

Chapter 9

Definiteness in Russian bare nominal kinds

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In the literature on generic nominal reference, it is usually pointed out that in Russian, both singular and plural nominal expressions can have a generic reference (Chierchia 1998; Doron 2003; Dayal 2004). The main contribution of this article is to propose an explicit analysis for composing definite kinds from bare nominals in this language. We provide independent empirical support for the definiteness of apparent bare nominals in argument position of kind-level predicates and argue that definiteness is to be associated with a null D(eterminer), interpreted as the iota operator. The general hypothesis we defend is that definite kinds, even in a language without articles such as Russian, encode definiteness semantically and syntactically.

1 Introduction

In the literature on generic nominal reference it is usually pointed out that in Russian, a language without articles, both bare singular and bare plural nominal expressions can have a generic reference (Chierchia 1998; Doron 2003; Dayal 2004). This is exemplified in (1), where nouns specified morphologically for singular (1a) and for plural (1b) occur in argument position of a k(ind)-level predicate.¹

¹In this paper, we assume a three-way classification of verbal predicates into k(ind)-level, i(individual)-level and s tage)-level (Carlson 1977). While k-level predicates appear to form a scarce but stable class, it is well known that the division line between i- and s-level predi-



In this context both *panda* and *pandy* can be said to refer to kinds.

- (1) a. *Panda naxoditsja na grani isčeznovenija.*
panda.NOM.SG is.found on verge extinction.GEN
b. *Pandy naxodjatsja na grani isčeznovenija.*
panda.NOM.PL are.found on verge extinction.GEN

A common background assumption considers plural generics as more natural and preferable, so in a significant part of literature on genericity it is taken for granted that plurals (bare plurals in English) constitute the “default” way to refer to kinds.² Setting aside the question of what is the “default” way to express genericity in the nominal domain in Russian, we simply point out that, given that (1a) is grammatical and natural, an analysis of it is needed in the theory of grammar in any case.

In contrast to Russian, in a language with overt determiners, English for instance, the subject of a sentence corresponding to (1a) will be expressed by means of a definite generic (Carlson 1977) or the singular generic (Chierchia 1998) *the* N construction (i.e. *the panda*), as in (2a). On the other hand, English also allows bare plurals to refer to kinds, as illustrated in (2b).

- (2) a. *The panda is on the verge of extinction.*
b. *Pandas are on the verge of extinction.*

The correspondence between the so-called English definite generic and the Russian bare nominal with a kind reference interpretation in (1a) is usually assumed to hold merely on the basis of their singular number morphology (cf. Dayal 2004), so a reasonable expectation is that the analysis assumed for definite generics in English can also be extended to the corresponding Russian cases. This approach has to address at least the following issue. Any analysis of the English definite generic includes the iota operator (*i*) in the semantic represen-

cates is not clearly marked. For instance, *fly* in (i.a) denotes an *i*-level property while in (i.b) it functions as an *s*-level predicate:

- (i) a. *Hummingbirds fly backwards.*
b. *Hummingbirds are flying over the lake.*

²See Ionin et al. (2011) for an experimental investigation on the expression of genericity in English, Spanish and Brazilian Portuguese.

tation (cf. Chierchia 1998, Dayal 2004), which is quite indisputable for English, given that these expressions appear with a definite article.³

More generally, a number of questions arise with respect to (2) if we take into account some cross-linguistic data. In Spanish, for instance, bare plurals do not have a generic reading (Laca 1990; Dobrovie-Sorin & Laca 1996; 2003), making them different from bare plurals in English (e.g. 2b), which are considered to be the genuine expression of kind reference in that language (Longobardi 1994; 2001; 2005; Chierchia 1998; Dayal 2004, i.a.). By contrast, the default way to refer to kinds in Spanish is by means of a (non-plural) common noun preceded by a definite article (Borik & Espinal 2015). The question is then how to derive a kind reference for languages like Spanish and English keeping in mind these crucial differences concerning the interpretation of bare plurals. A look at languages like Russian makes the issue even more complex: Russian, does not have any articles but clearly possesses the means to make reference to kinds, as shown in (1). Does this mean that the same type of analysis as for English and Spanish could or should be extended to Russian despite the observed superficial differences in the syntax of nominal phrases?⁴

This paper aims at contributing to an understanding of kind expressions of the type exemplified in (1a). We provide independent empirical support for the definiteness of the subject in (1a), and argue that it is to be associated with a null D(eterminer), interpreted as ι . We postulate the structure in (3a) for definite kind arguments in languages with and without articles (e.g. Germanic, Romance, Slavic), the meaning of which is represented in (3b).

- (3) a. $[_{DP}D[_{NP}N]]$
 b. $[[\text{Def } N]] = \iota x^k [P(x^k)]$
 where P corresponds to the descriptive content of a noun N, and
 $x^k \in K$ (i.e. the domain of kinds)

Although we do not deal with plural kind expressions exemplified in (1b) in this paper, we would like to point out that they do not constitute a counterexample to our analysis for (1a). We assume that a different syntactic and semantic

³Although see Coppock & Beaver (2015), who argue that definiteness as encoded by the definite article must be distinguished from determinacy, which consists in denoting an individual. Should this claim also be adopted for Russian, it would need an independent motivation, since Russian does not overtly express definiteness.

