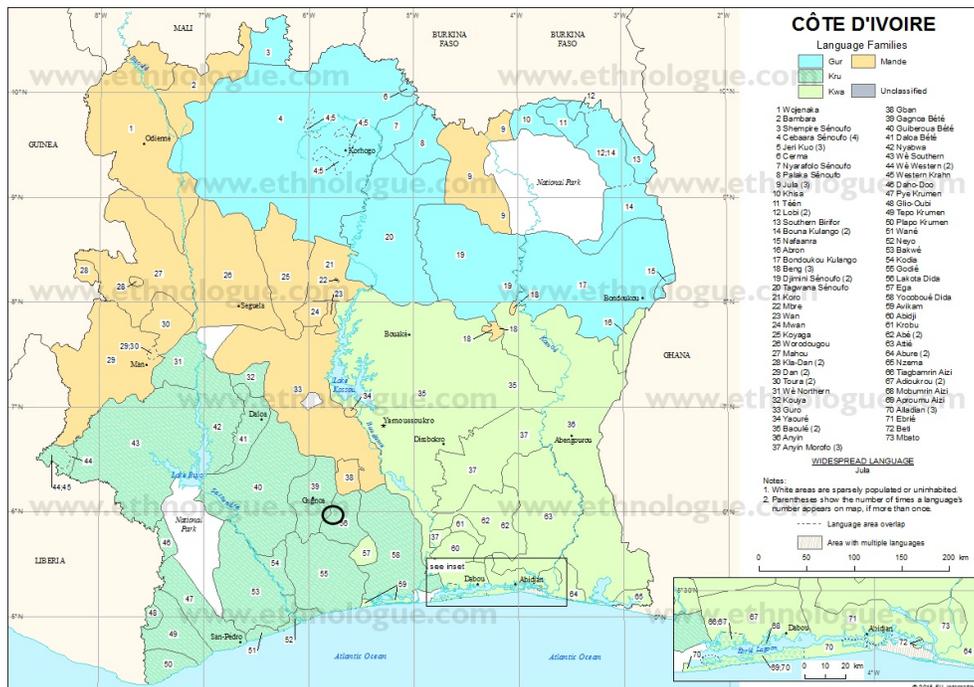
- The data in this talk has been collected over the past five years in Sande's work with the Guébie community (Sande 2017).

- The specific forms presented here have each been confirmed by two male speakers, ages ~30 and ~40.

  Roadmap

2   Guébie number marking

- In this section we show that Guébie distinguishes three noun categories based on number marking:

  1. Count nouns

  2. True mass nouns

  3. "Countable" mass nouns

- The diagnostics for these three categories are based on their compatibility with Guébie's number morphology: the plural marker (/-a/ or /-i/), and the singulative marker (/-je/ or /-ɓə/).

  - The two plural markers and two singulative markers are allomorphs and do not differ in meaning (Sande 2017)[1].

2.1   Count nouns

- Count nouns in Guébie have a singular individual interpretation in their bare form.

  - These include words for humans, large animals, and items that typically do not come in groups, i.e. [ŋʷɔnɔ$^{4.4}$] *woman*, [ɓə^{31}] *plate*, [mɛɔ$^{3.1}$] *tongue*.

- Bare count nouns cannot have a plural interpretation

  (1)   *liene$^{3.3.1}$ ɛja$^{2.3}$ lieko$^{3.3.1}$ ɓə^{31} mɔ^{1}
        DEM.PRO.PROX with   DEM.PRO.DIST plate be.EMPH

        Intended: 'This thing and that thing are plate(s).'

- These nouns combine directly with the plural suffix (/-a/ or /-i/) to yield a plural reading.

  (2)   liene$^{3.3.1}$ ɛja$^{2.3}$ lieko$^{3.3.1}$ ɓə-i$^{3.12}$ mɔ^{1}
        DEM.PRO.PROX with   DEM.PRO.DIST plate-PL be.EMPH

        'This thing and that thing are plates.'

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[1]The two singulative markers do not seem to differ in meaning, and there are phonological traits which explain their distribution. One speaker expresses an intuition that nouns that take /-je/ are often small while nouns that take /-ɓə/ are often large and/or round. However, this intuition does not hold up across the collected data. More work will be done in the future to explore this area.

