n. Gender, number, and entity types

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1 Introduction

It is generally assumed that nouns are lexically marked for a gender value and can occur in one of a few number values, each of which determines a distinct interpretation. Both the association with a gender value and the possibility to occur in a number value depend to some extent on the nounôs meaning. For example, concerning number, the meaning of mass nouns like *stuff* or *fun* makes a plural unavailable. As for gender, the privileged association of feminine gender with female-denoting content makes the feminine value of the French *soeur* ósisterô non-accidental, in contrast with its appearance on nouns that do not refer to animated entities (for example *fleur* óflowerô) or that denote animated entities in a way that ignores sex-based distinctions, like *personne* ópersonô.

The traditional outlook just outlined presupposes a notion of nounôs meaning independent of a syntactic context, which does not sit easily with non-lexicalist approaches that model as syntactic constructions the linguistic knowledge encapsulated in words. This chapter aims at contributing to an alternative interpretation. It presents phenomena that do not fit the traditional picture sketched above and analyzes them from a unified perspective, based on the assumption that nouns are substructures of DPs and that nominal lexical knowledge can be modelled as a syntactic structure that distributes the content of a noun along the DP projection line.

Against this theoretical backdrop, I sketch out a theory of how noun-constitutive content is constructed. Section 2 examines the use of number in kind-denoting nominals, section 3 the

ss reading, and section 4 the determination of gender for The central part of the chapter, in section 3, articulates the syntactic hypothesis which acts as linchpin for the analysis of these phenomena, and consists of a finer-grained structure for what is called ódivision of referenceô since Borer (2005a), as part of an abstract structural pattern claimed to underlie nominal expressions across the typological spectrum of natural language. The division of reference relates not only countability and number, but also some aspects of gender assignment and kind-level interpretation, to the way language encodes the part structure of a nounôs denotation. My goals are to predict the impossibility of a kind-level reading for some specifiable classes of plural nouns; the existence of mass plurals; the alignment of semantic and morphological properties observed with *furniture*-type nouns; and the special morphosyntactic behaviour of ómixed-genderô DPs, specifically the impossibility of pluralization for masculine nouns accompanied by feminine determiners in Italian. At a higher level, this chapter argues for a constructionist approach to the ingredients of nominality crosslinguistically: not only number and countability, but also gender and the kind- or object-level reading are best seen as emergent characterizations that arise from the DP as a whole.

2 Number and kind-level reading

2.1 Two empirical observations

Since Carlson (1977), it is generally accepted that nouns can denote either over a domain of objects or over a domain of kinds, which bear to objects the relation of universals to particulars instantiating them. Predicates like óto be extinct / on the verge of extinctionô bring out best this interpretation, since their subjects cannot refer to instances but only to a kind:

b. Whales are on the verge of extinction.

c Penguins come in different forms.

The bare plurals illustrated in (1) exemplify one common way of referring to kinds in English. Other strategies are available, within and across languages, with different properties. Note in particular that a singular definite description with the intended interpretation is perfectly acceptable in *the dodo is extinct*, but it is less natural in *the penguin comes in different forms* (see Krifka et al.1995 and Carlson 2010).

Let us start our discussion by noting the contrast between (2a) and (2b):

(2) a. Bears are extinct /on the verge of extinction.

b. # Bear specimens are extinct /on the verge of extinction.

Intuitively, *specimens* simply contradicts the kind interpretation required by the predicate. But current semantic accounts do not capture this seemingly obvious fact. The reason is that the kind reading of *bears* is generally analyzed as derivative from the object reading of the plural DPs: *bears* takes its reference over sets of object-level bears, and this can be intensionally abstracted to refer to the total set of bears present at any given world, given the right predicate (as in (2)) or also in generic environments (like in *beavers build dams*). The problem is that the same should apply to *bear specimens*. The puzzle concerns the interpretation of kinds from plurals, not specifically from bare plurals, because we find it also

gh plural definite descriptions, as in the Italian

(3) a. Gli orsi sono estinti / in via di estinzione. (= (2a)) (Italian)

b. # Gli esemplari di orso sono estinti / in via di estinzione. (= (2b))

The second fact to note is that an interpretation like that illustrated in (2), with a bare plural interpreted as a kind, seems to be systematically unavailable for mass plurals like *waters*. These are nouns which maintain their mass interpretation even when pluralized, as opposed for instance to the ópackagingô (countable) reading of *three waters* meaning óthree portions/orders/bottles of waterô. Contrasting with this is the mass reading of (4a), which however becomes impossible in a kind context like (4b) (see Acquaviva 2008: 45, 2009, as well as Tsoulas 2009 and Alexiadou 2011 for Greek):

(4) a. The water / waters in the lake

b. The formula of water / *waters is H_2O.

Ghaniabadi (2012) observes the same phenomenon in Persian. Nouns for homogeneous substances can be plural, but not when the context enforces a kind reading:

(5) a Âb-â qatô-e. (Persian)

water-PL cut-is.3SG

b Ab (-a) vase ña nayati-me.

water (-PL) for us vital-CLITIC.is.3SG

ôWater is vital for us.ô

In these cases, which are not isolated, plurality is semantically contentful, restricting the reference to concrete quantities (often with an implicature of large quantity: see Harbour 2008). The question is why the same mechanism that interprets a plurality as a kind in (2a) and (3a) cannot do the same in (4b) and (5b).

The puzzle is not caused by the assumption that kind-level reference is derivative from object-level reference, as is commonly assumed (for instance in Chierchia 1998). Other authors, like Krifka (1995), propose that either type of interpretation can be basic, but even for them plurals refer to objects, and only secondarily to kinds. Borik and Espinal (2015) articulate a recent analysis along these lines. For them, direct reference to kinds uses what looks like the ósingularô but is in fact a numberless N; the introduction of a Number projection switches the interpretation to instances of the kind, restricted according to the number value (cf. Déprez 2005):

(6) a $[_{DP}$ D $[_{NP}$ N]] numberless; kind

b $[_{DP}$ D $[_{NumP}$ Num[ï PL] $[_{NP}$ N]]] number-marked (sg); individual object

More precisely, bare nouns denote properties of kinds; the definite description in (7) refers to a kind insofar as it lacks a Number projection, and the definite D restricts the DP

nsisting of the one kind individual that has the property

ota operator (x^k and x^o notate variables ranging over kinds and objects respectively).

(7) El dodó fue exterminado.

óThe dodo was exterminated.ô

(8) a [[dodó]] = property of dodo kind

b [[el dodó]] = ιx^k [dodó (x^k)] definite description true of a kind

Since number entails reference to instance objects, the kind reading in cases like (3a) is indirect: óDefinite plurals in their generic uses are conceived as the intensionalized version of ónormalô definite plurals (^ι).ô (Borik and Espinal 2015: 216).

(9) Los colibrís son abuntantes en Costa Rica.

