

The Morphosemantics of Transnumeral Nouns

Paolo Acquaviva
University College Dublin
paolo.acquaviva@ucd.ie

0. Introduction

This paper studies the interaction between number morphology and semantic interpretation on nouns that are semantically neither singular nor plural. After exemplifying the notion of transnumeral nouns in section 1, it will be shown in section 2 that a transnumeral interpretation has morphological reflexes also on nouns which have morphological number; in particular, nouns where singular or plural marking does not straightforwardly correlate with singular or plural semantics tend to be morphologically irregular along similar ways. On the semantic level, section 3 will argue that these common morphological patterns define a semantic class of nouns more precisely characterized as “weakly individuated concepts”. On the morphological level, it will be argued in sections 4 and 5 that the various idiosyncrasies of these nouns have a lot in common, which can be traced back to the fact that number is *not* assigned to the noun by a syntactic [Number] head distinct from [N] (as is normally the case):

A noun may be transnumeral only if it is not assigned number from a separate [Number] head.

This subsumes apparently singular “numberless” nouns, inherent plurals, and even *pluralia tantum* like *scissors*. Beside offering a semantically unified approach to the morphology of *pluralia tantum*, irregular plurals, classifiers and collectives, this analysis also explains under what conditions transnumeral semantics can be compatible with number morphology, and why this cannot happen when number is fused with gender.

1. Point of Departure: Transnumeral Nouns

There are different ways in which a noun may be said to transcend the number opposition.¹ In the clearest case, a noun not formally marked for any number value occurs in a construction that makes it problematic, or impossible, to decide which number it is. Such examples of morphosyntactic transnumerality must be distinguished from the simple property of lacking a number exponent: the English *pen*, for example, has no singular marking, but it is not transnumeral because all and only the occurrences of the noun in the form *pen* are unambiguously singular (both syntactically and interpretively). In certain languages and in certain constructions, however, the lack of explicit number marking correlates with an interpretation that is neither clearly singular nor plural.

¹ Of course, there is no single number opposition, as the comprehensive survey of Corbett (2000) makes clear. What I have to say here applies to nouns that neutralize a number opposition elsewhere present in their respective language, very often falling in what Corbett calls “general number”.

1.1 *Complements to Classifiers*

Classifiers are overt markers of countability, which express a unit of the referent of their complement noun, like *blade* in *a blade of grass* (cf. Greenberg 1974). Although such unit expressions can semantically be analyzed as classifiers even in languages like English (cf. Chierchia 1998), both the unit noun *blade* and its complement *grass* are full lexical nouns: they have autonomous meaning, they can occur without a complement mass noun, and they can be either singular or plural. This last property has particular significance, because it discriminates unit nouns with a classifier semantics from classifiers proper, which are grammaticalized expressions of countability. The English *head* in *three head of cattle*, which lacks the expression of plural otherwise mandatory for nouns in this context, is closer to being a classifier in the morphosyntactic sense.²

The distinctive trait of classifier constructions in the strict sense, however, lies not so much in the classifier itself as in the complement noun. In English, unit nouns like *blade* and the quasi-classifier *head* are followed by mass nouns that are unambiguously singular or, more rarely, plural like *cattle* (we will consider exceptions below). Classifier languages differ in two respects: *all* nouns occur as complement to classifiers in counting contexts (except measures and unit-nouns, which are by themselves expressions of countability), which gives the impression that all nouns are mass; and they are morphosyntactically neither singular nor plural. The languages of South-East Asia, here exemplified by Mandarin Chinese, are the best-known instantiation of this type: morphology just does not provide a number opposition for nouns (apart from a “collective” marker *-men* for animate nouns or pronouns), and in contexts that entail countability (not only after numerals), all nouns must be preceded by a classifier. As Cheng and Sybesma explain (1999: 514–515), some classifiers “create a unit of measure” over a mass like ‘rice’ (*mass-classifiers*), while others apply to conceptually bounded referents like ‘pen’, and “simply name the unit of natural semantic partitioning” (*count-classifiers*):

- | | | |
|-----|--------------------------|--|
| (1) | <i>mass-classifier</i> : | <i>count-classifier</i> : |
| | san ba mi | san zhi bi |
| | 3 hand(ful) rice | 3 CL pen |
| | | (Mandarin Chinese: Cheng and Sybesma 1999) |

Löbel (2000) and Bisang (1999) show further that in a language like Vietnamese the same lexical item can have the function of lexical noun and of classifier:

- | | | |
|-----|---------------|---|
| (2) | hai cái bao | hai bao cam |
| | two thing bag | two bag(fuls) orange (Vietnamese: Löbel 2000) |

Clearly, the noun governed by a classifier is not just morphologically unmarked for number (which could in principle be an accident of the inflectional morphology of these languages), but lacks any syntactic or even semantic characterization as either singular or plural. Such “concept nouns” (Rijkhoff 1991), which Chierchia (1999) analyzes as

² Multipliers like *dozen* or *hundred* can also appear as invariable singulars (*three dozen / hundred students*), but they differ from classifiers in that their complement noun must be independently countable. In English, this correlates with the lack of preposition *of* before the head noun.

kind-referring expressions, do not designate one or multiple entities: as such, they are transnumeral.

