

Beyond the object-substance distinction in a classifier language: Experimental evidence from Tashkent Uzbek

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Theoretical Background

Nouns in Classifier languages...

View #1:

- ✓ ...have uniform unindividuated semantics, i.e., mass (e.g., Ritchie)
- ✓ ...underspecified for count/mass (e.g., Borer 2005)
- ✓ ... flexible w.r.t. count/mass (e.g., Pelletier 2012)
- ☞ Count reading is obtained only at the syntactic level, e.g., via CLs

View #2:

- ✓ ...have non-uniform semantics (i.e., individuated vs. unindividuated) (e.g., Doetjes 1997, Cheng & Sybesma 1998, Inagaki & Barner 2009)
- ☞ Count-mass distinction *fully aligns* with cognitive object-substance distinction (e.g., Chierchia 2021)
- ☞ Count-mass distinction *transcends* cognitive object-substance distinction (e.g., Erbach et al. 2021) ← **Newly Emerging Analysis**

Tashkent Uzbek (TU) - Basic Facts

- An influential dialect of Uzbek
 - Has a sizable inventory of numeral classifiers, including sortal, mensural, group, granular
 - Which are obligatory in numeral constructions
 - With both prototypically count nouns (1a) and prototypically mass nouns (1b) (e.g., Levy-Forsythe & Kagan 2022)
- (1) a. ikki dona kitob b. ikki tomchi ter
two_{CL}item book two_{CL}drop sweat
'two books' 'two drops of sweat'

Current study - Goals

- Establish the existence of a lexicalized count-mass distinction in Tashkent Uzbek (TU)
- Specifically**
- Demonstrate that TU nouns are not uniformly unindividuated
- Importantly**
- Show that the count-mass distinction in TU transcends the cognitive object-substance distinction, just like in English-type languages (Chierchia's 2021 "Type I")

Levy-Forsythe (in prep.) on TU:

- Individuation-sensitive modifiers → Conceptual object-substance distinction
 - Adjectives of Size
 - ✓ Object Count Nouns (2a) and Object Mass Nouns (2b)
- (2) a. katta/kichkina kitob b. katta/kichkina mebel
big / small book big / small furniture
'big/small book' 'big/small furniture'
- * Substance Mass Nouns (2c)
- c. *katta/kichkina qor
big / small snow
Int.: 'big/small snow'
- Countability-sensitive modifiers → Grammatical count-mass distinction
 - Numeral+CL
 - ✓ Object Count Nouns (3a)
- (3) a. uch-ta kitob
three_{CL}GEN book
'three books'
- * Object Mass Nouns (3b) Substance Mass Nouns (3c)
- b. *uch-ta mebel c. *uch-ta qor
three_{CL}GEN furniture three_{CL}GEN snow
Int.: 'three (items of) furniture' Int.: 'three (units of) snow'

Hypotheses & predictions

Hypothesis I

Unlike nouns in non-CLs, nominals in CLs have uniform unindividuated semantics

Predictions

No restriction on count-mass/individuation restriction on modification →
High acceptability for modified NPs, regardless of NP type

Hypothesis II

Nouns in CLs have non-uniform semantics, but it merely aligns with the conceptual object-substance distinction

Predictions

Object-denoting nouns → **high** acceptability scores, regardless of modifier type
Substance-denoting mass nouns → **low** acceptability scores, regardless of modifier type

Hypothesis III

The count-mass distinction in CLs transcends object-substance distinction

Predictions

Individuation-probing modifiers

All object-denoting nouns → **high** acceptability scores
All substance-denoting mass nouns → **low** acceptability scores

Countability-probing modifiers

Object count nouns → **high** acceptability scores
Substance mass nouns → **low** acceptability scores
Object mass nouns → **low** acceptability scores

Methods

Experimental design & materials

		Modifier Type	
		Individuation-Probing	Countability-Probing
Noun type	Object Count	Xonada katta televizor o'rnatildi. Room.LOC big TV installed.PSV 'A big TV was installed in the room.'	Vazirlikda ikkala xat imzolandi. Ministry.LOC two.COLL letter signed.PSV 'Both letters were signed at the ministry.'
	Object Mass	Zavodda katta mebel ishlab chiqarildi. Factory.LOC big furniture produced.PSV 'Big furniture was produced in the factory.'	Yo'lda ikkala pochta yo'qoldi. Road.LOC two.COLL mail lost.PSV 'Both mails were lost on the road'
	Substance Mass	Rasmda katta qor chizildi. Picture.LOC big snow drew.PSV 'Big snow was drawn in the picture.'	Laboratoriyada ikkala gaz suyultirildi. Lab.LOC two.COLL gas liquefied.PSV 'Both gases were liquefied at the lab.'