(3) **Count nouns in Guébie**

	Singular	Plural	Translation
	Root	Root-PL	
a.	ɓə^{31}	ɓə-i$^{3.12}$	'plate'
b.	cu^3	cu-i$^{3.2}$	'month'
c.	sabala$^{3.3.3}$	sabala-i$^{3.3.3.2}$	'shoe'
d.	ɟak^{w}ɛlɛ$^{2.3.1}$	ɟak^{w}ɛlɛ-r$^{2.3.1.2}$	'tarantula'
e.	mɛɔ$^{3.1}$	mɛɔ-r$^{3.1.2}$	'tongue'
f.	goji$^{3.1}$	goji-a$^{3.1.2}$	'dog'
g.	du^2	du-a$^{2.2}$	'city'

- These nouns cannot combine with the singulative suffix.

(4) ***noun-SG**

a. *mɛɔ$^{3.1}$-ɓə/je^1
tongue-SG
Intended: 'A tongue'

b. *ɓə^{31}-ɓə/je^1
plate-SG
Intended: 'A plate'

- Only the plural form of a count noun can combine with a numeral (>1) or 'all, many' quantifier:

(5) **Numerals only combine with plural-marked count nouns**

a. mɛɔ-r$^{3.1.2}$ ta^3
tongue-PL three
'Three tongues'

b. *mɛɔ$^{3.1}$ ta^3
tongue three
Intended: 'Three tongues'

c. ɓə-i$^{3.12}$ ta^3
plate-PL three
'Three plates'

d. *ɓə^{31} ta^3
plate three
Intended: 'Three plates'

(6) **Quantifiers only combine with plural-marked count nouns**

a. ɓə-i$^{3.12}$ aɓa$^{4.2}$
plate-PL all
'all the plates', #'all the plate'

b. ɓə-i$^{3.12}$ ɓutugba$^{3.1.1}$
plate-PL much
'many plates', #'much plate'

c. *ɓə^{31} aɓa$^{4.2}$/ɓutugba$^{3.1.1}$
plate all/much
Intended: 'all/much plate' or 'all/many plates'

2.2 True mass nouns

- True mass nouns refer to substances, including liquids like *blood, oil*, and those consisting of very tiny particles like *sand* and *salt*.

- These nouns only appear in their bare form:

  - Unlike count nouns, mass nouns cannot combine directly with the plural suffix: *bare-PL.

  (7) **True mass nouns in Guébie**

	Mass	Plural	Translation
	Root	*Root-PL	
a.	dolo$^{1.1}$	*dolo-a, *dolo-i	'blood'
b.	dodo$^{3.2}$	*dodo-a, *dodo-i	'sand'

  - Nouns in this class cannot combine with the singulative suffix.

  (8) **True mass nouns**

	Mass	Singular	Plural	Translation
	Root	Root-SG	Root-SG-PL	
a.	dodo$^{1.1}$	*dodo-je, *dodo-ɓə	*dodo(-je)-i/a, *dodo(-ɓə)-i/a	'blood'
b.	dolo$^{3.2}$	*dolo-je, *dolo-ɓə	*dolo(-je)-i/a, *dolo(-ɓə)-i/a	'sand'
c.	kpə^{4}	*kpə-je, *kpə-ɓə	*kpə(-je)-i/a, *kpə(-ɓə)-i/a	'oil'
d.	ɟuru$^{2.2}$	*ɟuru-je, *ɟuru-ɓə	*ɟuru(-je)-i/a, *ɟuru(-ɓə)-i/a	'salt'

- These nouns cannot be modified directly by numerals, but instead require a measure word:

  (9) **Numerals cannot modify bare mass nouns**
  a. dodo$^{3.2}$ la^{2} ci-ə$^{2.2}$ ta^{3}
      sand   of   type-PL   three
      'three types of sand'
  b. *dodo$^{3.2}$ ta^{3}
      sand   three
      Intended:'three sands'

- Unlike count nouns, which cannot combine with quantifiers 'all, many' in their bare form, bare mass nouns combine with quantifiers.

