
ARBEITSGRUPPE 2 | WORKSHOP 2

Raum | *Room*: S 15, Seminargebäude

**Divide and count: On the (morpho-)syntax and semantics of
division, plurality and countability**

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Counting is a curious thing: while mathematicians talk about countable and uncountable infinities, linguists talk about countable and uncountable nouns – and wonder how many countabilities there are in the first place. The issue of countability is a rather complex topic and minimally involves the following aspects:

- i) Countability per se (diagnostics)
- ii) Nominal denotations (individuals, “stuff”, collections, kinds ...?)
- iii) The thing being counted (individuals, measure-units, pluralities ...?)
- iv) Kinds of Numerals
- v) Plurality and Cardinality
- vi) Partitivity

Notably, in order to understand how countability is encoded in natural language, it is essential and instructive to carefully examine the morphosyntactic reflexes and syntactic dependencies pertaining to the above notions. Also the lexicon might give interesting insights (e.g. **pluralia tantum**). Besides the traditional **singular** vs. **plural** distinction, some languages also have **dual**, **paucal NUMBER**; likewise, the distinction **mass** vs. **count** may not exhaust the range of countabilities across languages. As was shown very thoroughly by Grimm (2012), the traditional two-way distinctions between mass/count and singular/plural are not sufficient to capture richer grammatical number systems involving **singulative-collective** marking. In addition, **counting** and **grammatical NUMBER** (marking) do not necessarily go hand in hand and we find **morpho-semantic mismatches**; case in point: languages where counted nouns are morphologically marked as singular (e.g. Estonian, Hungarian, Turkish).

Semantic accounts (e.g. Link 1983, Krifka 1989) have often focused on the semantics of the plural (sum individuals), or the similarities between plural and mass denotations (cumulativity), while syntactic accounts (e.g. Löbel 1989, Ritter 1992) have established that NUMBER is a separate functional category. Borer (2005) argues that the functional projection realizing the English plural -s is also

responsible for division which makes counting possible in the first place. Mathieu (2012) elaborating on Grimm and Borer argues that there are even more “flavors of division” and, plural morpheme may not only indicate division but can realize other functional heads in the fine-grained DP-structure (s. also Alexiadou 2011).

We invite papers investigating these issues from a theoretical (syntax-semantics-interface) as well as a typological perspective.

The questions we wish to address include, but are not limited to the following:

- What kinds of countable entities are recognized by natural language?
- What are the semantic building blocks of counting and division, and how are they reflected in the syntax (e.g. COUNT NOUN = MASS NOUN + DIVISION, cf. Borer 2005)?
- Do functional categories contributing to division and countability have the same universal features or may their content vary cross-linguistically (Wiltschko 2014)?
- What is the role of NUMBER in building kind-referring expressions (Dayal 2004 vs. Borik & Espinal 2020)?

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**Distributed number:
Syntax, morphology, semantics**

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(joint work with Myriam Dali)

The aim of this talk is to give a comprehensive analysis of number, and of plurals in particular, from a variety of angles: syntactic, morphological, and semantic. My main proposal is that the plural is not homogeneous and that number is distributed along the nominal spine with different effects depending on the type of functional head (and semantic features) it is associated with.

On my view, number, including plurals, can be associated with bare nPs and a lower NumP (NumP1) but also with a higher NumP (NumP2). Whereas most scholars concentrate on the division of labour between *n* and NumP1, my main focus will be on the division of labour between NumP1 and NumP2.

Although my survey of languages is vast (it includes English, French, Ojibwe, Blackfoot, Hebrew, Arabic, Japanese, Korean, Chinese, Turkish, Persian, Western Armenian, etc.), I will focus, for the purposes of this talk, on Arabic. The reason for this move is that this language is extremely interesting with regard to the way it expresses number. In particular, the grammar of Arabic includes a singulative alongside a singular as well as many plurals (broken plurals, sound plurals, plurals of singulatives, plurals of collectives, plurals of plurals) together with a dual and a paucal.

In other words, number in Arabic is complex: it displays various forms of plurals that are somehow unusual and the constraints on plural marking are intricate, exhibiting an interesting division of labour between syntax and semantics. More generally, Arabic provides insights on the relationship between gender and number, showing in particular, from a morphological point of view, that feminine exponents can represent number across the board. Existing evidence points to the idea that there is a close relationship between gender and number and Arabic provides further evidence that the two are closely linked (both diachronically and synchronically).

I will pay particular attention to paucity and the inclusive/exclusive contrast in Arabic, arriving at a simple synchronic system of Arabic number that accounts for a very complex set of facts. I will also provide, time permitting, specific arguments in favour of the view that linguistic change can occur inside words, adding evidence to existing literature in favour of the view that Affix migration is a productive operation in historical linguistic development.