⁴See also Cyrino & Espinal (2015) for an analysis of definite kinds and definite plural generics within the NP/DP debate in Brazilian Portuguese, a language that allows the omission of the article in all argument positions.

composition is to be associated with the generic (bare) plural in (1b). In particular, the analysis proposed in (Chierchia 1998), in which plural kind nominals are semantically derived by the down operator \bigcap that applies to plural properties, could be adopted to account for plural generics in Russian. Our hypothesis (which we will not defend or justify further in this paper) with respect to plural kind nominals in Russian is, therefore, that these expressions are, indeed, derived from pluralities and are specified for Number, namely, for plural. Their structural representation would then look like in (4).

$$(4) \quad \bigcap_{[\text{NumP} \text{Num}_{+pl} [\text{NP} \text{N}]]}$$

The differences between (3a), the structure that we adopt for definite kinds, and (4), the structure that we would hypothesize for generic plurals, are obvious. First of all, definite kinds are syntactically and semantically definite and hence are structurally represented as full DPs, whereas there is no a priori evidence to suggest that the same holds for generic plurals.⁵ Secondly, only in the structure for generic plurals Number is present.⁶ We will not deal specifically with the syntax and semantics for Number in this paper, but in general, we assume that definite kinds are syntactically and semantically numberless, at least in those languages where nominals inflect for number (see Borik & Espinal 2015 for details).

The paper is organized as follows. §2 presents the theoretical framework that constitutes the basis for our analysis. We will introduce the fundamental theoretical claims regarding the composition of definite kinds, focusing, in turn, on the meaning of Ns (properties of kinds) and the meaning of the definite article (*ι*). In §3 we will present our analysis of definite kinds in Russian. With this aim in mind we will provide both semantic arguments for definiteness and syntactic arguments for a DP structure with a null D (translated as *ι*). This section will close with an account of modified definite kinds. §4 will conclude the paper.

⁵This matter, however, deserves a full and thorough investigation, which falls outside the scope of this paper.

⁶We differentiate between morphophonological number, on the one hand, and syntactic Number, which is always interpreted semantically, on the other. In Russian, any nominal expression is marked for number and case and these two specifications come as a cluster. In other words, it is impossible to determine which part of a cluster encodes number and which part encodes case, which is a standard feature of a language with synthetic morphology. We assume that this cluster does not necessarily correspond to a syntactic Number projection, which has to have a semantic effect, and yield either a singular or a plural interpretation for a nominal phrase (cf. Ionin & Matushansky 2006; Pereltsvaig 2013 for similar claims).

2 Theoretical background

In this section we will briefly summarize the theoretical assumptions or postulates underlying our account of definite kinds in natural languages.

We assume that definite kinds express D-genericity (cf. Krifka et al. 1995) and argue that they are composed by applying ι , which is encoded by the definite article, to the denotation of a common noun, which denotes properties of kinds. This proposal is conceived as a universal principle, no matter whether the languages considered have overt articles (such as English) or not (such as Russian).

We start this section by discussing the meaning of common nouns. We argue that they denote properties of kinds (Espinal & McNally 2007a,b; Dobrovie-Sorin & Pires de Oliveira 2008; Espinal 2010; Espinal & McNally 2011). Next, we discuss the meaning of the definite article, conceived as a maximality operator (Sharvy 1980), and the composition of a definite kind reading.

2.1 Theoretical postulate 1: Root common nouns denote properties of kinds

Kind reference in natural language is quite often assumed to be a special type of reference contrasted with the reference to objects. In other words, if objects are standard entities of the semantic ontology, so are kinds. This theoretical hypothesis can be traced back to at least Carlson (1977), who distinguished between three types of entities relevant for natural language semantics: kinds, that is, the denotation of *the panda* and *pandas* in (2); objects, that is, the denotation of proper names and common noun phrases; and stages, i.e. the denotation of the last type of nominal expressions in combination with stage-level predicates. Kinds and objects, in Carlson's typology, are abstract entities and together they form a class of "individuals", whereas stages are concrete spatio-temporal realizations of abstract entities.

In less fine-grained classifications of entities, only two types are recognized: kinds and objects (cf. Zamparelli 1995).⁷ This is the ontology assumed here as well: we distinguish between kinds, or abstract entities, and objects, or particular entities, although we do not agree with Carlson (1977), Zamparelli (1995), and many others after them, for whom the denotation of a common noun is a kind entity.

⁷In a different terminological tradition (e.g. Vergnaud & Zubizarreta 1992) this distinction corresponds to types vs. tokens.

Under a different approach it is claimed in the semantic literature that common nouns denote properties, rather than entities (Chierchia 1984; 1998; Partee 1986 among many others), that is, common nouns are lexical predicates.

In this paper, we adopt a third alternative and postulate that common nouns denote properties of kinds.⁸ This alternative has been empirically motivated in a number of recent proposals, including Dobrovie-Sorin & Pires de Oliveira's (2008) work on bare nouns in Brazilian Portuguese, McNally & Boleda's (2004) analysis of relational adjectives, and Espinal's (2010) and Espinal & McNally's (2007b; 2011) semantic description of the meaning of bare nouns in object position in Catalan and Spanish. The arguments supporting the hypothesis that common nouns denote descriptions of kinds are based on pronominalization, number neutral interpretation and adjective modification. The reasoning is the following:

- (i) A common noun (a real bare nominal) cannot be taken to refer to individual object-entities because the anaphoric pronoun that it licenses (in some Romance languages) is not compatible with an object/token interpretation (cf. the difference between Catalan *en* lit. 'one', referring to properties, and *el/la/els/les* lit. 3RD.ACC.SG/PL.MASC/FEM 'it/them'); if it cannot denote an entity, it must denote a property.
- (ii) If a common noun has a property denotation, it has no inherent number information, and therefore it has a number neutral interpretation (i.e. it is compatible with atomicity and non-atomicity entailments, Farkas & de Swart 2003); by contrast, nouns specified syntactically for Number refer either to atomic or non-atomic sums.
- (iii) If a common noun had an individual property denotation, it would be expected to easily combine with any kind of modifier, but this is not the case. Bare nouns in syntactic positions that allow bare nominals (e.g. in object position of a restricted class of predicates (Espinal & McNally 2007b; 2011) and in predicate position of copular sentences (de Swart et al. 2007; Zamparelli 2008)) can only combine with classifying adjectives, and this restriction can be explained only if both expressions are taken to denote properties of kinds or if the appropriate adjectives are kind modifiers.