  (10) **Quantifiers can modify bare mass nouns**
  a. dolo$^{1.1}$ aɓa$^{4.2}$
      blood   all
      'all the blood'
  b. dolo$^{1.1}$ ɓutugba$^{3.1.1}$
      blood   much
      'a lot of blood'
  c. dodo$^{3.2}$ aɓa$^{4.2}$
      sand   all
      'all the sand'

2.3 "Countable" mass nouns

- The third class of nouns shows split behavior:

  - Bare "countable" mass nouns pattern with mass nouns
  - SG-marked "countable" mass nouns pattern with count nouns

- This is a huge class of nouns in Guébie, which consists of individuals that typically come in groups (*mosquitoes, bees, ants, plantains, fingers, teeth, coconuts*).[2]

- Like mass nouns, these cannot combine directly with the plural suffix: *bare-PL.

  (11) **Countable mass nouns in Guébie**

	Mass	Plural	Translation
	Root	*Root-PL	
a.	novi$^{2.3}$	*novi-a, *novi-i	'bees'
b.	kuk^{w}e$^{4.1}$	*kuk^{w}e-a, *kuk^{w}e-i	'ants'
c.	wʊlɛ$^{3.1}$	*wʊlɛ-a, *wʊlɛ-ɪ	'fingers'
d.	ɟe^3	*ɟe-a, *ɟe-i	'stars'
e.	ɟa^{31}	*ɟa-a, ??ɟa-i	'coconuts'
f.	troɓiə$^{3.2.2}$	*troɓiə-a, *troɓiə-i	'eggplants'

- Again like mass nouns, but unlike count nouns, bare "countable" mass nouns cannot combine with numerals, but can combine with quantifiers.

  (12) a. *ɟa^{31} ta^3
           coconuts three
           Intended: 'Three coconuts'

  b. ɟa^{31} aɓa$^{4.2}$
           coconuts all
           Intended: 'all coconut'

- These countable mass nouns can combine with the SG suffix to yield a singular individual reading.

  - Just like bare count nouns, these SG-marked nouns cannot be predicated of plural subjects.

  (13) *liəne$^{3.3.1}$ ɛja$^{2.3}$ liəko$^{3.3.1}$ ɟa-ɓə$^{3.1}$ mɔ^1
         DEM.PRO.PROX   with   DEM.PRO.DIST   coconuts-SG   be.EMPH
         Intended: 'This thing and that thing are coconut.'

- This SG form can then be pluralized with the /-a, -i/ plural markers[3].

  (14) liəne$^{3.3.1}$ ɛja$^{2.3}$ liəko$^{3.3.1}$ ɟa-ɓə-i$^{3.1.2}$ mɔ^1
         DEM.PRO.PROX   with   DEM.PRO.DIST   coconuts-SG-PL   be.EMPH
         'This thing and that thing are coconuts.'

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[2]Interestingly, *water* also falls into this class: when it combines with the SG suffix, it refers to a body of water such as a lake. For the present, we set *water* aside, as we are unsure to what extent coercion plays a role.

[3]See (Marchese 1979, 88-89) for a 2-way split in other Kru languages between countable nouns that take a plural suffix directly, and countable mass nouns which take -SG-PL suffixes.

(15) **Singular and Plural on countable mass nouns**

	Mass	Singular	Plural	Translation
	Root	Root-SG	Root-SG-PL	
a.	ɟa^{31}	ɟa-ɓə$^{3.1}$	ɟa-ɓə-i$^{3.1.2}$	'coconut'
b.	troɓiə$^{3.2.2}$	troɓiə-je$^{3.2.2.1}$	troɓiə-je-i$^{3.2.2.1.2}$	'eggplant'
c.	novi$^{2.3}$	novi-je$^{2.3.1}$	novi-je-i$^{2.3.1.2}$	'bee'
d.	kuk^{w}e$^{4.1}$	kuk^{w}e-je$^{4.1.1}$	kuk^{w}e-je-i$^{4.1.1.2}$	'ant'
e.	wʊlɛ$^{3.1}$	wʊlɛ-je$^{3.1.1}$	wʊlɛ-je-ɹ$^{3.1.1.2}$	'finger'
f.	ɟe^3	ɟalɪ-je$^{3.1}$	ɟalɪ-je-i$^{3.1.2}$	'star'