1.2 *Formally [SG] Nouns After Numerals >2*

Transnumerality emerges in a different fashion in languages that, unlike those of South-East Asia, have a well-established number opposition in nominal morphology and syntax. A typical case involves the use of formally singular nouns in a semantically plural context. In agglutinating languages where a plural suffix is attached to the base singular form, numerals often govern what is morphologically the singular form:

- (3) két kocsi (Hungarian; Uralic languages generally)
2 car.SG
- (4) iki ev (Turkish; Turkic languages generally)
2 house.SG

As Corbett (2000: 211) notes, the absence of plural marking on semantically plural nouns is typologically most common for nouns governed by numerals, which is unsurprising because formal marking is redundant where plurality is semantically implied. But this does not explain why this is much more common in morphologically agglutinating languages than in inflecting / fusional ones. In fact, the use of singular after semantically plural numerals is but a facet of a more general pattern: where the plural is morphologically an extension of the singular (typically arising from suffixation of a non-suffixed singular), the latter form can typically be used with an interpretation as kind, or as group:

- (5) a. a bálma a legnagyobb emlosállat (Hungarian: Rounds 2001: 91)
the whale.SG A largest mammal.SG
'whales are the largest mammals'
- b. az alma a sarokban, a költe a porcon van
the apple A corner.LOC, the pear A shelf.LOC are
'the apples are in the corner, the pears are on the shelf'
- (6) polis 'the police, the policeman' (Turkish: Lewis 1967: 26)
bir polis 'a policeman'

Viewed in this context, the "singular" after plural numbers is not really a singular at all, but a base form morphologically and semantically unspecified for number. Unlike the previous case, transnumeral nouns in such agglutinating languages are formally members of a regular number opposition (hence their traditional label of "singulars"); but the wide availability of a semantically non-singular interpretation shows that the number opposition is more aptly analyzed as "base vs. plural" than as "singular vs. plural".

Russian seems to provide a counterexample to the claim that a "singular" noun form after plural numbers is in fact a numberless base form. As is well known, the numbers 2-3-4 seem to govern a singular form (in the genitive case) which is *not* a bare stem on which plural is affixed:

- (7) dva žurnal-a (PL.NOM žurnal-y, PL.GEN žurnal-ov) (Russian)
 2 journal.SG.GEN

In fact, there are independent reasons to view this as an apparent counterexample. First, the singular is only mandated if the noun phrase appears in the nominative case (and accusative when the two are identical); second, an adjective modifying the putative genitive singular noun is *plural* (with nominative or genitive case); third, the “genitive singular” form used after ‘two’ carries in some nouns a different stress from that of the regular genitive singular.

As Corbett (1993) has expressly argued, this is enough evidence to consider *zurnala* in (7) a special form of the noun mandated by the governing ‘two’, identical with the genitive singular form but synchronically distinct from it, in particular not marked [singular] for agreement purposes.

1.3 Base to Singulative Affixation

Singulative affixes derive nouns interpreted as single individuals (objects or events). Given this discretizing function, the singulative derivation therefore presupposes a class of nouns with transnumeral interpretation, in so far as they derive individual referents from bases that, regardless of their grammatical number, must be interpretively distinct from both singular individuals and plural aggregates. The Arabic derivations known as “unit noun” (*ism l-wahda*) and “instance noun” (*ism l-marra*) provide the clearest and best-known example of a morphological process that derives an individual entity or event from a base noun interpreted as a mass, as an activity predicate, or as a pure property:

- (8) a. baqar^{unn} ‘cattle’ – baqarat^{unn} ‘cow’
 b. hadiid^{unn} ‘iron’ – hadiidat^{unn} ‘piece of iron’ (classical Arabic)
- (9) ‘akil ‘food’ – ‘akla ‘a meal’ (Gulf Arabic; Qafisheh 1977)
- (10) boos ‘kissing’ – boose ‘a kiss’ (Syrian Arabic; Cowell 1964)

The tight relation between the interpretation of nouns that serve as bases for singulative derivation and that of complements to classifiers comes to the fore in the Omani dialect, where Greenberg (1974) has documented the simultaneous existence of both constructions:

- (11) a. baqar ‘cattle’ – baqra (fem) ‘cow’
 b. thalaath baqraat ‘3 cows’ (3 + N.FEM.PL)
 c. thalaathit rwaas baqar ‘3 cows’ (3 + CL + N) (Omani Arabic; Greenberg 1974)

As can be seen, the discretization into individuals, required by the numerical construction, can be achieved either by resorting to a singulative like *baqrat*, or by having the uncountable base-form *baqra* governed by an individualizing classifier.