óHummingbirds are numerous in Costa Rica.ô

(10) ^ιx^o ∃x^k [colibrí (x^k) & R(x^0 , x^k) & x^0 ∈ Sum] & abundante (x^0)

The ódownô ^ operator creates a function from situations to unique maximal sums of *individuals* (variable x^o) which instantiate (relation R) the hummingbird kind (an existentially quantified kind x^k that has the property of being a *colibri*). The main predication asserts that

nt. In the authorsô words, óthe meaning of the definite

lized generic reading in the context of a k[ind]- or an i[ndividual]-level predicate.ô (Borik and Espinal 2015: 218)ôThis captures the effect of Chierchiaôs (1998) ódownô operator $\cap$ which defines kinds from properties of objects, turning predicates into their maximal denotation at any given world (that operator is resorted to for English bare plurals: Borik and Espinal 2015:170). On this account too, then, plurals can denote kinds through abstraction over total sums of individual objects (Chierchia 1998, 2010). The question raised by (3)-(5) stands: why is this impossible precisely in those cases?

2.2 Kinds and entity types

The following sections will outline a general approach to the interpretation of DPs where the answer to this question follows from the way plural, and more generally number, interacts with the grammatical encoding of part structure in DPs.

Mass plurals like *waters* (but also like *contents*, as we will see) cannot provide any basis for the division of their reference domain other than spatiotemporally situated extensions. Pluralization here cannot select multi-membered sets of water-elements, defined independently of the world they are in, and intensionally abstracted across various worlds. Rather, it can only denote sets of water portions defined in one world.

As for *bear specimens*, the claim is not so much that this phrase does not admit a kind interpretation, as that it cannot be equivalent to *bears* in the kind-referring sense. The head noun *specimens* can in principle refer at kind-level, but this interpretation is not at all obvious. The key claim is that *bear specimens* cannot mean óthe bear as a natural kindô because this is a reading specifically associated with the noun *bear* (singular or plural) and not arising from its extension, which consists of bear specimens and their sums.

the interplay between number and kind- and object-level

the context of a broader claim about nominality and the bases of noun semantics. What is argued here is not just that nouns denote kinds directly, without the intermediary of object-level reference (a position defended by Krifka 1995, Zamparelli 2000, and especially Mueller-Reichau 2006),[1] but that both interpretations are best seen as properties of the DP as a whole, not of lexical nouns.

The very notion of ónounô, in fact, cannot be a theoretical primitive in the non-lexicalist decompositional approach followed here (especially based on Borer 2005a,b, 2013), but emerges from the morphological, syntactic, and semantic properties of an interpreted DP-internal substructure. The claim, in a radically constructionist perspective, is that common nouns consist of a syntactic projection line whose semantic content defines what I will call an óentity typeô, which can be interpreted at kind- or at object level. What makes a noun a noun, or rather, formally, what turns a root into a noun, is semantically the property of naming an entity type. Common nouns, it is suggested, are at the most basic level *names* for entity types, conceived as higher-level entities like Aristotleôs secondary categoriesð what *man* is to the primary substance *Socrates* (*Categoriae*, 5).[2] It is only through the construction of a syntactic structure that nouns become predicates, as will be spelled out in section 3. Before then, the minimal piece of syntactic structure that can be characterized as nominal (a nominalized root, as we will see) does not have an interpretation of type $\langle e, t \rangle$ but of type e as an unanalyzable name, a label maximally underdetermined except for the fact of being formally distinct from other names.[3]

This background claim effectively denies the assumption stated at the start of this section, namely that ónouns can denote either over a domain of objects or over a domain of kindsô. Instead of assuming a pre-existing domain of entities (at both kind- and object-level) as a possible denotation for all linguistic expressions, the hypothesis presented here makes a sharp

s that *refer* to entities and others that *define* them, in the

book and *exercise book* all define distinct entities. In sum, the innermost nominal core defines an entity as opposed to others, and it is larger structures that have a denotation determined on the basis of this definition; finally, acts of reference must be mediated through the whole DP.[4]

Just as the constructionist syntactic approach has modelled verb meaning by means of grammatical representations interpreted as event structure templates (Erteshik-Shir and Rapoport 2005, Borer 2005b, Ramchand 2008, Harley 2009, among others), the background assumption of our analysis is that the meaning of common nouns emerges from the interpretation of a syntactic complex object. This applies not only to the determination of countability (as in Borer 2005a), but also to what is often called ócategorizationô, or the determination of one entity type as opposed to others. As stated, I execute this programme by analyzing the smallest nominal structure (a nominalized root) as a name labelling an *e*-type abstract entity, called óentity typeô. In the absence of other determinations this is ultimately interpreted as a kind, an abstract entity with no internal structure. Otherwise, more determinations (discussed in the next section) further qualify the nounôs denotation domain, in particular its part structure. When this happens, the noun denotes instance tokens of the abstract type, because the type by itself has no internal structure. Since number is the category most directly involved in expressing this information, its privileged relation with an object-level reading follows naturally without having to be stipulated. At the same time, a singular marking is compatible with a kind reading, insofar as it can signal lack of part structure in the denotation (as in most abstract nouns like *love*, for example) rather than the selection of atomic elements of a subdivided domain.

Common nouns thus start their life as names for entity types, but this does not mean that such types are always and only identified by what ends up as a noun for morphology.

lows are syntactically equivalent to any other common

ey denote undescribed and uncategorized objects (Wierzbicka 1988). Conversely, entity types can be named by grammatically complex expressions: not just compounds as in *exercise book*, but also modified nouns or number-inflected nouns: the phrases in (11a) name specific subkinds of rice and tea, respectively, and more strikingly the singular-plural pairs in (11b-c) also serve as denominations for partly (11b) or totally (11c) disjoint denotations (see Acquaviva 2008):

(11) a. long-grain rice, green tea

b. brain ‘brain organ’, brains ‘brain organs’ or ‘brain matter’

c. membro ‘member’ (sg.), membra ‘limbs’ (pl.) (Italian)

Because entity types admit such alternative labellings, the proposed account avoids the circularity of defining nouns as the entity-denoting category and entities as the referents of nouns. At the same time there is a crucial distinction between ‘entities’, which can be talked about despite being uncategorized,[5] and entity types, which are the result of linguistic categorization by definition. This is reflected in the principled distinction between the possible denotation space of common nouns, which consists of the entity types lexicalized in the language (ultimately interpreted as kinds or as object-level instances), and the much broader denotation space of DPs, which embraces all entities in the universe of discourse, beyond what is expressible by using nouns. This includes for instance the denotations of *your ‘no’* or *that ‘whew’*, where *no* and *whew* are not nouns but mentioned expressions (non-linguistic, in the case of *whew*) which appear in a nominal frame and make it possible to refer to contextually salient communicative events identified by the uttering of *no* and *whew*. In

act of reference can be made, relating linguistic

liscourse. What lies inside is only part of what the global DP ends up being true of, and nouns, in a truly constructionist perspective, are pieces of this overarching structure. The various DP-internal morphemes are of course interpreted compositionally, but this does not entail that the óchoiceô between kind- or object-level denotation should be made before DP. What ultimately gets interpreted as denoting a kind or kind instances is not the noun, but the whole DP.