The syntax-semantic analysis of Akan plural morphology

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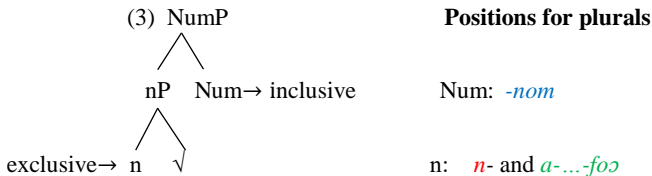
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In this study, I propose that the plural morphemes in Akan are not allomorphs from a semantics and syntactic perspective (contra to Ofori (2016), who considered the plural morphemes in Akan as allomorphs). Firstly, plural morphemes in Akan correspond to different semantic interpretations. For instance, whereas the prefix *n-* is a *strict plurality* whose denotation excludes atoms and thus has the exclusive reading in negative sentences (1), the plural morpheme *a-/n-...-nom* has a *number neutral denotation*. It hence is inclusive in a negative context (2). *a-...-foɔ*, on the other hand, is a *group denoting morpheme*, allowing for non-maximality reading.

- (1) Mary ε- n- ni **n-konwa** wɔ ne dan no mu hɔ
 Mary 3SG-NEG-have PL-chair LOC POSS house DET inside there
 ‘Mary does not have chairs in her room’ [chairs=1/0]
- (2) Mary a- n- hu **a-nua-nom** wɔ paaki no so
 Mary PFV-NEG-see PL-sibling-PL LOC park DET LOC
 ‘Mary did not see the siblings on the field.’ [siblings= 0]

Syntactically, following Kramer’s (2016) split number analysis and Mathieu’s (2014) distributed plural analysis, I assume two positions within the NP spine for plurals in Akan: *n* (nominalizing head) and *Num* (number head) and propose that *n-/a-* and *a-...-foɔ* (here I assume the circumfix morpheme as a discontinuous morpheme (c.f. Harbour 2008)) as heads of the nominalizing phrase (nP) and the suffix *-nom* as the heads of number phrase (NumP) and attribute the exclusive reading to *n* and inclusive reading to *Num* as shown in (3).



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**Number and Definiteness in kinds across languages:
Insights from an experimental study**

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Kind and generic readings can be realized with a multitude of structures within and across languages. Romance languages (1c) and Greek (1d), e.g., use definite plurals but Germanic languages employ bare plurals (Krifka et al. 1995, Chierchia 1998, Alexiadou et al. 2007). German is exceptional, as both definite plurals and bare plurals license generic/kind readings (1b). Recently, Acton (2019) observed that even in English generic readings can be expressed with definite plurals, though with the effect that the speaker distances themselves from the kind expressed.

- (1)
- a. (*The) dogs are widespread.
 - b. (Die) Pandabären sind vom Aussterben bedroht.
 - c. *(I) cani sono diffusi.
the dogs are widespread
 - d. *(Ta) pulja dodo ehun pleon afanisti.
the birds dodo have already disappeared

Kind readings can also be expressed with definite singulars, if the kind is well established – known as the well-defined kind restriction (Carlson 1997, Krifka et al. 1995, Dayal 2004), shown in (2).

- (2)
- a. The polar bear is slowly disappearing. (Carlson 2011)
 - b. ??The white bear is slowly disappearing.

We present results from an experimental study comparing English, German, Italian, and Greek, where we investigate definiteness and number marking for kind and generic readings, distancing effects, and the well-defined kind restriction.

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Numeral modification of plural mass nouns

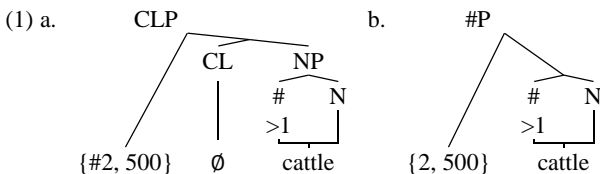
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Groceries ‘grocery items’, *clothes* and *cattle* lack singular counterparts and are reported as unmodifiable by small numerals. Alongside that, Allan (1980) reports *cattle* as modifiable by 500, and the preceding nouns are attested as modified by small numerals. I argue that Allan’s judgement of {#2, 500} *cattle* is key towards the mixed judgements towards 2 *cattle*. The analysis relies on: (i) The nouns license plural agreement, formalized with the morphosyntax of Cowper & Hall (2012), and (ii) The nouns range over disjoint individuals, formalized with Landman’s (2020) semantic notion of neatness. Taken together, the preceding nouns are modifiable only by round numerals for certain speakers, and a certain morphosyntactic reanalysis leads them to be modifiable by all numerals.

Data. The existence of speakers who judge {#2, 500} *cattle* makes correct corpus predictions. In iWeb (Davies 2018–), six plural nouns without singular counterparts are modified by round numerals (multiples of 5) significantly more than inflectional plural (near-)synonyms: *Cattle-cows*, *swine-pigs*, *livestock-farm animals*, *poultry-birds*, *fowl-birds* and *munitions-weapons*.

Analysis. In [NP *cattle*] in (1a), # encodes individuation and modifies N, and >1 licenses plural agreement (*these cattle*; Cowper & Hall 2012). I posit that speakers who judge {#2, 500} *cattle* can embed [NP *cattle*] in a classifier phrase (CLP) headed by [CL \emptyset], which based on data from classifier languages is assumed to be compatible with 500 but not 2. Speakers who represent (1a) can produce 500 *cattle*, which addressees can represent as (1b), with # as a head rather than a modifier. This reanalysis is motivated by bias against covert elements like [CL \emptyset], plus [# >1] as a head as in (1b) is routine for nominals which license plural agreement (*cows*). (1) accounts for the mixed judgements towards 2 *cattle*, plus the generalization that round numerals are less subject to limited numeral modification



References: • Allan, K. (1980). Nouns and countability. *Language* 56(3), 541–567. • Cowper, E. & D. C. Hall (2012). In D. Massam (ed.), *Count and mass across languages*. Oxford: OUP, 25–42. • Davies, M. (2018–). *iWeb: The 14 billion word web corpus*. • Landman, F. (2020). *Iceberg semantics for mass nouns and count nouns*. Cham: Springer.