The distribution of singulatives in Breton sheds further light on the transnumeral interpretation of the nominal bases which singulatives are derived from. The singulative suffix *-enn* turns into feminine nouns with individual referents bases with various interpretations:

- (12) a. *collectives:* (Breton: Trépos 1957)
plouz ‘straw’ → eur blouzenn ‘a straw’
stered ‘stars’ → eur steredenn ‘a star’
- b. *plurals:*
bran ‘crow’, brini ‘crows’ → brinienn ‘a crow’
- c. *singulatives:*
lod ‘part’ → lodenn ‘part’

In the examples in (12a), the input to singulative derivation is a mass noun, whether grammatically singular like *plouz* or plural like *stered* (cf. the English *clothing* and *clothes*, neither of which is countable). The transnumeral interpretation of the input is less obvious in (12b), where the singulative is formed by suffixation of a plural which, unlike *stered*, has its own unsuffixed singular. Apparently, a plural like *brini* is liable to being interpreted as a collective mass (like *cattle*), which the singulative suffix makes countable. The most surprising case is (12c), where the singulative attaches to a base which, judging by the gloss, is already every bit as countable as the output. The explanation by Trépos (1957: 268) is enlightening: ‘le suffixe *-enn* rend l’objet plus proche, plus materiel, plus tangible; c’est ainsi que *lod* désigne plutôt la part lorsque le partage n’est pas encore fait: *peb hini* ‘no e *lod* ‘chacun aura sa part’, et *lodenn* la part que chacun reçoit: *brasoc’h eo e lodenn* ‘sa part est plus grande’. The unsuffixed basis, then, refers to an abstract equivalence class rather than an actual individual object. *Lod* does not refer to a mass or a kind, or to a referent conceptualized as plural without being an aggregate of salient individuals (such as *brini*); still, it can feed singulative derivation. This suggests a connection between the interpretation as an equivalence class and the interpretations of referents that are neither singular nor plural (typically mass or kind), and this connection leads us to an empirical domain traditionally disregarded in the analysis of transnumeral nouns.

2. The Irregularity of Number on Unit Nouns

That measure nouns often show irregular morphology is well known. But their morphological idiosyncrasies should be seen in the context of the morphology and semantics of transnumeral nouns. The examples overviewed in this section will show that a host of unit concepts, not just measure nouns, display a *certain* kind of irregularity which is strongly reminiscent of the transnumeral status of classifiers, although in these cases we are dealing with nouns with morphological number.

2.1 Exceptionally Singular Measure Terms in Germanic

In English (especially in its European dialects), many units of measurement are irregular with respect to morphosyntactic number: they can, or sometimes must, appear as singular nouns in a context that would mandate the plural for all other nouns.

Expressions that are part of the counting system (“large numbers”: *dozen, score, hundred, thousand, million*) would appear to be nouns, in so far as they can all appear as single complements of the singular indefinite article and all can be suffixed by the plural *-s*. Distributionally, however, they resemble classifiers more than lexical nouns, because they can be followed immediately by a head noun, without an intervening preposition (*one hundred pens*). The crucial observation is that they all can appear in the singular after semantically plural determiners (numbers above 1 or count determiners like *a few*):

(13) three dozen / score / hundred / thousand / million (pens)

Note that the lexical noun is not obligatory, and its presence has no bearing on the morphological number of these numerical expression. Together with the fact that the plural form is generally available (although usage varies), this shows that we are indeed in the presence of a morphosyntactic irregularity: these units of counting *can* behave just like any other noun, but the expression of the plural is liable to being suspended.

The same occurs with units of measurement that are unambiguously nouns: semantically, they define a dimension (space for *fathom*, weight for *pound*, otherwise monetary value) in addition to a quantification; syntactically they cannot be immediately followed by a noun.

(14) three bob / quid / pound / cent / Euro / fathom

Indeed, the plural is morphologically ill-formed for *bob* and *quid*.

This irregular singular in a plural context should not be confused with the singular of phrases like *three foot long*, where the measurement appears as a pre-nominal or pre-adjectival modifier. The singular in this latter construction is generalized to *all* nouns provided they can have a unit interpretation (*a three-page document, three year old*).

