

Idiosyncratically Mass and Idiosyncratically Count

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Major Claims

- The mass/count distinction in Telugu is (almost) exactly like that of English.
- There exist nouns that are mass nouns in the language that have plural morphology.
- These plural mass nouns do not fit the existing types of plural mass nouns.
- 'Count/Mass' quantifier allomorphy in Telugu is conditioned by number.
- We can also understand English in the same manner. Evidence for this will come from fake-mass nouns and plural mass nouns.

Roadmap

- 1 Overview and Major Claims
- 2 **Mass versus Count**
- 3 The mass/count distinction in Telugu
 - A 'regular' mass/count distinction
 - Plural Mass Nouns in Telugu
- 4 How to Treat Quantifier Allomorphy
- 5 Extension: Fake Mass Nouns in English
- 6 Conclusions

A Collection of Properties

- The mass/count distinction is known to be a collection of properties that may or may not hold in every language.
 - Fairly consistent is the ability to combine directly with numerals or not (if a language contrasts between the two).
 - Count nouns do combine with numerals, mass nouns like *water* do not, and require the use of a measure phrase.
- (1) There are three owls on the branch.
 - (2) * There are three waters on the floor.
 - (3) There are three **puddles of** water on the floor.

A Collection of Properties

- Another property (again, for languages that make a contrast), count nouns are able to combine with plural morphology quite freely, however mass nouns are not able to.
 - (4) There are hungry owls on the branch.
 - (5) * There are waters on the floor.
- With mass nouns, plural inflection must be carried on the measure phrase:
 - (6) There are puddles of water on the floor.

A Collection of Properties

- There is also sometime sensitivity to mass versus count in quantifier selection.
 - English for instance has the quantifier 'many', which combines with count nouns, and 'much', which combines with mass nouns.
 - The same sensitivity is seen with 'few' (count) versus 'little' (mass).
- (7)
- a. There are many/*much owls on the branch.
 - b. There is *many/much sand left to be moved.
 - c. There are few/*little owls out in the cold.
 - d. There is *few/little water left to drink.

A Collection of Properties

- Next, there is a difference between how mass nouns and count nouns behave with respect to comparison. As Bale & Barner (2009) note, count nouns are compared by number of entities, whilst mass nouns are compared by volume.

(8) John saw more owls than Mike did.

⇒ Number of individual owls important, size of them irrelevant.

(9) John drank more water than Mike did.

⇒ Overall volume of water is important, number of individual portions not relevant.

A Collection of Properties

- Finally, as noted by Schwarzschild (2011) certain adjectives are incompatible with certain noun classes. Important here are stubbornly distributive predicates, which Schwarzschild shows to be incompatible with mass nouns.

(10) The owls are large.

(11) # The water is large.

- Stubbornly distributive predicates obligatorily distribute to individual parts (each owl must be large in (10), not the entire collection of owls).
- Since mass interpretation ostensibly does not include individual parts, an adjective like *large* cannot combine with a mass noun.

A Collection of Properties

- Not all of these properties need to be shown in a given language. Dutch does have a mass/count distinction but does not distinguish between 'much' and 'many' for instance:

(12) Ik heb veel uilen/water gezien.
 I have many/much owls/water seen
 'I saw many owl/much water.'

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Telugu

- Telugu is a Dravidian language spoken in Eastern India by some 74,000,000 speakers.¹



- Map from:
<http://www.chrismary.com/languagekeyboard/resource/dravidian/telugu.html>.
- The following data comes from my own fieldwork (see also Krishnamurti & Gwynn, 1985).

¹Ethnologue.

Mass/Count in Telugu

- Telugu has certain nouns which combine with numerals, and certain nouns which don't. The classes of nouns fit very much with prototypical count and mass nouns in other languages.

(13) Raaju muuDu aratipanD-lu tinn-aa-Du
 Raaju three banana-PL eat-PAST-3.MASC.SG
 'Raaju ate three bananas.'

(14) * Raaju renDu isuka-lu konn-aa-Du
 Raaju two sand-PL dig-PAST-3.MASC.SG
 INTENDED: 'Raaju dug two (piles of) sand(s).'

- In order to combine with numerals, mass nouns must have a measure phrase.

Mass/Count in Telugu

- Telugu is a language which marks an obligatory singular/plural contrast in number.

(15) kukka tinn-a-di
dog eat-PAST-3.NM.SG
'A dog ate.'

(16) kukka-lu tinn-aa-ji
dog-PL eat-PAST-3.NM.PL
'Dogs ate.'

- It is not possible to omit the plural morphology in (16), even if the subject would be inanimate.