Syntactic and interpretive constraints on the combination of numerals and nouns: Lalo Yi

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Lalo Yi imposes an important restriction on the use of numerals to count out nouns. Unlike other numeral classifier languages, it is often not possible to combine numerals and classifiers with nouns to form a single syntactic constituent, and instead, a numeral-classifier pair must appear clause-finally, in an immediately pre-verbal position as an independent syntactic constituent:

- (1) **co13sen33** hi55-ku33 **sa33-ma55** ty55zi55 kuɛ13 a55 mu55.
student home-LOC three-CL return RLS SFP VIS
 ‘Three students went back home.’

This restriction relates to the *specificity* of the NP. If demonstratives or the indefinite article element *nikhe* are present, this does enable the syntactic combination of numerals with nouns (2). The absence of any article in NP-numeral construals such as (1) only permit *non-specific* interpretations.

- (2) tsi55tsi33-di31 [**thi31-u31 ni55khe55n nu31-pen31** ta31 a31 mu55.
table-LOC book INDEF two-CL put SFP VIS
 ‘There are two specific books on the table.’

We offer a syntactic-semantic analysis of these patterns which suggests that any syntactic combination of nouns/NPs and numerals requires the projection of a DP constituent with a D position that is lexically instantiated. This allows for numerals to merge with NPs with specific interpretations, but as Lalo Yi has no non-specific (indefinite) article, numerals may only be construed with nouns via a different syntactic structure, in which numeral-classifier pairs occur in a unique functional projection located within vP. Such a structural analysis will be shown to allow for an explanation of other related restrictions: (i) it is only possible for *one* bare non-specific noun/NP per clause to be counted by a clause-final numeral-classifier pair, (ii) if aspect markers occur, a clause-final numeral-classifier pair may be construed with the object of the verb, but never with a subject NP, and (iii) certain types of verbs cannot be used with clause-final numeral-classifiers. We also show that numerals may be combined with classifiers as syntactic NumP constituents when they have no specific or asserted reference and are pure quantity expressions (e.g. ‘Two people can lift up one cow.’).

**At the margins of countability.
(Morpho-)syntactic and semantic evidence for countability of object
mass nouns in two Creoles and their European lexifiers.**

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In languages which show strongly grammaticalized number marking, object mass nouns (OMN) like Engl. *furniture* are mass nouns syntactically, but on the semantic level they pattern with count nouns, since they refer to a more or less heterogeneous plurality of discrete entities. Although they have become a prominent research topic notably in formal semantics focussing mostly on English (see Chierchia 2010), studies on languages without obligatory number marking are still scarce.

We investigate nouns in typical OMN domains (Mihatsch, 2016) in two Creole languages, the French based Reunion Creole and the Spanish based Papiamentu. Unlike the Romance lexifier languages these Creoles show a highly flexible noun system with optional number marking and weakly grammaticalized determiners (Staudacher-Valliamée, 2004, p. 65; Kouwenberg & Murray, 1994, pp. 48–50). Basing our analysis on data from an acceptability judgement study, we compare the creole languages to their lexifiers as well as Portuguese, which shows some syntactic similarities with Creoles.

Given the flexibility of Creole noun system, we hypothesize a greater syntactic flexibility of OMNs in Creoles. Following on from this, we assume a greater acceptability of syntactic means of expression of countability (e.g. numerals) than in the lexifier languages, while semantic evidence for natural atomicity might show some differences between the languages, but presumably to a lesser degree. We further expect that Portuguese occupies an intermediate position.

The results indeed confirm our hypothesis and show that object mass nouns are easily accepted with stubbornly distributive predicates both in Creoles and lexifiers as well as in the Portuguese varieties. We do see some differences in the acceptability of distributive contexts and rather great differences between the languages as for the acceptability of uses in syntactic count contexts. Creoles do show some differences between the test and the control sentences, pointing to a particular syntactic status of these nouns, albeit in a subtle way. Both Brazilian and European Portuguese generally pattern with the Creole languages.

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The structure of animate collective nouns

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Goal. In this paper we analyze animate collective nouns in Spanish (*población* ‘population’, *equipo* ‘team’, etc.) as derived from the ‘phrasal spell-out’ (Caha 2021) of partitive structures, assuming the analysis of partitives developed in Pérez-Jiménez & Demonte (2017). Our proposal accounts for the agreement alternations triggered by these nouns (1,2) and for their referential properties too.

- (1) El equipo viajó a Melbourne. (esTenTen18)
The team_{MASC.SG} travelled_{3.SG} to Melbourne.
 ‘The team travelled to Melbourne’.
- (2) El equipo ya me han advertido... (esTenTen18)
The team_{MASC.SG} already me have_{3.PL} warned...
 ‘The team have already warned me’.