We thus conclude that it is highly plausible to assume the denotation of a common noun to be a property of a kind.⁹

⁸We adopt this hypothesis for all types of nouns, i.e. count, mass and abstract nouns.

⁹This view should be contrasted with those in which the interpretation of a nominal root is equivalent to that of a mass noun (Borer 2005; Rothstein 2010), and with those that derive taxonomic kinds in the lexicon by a direct application of the MASS operation to a N_{root} (Pires de Oliveira & Rothstein 2011; Trugman 2013).

Now, what precisely does it mean to say that common nouns denote properties of kinds? We assume that there are two domains in our semantic ontology, the domain of objects and the domain of kinds. Under a standard view, the denotation of the predicate with the descriptive content *P* is the set of objects that share property *P*. Thus, the denotation of the noun *boy* in the domain of objects is a set of objects that have the boy-property. Note, however, that in our world some nouns can denote singleton sets (e.g. *sun* or *moon*). Without challenging the process described above, we propose that instead of the domain of objects, common nouns range over kinds, conceived as integral entities. Thus, the same noun *boy* in our proposal looks for entities that share a boy-property but in the domain of kinds rather than objects.

In accordance with what we have just said the meaning of a common noun should have the logical representation in (5), where *P* stands for a property corresponding to the descriptive content of *N*, and x^k a kind entity, such that the property *P* applies to x^k .

$$(5) \quad \llbracket N \rrbracket = \lambda x^k [P(x^k)]$$

Having given a formal definition of the denotation of a common noun, we will now briefly clarify our more general assumptions about kinds, although we do not pretend to give a full justified answer to the question of what type of entities kinds essentially are. Following Borik & Espinal (2015), we adopt the claim that kinds are not sets of subkinds, but are instead perceived as integral, undivided entities with no internal structure, which means that kinds do not form part of a standard quantificational domain for individuals represented by a lattice structure (Link 1983). We also share the view of Mueller-Reichau (2011), according to whom kinds are, in essence, abstract sortal concepts. Sortal concepts are mental representations that are used to “categorize and individuate objects” (Mueller-Reichau 2011: 21). Thus, kinds are entities, but their (mental) representations are obtained by abstraction over a number of individual objects that share certain relevant properties. This, however, does not necessarily mean that linguistically, a kind should necessarily be construed as a set of representative objects, although conceptually it might be the case.

2.2 Theoretical postulate 2: The definite article corresponds to ι and expresses maximality

In Partee (1986), it is proposed that definite noun phrases are generated by a type shifting operator that maps a singleton property $\langle e, t \rangle$ onto an individual denotation of type $\langle e \rangle$. This type shifting operation is called *iota*. In this sense,

the meaning of the definite article is to map a property onto the maximal/unique individual having that property.¹⁰

$$(6) \quad \llbracket D_{\text{DEF}} \rrbracket = P \rightarrow \iota x[P(x)]$$

When the definite article applies to a noun that denotes a property of a kind, the iota operator yields a maximal/unique kind entity. This is how definite kind expressions are derived. Crucially for our analysis, in the composition of definite kinds, there is no intervener between the iota operator, associated with the definite article (in languages with articles), and the noun. We illustrate this derivation in example (7).

- (7) a. **The panda** is on the verge of extinction.
 b. $[_{\text{DP}} \textit{the} [_{\text{NP}} \textit{panda}]]$
 c. $\llbracket \textit{the panda} \rrbracket = \iota x^k[\textit{panda}(x^k)]$

The subject of (7a), repeated from (2a), is a definite kind expression derived by applying the iota operator to the noun *panda*. Its syntactic structure is given in (7b), and the semantic composition associated with this expression is provided in (7c).¹¹ This is the essence of our analysis of definite kinds, which we would like to extend to Russian. In this section, we have presented the fundamental theoretical postulates on which we base our analysis of reference to kinds in natural languages. We now address the main issue of this paper, namely, the question of whether Russian has definite kinds, in spite of the fact that it has no overt articles, and which are the arguments that support the existence of definite kinds in this language.

3 Definite kinds in Russian

As we pointed out in §1, the correspondence between the English definite kind expression in (2a) and the Russian bare nominal in (1a) (repeated in 8) with a kind reference is usually assumed to hold, and a reasonable expectation is that the analysis adopted for definite kinds in English can also be extended to Russian cases.

¹⁰The terms *maximal* and *unique* are used in this paper in the sense of Sharvy (1980) and Link (1983), who provide a unified semantics for definiteness, independently of whether the definite article combines with a singular or a plural expression. Thus, these terms should not be confused or even associated with plural and singular number, respectively.

¹¹Once again, we propose this derivation for all types of nouns, i.e. count, mass and abstract nouns. See Borik & Espinal (2015) for details.

- (8) *Panda naxoditsja na grani isčeznovenija.*
 panda.NOM.SG is.found on verge extinction.GEN
 ‘The panda is on the verge of extinction.’

