Determining morphosyntactic feature values: the case of case[1]

Greville G. Corbett
Surrey Morphology Group

A long-running and still vital debate concerns the way in which we can determine the number of cases (case values) in a given language. This matters both for the description of particular languages, and even more for typology, given the imperative for the typologist to compare like with like. Within this debate special attention has been devoted to Russian. And rightly so, since Russian exhibits a whole set of difficult analytic problems with respect to case. As a result it has been claimed to have as few as six case values or as many as eleven.

This contribution continues the debate, again giving Russian a central place. Our concern with case is partly with case as a feature (comparable to gender, number and person), but mainly with the values of the feature (nominative, accusative and so on).[2] What is novel about it is first the adoption of a canonical approach, in which we construct a logical scheme against which to evaluate the different case values (see §1 below), and second the fact that the criteria we discuss are shown to be relevant to morphosyntactic features more generally, rather then being restricted to case.

The debate on case has a distinguished earlier history, including among others Hjelmslev (1935-37), Jakobson (1936, 1958),[3] de Groot (1939) and Kuryłowicz

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[1] This is an issue to which Bernard Comrie has made important contributions (1986, 1991). One of his papers on the topic includes the line: '… the ideas are therefore put forward in the spirit of initiating a discussion' (1991: 104); the current chapter takes forward that discussion

[2] The related issue as to when case should be recognized as a feature is considered in Spencer and Otoguro (2005) and Spencer (this volume). Features are often called 'categories', and their values are sometimes called 'properties', sometimes also 'grammemes', notably by Zaliznjak.

[3] Jakobson's approach is discussed and developed in many places, for instance, in Chvany (1986) and in Franks (1995: 41-55). Unlike work in this tradition, we will not decompose Jakobson's eight case values into sub-features, except where there is specific evidence for structuring (as with the second locative). There are two main grounds for this decision. First the analyses of this type have proved problematic (see, for example, Baerman, Brown and Corbett 2005: 210). And second, as Gerald Gazdar has pointed out (personal communication), there are 6720 possible ways to describe

(1949).[4] It is not surprising that Russian has figured large, since its case system combines many of the difficult issues. Uspenskij (1957) gives interesting detail on earlier discussions, notably within the group which started work on mathematical models in linguistics in Moscow in 1956, responding to questions posed by Andrej Kolmogorov.[5] This work in the Set-theoretical School led to important contributions by Zaliznjak (1967, 1973), which are of continuing value. One reason for this is Zaliznjak's modern approach to morphology (see Krylov 2002: 705). Mel´čuk (1986/2006) takes up the issues discussed by Zaliznjak critically and constructively. An extensive and sympathetic technical survey of this work is given by van Helden (1993).[6] There is continuing discussion on determining the case values of Russian, see for instance Gladkij (1999)[7] and Plungian (2000: 161-180); a useful survey from a computational perspective is provided by Koval´ (2004).

Each of the case values identified (such as nominative or genitive) may have different functions; as Zaliznjak (1973: 56n2) points out, this is recognized in the traditional names: genetivus possessivus, genetivus partitivus, dativus commodi, dativus possessivus, and so on, where the first part of the name specifies the formal case, and the second part indicates its function. While we shall concentrate on case values, these various case functions also deserve typological investigation, as proposed by Ferguson (1970), and continued recently through the use of semantic maps (Haspelmath 2003).[8]

1   The canonical approach in typology

How are we to make progress in understanding a system like the Russian case system? We must examine the data carefully using different approaches (including work with consultants and corpus studies) and work through the extensive literature on the subject, some of which we noted above. Yet the data are so familiar to many linguists that it is hard to get further. In trying to get a new view of this complex phenomenon we may take a 'canonical' approach. We extrapolate from what there is to what there might be. And within that scheme of theoretical possibilities we can situate the real instances we have found. An effect of this canonical approach is to

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eight values using three binary features. In view of this, unless there are principled reasons for postulating particular binary features from the outset, it should not be taken as significant if there is an analysis using binary features which is partially successful.

[4] For a critical account of some of the early attempts to describe the Russian system see Kilby (1977: 1-42); for much earlier accounts of case see Serbat (1981), and for more recent developments see Anderson (2006) and Butt (2006). The importance of the issue can be seen from the fact that the general topic of case, taken broadly, has 6643 entries in Campe's bibliography (1994).

[5] See van Helden (1993: 138) for sources.

[6] van Helden (1993: 554-557, 1062-1115) is particularly relevant to Zaliznjak's work; Meyer (1994) is a valuable review of van Helden (1993).

[7] Gladkij's dependency model (presented in Gladkij 1969, 1973a, b) is considered to be 'the apex of case modelling' (van Helden 1993: 849); see van Helden (1993: 849-878) for discussion.

[8] The issue of whether case values have meaning is taken up by Mel´čuk (2004). For discussion both of establishing case values and of their functions see Arkadiev (2006: 18-48).

separate out coincidental overlappings in the examples that exist; we may then start to ask which characteristics *happen* to be the way they are and which *have* to be the way they are. To take an easy example: in Russian the form *Ivanu* 'to Ivan' can only be an instance of the dative case. Whatever the syntactic environment, *Ivanu* 'to Ivan' must be a dative (and if another case value were required this form would be ungrammatical). On the other hand *Ivana* could fit into syntactic slots where we find the accusative and those requiring the genitive. If every form were like that, we would have no evidence for distinguishing genitive from accusative; and continuing along that route to the logical end point, if we had no means of distinguishing cases we would have no case system. We can say, therefore, that the situation represented by *Ivanu* 'to Ivan', where we have a unique mapping from form to function is canonical, that represented by *Ivana* is not. We can imagine a system in which every form of every nominal were like *Ivanu*. That would be fully canonical in terms of the form-function mapping. It does not matter at this stage whether such a system exists: the point is that we can define it, we can recognize it if we find it, and it gives us one measure of canonicity according to which we can calibrate the instances of case values in the system which we are examining. We can consider the syntax of these case values in a similar way. Imagine we had a language whose case values were all determined by simple syntactic rules of the type: 'the direct object of a transitive verb stands in the accusative case'. We could recognize and agree about such a system, and it would indeed be canonical. It is harder to classify the numerous possible deviations from such simple syntactic rules: we can agree readily that there is a deviation, but it is much harder to establish and to agree whether we have a slightly different syntactic structure, or a semantic condition, and so on. Thus it can be helpful to have the logically possible canonical system in mind, whether or not we find examples of it.

The canonical approach then requires clear definitions. We take these to their logical end points, in order to construct a theoretical space. The convergence of criteria fixes a canonical point from which the phenomena actually found can be calibrated. The instances which would qualify as canonical according to our definitions, the ones that are the indisputable instances, will almost certainly not be frequent. This is expected, and certainly not to be treated as a problem. Since the paper uses Russian data, it is appropriate to repeat the neat formulation by Johanna Nichols (personal communication): 'Canonical constructions are all alike; each non-canonical construction is non-canonical in its own way.'[9] This canonical approach has been applied for both syntax and morphology (see Corbett (2007a) for references). The canonical approach allows us to handle gradient phenomena in a principled way. For the current problem this has a nice consequence, in that we can locate instances of case values as more or less canonical, rather than having an 'all or nothing' requirement that a particular instance is a case value or it is not. This is a particular advantage when considering diachronic change, since forms may gain or lose 'casehood' gradually over time (Michael Daniel, personal communication).