Hypothesis. The structure spelled-out as *equipo* contains a null group noun [group] merged to a root that determines the specific lexical item to be spelled-out. The null noun [group] selects a partitive complement with a null personal pronoun (pro). Partitive semantics requires pro to be plural. We are trying to formalize the intuition that *equipo* means ‘group of animate beings’. The null noun [group] has in this example concord features valued as number: sg, gender: masc. What characterizes this noun is the behaviour of the index bundle. On the one hand, the index bundle can be valued by default: the index number and gender features have identical values to those for number and gender in the concord value: number: sg, gender: masc. Person will be systematically valued as 3. On the other hand, the index bundle can be unvalued. The values of the index number, gender and person features will be taken from that element that they can agree with in a maximal way under locality constraints: the index features of pro. Pro, as a pronominal category, has a bundle of valued index features, depending on its referential properties: thus, gender can be masc. or fem. and person can be 1, 2, 3. The existence of a pro in the structure and the behaviour of the index bundle of the null group noun allows to explain the hybrid agreement illustrated in 1 and 2.

References: • Areses, I. (in preparation). *Propiedades sintáctico-semánticas de los nombres que expresan colectividades*. PhD. Diss. UAH. • Caha, P. (2021). The marking of mass, count and plural denotations in multi-dimensional paradigms. *Studia Linguistica* 76(1), 1-63. • Pérez-Jiménez, I. & V. Demonte (2017). Agreement and interpretation of partitive constructions in Spanish: The dual nature of nominal features”. *Probus* 29(2), 355-395. • Wechsler, S. & L. Zlatić (2000). *The Many Faces of Agreement*. Stanford: CSLI.

In favor of derivationally early mass/count distinction

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There is an ongoing debate in the literature regarding the derivational stage at which the mass-count distinction emerges. While the classical approach treats it as present in the lexicon (Chomsky 1965; Quirk et al. 1972), it has also been argued that all nominal stems are born as mass. On such approaches, the mass-count distinction only emerges in syntax, at the level of DivP (e.g., Borer 2005, de Belder 2011, Mathieu 2012, Acquaviva 2019). We argue that the mass-count distinction is present at least as low as at the nP level. To do so, we observe that some derivational suffixes in Russian are sensitive to the mass-count distinction and to the related concept of a natural unit (NU). We demonstrate that these suffixes occupy the position not higher than that of n^0 .

Data. We consider four suffixes with quantificational, mass/count-related meaning: the collective *-nik* (*el' – el'-nik* ‘fir – fir grove’); collective *-jo* (*žul-ik – žul-jo* ‘swindler – swindlers’); singulative *-in-* (*-in₁*) (*gorox – goroš-in-a* ‘pea – a pea’); and massifier *-in-* (*-in₂*) (*svin-ja – svin-in-a* ‘pig – pork’). These suffixes determine the countability of the resulting noun, **and** impose restrictions on the input. Thus, the attachment of *-nik* and *-in₁* creates count nouns, whereas *-jo* and *-in₂* create mass ones. Further, *-in₁* can only apply to mass stems, whereas the other three suffixes are incompatible with mass stems (but fine with count ones). Thus, not only the mother node but also the sister node of these suffixes is specified as mass or count. What is the nature (and the “height”) of these nodes?

The suffixes as n^0 . We propose that the suffixes in question function as n^0 heads. As such, they must appear below Div. Several observations support this analysis. The suffixes are not fully productive; the resulting meaning is not always fully compositional (with the exception of the singulative *-in-*); the nature of the stem to which the suffixes attach is not systematic: sometimes this is a bare root; sometimes, a root and an additional low suffix, not always synchronously meaningful. Furthermore, the suffixes function as nominalizers, determine the gender/declension class of the noun and are incompatible with other overt n^0 heads.

The level of the mass-count distinction. *-nik*, *-jo*, *-in₁* and *-in₂* impose countness or masshood requirements both on their sisters and the resulting nouns. Given that these suffixes are n^0 , all the expressions in question appear at the root level, lower than DivP. This shows that the mass-count distinction is already present by the nP level, i.e. (at least) at the stage when the stem is turned into a noun. Crucially, mass/count distinction is not purely conceptual – it is relevant for the grammar, determining which morphemes can, and which cannot, combine.

Accounting for the presence/absence of overt number morphology in Romance nominals: insights from Francoprovençal

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In this paper, we investigate noun phrases without any overt number (NUM) marking in Francoprovençal (FrPr), an endangered Gallo-Romance language, which does not have bare nouns, cf. (1). This property is surprising in Romance, where the noun (N) and/or the determiner traditionally carry overt NUM marking, as illustrated in (2) and (3) (Cyrino/Espinal 2020):

- | | | | | |
|-----|-----------|--------------|-----------------|---------------------------|
| (1) | də 'dzor | of day | ‘of day’ | FrPr B, St-Nicolas, Italy |
| (2) | los días | / loʃ dias / | ‘the.pl day.pl’ | Spanish |
| (3) | les jours | / le ʒuʁ / | ‘the.pl day’ | French |