The irregular singular for measure terms is even more prominent in German. The “large numbers” 100 and 1,000 are full-fledged nouns (with regular plural) if and only if they refer to sets of individuals (*Hundert sind gestorben* ‘hundreds died’); otherwise, they are invariable and orthographically attached to the governing number (*dreihundert Leute* ‘three hundred people’). Units of quantity (monetary or otherwise) are instead obligatorily singular:

(15) drei Mark / Pfund / Kilo / Gramm / Mann / Fuss / Faden
‘3 mark.SG / pound.SG / kilo.SG / gram.SG / man.SG / foot.SG / fathom.SG’

I have included *Mann* ‘man’, as a unit measuring the numerical strength of groups (often in a military context). German also allows, with a number of unit nouns, the construction that English restricts to *head* in *three head of cattle*; the classifier function

of such unit nouns is in German further enhanced by the lack of a preposition in front of the lexical noun:

- (16) drei Sack Kohle drei Glas Wein drei Korb Kartoffeln
 3 sack.SG coal 3 glass.SG wine 3 basket.SG potatoes

Usage varies greatly, and speakers disagree on the set of nouns that can be thus employed (partly, this has cultural reasons: measuring commodities by traditional containers is much less common today than fifty years ago). However, variation does not obscure the irregularity of unit nouns with respect to morphological number.

2.2 *Exceptional Plurals in Irish and Italian*

Irish and Italian provide two more genetically unconnected examples of the way irregularities in morphological number affect a class of nouns that centres on units of measurement but, crucially, extends beyond this class.

The Irish data concern a class of exceptions to the general pattern of morphosyntactic number in numerically quantified noun phrases: a noun governed by 3-10 is generally singular, but some nouns appear in the plural. Abstracting away from considerable dialectal variation and the complications of numerical quantification in Celtic (cf. Ó Siadhail 1982, Acquaviva 2004), the irregular use of plural after 3-10 is characterized by two main features: first, morphologically, there are some nouns that have a special plural form only employed after numerals 3-10; second, the nouns that exceptionally appear in the plural (whether the regular plural or a special form) after 3-10 in all dialects comprise units of measurement, plus concepts like ‘instance’, ‘item’, ‘year’, ‘week’ and, in single dialect groups, notions like ‘egg’ (Connacht) or ‘boat’ and ‘man’ (Munster). For reasons of space, only the less dialectally characterized nouns are reproduced here:

- (17) Some nouns that take the plural after 3-10 (GGBC 1999: 70)

<i>singular</i>		<i>plural</i>
ceann	‘head (as a unit), one’	cinn
cloigeann	‘head (counting persons)’	cloigne
orlach	‘inch’	orlaí
slat	‘rod (measure), yard’	slata

- (18) Some nouns that take a special plural form after 3-10 (*ibidem*)

<i>singular</i>		<i>plural</i>	<i>plural after 3-10</i>
bliain	‘year’	blianta	bliana
fiche	‘twenty’	fichidí	fichid
pingin	‘penny’	pinginí	pingine
uair	‘time, occasion’	uaireanta	uaire

In the context of our previous observations, this selection raises three questions:

- (i) why do the Irish irregular nouns resemble so much a list of classifiers and unit nouns?

- (ii) why are normal nouns singular and the exceptions plural rather than the other way around?
- (iii) why a special plural form?

Related questions are raised by irregular plurals in Italian. In this case, unlike in Irish, the irregularity resides in the morphology of the nouns, and is not restricted to numerically quantified contexts. The nouns in this class (a group comprising between 10 and 20 items, depending on usage) are all masculine and their singular ends in *-o*; their plural, however, ends in *-a*, which is nowhere else in Italian an exponent for plurality, and is feminine for the purposes of syntactic agreement. To compound the irregularity, many of these nouns also have a regular masculine plural in *-i*, giving rise to a series of plural doublets:

- (19) Some Italian irregular plurals in *-a* (Acquaviva 2002)

<i>singular (masc.)</i>	<i>regular plural (masc.)</i>	<i>irregular plural (fem.)</i>
cervello 'brain'	cervelli 'brains' (organs)	cervella 'brains' (mass)
fondamento 'ground'	fondamenti 'grounds'	fondamenta 'foundations'
dito 'finger'		dita 'fingers'
centinaio 'hundred'		centinaia 'hundreds'
uovo 'egg'		uova 'eggs'

Leaving aside the non-trivial complexities of these plurals, let us focus on the concepts associated with this morphologically irregular class. The lexical choice comprises units of measurement (*miglia* 'miles', *centinaia* 'hundreds', *migliaia* 'thousands'), of quantity (*staia* 'bushels', *paia* 'pairs', obsolete *carra* 'cartloads'), members of cohesive aggregates (*braccia* 'arms', *corna* 'horns'), complexes of non-individual parts (*budella* 'entrails', *mura* 'city walls'), and objects perceived as indistinguishable (*uova* 'eggs'; note the parallel with Irish *uibhe* 'eggs'). The association between units of measure and irregular number is once more confirmed; comparing the Irish and Italian lists, however, we see that a host of other concepts is involved.