3. Number and part structure

3.1 The DP projection line

The claim that common nouns start their syntactic life as names for *e*-type entities is easy to reconcile with the broad consensus views held about the structure of DPs. Acounts broadly converge in delineating an innermost categorization nucleus which defines the ólexicalô properties of a noun; this is included in a region that expresses number and, more or less directly, accounts for the nounôs countability properties; more peripherally, information that determines a quantity for the units so defined, and in outermost position specifications that place the noun in its linguistic and situational context. Narrowing the picture to those decompositional approaches that analyze nouns and other lexical categories as syntagmatically categorized roots (Marantz 1997, Harley 2014, Borer 2005a), we obtain the following abstract structure (based on the critical overview in Svenonius 2008) as a hypothesis of how noun-constituting information is organized across the typological spectrum:

(12) DP

DEIXIS	numerals			
REFERENCE IN DISCOURSE	quantifiers	COUNTABILITY		
articles,demonstratives	unit classifiers	sort / shape classifiers	CATEGORIZATION	root
case	number	noun classifiers	gender	

If categorization is what turns a root into a noun, it is plausible to associate with this position gender or noun class information, or those classifiers that make a tight semantic and morphological unit with the root, rather than with a numeral or another higher morpheme (ónoun classifiersô for Svenonius 2008 and Aikhenvald 2003**).** If by ópositionô one specifically means a head, however, then this head must be void of morphosyntactically relevant information for the great many languages that lack gender, class prefixes, or noun classifiers. Instead of accepting an often null categorizing [n] as posited by Marantz (1997) and later work in Distributed Morphology, I will follow Borerôs (2005a, 2013) idea that syntactic projections are not necessarily headed by morphemes, but host semantic and morphosyntactic information which act as variables assigned a órangeô in various waysð not necessarily by the insertion of a morpheme.

Adger (2013) originally reinterprets this insight and notes that, if the order of projections must be given anyway, we no longer need to assume a vocabulary of functional heads (often null) just to support a projection line: the ordered line itself can be viewed as an important piece of grammatical knowledge (óso rather than having a functional lexicon, we simply use the antecedently given order of functional categories in a language as the source of labeling information.ôp. 22). Adger proposes that the formal operation that extends a syntactic structure (Merge) can target the same element more than once, with distinct labels: a merged X can be re-merged as {X}, and then again as {{X}}, each time forming a distinct object for computation. These innovative ideas allow us to formally represent the notion of ónominalized rootô either as a root categorized by a nominalizing morpheme, or as a óself-

he function of naming an entity type makes sure that this

ntion. In other words, the notion of entity type provides a content for the label of what I will from now on notate [ã]$_n$. As regards the meaning of the labels higher up in the nominal projection line, Adger adds óCl is the category that a classified noun bears [...] and Num is the category that a counted nominal has.ô (p. 22). The question then is what is exactly a classified or a counted nominal.

Countability and quantity pertain to the category of number, insofar as numerosity depends on what counts as a unit. Borer (2005a) emphasized this aspect and analyzed number as an operator that divides a nounôs reference domain, rather than a one-many (or not-one) switch. As a welcome consequence, this removed the empirically inadequate assumption that plurality entails countability (see Acquaviva 2008), and the idea of a grammatically encoded ódivision of referenceô provided a unified analytic framework for the morphosyntax of classifier-based and number-based systems (see Massam 2012). On the other hand, the distinction between carving up the reference domain into units and restricting the numerosity of such units has made it clear that number, and plural in particular, can express a range of semantic functions (see particularly the proposals of Ouwayda 2014 and Mathieu 2014 on a óhighô, quantity-dependent, and a ólowô encoding of plurality in Arabic). As the main focus of this chapter is the interplay of number, countability, and classification (including gender) as constitutive elements of nominality across languages (that is, by hypothesis, of the DP projection line), I will concentrate on the division of reference; number will be relevant insofar as it affects or constrains it.[6] The following proposal attempts to sharpen the general picture outlined in (12), and its fundamental claims about the nature of nominality are therefore universal; however, the specific claims about number concern languages where this is a recognizable grammatical category.

ference

A root interpreted as an entity name ($[\sqrt{\ }]_n$) is the smallest structure we can call ónounô. As noted, this is a label that identifies an *e*-type entity, without internal structure. It is possible that proper names like *Fido* occur in DPs in this minimally reduced guise (which, however, is still syntactically a structure since a root is not the same as a nominalized root); this would depend on whether morphology admits truly numberless nouns in the language. This is just a possibility that must be mentioned for completeness; moving on, the next level is where a nounôs denotation is characterized as having a part structure. For that, the name of an entity type is interpreted as a property: the property of being that sort of entity (whether at kind- or object level). What is true of this property can now be qualified in part-structural terms. My proposal is that the division of reference is distributed across at least two loci: an inner one expresses no constraint at all on the elements of the denotation, while a higher one partitions this undifferentiated domain into minimal elements and their sums.

The inner division operator defines a property of sums in the mereological sense, ranging not only on atoms and their sums, but also any sum in an atomless domain. Indicating sums with the symbol Σ, we may describe its logical type as $\langle e^{\Sigma}, t \rangle$, and use PÉ (óproperty of sumsô) as its syntactic label. This describes, as is clear, the denotation of mass nouns like *water* or *stuff*, modelled as an atomless lattice where every element is a sum, and so the property P it denotes is equivalent to *P, its closure under sum formation. Note however that ósumsô in this sense are merely the most generic description of any conceivable individual; there is no need to stipulate that the things mass nouns are true of constitute an ontological domain disjoint from that of individual entities (as in Chierchia 2010, following Link 1983). On the contrary, our approach aims at bringing about this and more refined distinctions from the interpretation of syntactic objects.

e, and so more informative: it subdivides into discrete

roperty denoted by P*, generating a new domain consisting of minimal elements and their sums. Formally this is modelled as a partition over the set denoted by P*: a function ɿ (P*) from the set of sums denoted by P* into another set, whose members are all subsets of P*, such that their union has as members all and only the original members of P*, and no one element of P* belongs to more than one of the subsets into which it is partitioned. DivP will be retained as the label for this higher operator, but note that the elements of the partition it creates are not necessarily ‘stable’, with the same size or perceptual properties, or ‘whole’ in any sense. While P* simply divides the reference domain, DivP divides it into a set of specifiable elements; they may or may not lend themselves to enumeration. The partition it introduces is only a necessary condition for countability. [7]

Number, it is suggested, is the most peripheral part of this grammatical determination of part structure. If a language has grammatical number, it expresses morphosyntactic features that restrict the size of the denotation. This takes place through a functor that takes a property P and selects a restricted section of *P (the set of its sums): only the atoms, or the non-atoms, or the whole set of possible sums, or different selections as they can be defined by the features available to a language. This means that number has a twofold function: it turns the atomic property P defined by Div into *P (closure under sum formation), and it restricts the lattice of *P, as determined by a semantic number feature. For Harbour (2014), the whole attested typological spectrum can be derived from the features [±atomic], [±minimal], [[±additive] and their combinations. These restrict the denotation to atoms, or non-atoms, or sets with or without minimal parts (where ‘minimality’ is defined in terms of other features, so that ‘dual’ selects the minimal elements that comprise non-atoms), or a small number of other possible

ative values where the size of the restriction is not an efined one like óa small numberô or ótoo many to countô.