- ❖ 6 items/condition
- ❖ All nouns in their bare form (no the plural suffix)

Procedure

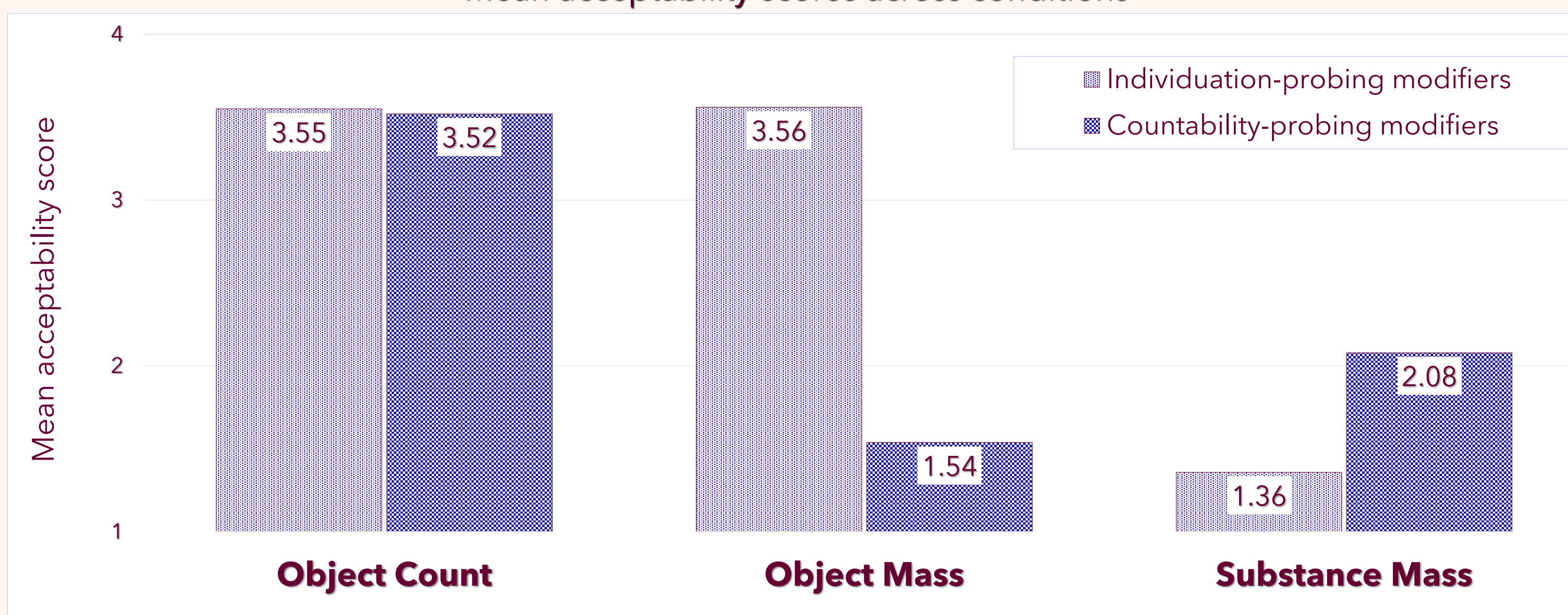
- ❖ Gradable acceptability judgment task
- ❖ Online via Qualtrics
- ❖ Verbal stimuli: audio files
- ❖ 4-point forced-choice scale
- ❖ Only extreme ends of scale explicitly labeled:
1 = *past* 'low'
4 = *baland* 'high'