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[9] Compare: 'All happy families are alike; each unhappy family is unhappy in its own way.' (Lev Tolstoy, *Anna Karenina*). This point is also relevant to the difference between prototypical and canonical. The prototypical instance has to exist; if we say that the prototypical bird is a robin, there have to be robins. On the other hand there is no requirement for the canonical point to be occupied, in fact it typically is not.

2   Canonical features and their values

In attempting to establish what is canonical for case, we find that almost every criterion holds equally well for other morphosyntactic features and their values. We shall concentrate on case, while making occasional comparisons with other features. We need to look first at how case values are identified, in order then to investigate how issues of canonicity relate to such case values (§3). As a point of reference, we give traditional paradigms of two types of Russian noun:

(1)   Paradigm of two Russian nouns

	žurnal 'magazine' (inflectional class I)		*komnata* 'room' (inflectional class II)	
	SINGULAR	PLURAL	SINGULAR	PLURAL
NOMINATIVE	žurnal	žurnaly	komnata	komnaty
ACCUSATIVE	žurnal	žurnaly	komnatu	komnaty
GENITIVE	žurnala	žurnalov	komnaty	komnat
DATIVE	žurnalu	žurnalam	komnate	komnatam
INSTRUMENTAL	žurnalom	žurnalami	komnatoj	komnatami
LOCATIVE	žurnale	žurnalax	komnate	komnatax

These are fully regular nouns: there are many thousands which inflect similarly.[10] However, these nouns represents only two inflectional classes; there are two other major classes and several smaller subclasses (Corbett and Fraser 1993).

The cases proposed are relatively uncontroversial. But it is still worth asking, as Kolmogorov and the members of the Set-theoretical School did, how we justify such an analysis. For instance, given that *žurnal* has the same forms, singular and plural, for the case values nominative and accusative, how do we justify claiming there are two case values here? The method is set out in Zaliznjak (1967/2002: 36-42), but see also Goddard (1982) and Comrie (1986, 1991). We start from the idea of contexts. We find various syntactic contexts, such as *ja vižu ...* 'I see …', *u menja net ...* 'I haven't got a …' and collate the forms which fit appropriately into these contexts (by tradition, the contexts are the rows, and the items examined - nouns in this instance - are arranged in columns, giving a table). Evidently *žurnal* and *komnatu* would both fit in the *ja vižu …* context. However, there are other contexts where *komnatu* would not fit, but *komnata* would be needed, and here *žurnal* would again fit. Hence we could claim that the two different instances of *žurnal* have different case values. If two contexts produce exactly the same results for every noun we test, then we can discard one of the two contexts.

So far this makes intuitive sense. However, the context must also be semantically constrained. Thus the context *ona pišet ...* 'she is writing …' would allow both *pis´mo* 'a letter' and *karandašom* 'with a pencil'. We do not want to suggest these two nouns are in the same case, rather that the apparently single context is not adequate here.[11] In

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[10] Animates like *Ivan*, mentioned earlier, inflect like *žurnal* 'magazine' but, being animate, have the accusative syncretic with the genitive.

[11] The notion of 'context' is considered further in Madojan (1989).

the terms of Comrie (1986: 91)[12] we also require identity of function. And more generally, we may require alternative contexts to allow natural readings for different semantic classes of noun.

The procedure works well while we constrain the contexts (consciously or unconsciously). But suppose that like Zaliznjak we take the procedure seriously and include contexts like *ja risuju svoju ...* 'I am drawing my own …' ? *Svoju* 'one's own' is feminine, and there is no possible form of *žurnal* 'magazine' that could fit into this context, since it is masculine. The next step in the procedure is to eliminate contexts like this one, which produce gaps in the table, provided that in all other respects (i.e. apart from the gap) the context gives results which are identical to those of another context. This has the neat effect of allowing us to abstract away from the features of number and gender. For a fuller account see Zaliznjak (1967/2002: 36-42); the issues are well summarized in Blake (1994: 29-30).

3   Criteria for canonical features and values

Given this general approach to determining case feature values, let us now consider a canonical morphosyntactic feature and its values, and see how our case data fit in. There are several criteria, which we group under more general principles. This part has two goals, therefore. To introduce the criteria for canonicity, and then for each one to indicate briefly how the six main cases of Russian (as in (1)) measure up against it.

Principle I: Features and their values are clearly distinguished by formal means (and the clearer the formal means by which a feature or value is distinguished, the more canonical that feature or value).

Formal means are 'clear' to the extent that they allow a transparent and regular mapping from form to function. The general point is straightforward: in the canonical situation there is clear evidence for the feature and its values.

Turning to Russian, it is evident that there is a morphosyntactic feature of case. In most instances, accounting for the inflectional form of the use of a noun, adjective or pronoun requires reference to case. More interesting is to look at the values of the feature and more interesting still to look at the contentious case values. We therefore look quite briefly here at the main six values, going through the criteria in turn, mainly in order to indicate that the six main case values vary considerably, and in some instances diverge considerably from canonical. We shall not linger over the detail here, in order to concentrate subsequently on the contentious case values (in §4 and §5). We shall see that Principle I is largely observed, though with great variation between the case values.

Principle I covers four more specific criteria:

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[12] Bílý and Pettersson (1988) take issue with Comrie (1986), arguing against what they consider to be over-reliance on the 'analogical principle' for determining the number of cases; their analysis, in my view, does not provide a convincing interface between syntax and morphology. As discussed in §2.2 below, syntax should be 'morphology-free', and their analysis, I believe, does not guarantee this.

Criterion 1:   Canonical features and their values have a dedicated form (are 'autonomous').

It is natural to assume that in order to postulate a feature, and its various values, we should be able in each instance to point to an inflected form and to show that it can be explained only in terms of the particular feature and value. For instance, in (1) above, the form *žurnalom* requires reference to case and to instrumental: it cannot result from any other specification. This is what Zaliznjak (1973: 69-74) and Mel´čuk (1986: 66-70) treat as 'autonomous'. There is a question, however, as to what is the standard of comparison. We might state the criterion in absolute terms, that is, we look for some marker with a unique function. This would be appropriate if the inflectional morphology in question was also canonical (see Principle III below). However, Zaliznjak and Mel´čuk both treat autonomy relative to a particular lexeme; if for a given lexeme there is a unique form, then the feature value is autonomous. It may seem obvious that we can argue for a feature only if it autonomous is in this sense. However, even that is not clear-cut; see Chumakina, Kibort and Corbett (2007) where it is argued that a person feature is required in the grammar of Archi, even though there is no dedicated form to support it.

Evaluation of Russian: some case values are clearly canonical in terms of criterion 1: thus *žurnalom* 'magazine' can only be instrumental (singular). However, the accusative case fares poorly against this criterion. Only in the second inflectional class do we find a unique form for the accusative: *komnatu* 'room' is accusative (singular). For all other classes the accusative is expressed by forms syncretic with the nominative or genitive. Zaliznjak (1973: 74-75) talks of the accusative as being close to non-autonomous.

Criterion 2:   Canonical features and their values are uniquely distinguishable across other logically compatible features and their values.

In the canonical situation, we can distinguish a case and its values irrespective of other features and their values. In other words, we do not have to select particular combinations: any of them will serve.[13] Of course, in languages like German we find numerous syncretisms, so that, for instance, to establish gender we look at forms which are singular. Allowing for the combination of features is a key part of the procedure for defining case; see Zaliznjak (1973: 59). The non-canonicity produced by various types of syncretism can produce difficult problems, as we shall see. Indeed, Meyer (1994: 360) suggests that successful set-theoretic modelling of a category in a given language requires full knowledge of all the other categories.

Russian: while case is expressed together with number (and also with gender in adjectives and some pronouns) the different values are normally distinguishable in the different combinations. However, the accusative is again far from canonical here.