Mass/Count in Telugu

- Plural marking is not possible on nouns that do not count (i.e. mass nouns).

(17) * aa abbaaji isuka-lu tavvu-tunn-aa-Du
 the boy sand-PL dig-PROG-PRES-3.NM.SG
 INTENDED: 'The boy is digging sands.'

- Plural morphology is shown on the measure phrase, however.

(18) neenu muuDu sisaa-la nuune konnaanu
 I three bottles.of.PL oil but-PAST-1SG
 'I bought three bottles of oil.'

Mass/Count in Telugu

- There is also a quantifier sensitivity to mass/count. *Konni* 'few' combines with count nouns, whilst *končam* 'little' combines with mass nouns.

(19) Raaju konni aratipanD-lu tinn-aa-Du
 Raaju few banana-PL eat-PAST-3.MASC.SG
 'Raaju ate few bananas.'

(20) neenu končamu uppu tinn-aa-nu
 I little salt eat-PAST-1.SG
 'I ate little salt.'

Mass/Count in Telugu

- Quantifier sensitivity is neutralised between 'many' and 'much'. They are both realised as *čaala*.

- (21) a. *raaǰu čaala aratipanD-lu t̪inn-aa-Du*
 Raaju a.lot.of banana-PL ate-PAST-3.M.SG
 ‘Raju ate many bananas.’
- b. *raaǰu čaala annam t̪inn-aa-Du*
 raaju a.lot.of rice eat-PAST-3.M.SG
 ‘Raju ate a lot of rice.’

Mass/Count in Telugu

- With regard to interpretation, we see that same differences between mass and count in Telugu as we do in English.
- The following sentence (with a count noun) requires comparison by number:

(22) raaju raani kannu ekkuvu aratipanD-lu tinn-aa-Du
 raaju raani COMP more banana-PL eat-PAST-3.M.SG
 'Raju ate more bananas than Raani.'

- **True:** Raju ate five small bananas, Rani ate three large ones.
- **False:** Raju ate four large bananas, Rani ate five small ones.

Mass/Count in Telugu

- With a mass noun however, we see that comparison is done by volume.

(23) raaju raani kannu ekkuvu nuune konn-aa-Du
 raaju raani COMP more oil buy-PAST-3.M.SG
 'Raju bought more oil than Rani.'

- **True:** Raju bought one 1 Litre cup of oil, Rani bought five 100ml ones.
- **False:** Raju bought five 100ml cups of oil, Rani bought one 1 Litre cup.

Mass/Count in Telugu

- Finally, we see the same incompatibility of stubbornly distributive predicates with mass nouns:

- (24) a. aratipanD-lu pedḍa-gaa unn-aa-ji
 banana-PL big-GA be-PRES-3.NM.PL
 'The bananas are large.'
- b. # vendi pedḍa-gaa un-di
 silver large-GA be-3.NM.SG
 INTENDED: 'The silver is large.'

Mass/Count in Telugu: Summary

- Telugu has a mass/count distinction that parallels that seen in English.

(25)

	Count nouns	Mass Nouns
Plural morphology	✓	✗
Combine with <i>konni</i>	✓	✗
Combine with <i>končam</i>	✗	✓
Directly countable	✓	✗
Distributive predicates	✓	✗
Comparison by	Number	Volume

Plural Mass Nouns

- In addition to the regular mass nouns of the language, there are some plural mass nouns.
- The two I will focus on here are *niiLLu* 'water' and *paalu* 'milk'.
- These nouns are clearly morphologically plural, having the plural suffix *-lu*, as well as controlling plural morphology on the verb.

(26) *nii-LLu unn-aa-ji*
 water-PL be-PRES-3PL
 'There is water.'

(27) * *nii-LLu undi*
 water-PL be-3.NONMASC.SG
 INTENDED: 'There is water.'

(28) *paa-lu table miida padd-aa-ji*
 milk-PL table on spill-PAST-3.PL
 'Milk spilled on the table.'

Telugu Plural Mass Nouns

- These nouns have the semantics of being mass nouns.
- They do not allow for combination with stubbornly distributive predicates.

(29) # nii-LLu peddagaa unn-aa-ji
 water-PL big-GA be-PRES-3PL
 ‘The water is large.’

Telugu Plural Mass Nouns

- Further, they require comparison by volume, not number.

(30) Raaju Raani kannā ekkuvā paa-lu vaaD-ææ-Du
 Raaju Raani COMPR more milk-PL use-PAST-3.MASC.SG
 'Raaju used more milk than Raani.'

- **True:** Raju used one 1 Litre cup of milk, Rani used five 100ml ones.
- **False:** Raju used five 100ml cups of milk, Rani used one 1 Litre cup.