In the face of these facts, one possibility is to deny the existence of a common semantic basis underlying the irregularity of all these nouns, beyond the central core of measure nouns. I want instead to argue that the morphological idiosyncrasies considered in this section (for languages in which nouns are fully integrated in the number opposition) should be considered on a par with those reviewed in the preceding section, where nouns were shown to be beyond the number opposition, only interpretively or morphologically as well. The next section will clarify the semantic connection between classifiers, unit nouns, measurements, "collectives", abstract notions (Breton *lod* 'part') and concepts like 'eggs'; this afford a deeper understanding of the morphology-semantics connection in transnumeral nouns.

3. Semantic Generalization

The complements of classifiers, the classifiers themselves, the bases for singulative affixation, *and* the irregular nouns reviewed in the preceding section all involve a

natural semantic class: they are associated with concepts without individual properties, as schematically set out in (20):

(20) *Concepts without individual properties*

homogeneous masses	NON-DISCRETE
collective masses (e.g. <i>furniture</i>)	
activity predicates	
abstract nouns	
abstract units (including Breton <i>lod</i> ‘part’)	EQUIVALENCE CLASSES
measures of quantity and amounts	
members of cohesive collections	WEAKLY INDIVIDUATED
objects without salient distinctive properties (e.g. <i>eggs, times</i>)	

Those nouns that require classifiers to establish a criterion of countability are like mass nouns for grammatical purposes (although the mass-count distinction is preserved semantically, even in languages like Chinese: cf. Cheng and Sybesma 1999). This is the category which most clearly transcends the semantic opposition between singular and plural: masses conceived as atomless (e.g. *water*, assuming it has no smallest parts for linguistic purposes), as well as mass nouns interpreted as aggregates (e.g. *furniture, clothes, embers*) cannot be said to be “many” because they lack an intrinsic criterion to define “one”. Semantically, they are all transnumeral, whether or not they carry grammatical number (as in English) or not (as in Chinese). Nouns that denote activity predicates, like Arabic *boos* ‘kissing’ (cf. (10) above), are also semantically transnumeral, as are abstract nouns (unless they are made countable by some other interpretive means, like the abstract *beauty* when it is turned into the concrete *beauty-beauties*). In all these cases, the noun’s domain of reference is non-discrete.

Unit nouns, encompassing classifiers, measurements and all other expressions of quantity, are instead discrete; indeed, their interpretation amounts to a criterion for segmenting a domain into units. But they are all equivalence classes: a litre, a sack-ful, or even just a “part” have no individual properties that could set them apart from another litre, sack-ful or “part”. In so far as these nouns express different criteria for segmentability, they refer to ways to discretize a domain, *not* to individuals or amount of matters. Of course these nouns are countable (that is their function), but they too are beyond the singular-plural semantic opposition, because a phrase like *three litres* does not refer to a plurality of litres as opposed to *one litre*: *three litres* refers to an amount of matter three times big as that referred to by *one litre*. I think this is the reason why measure nouns, and less consistently nouns used as criteria for standard sizes, tend to be irregular in the expression of number: because morphological number on them is not related to the interpretive distinction between one and more than one instance of an entity – and this is because they do not refer to entities.

What this second class has in common with the class of non-discrete concepts is the lack of distinctive individual properties for their referents: non-discrete concepts define no units, and unit nouns define no individuals. It is this crucial semantic trait that explains why, in a variety of languages, concepts in the third group, such as ‘egg’ or ‘finger’, may pattern with unit nouns. These concepts are discrete and refer to actual entities, but these entities are conceptualized as interchangeable, or weakly individual.

A noun like ‘time, circumstance’ (Irish *uair*, French *fois*, Italian *volta*) cannot identify an individual time interval unless it is deictically anchored. In some cases, the lack of distinctive individuality has a basis in the low perceptual salience of the objects involved (cf. phrases like *alike as two peas*). In other cases, it depends on the cohesiveness of aggregates: in the singular, a concept like ‘finger’ or ‘star’ clearly refers to an individual entity, but the plural of such concepts is easily conceptualized as a cohesive aggregate, a larger structure in which each part presupposes the others. And obviously, the greater the cohesion of parts in a whole, the lesser their individuality. Nouns in this third class, then, are not transnumeral in the sense that their interpretation precludes a semantic contrast between one and many, but in the sense that their plurals forms mean something different from just a plurality of singulars.