The following scheme sums up the proposed syntactic decomposition of nominality, part structure, and number:

(13)

FUNCTOR	LABEL	DESCRIPTION
Num	$[[[[\sqrt{}]_n]_P]_{Div}]_{Num}$	restriction of **P* to feature-defined parts
Div	$[[[\sqrt{}]_n]_{P\!\!\!/}]_{Div}$	property of individual entities; <*e,t*> partitions the set of sums
P/	$[[\sqrt{}]_n]_{P\!\!\!/}$	property of sums; <*e,t*> introduces variable, creates lattice
n	$[\sqrt{}]_n$	entity name; *e* names an entity type
$\sqrt{}$	root	label; purely differential content

This proposal brings together several past results. The idea that a property reading for nouns is not basic but syntactically introduced is entirely original, but it develops previous attempts to pinpoint what is specifically nominal in the semantics of nouns (see the discussion in Acquaviva 2014). The syntactic decomposition follows Borerôs (2005a) insight that mass interpretations are less specified than count ones. The use of partitions goes back to Chierchia (2010), developed by Deal (2013) to analyze the packaged count reading of mass plural nouns in Nez Perce; Mathieu (2012) offers a similar analysis for Ojibwe. In both cases, the members of the partition set are contextually determined portions of spatiotemporally situated matter; this is also what will be proposed for cases like *waters.* On the subject of countability, it is important that the syntactic determination of part structure does not include a countability switch, in the light of the much more nuanced nature of countability contrasts (see Massam

014: 191) conveniently sums up the aspects of continuity osal:

> I assume that roots name concepts and *n°* makes concepts ónounyô, structuring them as lattices. However, *n* underdetermines whether that lattice has an atomic stratum of whether its subparts have ever smaller subparts.

Our approach splits into two loci the functions mentioned in the first sentence, but follows the important insight expressed in the second.

3.3 Three empirical analyses

If lexical nouns are part of DP structure, their internal structure should also be seen as part of DP. Therefore, a finer-grained analysis of the innermost DP region should lead to a revealing and predictive account of the relation between a nounôs interpretation and its morphologyð in particular, between its countability properties and number, insofar as their interplay is constrained by the structure in (13). I will consider in this perspective three types of nouns, where the relation between semantics and morphology is systematic.

The first two are varieties of mass plurals: the type exemplified by *waters*, already mentioned, and the minimally different one illustrated by *contents.* In the relevant reading, exemplified by *the waters in the lake*, *deep waters*, or *vessels plying those waters*, the plural imposes a spatiotemporally situated reading which can refer to the concrete portions of substance, as in the first example, or to water-filled regions. In English, possibly the most natural context for mass plurals like *waters* is the definite phrase *the waters*, but other contexts are possible (google searches reveal without difficulty expressions like *I've crossed these sands* or *some waters are clearer*, which shows that definiteness is not grammatically obligatory). A less parochial perspective shows that such plurals are common even in

nguages (see Acquaviva 2008 for examples); recently

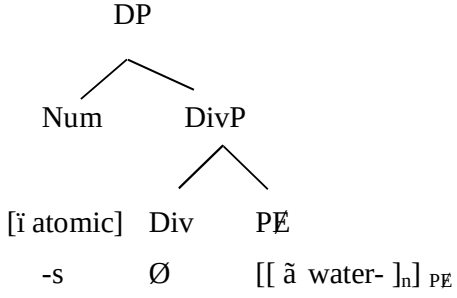
ılar for Modern Greek and Persian (Tsoulas 2009, Ghaniabadi 2012). While the details vary across languages, an abstract kind-level reading seems to be generally impossible, as illustrated by this Persian contrast from Ghaniabadi (2012):

(14) a. Âb-â qatô-e. (Persian)
water-PL cut-is.3SG
ôThe water is shut off.ô

b. Âb (*-â) vase mâ hayâti-me.
water (-PL) for us vital-CLITIC.is.3SG
ôWater is vital for us.ô

In this case, the structure depicted in (13) simply makes available for other languages the solution offered by Deal (2013) for Nez Perce: what is pluralized are sums of water, which can only be distinguished and identified on the basis of the space they occupy:

(15)

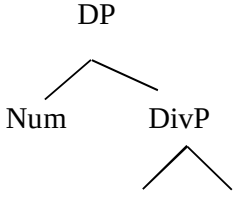


temporally situated reading. Notice that the same

s like *the Autumn rains* (or Villonôs *les neiges d'antan*, óthe snows of yesteryearô), where the partition is temporally situated and identifies events rather than expanses. Importantly, the elements of the partition lack any characterization (apart from being in the total denotation of the noun-property PÆ), and the indefinite criterion of division makes it impossible to enumerate the substance portions, which are so underspecified that they could include one another. Of course it remains to be explained why the availability of this strategy varies so much across languages and also across nominal rootsð noun-countability, for instance, is not necessarily a feature outside Indo-European.

Cases like *contents* receive almost the same structural analysis, with a subtle twist that makes our proposal distinctive. Plurals like *contents* ócontained thingsô, *shallows* óshallow placesô, or *beginnings* óevents making up a beginningô not only denote pluralities of things, regions, or events (respectively, in our three examples) by means of non-countable plural nouns; in addition, they are intrinsically vague as to the entities they denote. *Contents* is true of things contained (as a transient property), *shallows* of things that are shallow (so they must be three-dimensional, but no more is stated although world knowledge foregrounds areas of water bodies), and *beginnings* of things that happened in the opening stages of a larger event (so they must be events). The entities denoted share a property, but they are not categorized as instantiating the same entity type. In fact, no entity type is mentioned at all (see Wierzbicka 1988, Acquaviva 2008, 2016). Our system allows us to capture the difference between this class and other mass plurals: the property denoted by PÆ does not identify an entity type, so it should not be categorized as a nominal root [$_{n}$ ã].[9]

(16)



ent-
shallow-
beginning-

The only difference with (15) is that PÆ does not dominate nominalized roots. This would be just an arbitrary relabelling, were it not for the fact that, observationally, the ónounsô in question are all nominalizations from non-nominal bases (adjectives or verbal participles). This correspondence between a morphological and a semantic property follows directly from our analysis, and is in fact predicted by it.

In the same way, the structure in (13) also helps us make sense of the systematic map of morphological structure and semantic interpretation in ófake mass nounsô like *furniture*, *silverware*, *cutlery*, or *footwear* (see Alexiadou, to appear, and references there). A number of semantic analyses have considerably clarified the distinctive properties of this class of mass nouns, which denote aggregates of discrete elements. However, treating them as lexically listed mass nouns (as in Chierchia 2010) disregards the key fact that such nouns also follow a shared morphological pattern, as De Belder (2011) showed: they are morphologically derived, do not lend themselves to verbal conversion (**to furniture*), and, one may add, while pluralization is at least occasionally allowed for some mass nouns, it seems to be uniformly excluded for this class (**furnitures*, **silverwares*). Significantly, no such constellation of morphological properties holds of other mass nouns that also denote discrete individuals, like *salt* or *sand* (*to salt/sand, salts/sands*). De Belderôs (2011) idea to analyze the *furniture* class as a nominalization can now be sharpened as follows: these nouns are nominalized by a morpheme that spells out a PÆ layer (a suffix like *-ure* or a compounding stem like *-ware*); below this there lies a full DivP, where however the lexical stem (*furnit-*, *silver-*) does not identify an entity type. This models the fact that fake mass nouns denote collections of un-

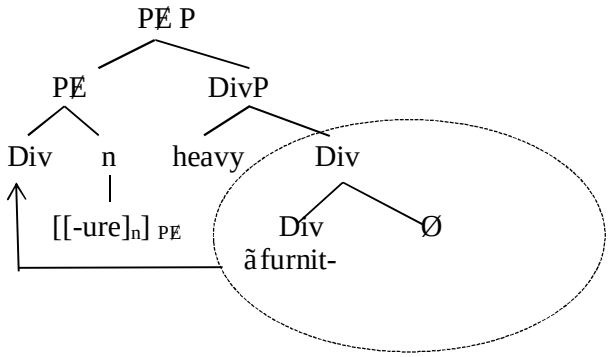
each other, like tables, cabinets, and chairs for

or silverware, boots, shoes, and slippers for footwear.