Telugu Plural Mass Nouns

- Furthermore, they do not combine directly with numerals, and require a measure phrase in order to do so.

(31) Raaju renDu *(kap-lu) nii-LLu taag-ææ-Du
 Raaju two cup-PL water-PL drink-PAST-3.MASC.PL
 'Raaju drank two (cups of) water.'

Telugu Plural Mass Nouns

- However, in one important respect they pattern with count nouns.
- They combine with the *count* quantifier *konni*, and not the mass quantifier *končam*.

(32) aa abbaaji konni nii-LLu taag-ees-tun-aa-Du
 the boy few water-PL drink-EMPH-PROG-PRES-3.MASC.PL
 ‘The boy is drinking some water.’

(33) * končam nii-LLu
 little water-PL
 INTENDED: ‘Little water.’

Telugu Plural Mass Nouns

- Summary of how *niiLLu* and *paalu* compare with other nouns:

	Count nouns	Mass Nouns	<i>niiLLu</i> and <i>paalu</i>
Plural morphology	✓	✗	✓
Combine with <i>konni</i>	✓	✗	✓
Combine with <i>končam</i>	✗	✓	✗
Directly countable	✓	✗	✗
Distributive predicates	✓	✗	✗
Comparison by	Number	Volume	Volume

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How to Handle Quantifier Allomorphy

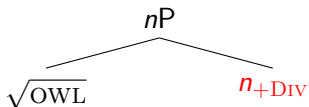
- Most existing analyses of quantifier sensitivity in the mass/count distinction assume that it arises because of certain quantifiers' need to combine with either mass or count nouns.
 - many/few → count nouns
 - much/little → mass nouns
- There are various ways in which one can formalise this (selection, allomorphy...).
- Telugu challenges this, as we have a count quantifier appearing with a mass noun.

How to Handle Quantifier Allomorphy

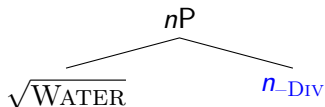
- One school of thought in current mass/count research is that $\sqrt{\text{ROOTS}}$ are undifferentiated for COUNT or MASS (Borer, 2005; Bale & Barner, 2009; de Belder, 2013).
- COUNT and MASS are created through combination with functional heads that create, or prohibit, division.
- This captures the ability of nouns to shift between count and mass usage.
- I will follow this approach, and label the head that creates division $n_{+\text{DIV}}$, and the one that prohibits division $n_{-\text{DIV}}$.

Count versus Mass Structures

(34) Count Noun



(35) Mass Noun



How to Handle Quantifier Allomorphy

- All one needs to say in this approach is that:
- *many* and *few* select for (a structure containing) $n_{+\text{DIV}}$.
- *much* and *little* select for (a structure containing) $n_{-\text{DIV}}$.

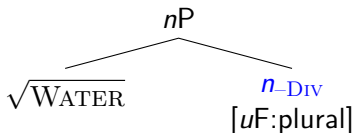
How to Handle Quantifier Allomorphy

- All one needs to say in this approach is that:
- *many* and *few* select for (a structure containing) n_{+DIV} .
- *much* and *little* select for (a structure containing) n_{-DIV} .
- **Telugu poses a problem for this, since we have an ostensibly count quantifier selecting for a subset of mass nouns.**

The structure of Milk and Water

- *niiLLu* and *paalu* are inherently plural in Telugu, as they never appear in a non-plural form.
- They are then equivalent to *pluralia tantum* nouns, yet this plurality is only morphological.
- Inherent features are located on category defining nodes (Kramer, 2014). I annotate the inherent feature as [*uF:plural*] (Smith, 2015).
- Furthermore, since they have mass interpretation, then I assume that they combine with a non-dividing *n*, annotated as *n-Div*.

(36)