- Like plural count nouns, SG and PL marked countable mass nouns (noun-SG-PL) can combine with numerals and quantifiers, but a noun-SG form cannot:

(16) **-SG-PL mass nouns with numerals**

    a.   ɟa-ɓə-i$^{3.1.2}$ ta^3
        coconuts-SG-PL three
        'Three coconuts'

    b.   *ɟa-ɓə$^{3.1}$ ta^3
        coconut-SG three
        Intended: 'three coconut(s)'

(17) **-SG-PL mass nouns with quantifiers**

    a.   ɟa-ɓə-i$^{3.1.2}$ aɓa$^{4.2}$
        coconuts-SG-PL all
        'all coconuts'

    b.   *ɟa-ɓə$^{3.1}$ aɓa$^{4.2}$
        coconuts-SG all
        Intended: 'all coconuts'

- Bare "countable" mass nouns pattern with true mass nouns.

  - They cannot take plural marking.
  - They cannot be modified by a numeral.

- By contrast, the -SG marked form of a "countable" mass noun patterns with count nouns.

  - The -SG marked form yields a singular individual interpretation.
  - They can take plural marking.
  - They can be modified by a numeral.

	Indiv. interp.	-PL	Noun-PL Numeral	Noun Quantifier
Count	X	X	X	
True mass				X
Countable mass (bare)				X
Countable mass (-SG)	X	X	X	

2.4 Summary

- Based on the distribution of singular and plural suffixes as well as numerals, we have seen that there is at least a three-way distinction in countability across nouns in Guébie:

  - Count nouns: 'plate, woman'
  - Countable mass nouns: 'coconut, finger'
  - True mass nouns: 'blood, sand'

3 Semantics

- An analysis of the above data must account for:

  - the different distribution and behavior of count nouns, true mass nouns, and countable mass nouns
  - the distribution of SG and its semantic effect (i.e. that it takes a countable mass noun and turns it into a count noun)

3.1 Count nouns vs. true mass nouns

- A concrete way to model countability distinctions relies on notions of cumulativity and divisibility.[4]

  (18) A noun is cumulative iff it denotes a cumulative predicate.
        A predicate p is cumulative iff any sum of parts that are p is also p.   (Deal 2017:128)

  (19) A noun is divisive iff it denotes a divisive predicate.
        A predicate p is divisive iff any part of something that is p is also p.   (Deal 2017:129)

- Noun denotations that are neither cumulative or divisive have been termed *quantized* (Krifka 1989; Deal 2017)

- These properties distinguish English singular count nouns and mass nouns:

  (20) English singular count nouns are not cumulative and not divisive (i.e. they are quantized)
        a. A is a plate, and B is a plate, but A+B are not a plate
        b. A is a plate, but any subpart of A is not a plate

  (21) English mass nouns are both cumulative and divisive
        a. A is sand, and B is sand, and A+B is sand
        b. A is sand, and any subpart of A is sand

- We can capture these properties of count and mass nouns in the following way, schematized in (22)

  - The denotation of a noun like *plate* contains only non-overlapping individuals.
  - The denotation of a noun like *sand* contains only members that overlap with other members.

  (22) a. ⟦plate⟧ = {a, b, c}
        b. ⟦sand⟧ = {ab, bc, ac, abc}

- This analysis extends nicely to Guébie's count nouns and true mass nouns

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[4]See Quine 1960, Cheng 1973, Link 1983, Krifka 1989, Doetjes 1997, Grimm 2012b, and Deal 2017, among others.

- Count nouns are neither divisive, nor cumulative (i.e. they are quantized)

- True mass nouns are both divisive, and cumulative

(23) a. ⟦ɓə³¹ "plate"⟧ = {a, b, c}
      b. ⟦dolo³·² "sand"⟧ = {ab, bc, ac, abc}

- Just like in English, this analysis accounts for the different behaviors of these noun classes:

  - PL can only combine with quantized denotations[5]
  - Numerals can only modify quantized denotations[6]

3.2   Countable mass nouns and SG

- Bare countable mass nouns behave like mass nouns, but when singular-marked behave like count nouns.