In (1), N is not marked for NUM, nor is invariable DE, a compulsory element in indefinite non-quantified noun phrases (deriving from the Latin preposition *de* ‘of’), occurring in some varieties of FrPr that do not have partitive articles (PAs) like French *du/de la/des* e.g. in *du chocolat* (‘chocolate’) (see Kristol 2016; for a more fine-grained discussion see Ihsane et al. submitted). This element is sometimes considered an allomorph of PAs (Carlier/Lamiroy 2014). To account for (1), we thus need to understand a) the relation between PAs, which also etymologically contain *de*, and uninflected DE, and b) when/why PAs/DE are used. One hypothesis on the presence/absence of PAs in Romance correlates with the absence of overt NUM on N (Delfitto/Schroten 1991; Gerards/Stark 2020; Pinzin/Poletto 2022 a.o.). The FrPr facts (invariable DE, absence of NUM on some Ns, noun class dependent number marking) show that this hypothesis needs to be revised. We will propose that the type of NUM marking on N can be correlated with DE being an allomorph of PAs in FrPr analogically spread to unmarked nouns, which explains why (1) is possible (unlike in Italian or French).

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A special kind – countability of abstract objects and related CPs

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This paper investigates countability and individuation in the domain of abstract objects like beliefs and possibilities. Such objects can be realized by nominal or clausal structures or by a combination of both. However, CPs in German and English lack number and countability for both syntactic and semantic reasons: syntactically, CPs cannot enter agreement relations and are not specified for number and semantically, as this paper argues, they refer to unique objects, e.g. kinds of beliefs or cases (linking kinds to number, cf. Borik & Espinal 2020). Nouns associated with those CPs provide a solution for both: syntactically, they provide phi-features, and semantically, they can provide countable particulars.

The uniqueness constraint of the CP can be circumvented in two ways, both of which involve (often silent) prepositions. First, prepositions may introduce an instantiation relation for the kind, like in *two dogs of this kind*, *two cases of Covid*, *zwei Fälle ?(davon), dass* ‘two instances of the case that’ (cf. Sæbø 2019). This way of counting is similar to that of pseudo-partitives (cf. Selkirk 1977).

The other way comes into play if the noun does not refer to the clause or an instance of the clause at all, but stands in an argumental relation to it, which can be made visible by a preposition in the German translation. This relation can be introduced from inside the clause, (1cd). The same holds for non-finite clauses as well, cf. (2), where quantification forces an argument reading of the non-finite clause.

- (1)
 - a. Kant adduces two reasons that aesthetic ideas deserve their name.
 - b. Kant führt zwei Gründe ?(dafür) an, dass sie ihren Namen verdienen.
 - c. He adduces two reasons why they do.
 - d. Er führt zwei Gründe (dafür) an, warum das so ist.
- (2)
 - a. Es gab immer noch die Möglichkeit, die Flasche zu öffnen.
‘We still had the possible option of opening the bottle.’
 - b. Es gab mehrere Möglichkeiten (dafür), (/ um) die Flasche zu öffnen.
‘There were several possible ways to open the bottle.’

In both cases, the instantiation and the argument relation, this relation is typically realized by a preposition.

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Article Drop in German

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Article Drop (AD) in German has been argued to be restricted to reduced registers or to plural nouns (but see Geist 2021; Heycock & Zamparelli 2003; Kiss 2019). We present novel data pertaining to mereological/instrumental PPs and topicalized NPs: while the former contain an incorporated argument of the head noun, topicalized NPs resemble Geist 2021’s bare nouns in specificational copular sentences, with relationality and uniqueness as AD’s licensing conditions.

Bare PPs are more likely to express mereological or instrumental relations:

- (1) Ich habe ein Haus mit \emptyset /einem Wintergarten besichtigt.
I have a house with \emptyset / a Winter+garden visited
 ‘I visited a house with a winter garden.’

Contra Kiss (2019), AD in sentences such as (1) gives rise to slightly different interpretations. While *mit Wintergarten* merely refers to a house type, *mit einem Wintergarten* introduces the referent into the discourse. NPs may also occur bare in topical position:

- (2a.) Du musst noch den Garten umgraben. (‘you still need to dig up the garden.’)
 (2b.) **Schaufel** steht im Schuppen.
shovel stands in+the shed
 ‘The shovel is in the garden.’

AD is licensed in a left-peripheral position. In contrast to specificational topics (Geist 2021), there is no case constraint on these bare nouns.

- (3a.) **Schaufel**^{ok} findest du im Schuppen.
shovel find you in+the shed
 (3b.) Im Schuppen steht \emptyset [#]//**eine**^{ok} Schaufel.
in+the shed stands \emptyset /a shovel

AD seems productive with prepositions expressing part-whole relationships, with the PP incorporated into the relational noun. Assuming a type-shifting analysis for nouns taking hyponymic PPs, the bare noun will receive a kind-interpretation, for which no article is required. On the other hand, topical bare NPs obey Geist’s constraints: anaphoric link to an antecedent and uniqueness interpretation. Their discourse relation seems to be teleological/instrumental, in that bare nouns express the way a task can be completed or a goal achieved.

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Varieties of Mass/Count Interpretation of Hybrid Nouns

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We take a closer look at the oft mentioned but under discussed category of hybrid nouns (a.k.a dual life nouns) like *apple*, *chocolate*, *potato*, and *rope*. We motivate an analysis in which there are differences in the mass meanings of certain nouns, contra analyses that assume mass has no meaning (e.g. Barner & Snedeker 2005; Borer 2005; Rothstein 2010; a.o.). Rather than relegate countability or one-ness to an unspecified contextual variable or extra-linguistic cognition, we propose a probabilistic model for inferences based on competition between the mass and count uses of the nouns.