Instead of identifying these various entity types, the nominal root labels the criterion for membership in the collection: it spells out the Div functor that lies below the upper PÆ, and adjoins to the head suffix to realize a morphological word. Adjectives like *heavy* modify the inner Div, with the result that they express a property of each piece (rather than of the whole collection) even though no piece is nominated. This is schematized in (17a-b).

(17) a. [furnit- [$_{PÆ}$ -ure] [$_{DivP}$ (heavy) furnit- Ø]]

b.



In sum, articulating the syntax of part structure as outlined in this section makes for a better understanding of the way number interacts with noun countability, over and above a crude ócount-massô contrast, and also with of kind interpretation. I will now turn to gender.

4. Gender as a property of DP

4.1 Gender above the 'lexical' noun level

Gender, as a grammatical category with more or less clear semantic motivation, is generally taken to act as a grammatical reflex of noun categorization (a point developed by Picallo 2008). Whether or not gender features themselves carry semantic information, gender values

contrasting classes, and this dimension of opposition is

ons for at least some nounsð not only the opposition between male and female, although this is the clearest and most common one. The choice of a ócontrollerô gender value (Corbett 1991) is thus an intrinsic property of a noun, which drives agreement and so affects the nounôs grammatical context, rather than being affected by it.

What I argue for in this section is not so much a revision as a fundamental qualification of this generally accepted view. Suppose we remove the notion of ónounô from the picture just sketched. We would then say that, in some languages, the nominal projection line of DP includes features morphologically realized in terms of gender values (controllers for agreement). In most cases, these features participate in the spellout of nouns as morphological words. However, they characterize the DP as a whole: this does not just mean that the gender value of DP can be sometimes underdetermined by the marking of the innermost nominalized root, but crucially also that this óhighô gender can categorize and define an entity type, without this categorization being encoded on the nominalized root. There is no lexical nucleus that fixes gender value and noun denotation, dominated by accessory grammatical information that fine-tune this content (for instance selecting atoms or non-atoms from the denotation domain, or adding modifiers). Rather, gender, when present, is part of the grammatical construction which globally determines how speakers define their ontology (entity types) and what they talk about (discourse referents). It is generally bundled together with the innermost root characterization (its nominality), but even where this is the rule, this fact does not descend from properties of the lexicon, or from parametric choices, or from the architecture of grammar, because there are exceptions. From a higher perspective, gender systems and noun class systems may be seen as alternative strategies for noun classification, where gender interacts with number in a way that noun classes do not, quite possibly because of structural differences (see Aikhenvald 2003: 19ï 80, Crisma, Marten and

ine et al. 2014). It is certainly noteworthy that some oun-external parallel noun classes in selecting a single number value, in concomitance with a particular part structure of the denotation. Such is the case of the so-called ómass neuterô of several Italoromance dialects, where a special ending of D signals a mass (substance or abstract) reading, which in this case is necessarily singular:

(18) a. **ju** kavallu óthe horseô (Loporcaro 2009: 136; dialect of LôAquila)

b. **lo** pa ó[the] breadô (substance)

(19) a. **rə** ffu^{e}kə ó[the] fireô (substance) (ibid., dialect of Molfetta)

b. **u** fu^{e}kə óthe fireplaceô

(20) a. **a** nˈɔtˈːóthe nightô (Loporcaro and Paciaroni. 2011: 413; dialects of

b. **o** nnˈɔtˈːó[the] darknessô Cetara, Ravello, Scala)

(21) a. **lu** feːru óthe ironô (piece) (Loporcaro 2009: 136; dialect of Macerata)

b. **lo** feːro ó[the] ironô (substance)

The examples in (20) and (21) make the opposition clearer, because it is morphologically realized on both determiner and nouns (through the noun ending in (21), through the contrast in initial consonant lengthening in (20)). However, what is decisive (and historically prior) is

hich can discriminate the same mass reading even on its

ns in (18)-(19). Substance designations like these parallel the equally mass abstract nominalizations that Spanish expresses by óneuterô determiner endings (*lo*, *eso*, *aquello, ello*), with or without gendered nouns, as in *lo importante* óthe important thingô or *lo tarde que es* óhow late it isô (lit. óthe lateness that it isô). It is far from obvious that these special determiner forms should be interpreted as a gender value. Roca (2005) cites the examples in (22) to show that *lo* can in fact combine with adjective-noun strings which already agree in gender, masculine or feminine; this is evidently not an alternative agreement class on the same plane as masculine and feminine:

(22) a. lo hombre coqueto de Juan

óJuanôs being a flirtatious manô

b. lo mujer coqueta de María

óMariaôs being a flirtatious womanô

Rocaôs point is well taken, but it concerns the range of gender values in Spanish. For our claim, the essential observations are that a DP like *[lo mujer coqueta]* refers to entities that are not women (possibly ófactsô, or property nominalizations), and that it marks this re-categorization by means of an irregular form in the paradigm of Ds, or, if Roca is correct, with a form outside their inflectional paradigm. Notice that the sentences in (22) cannot be expressed by Italian or French morpheme-by-morpheme translations which replace *lo* with a masculine determiner. This shows that they are not just nominalizations with a particular form of D. Evidently, *lo* introduces a rather specific interpretation which does more than turn

relevant for our conclusions is that, like in (18)-(21), a and D (or the lack of such an agreement relation) brings about a distinct categorization of the entity type denoted by the DP; this correlates with a particular part structure (atomless mereology for substances, no internal structure for abstractions) and is compatible with one number value only.