However, any analysis of English definite kinds includes at least the iota operator in the semantic representation (cf. Chierchia 1998, Dayal 2004). The iota operator is standardly assumed to correspond to the definite article, a claim that we do not want to challenge. However, in the absence of articles in Russian, we should be able to find other independent evidence that the iota operator is, indeed, present in the semantic representation of the subject argument in (8) and not merely assume that it is there due to an interpretation that corresponds to the English kind nominal. In §3.1 and §3.2 we provide independent empirical semantic and syntactic arguments for the definiteness of the subject in (8) and argue that it is to be associated with a null D(eterminer), interpreted as the iota operator.

3.1 Semantic definiteness of kind referring expressions

The core of the argument that we employ to prove that Russian definite kinds are really semantically definite is based on the use and interpretation of these expressions in a context that requires definiteness. The following context can show that kind-referring expressions behave like proper definites.

- (9) Context: In a biology lesson, the teacher explains various things about mammals. She explains that there are many endangered species in the world, then says the following:
The whale, for instance, is on the verge of extinction.

Note first that in English, the only morphologically singular expression that can refer to the species itself, and not to a subkind or an individual whale, is the definite one, i.e. *the whale* (Jespersen 1927), which we claim to be unspecified for Number. A DP with a demonstrative or a numeral, as illustrated in (10), will not get the same interpretation as the definite kind expression in (9).

- (10) a. *This whale, for instance, is on the verge of extinction.*
 b. *One whale, for instance, is on the verge of extinction.*

(10a) with the demonstrative can only be acceptable if the teacher points directly to a picture of a representative instance of the corresponding type of whale

(say, a blue whale), and thus, refers to a subkind via a representative, and (10b) can only refer to a subkind of whale as well.

In Russian, in the context of (9), the only expression that can be used is the bare noun *kit*, as illustrated in (11). *Kit* in (11) has exactly the same interpretation as the overt DP *the whale* in English, and cannot get an interpretation comparable to (10a) or (10b). This strongly suggests that *kit* in (11) corresponds to a *definite* kind referring expression.

- (11) *Kit*, *naprimer*, *naxoditsja na grani isčeznovenija*.
whale.NOM. for.instance is.found on verge extinction.GEN.
'The whale, for instance, is on the verge of extinction.'

Note, however, that theoretically, there could still be an option that while in English the kind referring DP has to be definite, in Russian it might be indefinite. Next, we will discuss why this is not the case.

Even though it is commonly believed that with k-level predicates indefinite DPs can only be interpreted taxonomically, i.e. as referring to a subkind rather than to a kind (see Mueller-Reichau 2011 and references therein), Dayal's (2004) examples like *to invent a pumpkin crusher* challenge this standard assumption. In this paper, we follow Mueller-Reichau who argues that there is a fundamental difference between k-level predicates like *to be extinct* and the ones like *to invent*. Only the latter allow for reference to novel (non-familiar) kinds, whereas the former impose a familiarity condition on the argument. This is why, by default, *A blue whale is in danger of extinction* can only be interpreted as referring to a subkind of the blue whale, whereas *Fred invented a pumpkin crusher* can be interpreted as referring to the kind pumpkin crusher, as well as to a subkind of crusher.¹² This distinction between different types of k-level predicates is both empirically motivated by the examples just given and by our intuition: it is difficult for something that has not existed before to become extinct, therefore, *to be extinct* requires familiar entities. By contrast, it is expected that if someone invents something, they will invent novel entities.

We observe similar effects in Russian with the same type of predicates: in (12a) an indefinite description can only refer to a subkind of whale, but the nominal in

¹²We thank an anonymous reviewer for the observation that *Fred invented a pumpkin crusher* allows for two interpretations: the kind 'pumpkin crusher' and a subkind of 'crusher'. Our intuition is that this is due to the fact that the object NP contains a modified noun. Thus, if we consider a non-modified NP, as in *Steve Jobs invented an i-pod* only the subkind reading is salient.

object position in (12b) can refer, indeed, to a new kind of artifact, a ‘mechanical calculator’, as well as to a subkind of ‘calculator’.¹³

- (12) a. *Odin kit* *naxoditsja na grani isčeznovenija.*
 One whale.NOM.SG is.found on verge extinction.GEN
 ‘One whale is in danger of extinction.’
- b. *Fred izobrel odnu šetnuju mašinu.*
 Fred invented one.ACC.SG calculating.ACC.SG machine.ACC.SG
 ‘Fred invented a mechanical calculator.’

Thus, we have all reasons to believe that the same distinction between different types of *k*-level predicates that Mueller-Reichau postulates for English also holds in Russian. Crucially, according to this view, with predicates of the *extinct*-type, “the speaker presupposes the existence of instances of the kind *X* as known to the hearer” (Mueller-Reichau 2011: 80). This lexical specification blocks reference to a kind for an indefinite expression in the context of *extinct*-type predicates.¹⁴

Let us now go back to our example (11). As has just been demonstrated in (12a), should the subject of (11) be indefinite, it would necessarily yield a subkind reading, which it does not. This allows us to conclude that the subject argument in (11) is indeed a definite expression and the semantic representation for this BN includes the iota operator, which “supplies” its definiteness, as shown in (13).

$$(13) \quad \llbracket kit \rrbracket = \iota x^k [kit(x^k)]$$

The iota operator simply selects the unique entity that refers to the class itself (i.e. to the class described by the noun *kit*), but does not make the denotation restricted to a given world.

The next issue we need to address is what kind of syntactic structure corresponds to the semantic representation in (13).