It is widely assumed that mass nouns derived from count nouns that denote discrete solid objects refer to the substance, or at least parts, of which the objects are made. This widespread approach accounts for context and corresponding utterances in (1-2), where the mass use of *apple* is not sanctioned but the count use is sanctioned when the apples referred to are whole, and the opposite is true when the apples are in non-whole form. However, this approach undergenerates uses of hybrid nouns given examples like (3), where whole, diced, and puréed apples can all be referred to with the mass noun.

- (1) [Context: There are three whole apples on a table]
 a. #There is apple on the table. b. There are apples on the table.
- (2) [Context: Two whole apples were coarsely diced, and added to salad]
 a. There is a lot of apple in this salad.
 b. #There are a lot of apples in this salad
- (3) Everyone who ate apple in the cafeteria got sick.

We put forward a competition-based account of the semantics of mass count. We propose that there are two dimensions of competition in our cases: (a) what forms are likely to be relevant, and (b) what the semantic referent is. (a) accounts for the contrasts between *apples* and *potatoes* and between *apple* and *chocolate*; (b) accounts for the interpretations of the count uses of nouns like *apples*, as well as the unmarked effects of their mass counterparts in cases like (3).

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Parts of clusters and Ukrainian singulatives

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Singulatives are derived unit nouns, i.e., expressions designating a singular object individuated from a plurality perceived as a homogeneous collection of entities (Acquaviva 2015, Kagan et al. t.a.). In this paper, we examine Ukrainian word formations such as *hrad* ‘hail’ → *hradyna* ‘hailstone’ and propose a mereotopological analysis on which the singulative morpheme *-yna* is an atomizer. It selects for an aggregate predicate, i.e., a property of entities prototypically conceptualized as clusters, and turns it into a predicate of discrete singular integrated wholes.

The suffix *-yna* always attaches to an uncountable concrete noun to form a countable concrete unit noun, but it combines only with a subset of uncountable nouns. The base is typically an aggregate noun, i.e., an expression designating entities naturally perceived as forming cohesive collections, as in the table below.

	GRANULAR	OBJ MASS	AMBIGUOUS	LIQUID	PL TANTUM
BASE	<i>żyto</i> ‘rye’	<i>posud</i> ‘dishes’	<i>cybul’a</i> ‘onion(s)’	<i>rosa</i> ‘dew’	<i>korali</i> ‘coral beads’
SGV	<i>żytyna</i> ‘a grain of rye’	<i>posudyna</i> ‘a dish’	<i>cybulyna</i> ‘an onion’	<i>rosyna</i> ‘a dew drop’	<i>koralyna</i> ‘a coral bead’

Following Grimm (2012), we adopt mereotopology, a theory of wholes extending standard mereology with topological notions which enables to capture subtle distinctions between different spatial configurations of objects (Casati & Varzi 1999). For instance, the notion of MAXIMALLY STRONGLY SELF-CONNECTED (MSSC) allows for distinguishing between integrated wholes and other mereological objects such as scattered entities and arbitrary sums. On the other hand, the concept of CLUSTER (CLSTR) enables to define pluralities of transitively connected entities, i.e., aggregates of objects. We assume that an Ukrainian granular noun like ‘hail’ denotes an aggregate predicate (1). The suffix *-yna* denotes a predicate modifier that takes an aggregate predicate and yields a predicate of MSSC objects (2). Thus, when it combines with (1), we obtain the semantics in (3), specifically the singulative *hradyna* denotes a set of separate hailstones. This accounts for the distribution of *-yna* and the effect of the singulative designating a unit within an aggregate.

$$(1) \quad \llbracket \textit{hrad} \rrbracket = \lambda x[\text{CLSTR}(\text{HAIL})(x) \vee * \text{HAIL}(x) \vee \text{MSSC}(\text{HAIL})(x)]$$

$$(2) \quad \llbracket \textit{-yna} \rrbracket = \lambda P : \text{AGGR}(P) \lambda x \exists y [P(y) \wedge x \sqsubseteq y \wedge \text{MSSC}(P)(x)]$$

$$(3) \quad \llbracket \textit{hradyna} \rrbracket = \lambda x \exists y [\llbracket \textit{hrad} \rrbracket (y) \wedge x \sqsubseteq y \wedge \text{MSSC}(\llbracket \textit{hrad} \rrbracket)(x)]$$

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Partitives, quantifiers, and numerals - an experimental study

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In this paper, we explore experimentally an interaction between partitives, quantifiers, and numerals, as in (1), focusing on the semantic import of *all three* and *both*.

- (1) a. Look at these children. **All three** of their toys are blue.
 b. Look at these children. **Both** of their toys are blue.

The results show that both (1a) and (1b) can obtain three readings, which in case of (1a) involve: (i) three toys overall (CUMULATIVE READING), (ii) three toys per child (DISTRIBUTIVE READING), or (iii) three children (INDIVIDUAL READING). The revealed differences between (1a) and (1b) concern: (i) an extent to which the readings are acceptable, and (ii) their behaviour in contexts where the number of objects was incorrect.