4.2 'Interpreted' gender and variable positioning

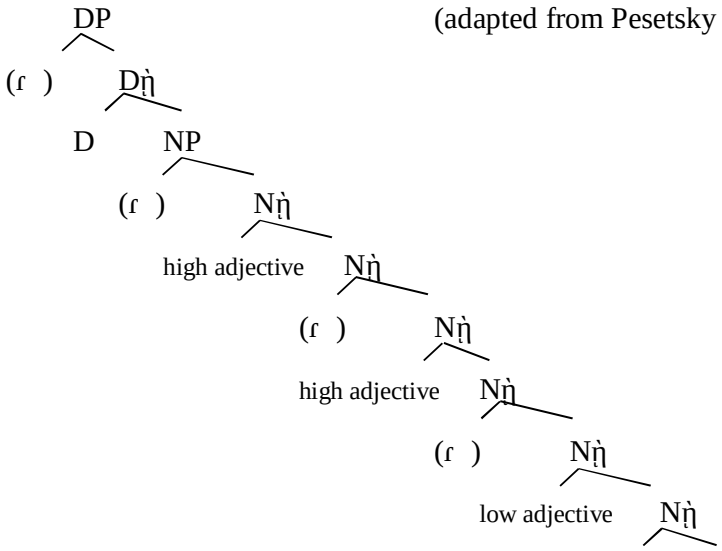
A second type of phenomena concerns the semantic effect of gender marking, and suggests that various interpretations correlate with distinct structural position within DP. Recall that a gender value assignment can have semantic import in a variety of ways, not reducible to the ómale-femaleô contrast that overshadows other semantic criteria in two- or three-values systems. What matters in this connection is not just the idea that gender-relevant interpretive properties are several, but more specifically the claim that this multiplicity is reflected syntagmatically, in the structure of the DP when this is analyzed at the level of abstraction appropriate for semantic interpretation. If semantic variability follows from structural variability in the representation of gender in DP, we have a strong reason for viewing gender as a formative of DP often but not necessarily associated on nouns, as here argued, rather than as a lexical property of nouns definable in isolation.

This is precisely the conclusion reached by Fassi-Fehri (2015) for Arabic, who identifies no fewer than five structural locations for a surprising number of distinct semantic functions of feminine gender: a position inside the root-categorizing [n] for so-called óconceptualô gender of root nouns like ómotherô and ófatherô;[10] the categorizing [n] itself for derivations like *maktab-at* ólibraryô from *maktab* óofficeô, but also *qiṭṭ-at* óshe-catô from *qiṭṭ* ócatô; the part-structure determining Cl (equivalent to Div in Borerôs notation) for singulatives, which turn a

a noun true of individual members of the collection, as ees (or the bee kindô); the quantity-determining Number, above Div, for pluratives, which package a plurality into a singular group (as *baraber-at* óBerber community, Berber peopleô from *baraber* óBerbersô); a DP-peripheral position for the use of feminine *-at* in diminutives or augmentatives [11]; and a very high CP-peripheral position (with illocutionary content) for the surprising use of the feminine suffix *-at-* in exclamative contexts, with expressive value even on óconceptuallyô masculine nouns, as in *yaa ʔab-at-i* óoh my beloved father!ô.

Fassi-Fehri (2015) explicitly connects his analysis to the idea of a ódistributedô gender advanced by Steriopolo and Wiltschko (2010), to account for Russian ómixed genderô DPs like *horošaya vrač*, where the masculine *vrač* ódoctorô is modified by the feminine adjective *horošaya* ógoodô, and the whole DP is true of female (good) doctors. The syntactic interpretation offered by Steriopolo and Wiltschko (2010) was given an important twist by Pesetskyôs (2013) reinterpretation in terms of a ófeminizingô abstract morpheme which can occupy several possible positions inside DP. I note this as ɾ , following Pesetsky, with the cyrillic initial of the Russian *ženščina* ówomanô:

(23) (adapted from Pesetsky 2013: 40)



(*ɾ) N

ɾ may be inserted in one of several positions (here four, for illustration) inside DP, but not inside the position of the ólowô adjectives closest to the head noun. Under the assumption that all and only adjectives above ɾ agree in feminine gender, this captures two generalizations: that if an adjective is feminine, everything from its position up (more external modifiers, and the DP as a whole) must be feminine for agreement purposes; and that non-intersective adjectives like *žubnoj* ódentalô in *žubnoj vrač* ódental doctorô, ódentistô, are systematically prevented from being feminine unless the head noun is. This explains why, if the gender mismatch between the two adjectives (and the noun) in (24a) is less than fully acceptable, the same mismatch in the inverted order is totally unacceptable (Pesetsky 2013: 38):

(24) a. ? U menja oļen interesnaja novij vraļ. (Russian)
by me very interesting.F.SG new.M.SG doctor
óI have a very interesting new (female) doctorô.

b. * U menja oļen interesnyj novaja vraļ.
by me very interesting.M.SG new.F.SG doctor
ód.ô

At the same time, the sequence ófeminine adjective - masculine nounô is unacceptable when the adjective is a low modifier defining a subkind of the nounð and so a distinct entity type:

n horoġaya ġubnoj vraḷ .

by us was.F.SG very interesting.F.SG dental.M.SG doctor

ôWe had a very interesting (female) dentist.ô

b. glavnyj / *glavnaja vraḷ

head.M.SG / * head.F.SG doctor

ôhead doctorô

Arabic and Russian, then, have recently provided independent motivation for a more nuanced view of gender as a grammatical ingredient of DP, not reducible to a lexical, noun-inherent determination. I will now consider a new piece of evidence, coming from Italian, which suggests a similar analysis and points to the same conclusion.

4.3 'Interpreted' gender and variable positioning: evidence from Italian

Like in the Russian example just considered, in Italian too a masculine noun for a role traditionally restricted to males can head a female-denoting DP if this has a feminine modifier (here mainly determiners). Beside the paradigms for ôministerô in (26a), masculine, and (26b), feminine, there exists therefore a mixed construction illustrated by (27):

(26) a. SG: il ministro PL: i ministri ôthe minister - the ministersô (Italian)

very common class; all masc. with one exception (*la mano* ôhandô)

b. SG: la ministra PL: le ministre

fem. DP; noun ending in *-a* (sg), *-e* (pl), very common inflectional class; all fem.

(27) SG: la ministro óshe [female] ministerô fem. D, masc. N

Crucially, such mixed DPs cannot be pluralized, either by inflecting both N and D or just D:

(28) PL: *le ministri [D_{PL} N_{PL}], *le ministro [D_{PL} N_{SG}]

The total impossibility of a plural is odd from a functional point of view, but it also contrasts with the fact that pluralization is never a problem in other cases where the DP fails to inherit its gender from a head noun. The examples in (29) illustrate singular-plural pairs for four such constructions: a feminine DP whose unexpressed head (*commissione* ócommitteeô) is contextually recoverable; another feminine DP lacking a feminine N head, where however the DP gender is determined conventionally and cannot be analyzed as a ase of ellipsis (contrast *la commissione ricorsi* óthe appeals committeeô, with **la macchina Topolino* óthe car [fem] Topolinoô); and two equally acceptable nominalizations headed by an acronym outside of the Italian morphological system, one feminine and the other masculine (see Thornton 2004a,b, 2009, Acquaviva 2009 for details). In all cases, the singular D pairs up with its inflectionally regular plural counterpart, as shown in (30):

(29) a. la ricorsi óthe appeals [committee]ô
the.F.SG appeals-MASC.PLô

b. la Topolino óthe Topolinoô (a car model)
óthe.F.SG ñTopolinoò ó (lit. ómouse.DIM.M.SGô)

ðthe BMWô

ðthe.F.SG BMWô

d. il BMW ðthe BMWô

ðthe.M.SG BMWô

(30) a. le ricorsi ðthe appeals [committees]ô

the.F.PL appeals-MASC.PLô

b. le Topolino ðthe Topolinoôsô (a car model)