- Modeling noun meanings in terms of cumulativity and divisiveness allows us capture this

  - Like true mass nouns, countable mass noun denotations are cumulative:
    Arbitrarily large groups of coconuts and ants can be refered to with a bare countable mass noun

  - Like count nouns, countable mass noun denotations are not divisive:
    They contain non-overlapping minimal parts

(24) ⟦ɟa³¹ "coconut"⟧ = {a, b, c, ab, bc, ac, abc}

- Since these denotations are cumulative, they cannot combine with PL or be directly modified by numerals.

  - They share this property of cumulativity with true mass nouns.

- They are crucially different from mass nouns, however, in that their denotations do contain non-overlapping minimal parts.

- We propose that this is what allows countable mass nouns (but not true mass nouns) to take the SG suffix.

  - The SG suffix takes in a countable mass noun denotation, and removes all non-atomic members.

(25) a. ⟦ɟa³¹ "coconut"⟧ = {a, b, c, ab, bc, ac, abc}
      b. ⟦ɟa-ɓə³·¹ "coconut"⟧ = {a, b, c}

- SG cannot attach to true mass nouns because their denotations do not contain these non-overlapping minimal parts.

- This kind of cumulative but non-divisive noun denotation is found in English (for nouns like *furniture*) and in "classifier" languages like Chinese and Japanese (see Doetjes 1997; Landman 2011; Deal 2017). We return to this cross-linguistic picture in Section 5 below.

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[5]The role of PL is to add sums to the denotation, and thus makes the resulting denotation cumulative. There is debate in the literature about the exact nature of PL (e.g. whether the resulting denotation includes atoms as well as sums; see Sauerland et al. 2005, Farkas and de Swart 2010), that we do not wish to address here. The Guébie PL data are compatible with analyses that account for English PL.

[6]This assumes that only sets with non-overlapping members (i.e. quantized denotations) can be counted (Chierchia 1998; Landman 2011). For languages that have PL inflection on nouns that are modified by numerals >1, that PL marking is taken to be either purely morphosyntactic (Krifka 1989) or semantically undone by the numeral modification (Chierchia 1998).

4 Gradability in counting: a complication

- In this section we explore the results of one diagnostic which reveal that countability distinctions in Guébie mass nouns is more fine grained than the number morphology reflects.

- This observations reflects recent findings in a variety of languages, including English and Dagaare (Gur) (see Grimm 2012a, 2012b).

  - For example, while *sand* and *rice* in English behaves in almost all respects like a mass noun (*sands, *three sand(s), *each sand), they can serve as the object of the verb *to count*.

(26)   a. John counted cats/plates.
       b. (?)John counted sand/rice.
       c. *John counted water/oil.

- This behavior split behavior for true mass nouns is also found in Guébie with the verb ɟɛlɛ$^{2.2}$ "to count"

- First, count nouns must be pluralized in order to be counted:

(27)   **Count nouns with "to count"**
       a. e^4 ɟɛlɛ$^{2.2}$ mɛɔ-ɪ$^{3.1.2}$
          1SG.NOM   count.PFV   tongue-PL
          'I counted tongues'
       b. *e^4 ɟɛlɛ$^{2.2}$ mɛɔ$^{3.1}$
          1SG.NOM   count.PFV   tongue
          Intended: 'I counted tongue(s)'
       c. e^4 ɟɛlɛ$^{2.2}$ ɓə-i$^{3.12}$
          1SG.NOM   count.PFV   plate-PL
          'I counted plates'
       d. *e^4 ɟɛlɛ$^{2.2}$ ɓə^{31}
          1SG.NOM   count.PFV   plate
          Intended: 'I counted plate(s)'

- As expected, SG-marked countable mass nouns pattern with count nouns: the SG-marked form cannot be counted unless also PL-marked.