We assume a structural ambiguity between the cumulative/distributive vs. individual readings; in the latter both/all three is part of the possessor. For this reason, the cardinality inference involves the toys in (4a) but the children in (4b).

- (4) a. [both [0/ N [of [their toys]]]] (cumulative/distributive)
 b. [[both 0/ N of their] toys] (individual)

The distributive and cumulative reading of (4a) are due to the respective interpretation of the PossP ‘their toys’. Following Zweig (2007), Barker (2019), we assume that the cumulative reading is actually a dependent plural reading, arising in possessives with a plural possessor and bare plural head: the head ‘toys’ is truth-conditionally singular but carries a multiplicity inference that overall there must be several toys. Dependent plural readings are similar to distributive readings in that the children are each required to own a toy, but multiplicity (several toys) is not distributive: one toy per child is enough. To derive the distributive readings, a distributive operator is included in the structure (Ivlieva 2020). The different behavior of *all three* and *both* can be explained by the different status of the cardinality information: with *both*, it is a part of the presupposed (but not the asserted) content, whereas with *all three*, it is presupposed as part of the restrictor (Heim & Kratzer 1998) but also asserted.

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Numbers that don't count: the case of plural 'one' in Slavic

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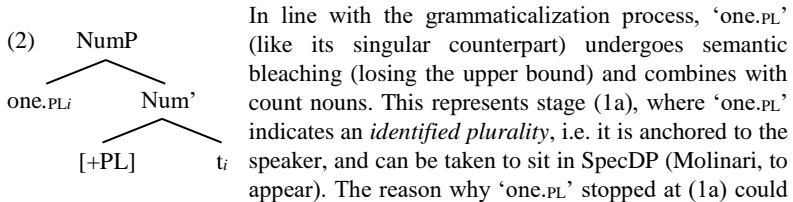
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The present work aims to characterize the properties of the plural numeral 'one' ('one.PL') in some Slavic languages (Russian [Ru], Polish [Pl], and Bulgarian [Bg]) in which singular one ('one.SG') has grammaticalized to different extents (see Geist 2010 for Ru, Hwaszcz & Kędzierska 2018 for Pl, Geist 2013 for Bg), although not reaching the status of an indefinite article (a partial overview is given in (1)). The use of 'one.PL', in fact, is not limited to *pluralia tantum* nouns (*ptNs*).

(1) Other functions of 'one' (beyond that of the numeral)	Ru <i>odin</i>		Pl <i>jeden</i>		Bg <i>edin</i>	
	one.SG	one.PL	one.SG	one.PL	one.SG	one.PL
a. Specific marker	+	+	+	+	+	+
b. Nonspecific in generic contexts	-	-	-	-	+	-
c. Predicative position	-	-	-	-	-	-

The general picture in (1) shows that 'one.PL' seems to slightly lag behind 'one.SG' in the grammaticalization path (with special reference to Bg). Capitalizing on some insights by Smith (2014), I propose that this lesser degree of grammaticalization of 'one.PL' could be found in the syntactic make-up of the numeral. Combining in the first instance with *ptNs* which require plural morphology on their modifiers, 'one.PL' requires an independent NumP layer introducing plural features, as in (2).



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On the Development of Grammatical Number

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The present study examines the evolution of the dual grammatical number in the Pama-Nyungan language family by examining its relation with cardinal numerals and the relative stability of the dual form in the family. Almost all languages offer resources for distinguishing reference to one entity (singular) from more than one entity (plural), with some languages further grammaticalizing the exact reference to two (dual) and three (trial) entities. Research on grammatical number marking shows that dual and trial markers have evolved from cardinal numbers two and three respectively (Aikhenvald, 2018, Corbett, 2000), highlighting the crucial role of counting and/or cardinality in the grammaticalization of number. Considering that all languages have cardinal numerals, it seems crucial to investigate *why* only some cultures have developed and/or maintained dual grammatical number. The centrality of counting in expressing quantity underpins the decades-old question of whether the count-mass distinction is based on iconicity or arbitrariness. In their synchronic study, Haspelmath and Karjus (2017) observed that the form asymmetry – marking number for forms which denote a single entity and not marking for forms denoting multiplex entity – is influenced by the economy of expression by which more frequently used forms are simplified. Grimm (2018), who examines different shades of individuation of entities – singular, plural, collective, explains the nuances of individuation and number marking, theorizing their iconic basis. These two synchronic studies highlight usage-based constraint on the grammaticalization of number. While synchronic studies offer an explanatory account for the development of grammatical number, diachronic studies that consider the role of shared descent in the development of grammatical number are scant. The study first explores the distribution of dual marking in 2,300+ languages from the *Grambank database*. It proceeds with a Bayesian phylogenetic analysis of dual marking in the Pama-Nyungan language family. The results shed light on evolutionary processes underlying number grammaticalisation, including their rate of stability in the language family.