¹³There are overt indefinite markers in Russian, although they are not articles. In (12) we use the unstressed version of *odin* ‘one’, which we take to be a specificity marker for indefinites in Russian (cf. Ionin 2013). If this marker bears stress, it is interpreted as a numeral. Note also that not all native speakers readily accept a subkind interpretation for examples like (12a). We have encountered judgments that vary from full rejection to full acceptance.

¹⁴Similarly, Stanković (2016) postulates a complex DP structure for Serbo-Croatian, which includes a kind-referring DP embedded under an individual referring DP. He argues that the kind-referring DP can only be definite, not indefinite in Serbo-Croatian.

3.2 Syntactic arguments for a DP structure

In example (7b) of §2 we already gave a syntactic structure for the definite kind expression in (7a), so it should be clear by now that the general syntactic structure associated with definite kinds should look like (14).

(14) [_{DP}D[_{NP}N]]

Syntactically, we defend the claim that definite kinds in Russian are DPs, that is, the D-layer is present in the syntactic representation of definite kind arguments even though there is no overt realization of the D-projection.

Before we discuss this analysis, let us point out that we assume a strict correspondence between syntactic and semantic representations at the syntax-semantic interface as a null hypothesis. This view on the syntax-semantics interface by default requires a consistent syntactic representation for each particular semantic operation. In the case of definite kinds, the operator that turns the meaning of a common noun (i.e. a property of kinds; see §2) into a kind expression is the iota operator, which needs to be represented syntactically, unless we assume that all nouns are structurally ambiguous and one and the same expression can be associated with various syntactic structures. Since there is ample cross-linguistic evidence that the iota operator is syntactically represented by the definite article (consider, for example, the situation in Germanic and Romance), we should conclude that we need a D projection even for article-less languages where iota is not lexicalized. Making this proposal, we follow the insights of Longobardi (1994; 2001; 2005), who claims that semantic referentiality (i.e. being a referring expression) is associated with a particular syntactic position, namely, the head of the DP. This claim could be considered one of the strongest mapping principles between the syntax and semantics of natural languages, and it fits neatly with the syntax-semantics correspondence that we are assuming in this paper.

As for Russian, proposals that provide a similar semantic motivation for the DP projection with a null D have been made, for instance, by Ramchand & Svenonius (2008) who argue that the D head in Russian is needed for reasons of semantic uniformity: this is the head that turns nominal expressions, which are originally of property-type $\langle e, t \rangle$, to arguments, i.e. expressions of type $\langle e \rangle$. They further suggest that the D head in Russian should be underspecified for features like (in)definiteness, (un)specificity, etc., which are determined contextually. This means that DPs in Russian can represent definite or indefinite (specific and non-specific) arguments, the hypothesis that we adopt in here as well.

However, the strict syntax-semantic correspondence is a working hypothesis that, in and by itself, cannot be taken as an argument for the presence of the DP

layer in the syntactic representation of definite kinds in Russian. A well-known debate in the literature on languages with and without articles is the discussion between the Universal-DP hypothesis (Longobardi 1994; Cinque 2005; Pereltsvaig 2007) and the Parametrized-DP hypothesis (Bošković 2005; 2008; Bošković & Gajewski 2008; Bošković 2009). According to the former, languages with or without articles would have all nominal arguments projected as full DPs and would allow null Ds. According to the second hypothesis, however, there exist two types of languages, those with articles (like English and Modern French), which project arguments as DPs, and those without articles (like Serbo-Croatian and Russian), which are postulated to project NPs.¹⁵

We adopt the view advocated by Pereltsvaig (2006), according to which nominal arguments can differ in “size”, i.e. have different types of syntactic structure in argument position, both across languages and language internally. Thus, in both Russian and, for instance, English or Spanish, we can find nominal arguments that syntactically correspond to either full DPs or smaller nominals: NPs, NumPs or QPs.¹⁶ In Russian, nominal arguments associated with different syntactic structures exhibit a number of different properties and have a different semantic interpretation as well. In particular, DP subjects obligatorily agree with the verbal predicate, whereas small nominals do not. Agreeing subjects allow an individuated / specific interpretation, a non-isomorphic wide scope reading, they may control PRO and be antecedents of anaphors, whereas non-agreeing subjects do not.¹⁷ To illustrate this difference between agreeing and non-agreeing nominal subjects, consider the minimal pair in (15) (from Pereltsvaig 2006: 438–9, ex. 3). Example (15a) exhibits number agreement between *pjat’ izvestnyx aktërov* ‘five famous actors’ and the verb, and this agreement is supposed to correlate with the distributive individuated interpretation of the subject, in the sense that each one of the famous actors played a role in the film. By contrast, in example (15b) there is no number agreement between the subject and the verb, the latter being in the third person singular neuter default form.¹⁸ Lack of syntactic agreement

¹⁵The Parametrized-DP hypothesis is given extensive empirical motivation in the literature. However, the arguments for the DP/NP split between languages, to the best of our knowledge, are purely syntactic (e.g. left-branch extraction, negative raising, superiority effects, etc.; e.g. Bošković 2008). The proponents of the Parametrized-DP hypothesis usually do not take into account the semantic functions attributed to the DP projection as we do in this paper.

¹⁶For similar claims in Romance languages see Schmitt & Munn (1999; 2003), Munn & Schmitt (2005), Dobrovie-Sorin et al. (2006), Cyrino & Espinal (2015), among others.

¹⁷For details, see Pereltsvaig (2006: 447).