ðthe.F.PL ñTopolinoòô (lit. ómouse.DIM.M.SGô)

c. le BMW ðthe BMWôsô

ðthe.F.PL BMWô

d. i BMW ðthe BMWôsô

ðthe.M.PL BMWô

The puzzle has an additional morphological dimension. While *la ministro* is not blocked by *la ministra*, as shown in (26), a noun that is feminine and female-denoting by virtue of a derivational suffix does block the use of its masculine counterpart with a feminine D:

Table 1Systematic blocking of *the.F N.M* when the gender of N is due to a derivational affix

[insert Table 1 here]

arises from an unusual combination of factors. It

stro or *sindaco*, but not derived ones like *direttore* or *dottore*; it differs from the superficially similar patterns in (30) because it lacks a plural, and also because the feminine gender of its D correlates with a mandatory animate ófemaleô reading. This suggests an analysis along the lines of Pesetskyôs (2013) ófeminizingô formative, which likewise associates with nouns denoting roles (and not, for instance, with *čelovek* óperson, human beingô).[12]

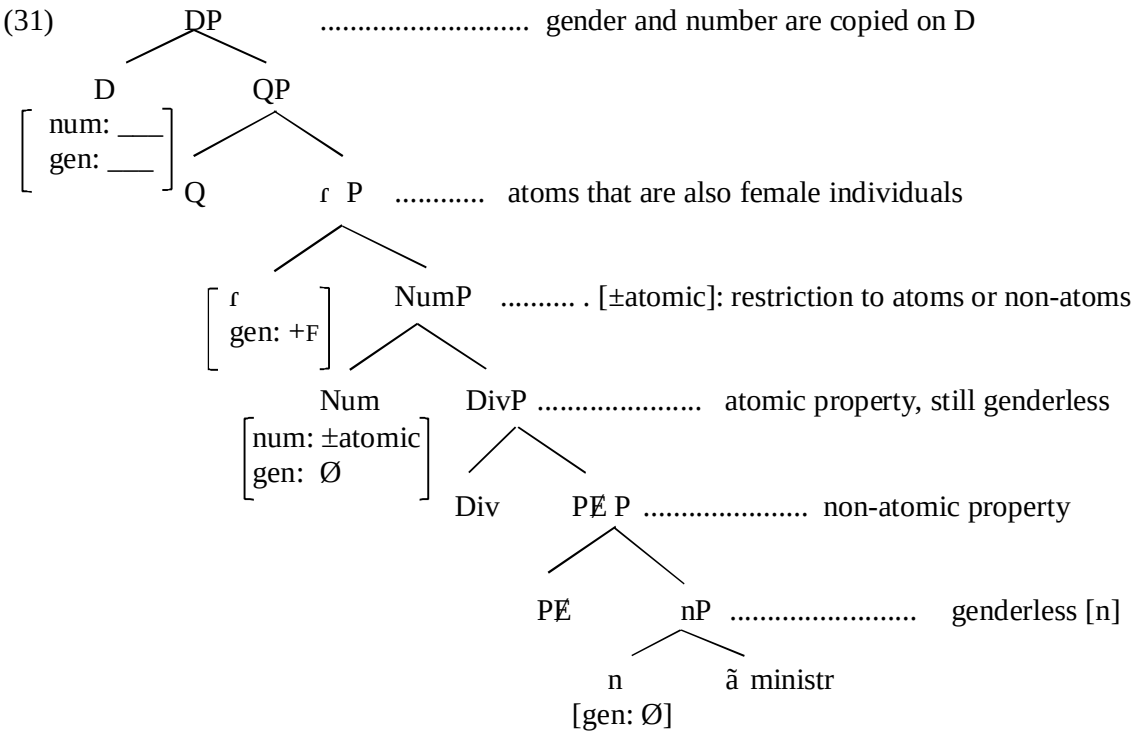
The restriction to underived stems (if confirmed, a strongly falsifiable prediction) suggests that *ministro* is genderless in (27) (unlike in the canonical (26a)).[13] Nouns on which a suffix enforces a gender choice, then, differ in this crucial respect. In addition, the source of the gender value cannot be D, as that would not explain why pluralization is impossible (unlike in (29)). To account for this key property, without losing sight of the semantics of the construction, I also hypothesize a female-denoting formative responsible for feminine gender marking inside óNPô (that is, below the highest levels of DP). Once Pesetskyôs analysis is grafted on our interpretation of the division of reference (section 3), we can be more precise on the way this feminine formative interacts with number.

Let us analyze the ɾ morpheme more precisely as a feminine-marking predicate *λx.(female)x*. This property can compose with the nominal property, as it is determined by the grammatical information expressed inside the DP spine. We can now claim that this predicate is merged *directly above* the position where number features are interpreted, and composes with it. A singular value, corresponding to a minus setting of the feature [±atomic], restricts the denotation to atoms; a plural value to non-atoms. But ɾ is above Number; the determination ó.. and is a womanô is not added to the atoms of the denotation, but to the restriction imposed by number. And the property of being a female can apply to atoms (that are also ministers), not to their sets. Alternatively, ɾ could be represented as a further

an as a higher head; either solution would require

s is summarized in (31):

(31)



In essence, this structural analysis claims that the feminine gender value is here decoupled from number, much as in noun class languages. The morphological system of Italian usually prevents a nominal stem from being spelled out without pronominal features, but the default vocalic ending of *ministro* obviates this difficulty.[14] Still, the noun *is* marked for gender, and this has both a morphological and a semantic reflex. But to see these effects, we must consider the whole DPð which is the general conclusion argued for in this section.

5. Conclusion

Each of the phenomena discussed here could be analyzed in different ways, and each has important ramifications not considered here. For instance, any analysis of kinds is incomplete

of English bare plurals, and for why other languages variety of manifestations which affect countability and part structure in different ways, across languages but also within the same language. Another angle I have not considered is the bundling of gender and number (and possibly other features, like definiteness), especially insofar as it affects part structure conceptualization: Italian feminine plurals like *le membra* ‘the limbs’ or *le mura* ‘the walls [as an enclosure]’, which stand opposed to a regular masculine singular-plural paradigm (Acquaviva 2008), point to a role of gender in signalling a part-structural interpretation, akin to what Fassi-Fehri (2015) has called the ‘perspectivizing’ function of feminine in Arabic. This is also true of a feminine mass like *la legna* ‘[the] timber’, categorically singular-only although it refers to wood as a collection of harvested pieces (typically as fuel), as opposed to the masculine *legno* ‘wood’ which can denote any mass and also the material as a kind. From yet another perspective, one could focus on how the content of gender marking is formally encoded, assessing the merits of the [±interpretable] distinction which is central in Kramer’s (2015) analysis. Finally, when gender is interpreted as a sort of female-denoting classifier, as I have proposed in section 4, it may give rise to subtle ambiguities which again point to variable interpretation loci: this is how the important contribution of Percus (2011) has analyzed the Italian *la mia seconda nipote* ‘my second niece’ (ambiguous between ‘the second-eldest among my nieces’, or ‘the second-eldest among my nieces and nephews, who is a female’).