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[13] Zaliznjak (1973: 84-86) and Mel´čuk (1986: 61) talk of 'complete' versus 'partial' case values, where a complete case value 'embraces all nouns of a language throughout the whole paradigm', while a partial case value 'functions for a subset of the nouns or for a subset of the paradigms only' (Mel´čuk 1986: 61). I separate out the notions of embracing all nouns and that of applying throughout the paradigm in criteria 4 and 2 respectively.

Criterion 3: Canonical features and their values are distinguished consistently across relevant word classes.

In a sense it is true to say that German and English both have case, and indeed that German and English both have gender. However, these statements are somewhat misleading. In German we have evidence for the case feature in articles, adjectives and pronouns (as well as limited evidence in nouns). For gender we have evidence in articles, adjectives and pronouns. In English the evidence for case and gender is restricted to pronouns.[14] Criterion 3 draws the distinction between the two systems, German being largely canonical here and English clearly not.

Russian: the six main case values are canonical in this respect. They are distinguished consistently across nouns, adjectives and pronouns.

Criterion 4: Canonical features and their values are distinguished consistently across lexemes within relevant word classes.

In the canonical situation, given the morphosyntactic specification determined by the syntax and the word class (part of speech) of the target,[15] no more is required. Each member of the word class marks the feature and all its values consistently. When more information *is* required, that is, when not all members of the word class behave consistently, deviations from the canonical situation may be seen in two different ways:

1. In terms of level, the deviation may be in terms of the *feature* as a whole[16] or only in terms of its *values*. Apart from a few indeclinables, any Russian adjective marks gender. In contrast, in Macedonian, while most adjectives mark gender and number, some mark number but do not mark gender (Friedman 1993: 266-267). That is, they do not mark the *feature* gender as a whole; it is not simply that they fail to distinguish particular values. Returning to case in Russian, we have already seen in (1) an instance of how different nouns can each mark case, but mark its different *values* to differing degrees.

2. In terms of range, the deviation may affect different numbers of lexemes. The canonical situation is that each lexeme marks the feature and its values. Deviations may involve larger or smaller subclasses. We may find inflectional classes, which distinguish the particular feature and its values to varying degrees (as in point 1). There may be subclasses at various levels, right down to individual lexical exceptions. The latter may be overdifferentiated (marking 'too many' distinctions compared with the other members of their subclass) or they may show additional syncretism and so show too few distinctions. For such situations, approaches like that

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[14] For those who do not accept pronominal gender systems, as discussed in Corbett (1991: 169-170), the gender example is not relevant here, but the argument from case is clear. Numerous further examples of case systems where the inventories of different word classes differ can be found in Iggesen (2005).

[15] Note that we refer to the 'target' since these criteria apply not just to case but more generally to morphosyntactic features. For case, the target is the governed item.

[16] This criterion takes up 'lexical generality', as in Bybee (1985: 84-86), and goes further in clearly distinguishing its application to features and to their values.

of Network Morphology (as in Corbett and Fraser 1993 and Evans, Brown and Corbett 2002), which rely on default inheritance, are particularly helpful, since they readily capture generalizations which apply to large classes and are overridden by specifications which are more and more restricted, right down to the idiosyncrasies of individual words. Moreover, this sort of deviation may be motivated to varying degrees. We may find that a distinction is available for, say, all animates (highly motivated), or at the other extreme that the distinction affects a number of lexical items each of which requires special indication in its lexical entry.

The different types of non-canonicity of lexemes (such as marking too few or too many distinctions) are covered by our third principle below, namely that canonical morphosyntactic features and their values are expressed by canonical inflectional morphology. That principle is concerned with canonicity from the point of view of the lexeme. Here we take the perspective of the feature and its values, suggesting that a canonical feature will not be subject to the restrictions we are considering. To clarify, we can return to those Macedonian adjectives which, non-canonically, mark number but not gender. From the point of view of the lexeme (as in Principle III), it would be equally non-canonical to fail to distinguish gender or to fail to distinguish number (since both features are available to that word class). From the point of view of the features (Criterion 4), in respect of these Macedonian adjectives, number is more canonical than gender since there is a restriction on gender which number is exempt from.

The essential point of this criterion, then, is that in the canonical situation it is sufficient to have a syntactic rule (of the type: in Polish 'the preposition *ku* 'towards' requires the dative') and the word class of the target (e.g. noun). Any requirement for additional information about the particular lexeme(s) making up the target is non-canonical.

Russian: the main case values are close to canonical in this respect, since they are distinguished by almost all nouns, adjectives and pronouns. It is true that Russian has quite a high proportion of indeclinable nouns. These fail to inflect, but for number as for case, so that case values are not singled out here. These indeclinables lack morphological case, but can occupy syntactic slots appropriate for the different case values.

Principle II: The use of canonical morphosyntactic features and their values is determined by simple syntactic rules.

This principle is vital for the interface between syntax and morphology. An important part of being 'simple' is that syntax is 'morphology-free' (Zwicky 1996: 301). That is, the rules of syntax do not have access to purely morphological features, such as inflectional class. Here we part company with Zaliznjak, who rightly points to the issue of the complexity of the rules of government, but suggests that it is not significant whether we have simpler rules of government and a larger inventory of cases, or more complex rules and fewer cases (1973: 67). Specifically, non-autonomous cases can be eliminated by a rule of government which distinguishes between subclasses of noun. We accept such a possibility when the subclasses are semantically defined, but exclude the possibility of rules of government referring to inflectional classes.

Russian: here we find all the main values of case are largely canonical, though again with some surprising divergences.

Criterion 5:   The use of canonical morphosyntactic features and their values is obligatory.

This is a well-known and important criterion. It is highlighted by Jakobson; in his discussion of Boas (1938: 132-133) Jakobson produced the famous quote: 'Thus the true difference between languages is not in what may or may not be expressed but in what must or must not be conveyed by the speakers.' (1959/1971: 492)[17] With regard to case, in the canonical situation case is required. In Russian any noun must be in some case, and so if there is a nominal form with no overt marker, this will still be interpreted as having a specific case value (the particular value will depend on the paradigm, see the forms of the nominative/accusative singular of inflectional class I in (1), and the genitive plural of inflectional class II). The bare stem will not be interpreted as being outside the case system. Similarly, from the point of view of the governor, in the canonical situation a governor requires a particular case value (for instance, Russian *k* 'towards' takes the dative', and there is no more to be said).

However, there is a more subtle problem lurking here. Where there is some degree of optionality, it is not straightforward, when trying to define case, to avoid admitting additional case values such as the 'nominative/instrumental'. Given a copula verb like *byt´* 'be', in the past or future, a predicate nominal may be in the nominative or instrumental case. As Zaliznjak (1973: 62) says, no grammar of Russian posits a composite case here; to avoid this, he has a stipulation which has the effect of eliminating cases that would arise from choices between otherwise established cases.[18] Our criterion has the effect of making such choices non-canonical.[19]

Russian: it is certainly true that the use of the main six case values is obligatory.

Criterion 6:   Canonical use of morphosyntactic features and their values does not admit syntactic conditions.

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[17] Note that Mel´čuk (1960/1974) discusses this criterion and in (1974: 111) points out that he, Mel´čuk, wrote the article in 1958, before seeing Jakobson's article. Percov (1996: 40, 2001: 71) traces the history of the notion back through Jakobson to Boas and before him to Maspero (1934: 35). However, I think Jakobson is right to give primacy to Boas, since the idea can be also found in Boas (1911: 35-43, especially 40-43).