4. Morphological Generalizations

Now that we have a semantic basis for viewing in a unified fashion all the dissociations we have considered between morphological and semantic number, we can focus on the morphological generalizations that emerge.

4.1 Germanic Irregular “Singulars” as Bare Stems

Section 1.2 above featured the use of apparently singular nouns with plural sense in (some) agglutinating languages. As was pointed out, this singular is better seen as a numberless stem (an approach that seems confirmed by descriptive grammarians). It is at least a coincidence that English irregularly singular measure terms (cf. 2.1 above) also appear in a form that has no exponent for number. As explained in (1), the mere absence of number marking on a noun like *pen* is no ground for regarding it as transnumeral, because that form systematically appears in a context that is interpretively and morphosyntactically singular. Things are different with measure nouns like *quid*, however, which never have a competing form **quids*; and also for *dozen* (or *head*), which is semantically neither singular nor plural when used as a unit of measurement. One can, of course, regard these cases as zero-plurals, akin to *sheep* or *aircraft* in *these sheep are grazing* or *these aircraft have landed*. But, aside from the fact that zero-plurals are *always* suffixless and not just in quantified contexts (unlike the nouns in (13)), this move would treat as accidental the concomitance of transnumeral interpretation and numberless form. This is especially unlikely when viewed from a comparative perspective: there is a definite tendency, as we saw in 1.2 above, for nouns to have “singular” form but plural sense after numbers when the “singular” has no number marking, and vice-versa, languages where a noun is always formally marked for number (as in Russian) tend to shun such semantics-morphology mismatches.

German allows us to test and refine the idea that irregularly singular measure nouns are formally numberless. *Mark* and *Gramm* are invariable, as is *Faden* ‘fathom’ (in fact much less than a fathom). *Kilo* is just like English: its plural is *Kilos*. These cases are all consistent with the hypothesis of numberless stems used as counting units, either because there is no competing plural, or because the plural is an agglutinative suffix attached to a form without a number marker (*Kilo-s*). The remaining nouns considered, *Fuss*, *Glas*, *Korb*, *Mann*, *Pfund* and *Sack*, are more complicated cases. Their plurals all involve the addition of a suffix: *Füsse*, *Gläser*, *Körbe*, *Männer*, *Pfunde*,

Säcke. If the marker of plurality was only a suffix, pasted on a bare stem identical with the singular, we could simply extend to German the analysis of English (and Turkish and Hungarian). But, except for *Pfunde*, pluralization also involves umlaut of the root vowel, so that at least on the surface the stems *fus*, *glas*, *korb*, *man*, *sak* contrast with the plural stems *füs-*, *gläs-*, *körb-*, *män-*, *säk-*; and because of this contrast, *fus*, *glas*, *korb*, *man*, *sak* appear as singular, not numberless.

However, root revowelling can also be seen as a secondary reflex of suffixation (cf. Carstairs 1987, Noyer 1997 for such an approach in terms of primary vs. secondary exponence). This means that a form like *Männer* can still be regarded as arising from suffixation to a bare stem which corresponds with the singular form: *man* + *er* (*UMLAUT*). Therefore, all of the German unit nouns above considered conform to the pattern SINGULAR = BARE NUMBERLESS STEM. The hypothesis that, even in German, what appear as irregular singulars are in fact numberless is straightforwardly compatible with this state of affairs. What is more, it *predicts* that no German unit noun can appear as an irregular singular if it is morphologically marked as singular. This is, in my opinion, the basis for the systematic exclusion of feminine unit nouns from this “quasi-classifier” construction:

- (21) *drei Flasche Wein *drei Tasse Wasser *drei Elle Stoff
 ‘3 bottle.SG wine’ ‘3 cup.SG water’ ‘3 cubit.SG cloth’

Unlike nouns like *Mann* or *Sack*, feminines like *Flasche* encode information about number through the final schwa, which is systematically connected with the singular number for feminine nouns (as opposed to masculines). What is more, a speaker of German would also be able to infer that a feminine noun ending in *-e* in the singular will end in *-en* in the plural, and that a feminine singular adjective will always end in *-e* (in the direct cases), which means that final *-e* has a morphological significance in the German nominal morphology as an exponent of the properties [feminine, singular]. This does not mean that *-e* spells out only these features in German, of course; but it does mean that a word form like *Flasche*, unlike *Fuss*, contains morphological information on singular number (for a feminine noun) and therefore cannot be said to be a bare numberless stem. My contention is that this explains the systematic lack of unit nouns as in (21).