(28)   **SG-marked countable mass nouns with "to count"**
       a. *e^4 ɟɛlɛ$^{2.2}$ saka-je$^{3.3.2}$
          1SG.NOM   count.PFV   rice-SG
          Intended: 'I counted rice'
       b. e^4 ɟɛlɛ$^{2.2}$ saka-je-i$^{3.3.2}$
          1SG.NOM   count.PFV   rice-SG-PL
          'I counted (pieces of) rice'
       c. *e^4 ɟɛlɛ$^{2.2}$ kuk^{w}i-je$^{4.2.2}$
          1SG.NOM   count.PFV   ants-SG
          Intended: 'I counted ant(s)'
       d. e^4 ɟɛlɛ$^{2.2}$ kuk^{w}i-je-i$^{4.2.2.2}$
          1SG.NOM   count.PFV   ants-SG-PL
          'I counted (a specific number of) ants'

- Bare countable mass nouns can serve as the object of "to count".[7]

    (29) **Countable mass nouns with "to count"**

    a. e^4 ɟɛlɛ$^{2.2}$ saka$^{3.3}$
        1SG.NOM   count.PFV   rice
        Intended: 'I counted rice'

    b. e^4 ɟɛlɛ$^{2.2}$ kuk^{w}i$^{4.2}$
        1SG.NOM   count.PFV   ants
        'I counted ants'

- Bare true mass nouns, however, show split behavior: *blood* cannot be counted, while *sand* can.

    (30) **True mass nouns with "to count"**

    a. *e^4 ɟɛlɛ$^{2.2}$ dolo$^{1.1}$
        1SG.NOM   count.PFV   blood
        Intended: 'I counted blood'

    b. ?e^4 ɟɛlɛ$^{2.2}$ dodo$^{2.2}$
        1SG.NOM   count.PFV   sand
        Intended: 'I counted sand'

- For all speakers, (30a) is bad, but for some speakers (30b) is fine.

- These findings are are somewhat intuitive: among the true mass nouns, liquids (*blood*) cannot be counted, while substances made of small particles (*sand*) can.

- This split, however, does not align with the behavior of mass nouns with respect to number marking: even though *sand* can be counted, it cannot take the SG suffix.

    - A more fine-grained extension to the account above is necessary.

    - This could be done following a proposal by Grimm 2012, which claims that in addition to the part-whole relations discussed above, nominal semantics also relies on degree of connectedness between parts, allowing for gradability in countability distinctions.

5 The cross-linguistic picture

- We have seen that Guébie has a core three-way countability distinction in its nominal semantics, with some evidence for gradability in true mass nouns.

    - This three-way distinction can be captured in terms of cumulativity and divisiveness.

- Three way distinctions of the same kind are also found in other languages, for example:

    - English additionally distinguishes "fake" mass nouns like *jewelry, furniture,* and *footwear.*

    - Welsh (Grimm 2012) has a large class of nouns that are interpreted plural in their bare form, and require a SG suffix for singular reference. This contrasts with nouns that are interpreted singular in their bare form (count nouns), and those that cannot take the SG suffix (mass nouns).

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[7]One exception is *water* (see footnote 2), which does not seem to give the expected reading of counting bodies of water, and is simply rejected.

- "Classifier" languages, like Chinese and Japanese, seem to make a two way countability distinction in terms of divisiveness, but not cumulativity[8].

  - They have no quantized noun denotations; typical count nouns in these languages are cumulative.
  - This kind of analysis explains the absence of PL marking in such languages, and that all noun require classifiers in numeral modification.

  (31)   Noun denotations in classifier languages
       a.   Individual-denoting nouns (e.g. *plate*): {a, b, c, ab, bc, ac, abc}
       b.   Substance-denoting nouns (e.g. *sand*): {ab, bc, ac, abc}

- While cumulative but non-divisive noun denotations are commonly attested cross-linguistically, languages differ in how they treat such denotations.

- First, languages differ in what objects are assigned cumulative, non-divisive denotations.

  - This class is small in English (*furniture, jewelry, footwear* and *mail,* among some others), with most nouns either truly mass or count.
  - Languages like Guébie and Welsh, in contrast, have very large classes of such nouns, consisting of a wide variety of objects that typically come in groups.
  - Classifier languages like Chinese and Japanese assign all non-substance nouns such denotations.

- Second, languages differ in how they allow such nouns to be modified by a numeral:

  - English uses measure words (e.g. *piece of furniture*)
  - Chinese and Japanese have dedicated classifiers
  - Guébie and Welsh have SG suffixes

- While both Guébie and Welsh employ similar strategies for allowing such nouns to be modified by numerals, they also show an interesting difference:

  - SG-marked nouns in Guébie can be further pluralized.