[18] And the problem caused by optionality becomes worse, since once we had a second locative, we would also have to allow for a composite locative/second locative for those nouns which have an optional second locative.

[19] Michael Daniel points out (personal communication) that we might analyse such case choices as reflecting slightly different diagnostic contexts (in the sense discussed in §2). This approach would entail making context a gradient notion. The contexts envisaged in §2 could be distinguished by straightforward syntactic tests, and unproblematic speaker judgements, while the case choices like nominative versus instrumental in the nominal predicate cannot. Thus it seems appropriate to treat such choices differently, and to consider them non-canonical. For discussion of some problems connected with the criterion see Maslova (1994).

Canonically there is a syntactic rule ('mark the direct object with the accusative') but no *additional* syntactic conditions.

Russian: there are instances of non-canonicity. Thus a possible condition might involve word order; and indeed topicalization affects the use of accusative or genitive for the direct object negated verbs (Timberlake 1975: 126).[20]

Criterion 7:   Canonical use of morphosyntactic features and their values does not admit semantic conditions.

If only semantics were involved we would have instead a morphosemantic feature, as we find, for instance, in local cases - notably in Daghestanian languages. Here we are concerned with features and values that are genuinely morphosyntactic in nature. The sort of condition that would give non-canonicity would be case marking for objects being conditioned by whether the object was definite or not.

Russian: the choice of case values for negated objects is an example here (Timberlake 1975: 125). Similarly the nominal predicate with copular and semi-copular verbs may be in the nominative or instrumental. The conditions on these choices are numerous, and complex, and have changed considerably over the last two centuries

Criterion 8:   Canonical use of morphosyntactic features and their values does not admit lexical conditions from the target (governee).

While Criterion 4 was concerned with whether marking was possible or not, here we assume that case is marked, and ask whether there can be further lexical conditions. The Russian preposition *po* (whose meaning is too wide to give a gloss for), allows surprising conditions, which have been changing over the recent past. Significantly for our purposes, different numerals stand in different cases when governed by *po* (Comrie, Stone and Polinsky 1996: 153-154 and references there). In other uses *po* takes the dative, but with the meaning 'after' it may take the locative, and according to Comrie (1991: 50) these collocations are largely lexicalized, another instance of non-canonical case government. For more on the various government possibilities of *po* see Iomdin (1991).

This criterion can be seen as relating to lexical semantics (while criterion 7 relates to semantics not specific to the lexeme). One way of thinking of criterion 8 is to say that in canonical use one can combine the lexical meaning of the lexeme and the grammatical meaning of the feature value in a compositional fashion. In Russian the instrumental (without preposition) can be used to indicate the time of an event, but

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[20] The conditions considered in criteria 6-9 could in principle be absolute or relative. If they were always relative, allowing some degree of optionality, they could be treated as sub-instances of criterion 5, which specifies that the canonical use of features and their values is obligatory. The conditions noted in criteria 6-9 are treated separately since they can be absolute, and so do not necessarily come under criterion 5. They can apply to other morphosyntactic features too: thus the values of the number feature in agreement are also subject to word-order conditions (Corbett 2006: 179).

provided the governed noun denotes a part of the day, or a season of the year. This constraint from the lexical semantics of the noun is non-canonical.[21]

Russian: under this latter interpretation, the six main case values have many fully canonical uses. However, there are also several instances of conditions, particularly for temporal expressions, which are non-canonical in this respect.

Criterion 9:   Canonical use of morphosyntactic features and their values does not admit additional lexical conditions from the controller (governor).

The idea is that in the canonical situation the controller has a single requirement (e.g. it governs the dative). Additional conditions from this source are not canonical.

Russian: the main six case values are largely canonical in this respect, but we find some instances of non-canonicity. Thus verbs normally take their subject in the nominative, irrespective of polarity. Just a few verbs, however, can have a genitive subject, but only when negated. Depending on the analysis of these constructions, we might consider this as an additional condition from the governor.

(2)   pisem   ne   prixodi-l-o
        letter.PL.GEN   NEG   come-PST-N.SG
        'no letters came'

The verbs must be lexically specified, and they govern the genitive only when negated.

Criterion 10:   The use of canonical morphosyntactic features and their values is sufficient (they are independent).

In canonical instances, features and their values can stand alone.

Russian: five of the main case values of Russian are canonical in this respect: each can stand alone to fill various syntactic slots. Thus the dative can signal the indirect object. Only the locative is non-canonical in this respect, since it can occur only together with a preposition.

Principle III: Canonical morphosyntactic features and their values are expressed by canonical inflectional morphology.

This principle covers a whole set of criteria, which we should have in mind but need not consider in detail (they are specified in Corbett (2007b)).[22] In brief, a canonical system has a one-to-one correspondence between form and function. To discuss canonicity of lexemes, we rely on the preceding analysis, since it presupposes that the features and their values are established for the language under investigation. Given

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[21] Examples which are not canonical in this regard are not restricted to case. While for many nouns the plural is in a fully straightforward relationship to the singular, there are some where the plural has rather specific meanings (see, for instance, Plungian (1997) on *vremja* 'time' and *vremena* 'times' in Russian).

[22] Since we are dealing with Russian, we have assumed that we are indeed dealing with bona fide inflection. For some languages this would be a serious issue for establishing whether we were dealing with a case feature or not.

the inventory of the features and their values we can 'multiply' them together, to give the possible cells in a paradigm. Thus if we find six cases and two numbers in the nominal system, the paradigm of a noun should have twelve cells. And then, to be canonical, a paradigm has to be 'consistent', according to these requirements:

(3)   Canonical inflection

	comparison across *cells* of a lexeme	comparison across *lexemes*
composition/structure (of the inflected *word*)	same	same
lexical material (≈shape of *stem*)	same	different
inflectional material (≈shape of *inflection*)	different	same
outcome (≈shape of inflected *word*)	different	different

This schema has two levels of comparison. At the first level, we start from the abstract paradigm (matrix) obtained by multiplying out the features and their values, and we examine any one lexeme fitted into this paradigm. The middle column involves comparing cell with cell, within a single lexeme. We consider the composition and structure of the cells (left column): if the first consists of a stem and a suffix, for this lexeme to have a canonical paradigm, every other cell must be the 'same' in this regard. Finding a prefix or any different means of exponence would indicate non-canonicity. In terms of the lexical material in the cell, identity is required (there should be no change to the stem). On the other hand, the inflectional material 'should' be different in every cell. The canonical outcome for such a lexeme, as shown in the last row, is that every cell in its paradigm will realize the morphosyntactic specification in a way distinct from that of every other cell.

The second level of comparison (given in the right column) involves a comparison of lexemes one with another. In a canonical system, the composition and structure of each cell remains the same, when we compare across lexemes. Naturally we require that the lexical information be different for different lexemes. However, in the canonical situation, the inflectional material is identical. That is, if our first lexeme marks genitive plural in -*a-t*, so does every other.

The overall outcome is that every cell of every lexeme is distinct. Inflection of this canonical type would make perfect sense in functional terms. Every morphosyntactic distinction is drawn unambiguously, for a small amount of phonological material. In real inflectional morphology we find great divergence from the canonical situation. Russian alone would be sufficient to show numerous divergences. The point of the canonical scheme is to provide a clear measure against which we can view such complex systems.

This schema makes inflectional classes non-canonical, but still allows for cumulation. Cumulation arises from intersecting features and it is appropriately criterion 2, relating to features, which makes cumulation non-canonical in comparison to agglutination (criterion 2 states that canonical features and their values are uniquely distinguishable across other logically compatible features and their values).