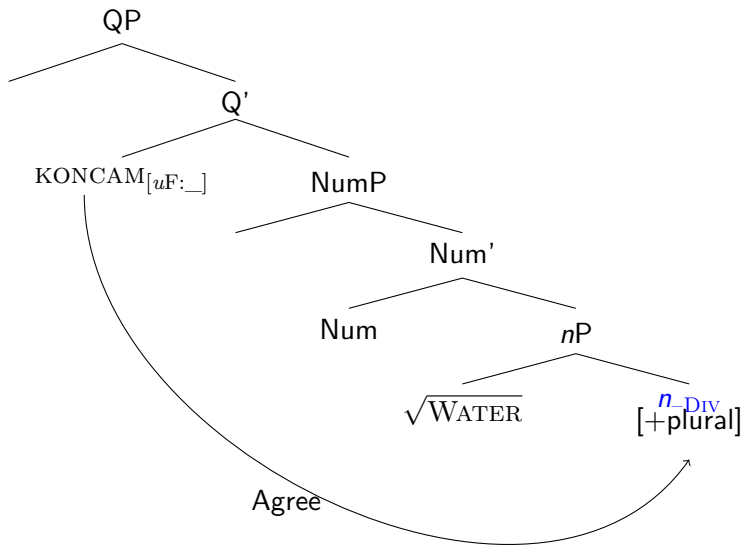


Mass/Count Quantifier Allomorphy in Telugu

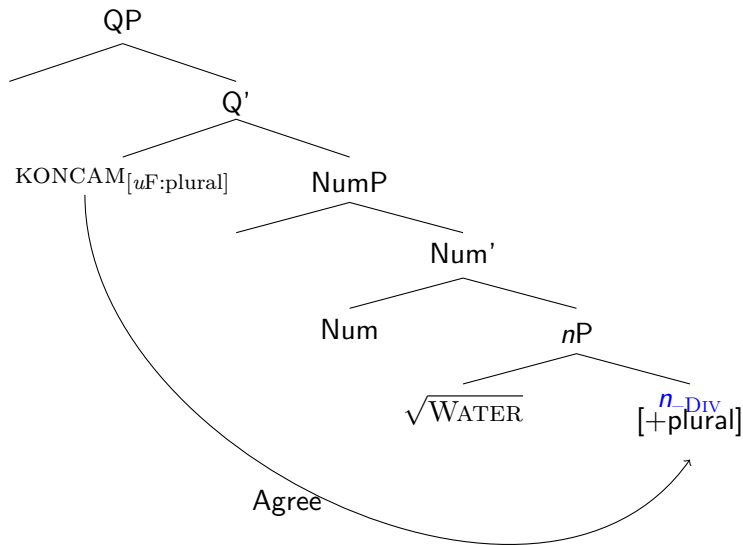
- I propose that quantifier allomorphy is not sensitive to n_{-Div} or n_{+Div} , but rather to the presence of $[uF:plural]$.
- There is a general quantifier KONČAM which carries a unvalued number feature $[uF:___]$.
- The quantifier agrees with the number value (if present) on the head of the noun phrase.
- Allomorphy is then determined according to the following VI-rules:

$$\begin{aligned}
 (37) \quad \sqrt{KONČAM}, [uF:plural] &\Leftrightarrow \text{konni} \\
 \sqrt{KONČAM} &\Leftrightarrow \text{končam}
 \end{aligned}$$

The Structure of Quantifier Allomorphy



The Structure of Quantifier Allomorphy



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Fake-Mass Nouns are Mass Nouns...

- Fake-mass nouns go under a variety of names (count-mass nouns, fake mass nouns, object mass nouns...).
- They seem to denote collections of objects.
- They cannot combine with numerals:

(38) * I brought three furniture(s)/mail(s)/luggage(s).

(39) I brought three *pieces of* furniture/mail/luggage.

- Nor can they combine with plural morphology.

(40) * There are furnitures/mails/luggages left to be delivered.

Fake-Mass Nouns are Mass Nouns...

- They unambiguously combine with the set of “mass” quantifiers in English:

- (41) a. There isn't {**many/much*} {furniture/mail/luggage} left to be delivered.
- b. There is {**few/little*} {furniture/mail/luggage} left.

...But They are Interpreted like Count Nouns

- However, their semantics is more like that of count nouns.
- They happily combine with stubbornly distributive predicates.

- (42)
- a. The furniture is large.
 - b. The mail is round.
 - c. The luggage is small.

- Furthermore, the standard of comparison with object mass nouns is number, and not volume (usually, though see Grimm, 2012; Grimm & Levin, 2012).

- (43) Chris bought more furniture than Mark.

Fake-Mass Nouns in English

- We saw earlier that *niiLLu* and *paalu* have a mismatch between being mass and count.

	Semantic Properties	
	+Count	+Mass
Morphosyntax	+Count	Regular count noun
	+Mass	Regular mass noun
		<i>niiLLu and paalu</i>
		???

- Fake-mass nouns appear to be the 'other' kind.

Fake-Mass Nouns in English

- We saw earlier that *niiLLu* and *paalu* have a mismatch between being mass and count.

	Semantic Properties		
	+Count	+Mass	
Morphosyntax	+Count	Regular count noun	<i>niiLLu</i> and <i>paalu</i>
	+Mass	Fake Mass Nouns	Regular mass noun

- Fake-mass nouns appear to be the 'other' kind.