  (32)   **Cross-linguistic countability classes**

	English	**Guébie**	**Welsh**	**Classifier langs**
Cumulative & Divisive	✓ (mass)	✓ (mass)	✓ (mass)	✓ (substance)
Neither Cum. nor Div.	✓ (count)	✓ (count)	✓ (count)	
Cum. but not Div.	✓ (fake mass)	✓ (countable mass)	✓ (collective)	✓ (individual)

6   Conclusion

- Guébie shows a core, three-way countability distinction in its nominal semantics, based on number morphology and numeral modification.

- A -SG suffix takes "countable" mass nouns and turns them into count nouns.

- We model these distinctions in terms of cumulativity and divisiveness, which are useful tools for modeling countability across languages.

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[8]For evidence of countability distinctions in Chinese and Japanese, see Cheng and Sybesma 1998, Inagaki and Barner 2009, and Cheung et al. 2010. For an explicit proposal in terms of cumulativity and divisiveness, see Deal 2017.

Appendices

(33) **List of countable mass nouns in Guébie**

		Bare	Bare-SG-PL	Gloss
Body parts				
	a.	wʊlɛ$^{3.1}$	wʊlɛ-je-ɪ$^{3.1.1.2}$	'finger'
	b.	gala$^{3.3}$	gala-je-i$^{3.3.1.2}$	'tooth'
	c.	jiri$^{2.3}$	jiri-je-i$^{2.3.1.2}$	'eye'
	d.	juk^{w}e$^{3.3}$	juk^{w}e-je-i$^{3.3.1.2}$	'ear'
	e.	ɓɔgɔ$^{3.1}$	ɓɔg^w-e-i$^{3.1.1.2}$	'leg'
	f.	ɲi^4	ɲi-je-i$^{4.1.2}$	'hair'
Fruit and vegetables				
	g.	ɟa^{31}	ɟa-ɓə-i$^{3.1.2}$	'coconut'
	h.	troɓiə$^{3.2.2}$	troɓiə-je-i$^{3.2.2.1.2}$	'eggplant'
	i.	dibo$^{2.3}$	ɟiote-je-i$^{2.2.3.1.2}$	'plantain'
	j.	gbajɔ$^{3.1}$	gbajɔ-je-i$^{3.1.1}$	'okra'
	k.	ŋatɛ$^{3.1}$	ŋatɛ-je-i$^{3.1.1.2}$	'yam'
	l.	gbajɪsɔ$^{2.2.3}$	gbajɪsɔ-ɓə-i$^{2.2.3.1.2}$	'papaya'
	m.	dio$^{3.3}$	dio-ɓə-i$^{3.3.1.2}$	'pineapple'
Grains/Nuts				
	n.	saka$^{3.3}$	saka-je-i$^{3.3.1.2}$	'rice'
	o.	g^{w}i^3	g^{w}i-je-i$^{3.1.2}$	'palm grain'
	p.	gʊ^3	gʊ-je-i$^{3.1.2}$	'kola nut'
	q.	dodo$^{2.3}$	dodo-je-i$^{2.3.1.2}$	'corn'
Animals				
	r.	novi$^{2.3}$	novi-je-i$^{2.3.1.2}$	'bee'
	s.	kuk^{w}e$^{4.1}$	kuk^{w}e-je-i$^{4.1.1.2}$	'ant'
	t.	sio$^{3.1}$	sio-je-i$^{3.1.2}$	'snail'
	u.	popi$^{3.1}$	popi-je-i$^{3.1.1.2}$	'bat'
	v.	kaŋɪ$^{3.1}$	kaŋɪ-je-i$^{3.1.1.2}$	'mosquito'
Other				
	w.	ɟe^3	ɟalɪ-je-i$^{3.1.2}$	'star'
	x.	sɪka$^{2.3}$	sɪka-je-i$^{2.3.1.2}$	'gold'
	y.	gbaɟuk^{w}ə$^{3.2.2}$	gbaɟuk^{w}ə-je-i$^{3.2.2.1.2}$	'grass'
	z.	kakɔ$^{3.1}$	kakɔ-je-i$^{3.1.1.2}$	'ember'
	aa.	ɲu^4	ɲu-ɓə-i$^{4.1.2}$	'water/body of water'

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