Russian: if we apply this principle to Russian, we see that the expression of case is through non-canonical morphology in many instances. However, this is only a reflection of the fusional morphology of Russian. Case values are no less canonically realized than the other feature values with which case interacts; case values are if anything more canonical in this respect.

To conclude this section we may say that the six main case values justify the traditional perception of them as full cases. However, they are not equally canonical. The canonical view gives a new view on what for some will be very familiar data, and this view highlights the disparities between the six main case values.

4   The more problematic case values in Russian

We now turn to the more problematic case values. While there are discussions in the literature of individual difficult values, for instance, the instrumental in Latvian or the locative in Latin, it is truly remarkable that one language should have a system with so many problematic case values. We present the essential data for each case value in turn, and only then go on to the issue of canonicity (§5).

4.1   Vocative
The vocative is of special interest, because it includes fossilized remnants of an old vocative and the development of a new one. There are the old forms *Bože* 'O God', *Gospodi* 'O Lord', which are distinct vocative forms, used for invocation. Then the new forms are those like *Nataš* 'Natasha!', *Pet´* 'Petya!', *mam* 'Mummy!' and so on. The new vocative is optional, the nominative always being an alternative. These new vocative forms are reported from the early 20th century, but they appear to have become more frequent in the second half of the century (Comrie, Stone and Polinsky 1996: 132, and references there). It is sometimes stated that the new vocative is available only for nouns in inflectional class II (see (1)), and with the ending *-a* being unstressed, and that it is found only in the singular. However, there are several facts which suggest a different account. First, *rebjata*, which is hard to translate, but means something like 'lads, guys', is used only in the plural, having become split over time from its original singular *rebenok* 'child' (see Chumakina, Hippisley and Corbett 2004 for an account of this development). This has the vocative *rebjat* 'lads!', though it is not from inflectional class II, and it is plural. This suggests a truncation, based on the nominative. There is also *devčat* 'girls!' from *devčata*. A second remarkable point about the new vocative is that it defies a regular rule of Russian, that final consonants are not voiced. Thus *gorod* 'town' is pronounced with final [t], the [d] being evident when there is an inflection so that the consonant is not final. The new vocative can defy this constraint, in a gradient way (devoicing may be absent or partial); see Daniel and Spencer (forthcoming) for this point, citing Panov (1997: 108-110), and Daniel (in press) for interesting discussion of vocatives in general. A third point, noted by Koval´ (2004: §5), following Klobukov (1986: 21), is that for some speakers there is a vocative of words ending in a -CCa cluster, where the vocative differs from the bare stem. Thus some accept the vocative *Mišk* from *Miška* (diminutive form of *Mixail*); this vocative differs from the bare stem: when the bare stem is used as a genitive plural, a 'fleeting vowel' is required giving *Mišek*. All these facts point towards truncation of the nominative, as worked out in Yadroff (1996). (See also Floricic 2002: 160-162 for further references, and Mel´čuk 2006: 503-504.)

The fact that for some nouns the vocative has this otherwise impossible shape, without devoicing, means here there is particular autonomy of form (as discussed by Koval′ 2004: §5).

4.2   Second genitive

The second genitive is a stark challenge for attempts to determine the number of cases of Russian (see Zaliznjak 1973, Worth 1984, and Comrie 1986).[23] Contrast these forms of *kisel′* 'kissel' (a thickened fruit drink) and *čaj* 'tea'. Both are members of inflectional class I (they vary somewhat from the forms in (1), but in predictable ways), and as expected both have the normal (first) genitive:

(4)   vkus   kiselj-a
         taste[SG.NOM]   kissel-SG.GEN
         'the taste of kissel'

(5)   vkus   čaj-a
         taste[SG.NOM]   tea-SG.GEN
         'the taste of tea'

We find a contrast, however, in certain partitive expressions:

(6)   stakan   kiselj-a
         glass[SG.NOM]   kissel-SG.GEN
         'a glass of kissel'

(7)   stakan   čaj-u
         glass[SG.NOM]   tea-SG.GEN2
         'a glass of tea'

In contemporary Russian, in the active use of the speakers I have consulted, *kisel′* 'kissel' is an example of a regular noun, while *čaj* 'tea' is one of the subclass which has a separate second genitive. The number of nouns with this second genitive is restricted and declining.[24] They are all members of the inflectional class I. Of the nouns which have a second genitive, for some the second genitive is normally used in partitive expressions, for the others the second genitive is a possibility, but in competition with the ordinary genitive; for data on this see Panov (1968: 180),

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[23] This material on the second genitive is presented in Corbett (forthcoming), in the context of a discussion of 'higher order irregularity', where it is pointed out that the Russian second genitive shows the rather unexpected interaction of overdifferentiation and syncretism.

[24] Ilola and Mustajoki (1989: 41-41) reporting on Zaliznjak (1977), identify 396. However, the form has been in decline, continuing since the publication of Zalizjak's dictionary. Our example helps show this: *kisel′* 'kissel' is given by Zaliznjak as having a second genitive, but consultants do not offer this form. Google gives over 200 examples of *stakan kiselja* 'glass of kissel' and none of *stakan kiselju*; however, other web searches reveal occasional sporadic instances of *kiselju* as a second genitive. This noun has almost lost its second genitive, but not quite. For further discussion of the second genitive see Wierzbicka (1983: 249-252), Uspenskij (2004: 11-26) and for a recent analysis of the second genitive in the Russian National Corpus see Brehmer (2006).

Graudina, Ickovič and Katlinskaja (1976: 121-125), Comrie, Stone and Polinsky (1996: 124-125), and especially Paus (1994). Thus the second genitive varies from being normally used, to being optional, to unusual – according to the particular lexical item.

The form itself is of interest too, as these partial paradigms show:

(8)   Russian partial singular paradigms

nominative	kisel′	čaj
genitive	kiselja	čaja
genitive 2	as genitive	čaju
dative	kiselju	čaju

The 'extra' form of *čaj* 'tea', the second genitive, is syncretic with the dative. There is no unique form for it. We cannot consign the problem to syntax by claiming that the form used *is* the dative, since any modifiers marked for case are indeed genitive. This is not obvious, since in the modern language – at least for some speakers - the inclusion of an agreeing modifier disfavours the use of the second genitive; instead the ordinary genitive is more likely:

(9)   stakan   krepk-ogo   čaj-a
        glass[SG.NOM]   strong-M.SG.GEN tea(M)-SG.GEN
        'a glass of strong tea'

Here the presence of the modifier *krepk-ogo* 'strong-M.SG.GEN' seems to make it more likely, for some speakers at least, that the ordinary genitive *čaja* will be used.[25] However, in those instances where the noun stands in the less likely second genitive in an expression similar to (9) genitive agreement is still required. Thus *krepkogo čaju* 'strong tea' is possible as a second genitive. Thus the distributional test shows that we have to distinguish the second genitive from other forms. Just to be sure, we check what happens if we put the attributive modifier in the dative:

(10)   krepk-omu   čaj-u
        strong -M.SG.DAT tea(M)-SG.DAT
        'strong tea'

(10) can be used only in syntactic positions where a dative is required. It is not a second genitive, and could not be used in (9). The problem is therefore a morphological one and not a syntactic issue: second genitives are not syntactic datives. To sum up: the issues presented by the second genitive are that it has a unique distribution but no unique form; it is available with a relatively small number of nouns, and with these its degree of optionality varies considerably; it may be subject

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[25] A further syntactic restriction is suggested by Irina Nikolaeva (personal communication), namely that the head noun (*stakan* 'glass' or similar) should be in a direct case. Speakers vary here, but some have are unwilling, or less willing, to accept a second genitive when the head is in an oblique case. Initial corpus investigation supports this intuition.

to the syntactic condition that modifiers intervening between the governor and the noun in the genitive disfavour the second genitive.[26]

4.3   Second locative

Russian has a locative case, often called the prepositional case because it occurs only together with a preposition (*v* 'in', *na* 'on', *o* 'about, concerning', or *pri* 'by, at, attached to, in the time of', and rarely with *po*, as noted in §3, discussion of criterion 8). Examples would be *v žurnale* 'in the magazine' and *v komnate* 'in the room'. For many nouns (including those of inflectional class I, like *žurnal* 'magazine') the locative has a distinct form in the singular, and for all inflecting nouns the locative is distinct in the plural.