Fake-Mass Nouns and Quantifier Allomorphy

- These nouns seem to cause a similar problem as Telugu nouns do.
- Based on their interpretation, they should combine with the dividing COUNT head, but their quantifier behaviour suggests that they combine with MASS.
- The solution taken by Bale & Barner (2009) is to claim that they are inherently divided roots, and can only combine with MASS.
- In this manner, one gets the distribution needed, albeit with a large stipulation that only the fake mass roots are inherently divided.

Fake-Mass Nouns and Quantifier Allomorphy

- However, we can look at the issue another way in light of the Telugu data.
- We can instead say that the choice between *many* and *much*, and *few* and *little*, is a matter of number sensitive allomorphy.
- Instead of the following:
 many/few → count nouns
 much/little → mass nouns

Fake-Mass Nouns and Quantifier Allomorphy

- However, we can look at the issue another way in light of the Telugu data.
- We can instead say that the choice between *many* and *much*, and *few* and *little*, is a matter of number sensitive allomorphy.
- We have this distribution:
 many/few → plural nouns
 much/little → non-plural nouns

Fake-Mass Nouns and Quantifier Allomorphy

- However, we can look at the issue another way in light of the Telugu data.
- We can instead say that the choice between *many* and *much*, and *few* and *little*, is a matter of number sensitive allomorphy.
- We have this distribution:
 many/few → plural nouns
 much/little → non-plural nouns
- The place to look for confirmation would be plural mass nouns in English.
- The predication is that they should combine with *many/few* and not *much, little*.

Plural Mass Nouns in English

Noun	Number of hits	MANY	MUCH
clothes	30450	62	0
belongings	1933	4	0
preparations	2719	2	0
valuables	445	3	0
fumes	1689	2	0
goods	17009	27	4
brains	5360	1	0
dregs	285	0	0
suds	264	0	0
guts	2984	0	0
contents	6145	0	0
remains	5137	5	0
winnings	670	0	0
ashes	3088	1	0
wages	7500	0	0
intestines	689	0	0

- These nouns chosen were common ones or taken from Ojeda (2005).

Back to Fake-Mass Nouns

- How then are we to account for the mass-like behaviour of fake mass nouns, if they're not really mass nouns?
- I propose that they have an inherent specification for semantic, but not morphological plurality.
- We can see numerous similarities of fake-mass nouns with *pluralia tantum* nouns in English.
- *Pluralia tantum* nouns also cannot directly combine with numerals:

(44) Mike packed three *(pairs of) trousers to take on holiday.

Back to Fake-Mass Nouns

- Fake-mass nouns and *pluralia tantum* nouns also seem to obey a stricter locality with respect to their measure phrase than true mass nouns do.
- In comparison contexts with true mass nouns, there are three positions that *more* can occupy:

- (45)
- a. Mike bought three *more* gallons of oil than Sam.
 - b. Mike bought three gallons *more* oil than Sam.
 - c. Mike bought three gallons of oil *more* than Sam.
- (46) Mike bought three (❶ more) gallons (❷ more) (of) oil (❸ more) than Sam.

Back to Fake-Mass Nouns

- Yet, for both fake-mass nouns and *pluralia tantum* nouns, position ② in (46) is unavailable:

- (47)
- a. Mike bought three *more* pieces of furniture than Sam.
 - b. * Mike bought three pieces *more* furniture than Sam.
 - c. Mike bought three pieces of furniture *more* than Sam.
- (48)
- a. Mike bought three *more* pairs of trousers than Sam.
 - b. * Mike bought three pairs *more* trousers than Sam.
 - c. Mike bought three pairs of trousers *more* than Sam.

Back to Fake-Mass Nouns

- Yet, for both fake-mass nouns and *pluralia tantum* nouns, position ② in (46) is unavailable:

- (49)
- a. Mike bought three *more* pieces of furniture than Sam.
 - b. * Mike bought three pieces *more* furniture than Sam.
 - c. Mike bought three pieces of furniture *more* than Sam.

- (50)
- a. Mike bought three *more* pairs of trousers than Sam.
 - b. * Mike bought three pairs *more* trousers than Sam.
 - c. Mike bought three pairs of trousers *more* than Sam.

- It seems as though there is something about an inherent number specification in English that prevents further number related information from combining.

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Conclusions

- In this talk I have described the mass/count distinction in Telugu, which is very much akin to that of English.
- However, the plural mass nouns of Telugu show pose problems for treating mass/count quantifier allomorphy as mass versus count.
- In Telugu, the allomorphy seen in quantifiers is best characterised as being about plural versus non-plural nouns.
- This analysis can be applied to English, to explain the distribution of *much/many* and *few/little* without stipulating that certain roots are inherently divided.

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