Space is, of course, one reason for not pursuing all of these directions. But more important is the fact that the phenomena which were discussed, taken together, are unified by a mutual coherence. Kind readings, I have argued, are unavailable in certain plurals because the DP architecture forces them to refer to spatiotemporally situated concrete portions. This same architecture gives us the flexibility needed to account for different types of count and mass nouns, not with a crude two-way switch but in a more nuanced manner that does justice to the

ed structure encodes whether the nounôs denotation is divided or partitioned into constituent elements (and their sums), and whether these elements are countable individuals that instantiate the entity type defined by the noun.

Within this architecture, number and gender provide grammatical marking for a range of different readings constrained by the possible content and the relative order of semantically interpreted functors. I have not argued for the decomposition of number and gender into smaller primitives, insofar as each of them is a unitary morphosyntactic category; what is decomposed is rather the notion of entity categorization, which emerges from our analysis as the global result of DP interpretation and not of the choice of a lexical item in isolation, even though the relevant grammatical information tends to be encapsulated in what morphology spells out as a single word. This is particularly significant for gender, which tends to occupy a very low, root-local position. But gender *is* not that position, and does not by itself bring about entity categorization. More generally, neither morphemes nor grammatical categories per se determine an interpretation, but the functors they realize.

It bears stating clearly that this does not amount to a theory of gender. Gender is so intimately tied to the choice of a lexical root and of a semantic content, that it remains the biggest challenge for a constructionist, non-lexicalistic theory of nouns. What this chapter has argued is that the data do not always support the traditional view of gender as a context-independent lexical feature, because in some cases gender is not determined by the choice of a root and of non-grammatical content. This does not call into question the traditional subdivision of DP (a noun-categorizing core, a middle region for number and/or division, and an outer shell for quantity, case, and other determinations); it does however cast doubt on the identification of gender with the innermost ólexicalô categorization function. While the information signalled

low in DP, it does not represent ôlexicalô information

ô determinations.

The unifying claim behind these analyses has been that what defines nominality is a certain syntactic structure, with a sequence of functors that between them define a range of possible interpretations. The structure and the semantic range it can express are anything but arbitrary. Our hypothesis of a contentless root which gets interpreted as the name of an abstract entity type, which is then turned into a property whose denotation can get more and more specified in terms of part structure, is a hypothesis about how language expresses the notion of entity.

Table 1

D MASC, N SUFFIX MASC	D FEM, N SUFFIX FEM	*D FEM, N SUFFIX MASC
il dirett-ore	la dirett-**rice**	* la dirett-ore
lo stud-ente	la stud-ent-**essa**	* la stud-ente
il guard-iano	la guard-**iana**	* la guardi-iano
il padr-one	la padr-**ona**	* la padr-one

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Endnotes

nominal lexical predicate is kind-level, while object-level predication arises through ôspatiotemporal localisationõ; bare plurals result from covert type-shifting.

[2] We call kinds what is referred to at kind-level, as a universal that admits instances. Such kinds may or may not identify individuals in the speakerôs mental ontology; for instance, normally *lawyer* names an entity type that is not an individual, but a role/stage in the life of an individual.

[3] This is evidently a very broad topic, with ramifications concerning the nature of lexical categories, the relation between linguistic and conceptual knowledge, and ultimately the ontology presupposed by an adequate theory of natural language in all of its typological variability (see Acquaviva 2014, Acquaviva 2012, Panagiotidis 2014).

[4] In a similar vein, Vergnaud and Zubizarreta (1992) argued that NP denoted types and DPs tokens, as a reviewer notes. Their proposal is indeed similar to the one advanced here, as it explicitly denies that lexical nouns denote over the same domain of objects as DPs. However, there are also many differences. The distinction of Vergnaud and Zubizarreta is illustrated by that between *computer* as a machine model and as a token object, so that *we have the same computer* can refer to one type and to one or two objects. For them, types and tokens have distinct indices which must be syntactically related by predication, requiring mutual m-command (no maximal projection must separate them). DPs can refer to types, but only if D is expletive, that is, semantically vacuous and also transparent for the mutual m-command requirement. Finally, their notion of denotation órefers to a relation between linguistic entitiesô (p. 610), namely DPs/NPs and the indices included in a level of representation they call L-structure. None of this applies to my proposal.

discourse referents entities that cannot have a criterion of identity; Strawson (1997) exemplified this case with ó*this* is the way he walksô.

[6] See Acquaviva (in press) for a presentation of the same structural analysis which focuses on number and its impact on ólexicalô meaning.

[7] Languages with and without classifiers differ in the morphosyntactic representation of countability properties, of course; but much recent work on Chinese, most notably Zhang (2012), strongly suggests that their grammar too encode some of the part-structural characterizations that underlie countability. The proposed finer-grained division fo reference, therefore, is meant to apply to these languages as well.

[8] Div seems the appropriate locus for the encoding of dimensionality, which Zhang (2012) has identified as one of the two key ingredients of what we call countability, and differentiates the syntax of dimensional (ócarrotô) and non-dimensional (óoilô) even in a language like Mandarin Chinese, where no noun is countable in the English sense. For the same reason Div seems also the appropriate locus for so-called óshapeô classifiers.

[9] The particulars in the denotation of *contents*-like nominalizations are thus *tropes*, concrete manifestations of a property which are not categorized as tokens of an entity type (see Moltmann 2009).

[10] The existence of such a root-driven semantic gender appears less than obvious in the light of the Italian masculine formation *mammo* ómale motherô, óman in a motherly roleô. What is ófemenineô here is not the nounôs denotation, which is restricted to males, but the cultural construction of motherly role.

[11] Note that, just like the Arabic *-at*, in Breton too the suffix *-enn* is a singulative marker but is also used with expressive function to form diminutives like *kalon-enn* ólittle heart, heart-

46, and references cited there). This should be seen in the context of the recurrent appearance of the same morphemes with expressive and packaging function, also in Russian and Romance (cf. French *ours* - *ourson* ‘bear - little bear’ and *glace* - *glaçon* ‘ice - ice piece’); see Jurafsky (1996).

[12] The similarities extend to the fact that *ministro* admits feminine modifiers (*un’altra ministro* ‘another [lit. an other] minister’), but also *masculine* low, subkind-denoting ones (*la primo ministro* ‘the first [M] minister’).

[13] If an Italian noun is not invariable, the *-o* ending is thought to always express gender and number; note however that *-o* is also the ending of several adverbs like *piano* ‘softly’, and especially of the clitic *lo* when it resumes a predicate, regardless of gender:

(i) Anna è alta, ma Maria non lo è.

‘Anna is tall [F], but Maria is not.’

See Acquaviva (2009) for more details and discussion.

[14] Without attempting a comparative analysis for Russian and Italian mixed-gender DPs, it should be noted that Russian masculine nouns like *vrač* ‘doctor’ carry no specific gender exponent, as I claim can happen for *ministro*. Of course the case paradigm evidences gender oppositions, but the patterns of syncretism do not align with genders (in the singular, feminine is opposed to masculine and neuter, with a special genitive-accusative syncretism for masculine animates; no distinction of patterns in the plural). A real counterexample would involve a feminine DP headed by a noun like *časovoy* ‘sentry’, morphologically a masculine adjective; but forms like *naša časovoy* ‘our[F] sentry[M] do not seem to be possible.