4.2 *Italian and Irish Irregular Plurals Have no Canonical Plural Suffixes*

Germanic unit nouns are irregular because they appear as singulars with plural interpretation; I have argued that they are morphologically not singular, and that their interpretation is neither singular nor plural. The Irish and Italian exceptions of 2.2 comprise nouns of the same semantic category as the Germanic exceptions (weakly individualized concepts), but they are irregular for the opposite reason: they are plural where the language would normally mandate a singular (Irish), or their plural form is irregular (Italian, partly Irish). On closer inspection, the formal irregularity of Italian and Irish special plurals turns out to systematically involve lack of a specifically plural suffix.

The point is straightforward for Italian. Not only, as mentioned above, is a plural ending *-a* a complete *unicum* in Italian morphology; when an irregular plural in *-a* is combined with an evaluative suffix such as *-ino/a*, the resulting form has the

inflectional ending determined by the suffix, but it crucially retains the (exceptional) feminine gender of the irregular plural: *dita* ‘fingers’ → *dit-ine* (fem. pl.). This means that the feminine gender is a feature of the base itself, which is retained even when the final *-a* is deleted. Therefore, *dita* does not inherit its [fem., pl.] features from the ending *-a*. (Cf. Acquaviva 2002 for several arguments to the effect that *dita* is an inherently plural lexeme.)

The Irish facts are more complex, but the crucial point for present purposes is that the irregular plurals systematically make use of palatalisation of the last consonant and addition of a neutral vowel (or a combination of the two). Both processes find wide application in Irish morphology outside of the function as plural markers (Ó Siadhail 1989: 135–140, 159–161). Regular plurals, on the other hand, feature specifically plural suffixes in addition to vowel extension and palatalisation:

(22) *Regular plurals:*

- specifically plural suffixes (bus-anna, tamall-acha, blian-ta, scór-tha, seachtain-í ...)
- suffix with stem extension (uibh-each-aí, uair-ean-ta ...)
- palatalisation (fear / fir, punt / puint, bord / boird ...)
- vowel extension (lámh / lámha, ceann / ceanna ...)

Irregular plurals:

- palatalisation (ceann / cinn, scór / scóir)
- vowel extension (uair / uair-e, pingin / pingin-e, bliain / blian-a, seachtain / seachtain-e ...)
- vowel extension + palatalisation (ubh / uibh-e)

The restriction to palatalisation and vowel extension typically means that irregular plurals are shorter than regular ones, a fact recognized by the traditional label of “short plurals”. The systematic restriction of irregular plurals to stem extensions that are not specifically plural suggests that short plurals are in fact morphologically anomalous among noun plurals. This is confirmed by the observation that specifically plural suffixes almost always attach to both direct and genitive case forms (“strong” plurals), while the form of short plurals fails to generalize to both case forms:

(23)

	Strong plural: <i>bliain</i> ‘year’		Weak plural: <i>muc</i> ‘pig’	
	<i>singular</i>	<i>plural</i>	<i>singular</i>	<i>plural</i>
<i>Nominative</i>	bliain	blian-ta	muc	muc-a
<i>Genitive</i>	blian-a	blian-ta	muic-e	muc

The conclusion I wish to draw from these observation is that Irish special plurals are irregular in a specific sense: their morphological structure is never STEM + PLURAL AFFIX. This is the same conclusion that arises from an examination of Italian irregular plurals, and it is reminiscent of the conclusion reached in connection with Germanic irregular singulars, which are never STEM + SINGULAR AFFIX. The underlying semantic uniformity of nouns with weakly individualized referents is thus matched by a morphological uniformity: when nouns with a transnumeral interpretation are morphologically irregular, they are either bare numberless stems (as in Turkish or

Germanic), or intrinsically plural stems, or *lexical* plurals (Italian or Irish). This latter category also includes Arabic broken plurals (cf. McCarthy and Prince 1990), and can be further exemplified by the English *pence*, which differs from *pennies* precisely in not being decomposable into STEM + PLURAL AFFIX. ‘Pence’, which refers to an abstract monetary value rather than to a plurality of penny-coins, also falls in the semantic class of transnumerals. I claim this match of form and meaning is systematic.

5. Conclusions

A simple statement about the abstract structure of transnumeral nouns encompasses all of the facts so far considered:

- (24) A noun may be transnumeral (and fall in the semantic class in (20)) only if it is not assigned number from a separate [Number] head.

Assuming that the abstract number features of a noun phrase are expressed not on N itself, but on a separate Number head, the morphological resources of a language can spell out in different ways an input schematically like in (25):

- (25) [DP D [NumberP Num [NP N]]]

(24) states that, if a noun has a transnumeral interpretation, its morphological form will be affected by the fact that it will not be “assigned number from a separate Number head”.