¹⁸Pereltsvaig (2006) does not indicate SG, but only NEUT, in the gloss for the verb in this example, because nouns, verbs, adjectives and various agreeing elements can express gender only in singular. We modified the gloss to include the number specification on the verb plus the number and case on the noun for the sake of explicitness.

correlates with a group interpretation of the nominal expression. This means that the subject argument *pjat' izvestnyx aktërov* 'five famous actors' is attributed a full DP structure with a null D in (15a) but a QP with a numeral in (15b).

- (15) a. *V ètom fil'me igrali* [pjat' izvestnyx aktërov].
in this film played.PL five famous actors.PL.GEN
'Five famous actors played in this film.'
- b. *V ètom fil'me igralo* [pjat' izvestnyx aktërov].
in this film played.SG.NEUT five famous actors.PL.GEN
'Five famous actors played in this film.'

We find Pereltsvaig's proposal that in Russian some nominals are DPs but small nominals can be found in the same syntactic position as DPs very plausible, and thus we adopt the claim that in all languages, including Russian, there can be nominal arguments of different "size", that is, involving a different "amount" of functional structure on top of the minimal NP projection, the highest projection that a nominal argument can have being a DP.

Let us now go back to definite kinds and test how arguments of k- and i-level predicates behave with respect to some properties listed in Pereltsvaig (2006). Note that only some of the properties this author lists can be tested for definite kinds. The reason for this is that the majority of Pereltsvaig's arguments are built for nominal phrases with various types of modifiers (numerals, adjectives, etc.), but kind expressions almost never accept regular modifiers.¹⁹ We thus focus on the following properties that kind arguments can be tested for: control of PRO, licensing of anaphors, substitution by pronominal elements and presence of non-restrictive relative clauses. We show that all these properties support an analysis of definite kinds in Russian as full DPs.

3.2.1 Control of PRO

Non-agreeing subjects cannot be controllers for PRO in infinitival clauses, while agreeing subjects, being full DPs, can. The contrast is exemplified in (16) (Pereltsvaig 2006: 444, ex. 10a).

- (16) [*Pjat' banditov*]_i *pytalis' / *pytalos'* [PRO_i *ubit' Džemsa Bonda*].
five thugs.PL.GEN tried.PL / tried.SG.NEUT PRO to.kill James Bond
'Five thugs tried to kill James Bond.'

¹⁹See, however, §3.3 below.

Let us now look at definite kinds. As shown in (17), definite kind subjects can control PRO of a purpose clause and, hence, pattern with agreeing subjects. Since agreeing subjects are argued to be full DPs, we can conclude that the same syntactic category should be attributed to definite kinds.

- (17) *Panda_i imeet neobyčnye perednije lapy čtoby PRO_i*
 panda.SG.NOM has.SG unusual front paws in.order.to PRO
uderživat' stebli bambuka.
 hold stems bamboo
 'The panda has unusual front paws to hold bamboo stems.'

3.2.2 Antecedents of reflexive pronouns

Our next piece of evidence in favour of the DP status of definite kinds is that these expressions can be antecedents of a reflexive pronoun. We start by illustrating the contrast between agreeing and non-agreeing subjects with respect to their ability to license reflexive pronouns (Pereltsvaig 2006: 455, ex. 11a): only agreeing subjects can license reflexive pronouns.

- (18) [*Pjat banditov*]_i *prikryvali / *prikryvalo sebja_i ot pul'*
 five thugs.PL.GEN shielded.PL / shielded.SG.NEUT self from bullets
Džemsa Bonda.
 James Bond
 'Five thugs shielded themselves from James Bond's bullets.'

As (19) illustrates, definite kinds pattern likewise.

- (19) *Tigr_i znaet kak zaščitit' sebja_i ot napadenija.*
 tiger.SG.NOM knows.SG how defend self from attacks
 'The/a tiger knows how to protect itself from being attacked.'

This example shows that, according to the test, the antecedent of the reflexive must be a DP. This DP may be devoid of Number, as in the structure (14) above (i.e. the structure postulated for definite kinds), or may have Number. In the latter situation, the D can be either definite or indefinite, and either singular or plural.

3.2.3 Pronominal substitution

Finally, a pronominal substitution test also shows that definite kinds behave like DPs rather than other, "smaller" types of arguments. The test as used in Pereltsvaig (2006) shows that third person pronouns can be used to substitute full DPs,

but not QPs or NPs, which can only be substituted by other (quantificational and/or pronominal) elements. The example below (based on Pereltsvaig 2006: 446, ex. 15a) shows that the pronominal subject of (20b) can only substitute the agreeing subject of (20a).

- (20) a. *Pjat' par tancevali / tancevalo tango.*
 five couples.PL.GEN danced.PL / danced.SG.NEUT tango
 'Five couples danced tango.'
- b. *Oni tancevali / *tancevalo tango.*
 they.PL.NOM danced.PL / danced.SG.NEUT tango
 'They danced a tango.'

Coming back to definite kinds, it can be easily shown that the definite kind agreeing subject in (21a) can only be replaced by a third person pronoun *ona* 'she', thus supporting the claim that definite kinds are DPs.

- (21) a. *Panda naxoditsja na grani isčeznovenija.*
 panda.SG.NOM is.found.SG on verge extinction.GEN
- b. *Ona naxoditsja na grani isčeznovenija.*
 she.SG.NOM is.found.SG on verge extinction.GEN
 'The panda/She is on the verge of extinction.'

The three arguments just given, which are based on the syntactic tests proposed in Pereltsvaig (2006) for differentiating between DP arguments and arguments associated with a "smaller" syntactic structure, all support the claim that definite kinds in Russian are syntactically DPs.