Participants

- 40 adult speakers of TU
- Recruited via social media

Results & analysis

Mean acceptability scores across conditions



Summary of findings

- Acceptability scores in the object count condition are near ceiling for both types of modifiers
- In stark contrast to the substance mass condition, with low scores for both modifiers
- Slightly elevated ratings of countability-probing modifiers in the substance mass condition may be due to contextual mass-to-count shift
- Enabled by the availability of the 'standard packaging' and the '(sub)kinds' reading, typical for substance mass nouns
- Most remarkable: data in the object mass condition, with judgments greatly diverging
- Individuation-probing modifier yield ratings that are essentially identical to object count condition
- In contrast, for countability-probing modifiers, judgments pattern with the substance mass results

Paired -Samples t-test

- Main effect of Noun Type ($p < 0.001$)
- Significant interaction of Noun Type and Modifier Type in Object Mass, Substance Mass ($p < 0.001$)
- But not in the Object Count condition ($p = 0.5567$)

General discussion

- The study conclusively affirms the existence of two canonical noun classes in TU: object count (e.g., *xat* 'letter', and substance mass nouns (e.g., *qor* 'snow')
- Which is clearly at odds with claims that nouns in CLs have uniform unindividuated semantics
- Most notably, our study also provides robust evidence for the existence of an additional, non-canonical nominal class: object mass nouns
- Morphosyntactically, object mass nouns (e.g., *mebel* 'furniture') pattern with mass nouns in that they are incompatible with number coding
- Unlike canonical substance mass nouns, however, object mass nouns refer to individuals (Barner & Snedeker 2005)
- Object mass nouns represent a dissociation between the linguistic count-mass distinction and the cognitive object-substance distinction (cf., Carey & Spelke 1996)
- Accordingly, under the view that in CLs, the linguistic distinction fully aligns with the cognitive distinction, such non-canonical nouns are predicted to be entirely absent in CLs such as TU (Chierchia 2021: 23)
- ☞ This prediction is not borne out by the results of the current study
- ☞ Instead, the study demonstrates that in TU, modification by classifiers (and other modifiers) is selectively restricted by the quantificational properties of the modified NP

Selected references: Allan, K. (1977). Classifiers. *Language*, 53, 285-311. | Barner, D., Inagaki, Sh., & Li, P. (2009). Language, thought, and real nouns. *Cognition* 111, 329-344. | Borer, H. (2005). In name only, Vol. 1. of Structuring sense: An exo-skeletal trilogy. Oxford University Press. | Carey, S. & Spelke, E. (1996). Science and core knowledge. *Philosophy of science*, 63(4), 515-533. | Cheng, L. & Sybesma, R. (1998). Yi-wan tang, yi-ge tang: Classifiers and massifiers. *The Tsing Hua Journal of Chinese Studies*, 28(3), 385-412. | Chierchia, G. (2010). Mass Nouns, Vagueness, and Semantic Variation. *Synthese*, 174: 99-149. | Chierchia, G. (2021). Mass vs. count: Where do we stand? Outline of a theory of semantic variation. In Kiss et al. (Eds.), *Things and Stuff: The Semantics of the Count-Mass Distinction* (21-54). CUP. | Doetjes, J. (1997). Quantifiers and Selection: On the Distribution of Quantifying Expressions in French, Dutch and English (PhD dissertation). Leiden U. | Erbach, K., Sutton, P., Filip, H., & Byrdeck, K. (2021). Object Mass Nouns as an Arbiter for the Count-Mass Category. In T. Kiss, F. Pelletier, & H. Husic (Eds.), *Things and Stuff: The Semantics of the Count-Mass Distinction* (pp. 167-192). Cambridge: Cambridge University Press. | Pelletier, J. (2012). Lexical Nouns are both +MASS and +COUNT but they are neither +MASS nor +COUNT. In Massam (Ed.), *Count and Mass across Languages*, 9-26. OUP. | Rothstein, S. (2010). Counting and the mass/count distinction. *Journal of Semantics* 27(3), 343-397. | Sudo, Y. (2016). The Semantic Role of Classifiers in Japanese. *The Baltic International Yearbook of Cognition, Logic and Communication*, 11, 1-15.