For our purposes the second locative is of greater interest. It is restricted in several ways. It occurs only with *v* 'in' and *na* 'on', primarily when used in their basic locative or temporal sense, and not with the other two prepositions which take the locative.[27] It is distinguished only in the singular, and for relatively small groups of nouns. However, these are of different inflectional classes, and within the first inflectional class there are nouns belonging to different subclasses which have the second locative.[28] Second locatives are always stressed on the inflection: e.g. *v sadú* 'in the garden'; similarly for nouns of inflectional class III. This is important when considering whether there are unique forms. For inflectional class I, which has most of the nouns with a second locative, the –*u* inflection is shared with the dative, but the forms are normally distinct, the second locative being stressed on the inflection and the dative singular typically being stressed on the stem (for those nouns with a second locative). In inflectional class III there are also nouns with the second locative, for example *v kroví* 'in blood' (covered in blood). The inflection is the same as for the dative singular and for the normal locative singular; these two have stem stress, while the second locative is stressed on the inflection.

It is limited too in the number of nouns which have it:

(11)   Nouns with the second locative (Ilola and Mustajoki (1989: 42-43)[29] from Zaliznjak (1977)[30]

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[26] While following Jakobson (1958) in accepting a second genitive and a second locative, we do not also have to decompose the cases, and to accept Jakobson's famous representation in the form of a cube. We may agree with Worth (1984: 298) that 'the cube was an enticing mistake'.

[27] See Thorndahl (1974), Brown (2007) and references there, for the development of the second locative, and see Plungian (2002) for recent discussion of its semantics.

[28] Thus *sad* 'garden' and *les* 'forest' form the nominative plural differently (*sady* but *lesa*), but both have the second locative (*sadú* and *lesú*).

[29] Brown (2007) reports similar but slightly lower figures, and adds interesting information on frequency. The form is in decline and so published figures tend to be overestimates of its use.

[30] Zaliznjak also includes *v zabyt´i* 'in oblivion' and *v poluzabyt´i* 'in semiconsciousness' (Zaliznjak 1967/2002: 287), and does not mark these as optional. However, Plungian (2002) states that the distinction is largely lost for these two nouns, with one or other form (in –*e* or in –*i*) being generalized for all uses. This view is adopted in the 2003 revision of Zaliznjak's dictionary.

inflectional class	example	nouns with second locative available	of these, second locative optional
I	*na beregú* 'on the bank'	128	33
III	*v stepí* 'in the steppe'	31	8

For some nouns (in locative contexts) the second locative is obligatory: it has to be *v sadú* 'in the garden' (and not **v sade*). For some nouns it is only optional. The number of nouns involved is declining.

The restrictions continue in that the second locative, like the second genitive, has special forms only for nouns. When case is marked on other word classes, notably adjectives, the forms are as for the normal locative:

(12) my   by-l-i   v   star-om   sad-u
      1PL   be-PST-PL in   old-M.SG.LOC   garden-LOC.2
      'we were in an old garden'

(13) my   razgovariva-l-i   o   star-om   sad-e
      1PL   converse-PST-PL   about   old-M.SG.LOC   garden-LOC
      'we were talking about an old garden'

The adjective is identical, for the second locative in (12) and the normal locative in (13). Unlike the second genitive, there is no difficulty with including adjectives in such phrases. And as Brown (2007) demonstrates, such modifiers are not restricted to set phrases. Speakers are fully comfortable with new expressions.

How then should we treat the second locative? Brown (2007) draws the analogy with sub-genders, specifically the animate/inanimate sub-genders of Russian. These are distinct for a small proportion of the available paradigm cells. The same is certainly true of the second locative (and is equally true of the second genitive). This particular sort of non-canonicity has a satisfying account. Brown's solution is to treat the second locative as a 'structured' case (1998: 198-200). In his Network Morphology analysis, which relies heavily on the notion of defaults, the default realization of the second locative will be as the normal locative (this default is overridden for the relative few nouns with a distinct second locative). Inflectional morphology in this model is specified according to ordered paths, where more specific information is ordered after more general. For instance the specification of the ordinary locative singular may be given as:[31]

(14)   <singular   locative>

This ordering is justified by the fact that some nouns have different stems for singular and plural (and these are specified within the lexical entry), while none have a special stem for locative. Then the specification of the second locative is an extension of this path:

(15)   <singular   locative   locative2>

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[31] Brown (1998, 2007) uses 'prepositional' and 'locative' rather than 'locative' and 'locative2'; the labels are not important here, and I have retained locative and locative2 for consistency in the text.

The effect is that when the second locative is 'required' by the preposition, if the noun has a form matching the specification (15) completely, this is the appropriate form. If not, by default, the closest matching path specifies the form, and that path is as in (14). This latter will always occur with adjectives, which Brown covers elegantly with no extra machinery. The analysis in effect says that all nouns have a second locative, but very few nouns *really* do.

Two important points need to be made here. First, Brown's solution for this particular type of non-canonicity is not just an elegant idea. It is worked out as a full implementation within Network Morphology (one of the inferential-realizational approaches). Brown's implementation gives the right outcomes and others can test it to ensure that it is indeed a valid analysis (the fragment is provided in Brown 1998). And second, it develops an idea found in Comrie (1991: 102), that of having a hierarchical feature analysis for the second cases,[32] one which captures the specific nature of these case values and does not involve invoking other artificial features for other case values.

4.4 The 'adnumerative'

The loss of the dual has left strange remnants scattered across Slavonic. Few are stranger than the adnumerative. The 'normal' situation in Russian is that the numerals *dva* 'two', *tri* 'three', *četyre* 'four' (as well as *oba* 'both', *poltora* 'one and a half', *pol* 'half' in compounds, for the latter see Billings 1998), provided they are in the nominative case (or the accusative and are quantifying an inanimate) take a noun in the genitive singular. For example, *dva žurnala* 'two magazines', where *žurnal* is in the genitive singular as in *cena žurnala* 'the price of the magazine'. An extremely small number of nouns have a special form in these circumstances. They are in inflectional class I, and the form is distinguished by stress only. Thus *dva časá* 'two hours, two o'clock' shows the special 'adnumerative', in contrast with *okolo čása* 'about an hour' with the normal genitive singular.