In the simplest case, [Num] is either absent, or in any case does not encode number features. Classifier languages typically feature a marker of countability (classifier) in place of [Num]; both N and the classifier itself are semantically transnumeral and fall under (24).

In languages with an established number opposition, N normally raises to Num, but here too nouns can remain Num-less: the bare “singulars” of Turkic and Uralic languages are N stems spelled out without Num, which is null (but syntactically present to provide the DP with number agreement features). Bases for singulative derivation, and more generally bare stems which do not enter into a number opposition, are amenable to the same kind of analysis as bare N without association with Num (in so far as they are not countable and display no number marking).

The disassociation between N and Num is especially common when N is governed by a numeral. Why this is so depends on the syntax of numerically modified DPs in the respective languages, a vast topic I have neither the ability nor the space to explore here. In general, basic numerals (2-10), which semantically force a count interpretation, require a marker of countability in the DP, which can either be the head Num itself or a classifier-like unit noun expressing the criterion for countability:

- (26) Numeral [NumberP [Num / Class] [NP N]]

English and German bare-stem unit nouns are in [Num/Class], if they are followed by a N (English *three million people*, German *drei Sack Kohle*); nouns that express a unit but

are not followed by another noun (as in *three quid*) can be seen as bare Ns raised to double up as criterion of countability:

(27) Numeral [NumberP [N_i] [NP t_i]]

The full significance of (24) emerges with lexical plurals, like the Italian and Irish examples of 4.2. These nouns are indeed plural, morphologically as well as syntactically; but we have seen that they are not constructed with the usual plural affixes of their respective language. This means that their plural formatives are really part of N itself, not spell-outs of Num. I think this is the crucial connection between semantics and morphology: Italian and Irish irregular plurals have a common semantic basis in the notion of weakly individualized concepts, and they are morphologically similar in not being decomposable into STEM + PLURAL AFFIX. Setting N = STEM and Num = PLURAL AFFIX, (24) provides the beginning of an explanation for this match: a N with that interpretation may be a bare stem (only apparently singular), or an internal plural (without a plural suffix that spells out Num).

In fact, (24) leaves open just one possibility for a “synthetic” plural (STEM + PL. AFFIX) to have a transnumeral interpretation. Consider a N which is inherently plural, regardless of the syntactic context. On some such *pluralia tantum* the morphological expression of plural is indeed fused with the stem: *pence* or *cattle* provide two English examples (differing in countability). But nouns like *scissors* are also inherently plural, even though they are clearly segmentable as STEM + PLURAL AFFIX. So, *scissors* is morphologically made up of N + Num, but the value [plural] on Num is part and parcel of the morphosyntactic characterization of this N. In this single case, I suggest, regular “synthetic” plurals can be transnumeral: indeed, *pluralia tantum* like *scissors* or *clothes* are uncountable and semantically transnumeral, despite their morphological number.

This unified perspective on the morphosemantics of transnumeral nouns affords some interesting typological consequences. Suppose a N is ill-formed without a gender, and gender and number are fused in that language. Then, number *must* have an exponent (the fusional [gender, number] affix). Hence, fusional languages like Latin, Russian or Italian are *predicted* to have no morphologically transnumeral nouns; that is, no “bare stems” comparable to Turkic or Germanic (cf. 1.2, 2.1). This explains on a principled basis why the pattern ‘Numeral + N.SG’ is especially common in agglutinating languages without gender. That would also explain why English (which has no morphological gender on its nouns), but not German nor Romance, may have transnumeral constructions like *twenty police / faculty / personnel*. These nouns are compatible with a singular or plural reading, and the reason I am proposing is that they are morphologically numberless in such constructions (but not in e.g. *three faculties*). But they can be morphologically numberless because they are genderless; English allows this, German does not.

Finally, I have claimed that a noun may be morphologically marked for number, but semantically transnumeral, only if the number feature is a property of the stem itself, as in *pluralia tantum* like *blues* or *scissors* or in internal plurals like *pence* or the Italian and Irish irregular plurals. In all other cases, a transnumeral interpretation demands a bare, Num-less N stem. But this last avenue is precluded for strongly fusional languages like Latin or Russian, in which every N must have gender and number in each of its word forms. This means that inherent number is the only way in which these languages can express transnumerality on nouns (apart from kind-readings,

as in *homo hominis lupus* ‘man [is] man’s wolf’). If correct, we would expect *pluralia* and *singularia tantum* to be particularly frequent in such languages, more than in languages that can express this reading via a bare stem. And, although this is no more than an educated guess, I submit it is correct.

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