Let us add one more observation to the arguments given above.

3.2.4 Distribution of relative clauses

There is a limited number of constructions in Russian where a nominal argument seems to have the status of a real bare NP and be associated with a minimal possible NP structure with no additional functional layers. A couple of relevant examples from Russian is given in (22) (22b is from Borik et al. 2012: ex. 8).

- (22) a. *Petja xodit v galstuke, (*kotoryj vseгда nraivsja ego žene).*
 Petja goes in tie.SG.OBL which always likes his wife
 'Petja is a tie-wearer, (*which his wife always likes).'

- b. *Katya nosit jubku, (*kotoruju ona vseгда pokupaet sama).*
 Katya wear.IMP skirt.SG.ACC which she always buys.IMP self
 ‘Katya is a skirt-wearer, (*which she always buys).’

The objects *galstuke* ‘tie’ and *jubku* ‘skirt’, despite being morphologically marked as singular, have a number neutral interpretation (i.e. one or more tie, one or more skirt), that is, can denote either an atomic or a plural entity satisfying the description of the nominal.²⁰ Number neutrality is a hallmark of bare nominals in various languages (cf. Farkas & de Swart 2003 for Hungarian; Dayal 2004 for Hindi; Espinal & McNally 2011 for Spanish and Catalan, etc.), so this is a good reason to assume that the objects in (22), despite being morphologically singular, are “true” bare nominals unspecified for syntactic and semantic Number.

Note, however, that neither *galstuke* ‘tie’ nor *jubku* ‘skirt’ in this interpretation can be modified by a relative clause.²¹ We suggest that a reason for blocking a relative clause in (22) is that in a real NP structure there is no room for descriptive but only for classifying modifiers (which is in accordance with our theoretical postulate 1, see §2.1). A classifying modifier but not a restrictive relative clause is allowed in (23), under the intended reading that Katya is a skirt-wearer.

- (23) *Katya nosit mini-jubku, (*kotoruju ona vseгда pokupaet sama).*
 Katya wear.IMP mini-skirt.SG.ACC which she always buys.IMP self
 ‘Katya is a mini-skirt wearer, (*which she always buys).’

Consider now an example with a definite kind expression:

- (24) a. *Amurskij tigr, kotoryj očen’ opasen, obitaet na jugo-vostoke*
 Siberian tiger which very dangerous lives on south-east
Rossii.
 Russia.
 ‘The Siberian tiger, which is extremely dangerous, lives in the
 south-east part of Russia.’

²⁰See Kagan & Pereltsvaig (2011) and Pereltsvaig (2013) for other types of number neutral arguments in Russian. In these papers, it is argued that semantically number neutral nominals are plural in Russian. We agree with this claim, but we think that Russian also has morphologically singular nominals with a number neutral interpretation.

²¹This is also a property of bare nominals in the same syntactic position in Romance languages, such as Catalan and Spanish. See Espinal & McNally (2011).

- b. # *Amurskij tigr, kotoryj rodilsja v našem zooparke, obitaet na*
Siberian tiger which was.born in our zoo live on
jugo-vostoke Rossii.
south-east Russia
'The Siberian tiger that was born in our zoo lives in the south-east
part of Russia.'

As can be seen in (24a), definite kinds allow subsequent modification by a non-restrictive relative clause. Non-restrictive (or appositive) relative clauses do not restrict the (set of) referents denoted by the nominal phrase, they just provide *additional* information about an already established referent. By contrast, as the example (24b) illustrates, a relative clause that can only be interpreted restrictively, imposes an individual (as opposed to a kind) interpretation on the subject of the clause, which is then difficult to combine with the verbal predicate *obitaet* 'to live' that normally selects for kinds.²²

Let us now go back to the claim that we made at the beginning of the section, namely, that the incompatibility of restrictive relative clauses with definite kinds can be seen as an additional argument for the DP status of the kind nominal. We now explain why it should be so.

Semantically, non-restrictive relative clauses are not interpreted in the scope of the determiner, as the following examples from English illustrate:

- (25) a. [*The public transport*], [*which is state-owned*], *is fast, clean and reliable.*
b. [*The [public transport which is state-owned]*] *is fast, clean and reliable.*

The example in (25a), which is interpreted non-restrictively, can be rephrased as a conjunction: 'the public transport is fast, clean and reliable and it is state-owned'. It does not imply (in fact, it cannot imply) that there is any other public transport except for the state-owned. The example in (25b), on the other hand, implies that not all the public transport is owned by the state and it is clear that the definite determiner the in (25b) has the whole nominal phrase, including the relative clause, in its scope.

Jackendoff (1977) suggested that the difference between restrictive and non-restrictive relative clauses should be reflected in their syntactic configuration, in

²²Two notes are in order here. First of all, Russian has several verbs that can be translated as 'to live', and the one used in example (24) is often used with kind nominals since its lexical meaning is closer to 'to live permanently, to inhabit'. Secondly, the # sign in front of (24b) means that the subject can, in principle, be interpreted as referring to an individual tiger, although it takes a certain effort to get this interpretation, at least for one of the authors of this paper, and the intuition is that this interpretation is an effect of coercion.

the sense that the latter adjoin higher in the structure than the former. Demirdache (1991) specifically proposed that non-restrictive relatives are adjoined to DP, although only at LF. De Vries (2006) postulates that appositive relative clauses should be represented as a coordination of DPs, an appositive relative as a specifying conjunct to the visible antecedent. Arsenijević & Gračanin-Yuksek (2016) also argued that the configurational differences between restrictive and non-restrictive relative clauses should be reflected in overt syntax on the basis of agreement facts in Bosnian/Serbian/Croatian. Generalizing over these and many more works on relative clauses, we can say that the main idea is that non-restrictive relatives can only have a DP as an antecedent. There is no a priori reason to believe that Russian non-restrictive clauses would be different in their syntax and semantics. Therefore, we take (24a) to be another piece of evidence in favor of the DP status of definite kind expressions.