The restrictions, in addition to those alluded to already, are severe. The nouns which have the form are: *čas* 'hour', *šag* 'step, pace', *šar* 'ball, sphere', *rjad* 'row', *sled* 'footprint'. (Zaliznjak (1977) gives the form as being optional with *šar* 'ball, sphere' and *sled* 'footprint', while Mel´čuk (1985: 431-432) implies that it is optional for more of them.) The use of the form is best maintained with *čas* 'hour'. Mel´čuk (1985: 430-437) offers interesting discussion, and suggests that with the nouns for which the adnumerative is not obligatory, an intervening modifier requires the use of the ordinary genitive (1985: 432):

(16)   *dva   širok-ix   šag-á (*šága* is required, according to Mel´čuk)
        two.NOM   wide-PL.GEN   step-ADNUMERATIVE
        'two wide steps'

The feature specification of the modifier (genitive plural) is perhaps surprising; however, this form can be used both with nouns with the adnumerative where a modifier occurs (Mel´čuk (1985: 433) and for those nouns without an adnumerative, which would stand in the genitive singular. For details of the choice between genitive plural and nominative plural for the modifier in comparable phrases see Corbett (1993).

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[32] Brown discusses the locative and Comrie the genitive, but in both instances the account generalizes to both second cases.

Returning to the adnumerative, we should still ask if it is a case value. It appears to be a rather odd combination of case and number. As Zaliznjak (1967/2002: 47) says, it is special as a case in being available only in the singular.[33] In its favour, it has a unique form. Furthermore, Russian numerals typically govern a case, while the number of the noun is limited (generally it must be plural but with lower numerals singular), and so the adnumerative fits into this pattern. The adnumerative seems to be on the extreme edge of what could be included as a case value.

4.5   The 'inclusive'

This case was suggested by Zaliznjak (1967/2002: 50), as one possible analysis to account for expressions of the type *idti v letčiki* 'to become a pilot'. These expressions are particularly challenging for synchronic analysis. There is helpful initial discussion in Zaliznjak (1967/2002: 50-52), and careful consideration of various alternatives in Mel´čuk (1978/1985: 461-489). After reviewing the evidence we shall conclude, with Mel´čuk that there is no need to postulate an additional case here, but that the considerable problems lie elsewhere.

The essential problem with expressions like *idti v letčiki* 'to become a pilot' is the form of the noun *letčiki*. This has the apparent form of the nominative plural. However, the preposition *v* 'in(to)' takes the accusative or the locative. The accusative plural of animate nouns like *letčik* 'pilot' is as the genitive, that is, *letčikov*. This is a fully general syncretic pattern in Russian: all animate nouns in the plural have accusative as genitive, while all inanimates in the plural have accusative as nominative. Thus the nominal form in the expression above cannot be accounted for by the normal rules, and Zaliznjak proposes an additional case as a result.

Of course, it is tempting to say that we are dealing merely with a set phrase. But that simply will not do. There are some one hundred verbs with the appropriate semantics to take the place of *idti* 'go' in the first syntactic 'slot', and even some nouns, like *kandidat* 'candidate' (Mel´čuk 1985: 461). Moreover, any animate noun can in principle take the place of *letčiki* 'pilots' in the third slot (though it is usually those denoting professions or social groupings). What is constant is that these expressions always involve becoming something. The two formal requirements are the preposition *v*, which normally means 'in(to)' and that the noun following the preposition must be in the plural. Interestingly, this requirement is maintained even when semantically it makes no apparent sense, as in this example (Mel´čuk 1985: 465):

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[33] Mel´čuk (1985: 430-431) argues that forms used with particular nouns (including suppletion in two instances) in the plural, when quantified by higher numerals (those above 'four' as in the examples discussed above), should also be considered instances of the adnumerative. For instance, *dvenadcat´ čelovek* 'twelve people' not **dvenadcat´ ljudej* 'twelve people'. I do not find the argument convincing, but nevertheless urge the reader to check Mel´čuk's reasoning independently. The issue is difficult.

(17)   Derjagin   pro-lez   v   sekretar-i
        Derjagin[NOM]   through-climb[PST.SG.M]   into   secretary-PL
                naš-ego   partbjuro
                our-N.SG.GEN   party.office[34]
        'Derjagin wormed his way into being secretary of our party office.'

The point is that there is only one secretary, but still the plural is required here.

Mel´čuk (1985: 462) rejects Zaliznjak's additional case here, on the grounds that it is being postulated on the basis of a single rather specific construction. That is reasonable, provided an alternative analysis can be given. There are two options, either nouns like *letčiki* 'pilots' in such expressions are in the nominative or they are in the accusative.

The nominative option has the advantage of simplicity, in that the form in the expression matches the normal nominative form. However, Mel´čuk produces three specific arguments against this option. To take just one, he points out that *idti v soldaty* 'to become a soldier' has a near synonym in *idti v armiju* 'to join the army' and here *armiju* is indisputably in the accusative. Mel´čuk also gives what he calls a *metapravilo* 'metarule', namely that in Russian prepositions never govern the nominative. (There are other potential instances of prepositions governing the nominative in Russian, Zaliznjak 1967/2002: 51n23, but Mel´čuk 1985: 438-452 has alternative analyses for these too.) Apart from the problematic instances in question, Russian prepositions govern all cases but the nominative. Mel´čuk is keen to maintain that generalization, though another linguist might look precisely for a preposition governing the nominative to complete the set. I agree with Mel´čuk that this construction is not sufficient to override the generalization.

Thus Mel´čuk takes the second option, and claims that *letčiki* and similar nouns are in the accusative case. This seems an odd claim at first, since the normal accusative is *letčikov* (as the genitive). Mel´čuk argues that in this construction the preposition *v* requires the governed noun phrase to be in the plural and to be inanimate. Since the inanimate accusative is as the nominative, this would give the right form. This solution has the great advantage of pinning the unusual behaviour precisely on the preposition *v* in this construction (and avoids not only postulating an extra case, but also doubling up of lexical entries). It is a remarkable requirement of a preposition, however.

There is a further very interesting complication. In this construction the noun phrases are not fully inanimate. In attributive position, we find inanimate agreement forms (Mel´čuk 1985: 466):

(18)   … popa-l   v   **starš-ie**   inžener-y.   (not *starš-ix)
        … get.PST[SG.M]   into   chief-PL   engineer-PL   * chief -PL.ACC=GEN
        '(he) made it to chief engineer'

Here the form *staršie* 'chief' can be treated as being in the accusative, identical to the nominative, which is what we find with inanimates. The form **staršix*, with

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[34] This noun is indeclinable. Note that not all Russian speakers share Mel´čuk's intuition concerning this example; some find it strange if *našego* 'our' is included, which highlights the fact that there is just one post.

accusative identical to genitive, as for animates, is unacceptable. In relative pronoun position, however, we find animate agreement (Igor Mel´čuk personal communication):[35]

(19)   … pro-lez   v   sekretari   partbjuro,
       … through-climb[PST.SG.M]   into   secretary-PL   party.office
           kakov-yx   u   nas   preziraj-ut
           which-PL   with   1PL.GEN   despise-3PL
       '… wormed his way into being secretary of the party office, which (sort) we
           despise'

Here the form *kakovyx* is accusative as genitive, marking animacy; the accusative-nominative (inanimate) **kakovye* is not accepted. Mel´čuk gives other examples of such splits in animacy; the restriction to the accusative case together with the fact that personal pronouns always show accusative-genitive syncretism means that only two distinct agreement positions are available for us to test (attributive and relative pronoun). In this limited sense, all Mel´čuk's examples are in accord with the Agreement Hierarchy (Corbett 2006: 206-237) in that we find syntactically justified forms in attributive position, contrasted with semantically justified forms of the relative pronoun.

As Mel´čuk points out, the basic idea can be found in Rothstein, who writes:

> The mechanism of the metonymy here involves changing of a single lexical feature specification from [+animate] (or more likely from [+human], which implies [+animate]) to [-animate]."[footnote omitted] (1977: 98).

Mel´čuk traces the idea back to Vinogradov (1947: 165), but the careful argumentation is all Mel´čuk's. There is later discussion in Bílý (1988) and Uspenskij (2004: 27-38).