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The Morpho-Syntax of Numeral Systems in South-Asian Languages

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This paper explores the linguistic questions regarding numeral systems and other quantifying numeral expressions in the South Asian region, via extensive fieldwork on the numeral and other quantifying systems of 77 major/minor South Asian languages belonging to six language families – Dravidian, Tibeto-Burman, Austro-Asiatic, Indo-Aryan, Tai-Kadai and Great Andamanese. The primary objective of this typological exercise is to develop a framework by which the core morphological and syntactic properties of numeral systems would be formally described, so that inferences about the role that membership of language families, sprachbunds, and language contact and cultural convergence in influencing the nature and form of numeral systems could be made. The paper identifies several pretty robust properties that cluster together to clearly demarcate some language families, as well as reliable traits that indicate different substrata of languages development. Table 1 below summarises the major parameters that this work has found in distinctive for language families in *SAND* (*South-Asian Numeral Database*).

Parameter	Value	Drav.	AA	TB	IA	TK
Subtractive morphology		+	-	-	+	-
Subtractive morphology in atoms	-	+	-	-	-	-
	A-B	-	-	-	+	-
Order in complex numerals	B-A	+	+	+	-	+
	With CM	-	-	+	-	-
Switch in running numerals		+	+	+	-	+
Idiosyncratic formation		+	-	+	+	+
PL in HMN		-	-	-	+	-
	[Num N]	+	+	+	+	-
Word order in NP	[N Num]	-	-	+	-	+
	[Num CL N]	-	+	-	+	-
	[CL Num N]	-	-	+	-	-
Plurality on N	Marked	+	+	-	+	-
	Unmarked	+	-	+	-	+

Table 1: Prominent parameters typologising SAND language families

This paper also explores some rare morphological processes involved in numeral systems like subtractive morphology, plurality in higher multiplicative numerals, and overcounting. In conclusion, it would not be unfair to say that numeral systems encode many fine intricacies of linguistic information, but they are also extraordinarily given to socially expedited elaboration, via coinage and/or borrowing. This leads to a greater tendency for numeral systems to be mixed and/or irregular, as elaboration of an existing limited system can take place from using the resources provided by another (possibly dominant) system available to a language.

Hierarchical Structures of Vague Quantity Quantifiers

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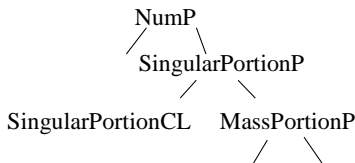
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This study investigates syntactic accounts for the “indeterminate” interpretation triggered by particular linguistic expressions. Mandarin-Chinese is the target language in this study; on the one hand, there are particular linguistic ‘items that are responsible for expressing *Vague* quantity (see (1)), on the other hand the sequence “[one+classifier]” can trigger a Abundance reading with certain contextual restrictions. The potential abundance reading from [one+classifier] challenges the previous analyses that classifiers are “singularising tools”. Together with the *Vague-Quantity* quantifiers, this study claims an extra syntactic head responsible for hosting the *Vague-quantity* expressions as well as the probing for classifiers that can denote “plural” meaning.

(1) Da-Liang De Xue-Sheng
Big-Quantity Mod students
 ‘A lot of students’ (Intended Reading)

(2) Yi-dui sha-zi
One-heap (CL) sand
 ‘One heap of sand/ heaps of sand.’ (Intended Reading)

Generally put, there are classifiers that are merged at higher position, which are interpreted as *Singularising tools* and they are incompatible with Abundance reading, we call such a position-“ Singular Portion Phrases” Also, there are classifiers that are compatible with gradable adjectives such as “big” ”good”, and they can denote a meaning of *a large quantity*, which accounts for a syntactic layer below the Singular-PortionP, in this study we call it “Mass-Portion Phrase”. Mass-PortionP also hosts the *Vague* quantity quantifier such as the case shown in (1), but compared to abundance-denoting classifiers, vague quantity quantifiers obligatorily require a portion marker-*de*, we account for the difference via the different quantificational processes. Therefore, the general sketch can be drawn (see below)



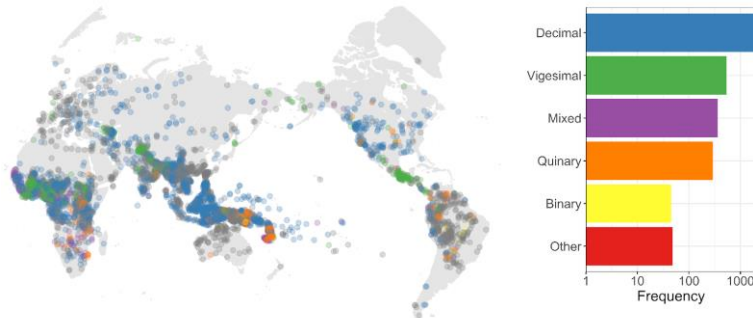
**Regularity and diversity in the world’s numeral systems:
The NumeralBank database**

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Numeral systems are uniquely human achievements, essential for numerical cognition, present in almost every speech community around the world– and yet, there is striking diversity in their structure, shape, and function. We introduce NumeralBank: an extensible open-access database designed to facilitate the documentation, exploration, and analysis of the world’s numeral systems, as well as how they relate to usage, communication, and cognition.

To date, NumeralBank includes standardized data on numeral systems 4,000+ languages covering all continents, major language families, and cultural areas (see Figure). In this talk, we comparatively describe the properties of numeral systems based on NumeralBank. In this talk, we comparatively describe the properties of numeral systems based on NumeralBank. Our analyses include compositionality of numerals across languages, and their structure (form) with respect to the numbers they represent (meaning).



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