The discussion of relative clauses once again supports the point made by Pereltsvaig (2006): we should allow for different structures to be associated with nominals in argument position. (24a) above indicates that definite kinds cannot be NPs, as we have seen that true bare NPs do not take relative clauses, restrictive or non-restrictive. If we consider the empirical contrast between (23) and (24a), together with Pereltsvaig's arguments discussed earlier in this section, the conclusion that we logically arrive at is the same: definite kinds in Russian are DPs.

This conclusion allows us to preserve the correspondence between the presence of D projection and the contribution of the iota operator, which, as we have seen above, is realized as a definite article in languages with articles. Our claim for an article-less language like Russian is, thus, that the syntactic representation of definite kinds involves a null D, which is translated as the iota operator, too.

3.3 Modified definite kinds

In §3.2 we have provided syntactic arguments for a DP structure. Still, a question that remains to be answered is whether definite kinds allow any sort of modification inside the DP. We think that the answer to this question is positive, and, following Borik & Espinal (2015) for Spanish, we show in this section that Russian has kind expressions with modifiers, which we call modified kinds.

Modified kinds are ind-referring expressions composed by a noun and a modifier, normally expressed by an adjective, provide an additional semantic argument for the definiteness of Russian bare nominal kinds. Consider the data in (26).

- (26) a. *Amurskij tigr* zanesen v Krasnuju knigu.
 Siberian tiger registered in Red book
 ‘The Siberian tiger is registered in the IUCN Red list.’
- b. *Mavrikijskij dront* izvesten tol’ko po izobraženijam i pis’mennym istočnikam XVII veka.
 Mauritius dodo known only from drawings and written sources XVII century
 ‘The dodo of the Mauritius island is only known from drawings and written sources of the XVII century.’

The modified DPs in subject position in (26), similarly to the corresponding non-modified versions, denote kinds. However, in comparison to the non-modified counterparts (e.g. *tigr* ‘tiger’), modified kinds (e.g. *amurskij tigr* ‘Siberian tiger’) are semantically more restricted. We suggest that modified kinds, composed by a noun preceded or followed by an adjective within a DP structure, are built by applying kind modifiers (of type $\langle\langle e^k, t \rangle, \langle e^k, t \rangle\rangle$) to properties of kinds (of type $\langle e^k, t \rangle$). The formal representation for the modified kind in (26) is given in (27).

- (27) a. $[_{DP}D[_{NP}(A) N (A)]]$
 b. $[[amurskij tigr]] = ix^k[(amurskij(tigr))(x^k)]$

A question that arises at this point is what kind of adjective can appear in a modified kind expression. We think that potentially any adjective can modify a kind although the whole expression is subject to an additional pragmatic constraint, known as the well-established kind restriction (cf. Krifka et al. 1995).

The well-established kind restriction has been widely discussed in the literature for English and other languages as applying to definite generics (cf. Vergnaud & Zubizarreta 1992, Krifka et al. 1995, Dayal 2004 and many others). If the well-established kind restriction is pragmatic in nature, it is expected that an appropriate contextual modification could make a definite kind reading in (28a) plausible. This is, indeed, the case. If there are only two relevant classes of tigers, wounded tigers and hungry tigers, (28b) becomes a perfectly acceptable characterization of the first class. In this case, the interpretation that should be attributed to the subject of (28b) is the one characteristic of a definite kind.

- (28) a. *Ranenyj tigr opasen.*
 wounded tiger dangerous
 ‘A wounded tiger is dangerous.’

- b. *Ranenyj tigr, kak vid, opasen.*
 wounded tiger as type dangerous
 ‘The wounded tiger, as a kind, is dangerous.’

We propose that the well-established kind restriction can block a kind interpretation for modified nominal expressions at a pragmatic level, but this is not a grammatical constraint (for similar observations see Dayal 1992; Krifka et al. 1995: 69; Dayal 2004: footnote 30). Rather, it is our world knowledge and accessible encyclopedic information that determines which expression can correspond to a known or established kind in the actual world. Note, furthermore, that this information can change, and hence, relevant contextual or extra-linguistic factors can have a strong influence on the interpretation of nominal expressions.

4 Conclusions

In this paper we have provided an analysis of definite kinds in Russian at the syntax-semantics interface. We have presented arguments for the semantic definiteness of bare nominal kinds, and syntactic arguments for a null D. We have argued that definite kinds are compositionally built by applying the iota operator corresponding to a (covert) definite D to the property of kinds denoted by the N, and we have extended this analysis to modified definite kinds. The analysis we propose applies to one specific type of expressions which refer to kinds, the one that corresponds to English definite kinds. In Russian, as in many other languages, there is a range of other expressions which plausibly encode D-genericity, notably, plural generics. We see it as one of the main questions for future research to complement our proposal by an analysis of other types of nominal generics in Russian and an account of similarities and differences in the meaning and use of various kind referring expressions.

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Abbreviations

GEN	genitive	MASC	masculine
ACC	accusative	FEM	feminine
OBL	oblique	NEUT	neuter
SG	singular	IMP	imperfective
PL	plural		

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