To conclude this particular part of the discussion, we may say that these expressions are challenging and fascinating, but that following Mel´čuk (and disagreeing with Zaliznjak) there is no need to postulate a separate case to account for them.

5   A canonical view of the problematic case values of Russian

Since we have eliminated the potential 'inclusive case', this leaves four problematic case values to consider in terms of canonicity. These are the vocative (presented in §4.1 above), the second genitive (§4.2), the second locative (§4.3) and the adnumerative (§4.4). We therefore return to the criteria for canonicity, and assess these four case values.

Principle I: Features and their values are clearly distinguished by formal means.

The case values we are considering show largely non-canonical behaviour with respect to the criteria which fall under Principle I.

Criterion 1: Canonical features and their values have a unique form.

The value which is non-canonical here is the second genitive, whose form is always the same as that of the dative.

Criterion 2: Canonical features and their values are uniquely distinguishable across other features and their values.

Here *all* the values under discussion are non-canonical: each of them is restricted to one number (almost exclusively the singular).[36]

Criterion 3: Canonical features and their values are distinguished consistently across relevant word classes.

Again *all* four values are non-canonical here, since they are restricted to nouns, while case is a feature also of adjectives and pronouns in Russian.

Criterion 4: Canonical features and their values are distinguished consistently across lexemes within relevant word classes.

Here *all* four values are non-canonical.[37] We noted that each is dramatically restricted in the nouns which can mark it. This is particularly true of the adnumerative, available for only a handful of nouns.

Principle II: The use of canonical morphosyntactic features and their values is determined by simple syntactic rules.

Once again, in different ways, the four values under discussion show non-canonicity for the criteria which fall under this principle.

Criterion 5: The use of canonical morphosyntactic features and their values is obligatory.

The new vocative is optional (the nominative is available for this function). The remaining three values are optional for at least some of the nouns which have them.

Criterion 6: Canonical use of morphosyntactic features and their values does not admit syntactic conditions.

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[36] Two provisos are in order here. First, recall that Mel´čuk (1985: 430) claims that the adnumerative is found in the plural too. For this criterion, however, the effect would not change, since any given noun has an adnumerative only for the singular or for the plural. Second there are the vocatives *rebjat* 'lads!' and *devčat* 'girls!', formed from original plurals; again the effect does not change since there is no corresponding singular vocative for these items.

[37] Isačenko (1962: 82) believes that neither the second genitive nor the second locative should be recognized as cases, since too few nouns have the forms; perhaps treating these case values rather as non-canonical is preferable to a black/white decision.

As we noted in §4.2, the second genitive is disfavoured if there is a modifier with the noun. We saw a similar issue with the adnumerative in §4.4. This is another non-canonical aspect of these two case values.

Criterion 7:   Canonical use of morphosyntactic features and their values does not admit semantic conditions.

Here the second locative is non-canonical. We have already noted that its use is restricted to two particular prepositions. Furthermore, they must be used in a locational sense. Thus the second locative *na mostú* 'on the bridge' is normal, in the locational sense.[38] Plungian (2002) argues further that the second locative is used particularly (though not exclusively) for instances of 'strict' localization. This is just one reflection of treating syntactic uses of case values as canonical, as opposed to semantic uses.

Criterion 8:   Canonical use of morphosyntactic features and their values does not admit lexical conditions from the target.

There is no problem here. There are issues as to which nouns have the case values in question, but we have not noted any further lexical conditions. The type of condition discussed under criterion 8 in §3 involving different case values determined by the particular governee is not found with the problematic case values.

Criterion 9:   Canonical use of morphosyntactic features and their values does not admit additional conditions from the controller (governor).

The idea is that the controller should have a single, simple requirement (e.g., dative). The adnumerative is non-canonical here, since the few controllers that govern it have an additional condition: the controller must stand in the nominative (or the accusative identical to the nominative as occurs when the governed noun is inanimate). This is seen in the following contrast:

(20)   dva   čas-á
        two.NOM   hour-ADNUMERATIVE
        'two o'clock'

(21)   k   dvum   čas-am
        by   two.DAT   hour-PL.DAT
        'by two o'clock'

In this respect the adnumerative is again non-canonical.[39]

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[38] With non-locational expressions the picture is complex: for some speakers, the normal locative is available for expressions like *ja nastaivaju na moste* 'I insist on a bridge' (as opposed to a ford or a tunnel, for instance), while others find this awkward or even unacceptable. The important point is that the choice is *na moste* for some speakers, or avoiding the form for others; no speaker offered *na mostu* 'on a bridge' using the second locative here.

[39] The syntax of Russian quantified expressions is well known for its complexity. Other numeral expressions also have matching in case values in the obliques; however, the case values involved all have numerous other uses outside quantified

Criterion 10: The use of canonical morphosyntactic features and their values is sufficient (they are independent).

Just as the first locative, the second locative is non-canonical in this respect. So too is the adnumerative, since it is available only together with one of the small list of quantifiers which governs it. Thus the adnumerative *časá* 'hour' cannot be used on its own (without a quantifier) to mean 'two-four hours'. (For this reason, alternative terms like 'paucal' are better avoided.)

Principle III: Canonical morphosyntactic features and their values are expressed by canonical inflectional morphology.

As we noted earlier, there are several deviations from canonicity, but most of these are not significantly different from those found with the main cases. The one that stands out is the new vocative, formed by truncation. This is highly non-canonical since this device is not used to mark case elsewhere in the paradigms under discussion.

(22)   Summary of non-canonical characteristics of the problematic case values

criterion (and brief description)	vocative	second genitive	second locative	adnumerative
1. dedicated form (autonomous)		X		
2. distinguishable across other features and values	X	X	X	X
3. distinguished consistently across relevant word classes	X	X	X	X
4. distinguished consistently across lexemes	X	X	X	X
5. obligatory	X	(X)	(X)	(X)
6. no syntactic conditions		X		X
7. no semantic conditions			X	
8. no lexical conditions from the governee				
9. no additional lexical conditions from the governor				X
10. use is sufficient (features/values are independent)			X	X

In (22), X indicates non-canonical behaviour, and (X) somewhat non-canonical behaviour. From (22) it is clear that the problematic case values are all non-canonical to a high degree. It must be recalled that the six main case values were not fully canonical either, yet the difference between the main six and these four is striking. Of the four problematic case values, the least difficult is the vocative. This is the case value which is on the rise, expanding its range, while all the others are in decline. Moreover, the vocative is typically a fringe case value, not well integrated into the case system, and so the non-canonical properties of the Russian vocative are not

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expression. The adnumerative is non-canonical in that it is available only according to the constraint imposed by quantified expressions.

surprising. The other three values are dropping out of the system, none of them ever having been well integrated into it. There is therefore no straightforward answer to the question 'how many case values has Russian?' Whatever number we give should be hedged with qualifications. Rather there are the traditional six values, which are canonical to varying degrees, there is the vocative, an innovation which is doing rather well, given that it is after all a vocative, and the three other values, all apparently in terminal decline, each highly non-canonical, and yet each maintaining a presence in the case system.

6   Conclusion

Research on how to establish case values in a given language has been making progress over the years. And Russian retains a central position since, though on the one hand it appears a fairly conservative Indo-European language, it also contains a plethora of challenging potential case values. We have seen the value of a canonical approach in these circumstances; it allows us to bring out the different properties of the case values, rather than having artificially to make black and white analytical decisions for each. Moreover, the criteria developed for case turn out to be largely applicable to other morphosyntactic values too.

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