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## THE USE OF COLLECTIVE NUMERALS IN CONTEMPORARY RUSSIAN: AN EMPIRICAL APPROACH

### Introduction

Collective numerals in Contemporary Russian are an interesting object of research due to the lack of this type of numerals in many languages and due to the complexity and variation in their use. The rules given in Russian grammars are scarce and often contradict each other, and in linguistic literature the collective numerals of the contemporary language have received little attention. Of the previous research the following papers should be mentioned. The first is a short paper by Suprun (Супрун 1959) where he summarizes the results of an experiment carried out in the 1950s.<sup>1</sup> The other is a paper by Mel'čuk (Мельчук 1985) in which he gives 22 rules concerning the use of collective numerals in Russian. The rules represent, in the first place, a detailed description of the author's own idiolect, but to some extent they are also generalized from other speakers of the literary language. After having finished my investigation, I came across three papers by Ščerbakov (Щербakov 1968a, 1968b, 1969), based on a large number of examples collected from Soviet literature and the press. In general, most of the observations made by Ščerbakov agree with the results of the present study.

A survey of previous literature showed that there is no general agreement concerning many uses of collective numerals. For example, most grammarians ban the use of collective numerals with nouns denoting female persons, but some consider phrases such as *две женщины* not unusual. All grammarians state that collective numerals are used with inanimate plural-only nouns, but there seems to be disagreement as to the restrictions concerning the numeric value of the numeral, its case form and the semantics of the noun. In addition, many grammarians allow for the use of collective numerals to denote the number of paired objects, e.g. *две пары сапог* 'two pairs of boots', while others consider this kind of use colloquial, rare, or obsolete. To take still another example, the semantic

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<sup>1</sup> The experiment was performed at Kirghizia State University. One hundred university students were asked to fill in a questionnaire containing 50 phrases with a numeral and a noun denoting a person. In each phrase only the beginning of the numeral and the stem of the noun were given.

distinction between collective and cardinal numerals is also a controversial issue: some grammarians deny the existence of any distinction whatsoever, while others maintain that collective numerals denote a quantity as an aggregate or a unit. Similar remarks concerning the presentation of collective numerals in Russian grammars and reference books are made in Hartenstein (1992).

The aim of this paper is to clarify the picture of the actual use of collective numerals using empirical data provided by two investigations — a survey of corpus materials and an experiment in the form of a questionnaire. Section 1 gives a brief description of the materials and methods of the investigation. The main body of the paper is Section 2, which presents the results in detail. One of the main findings of the study is that the semantic selectional restrictions concerning the use of collective numerals to quantify animate beings need to be revised. In particular, the study has shown that there is a clear tendency to use the genitive-accusative form of collective numerals equal to or higher than five, irrespective of the semantics of the quantified noun. The results also indicate that the use of collective numerals with inanimate nouns might be much more restricted than most of the grammars suggest. Section 3 discusses briefly some questions concerning the lexical description of collective and cardinal numerals. The conclusion is that to a certain extent the choice between a collective and a cardinal numeral resembles the choice between inflectional forms of a single lexeme. In other words, in some of their uses collective numerals behave functionally as members of the paradigms of corresponding cardinal numerals.

## **1. Material and methods of the study**

The investigation started with an analysis of Russian computer corpora including the Uppsala Corpus and modern prose texts from the Fowler Corpus, as well as some minor corpora consisting of modern fiction, journalistic texts, and recordings of colloquial speech. The corpora provided 605 examples of collective numerals. However, many uses of collective numerals were not represented in the corpora, or only few examples were found. In order to obtain data concerning these types of usage, an experiment in the form of a questionnaire was carried out.

The experiment took place in Moscow in February 1998. Two groups of subjects were tested: students of the Faculty of Journalism at Moscow State University and school children from School no. 1273 in Moscow. The first group included 104 students (85 females and 17 males), ranging in age from 17 to 24 with a mean age of 19.2 (Std. Dev. 1.678). The second group consisted of 48 children (23 females and 24 males) ranging in age from 10 to 12, averaging 10.8 years of age (Std. Dev. 0.668).<sup>2</sup> All subjects were native speakers of Russian.

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<sup>2</sup> Two students and one child failed to specify their sex, and seven students failed to specify their age.

The experiment consisted of two questionnaires which were evenly distributed among each group. Both questionnaires included 60 sentences where subjects were asked to choose between two quantifying expressions, one with a collective numeral and the other with a cardinal numeral or some other means of quantification. Most of the total of 120 sentences constituted pairs in which the members differed only in one variable. For example, if one sentence in a pair had a phrase quantifying a group of males, then the other had a phrase quantifying females, the rest of the two sentences being identical. This kind of experimental design made it possible to have control over the numerous variables associated in literature with the use of collective numerals. The members of each pair were separated and distributed between the two questionnaires. As a result, both the students and children were divided into two groups which filled in two different questionnaires.

The experiment was conducted during classes, and introduced and supervised by the author of this paper. Subjects were encouraged to rely on their own linguistic intuition in the instruction given at the beginning of the questionnaires.<sup>3</sup> In addition, it was emphasized that, in each sentence, the variants of a quantifying expression were given as synonyms carrying the same quantitative meaning. In general, subjects performed the task pretty well in about 20-30 minutes, although a few failed to write down their age or sex, or to fill in a couple of sentences.

Although the results concerning the students and children cannot be directly generalized for the whole population, they may give an idea about the direction in which the use of collective numerals is most probably shifting.

## 2. Results

### 2.1 Collective numerals quantifying animate beings

The analysis of corpus data revealed that the majority of collective numerals quantifying animate beings represented types of usage where the numeral is more or less autonomous, i.e. lacking an overt nominal complement or head. To this

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<sup>3</sup> The instruction was as follows: "В современном русском языке в употреблении так называемых собирательных числительных типа *двое* наблюдается большая вариация. Проводимый эксперимент направлен на выяснение некоторых вопросов, связанных с этой вариацией.

Анкета содержит 60 предложений. В каждом предложении предлагается два варианта числовых выражений. Ваша задача заключается в следующем:

- Подчеркните в каждом предложении тот вариант, который Вам кажется лучше.
- Если, по Вашему мнению, и тот и другой вариант одинаково хорошо подходят к данному предложению, подчеркните их оба.

Отвечая, опирайтесь на Ваше языковое чутье. Это не экзамен по русскому языку: здесь правильно то, что Вы считаете правильным!"

group belong cases where the numeral is adjacent to a pronoun, as in (1) below, or represents the nominative constituent in the so-called quantifier construction illustrated in (2):

- (1) А они **трое** сидели на траве.
- (2) Ведь игроков в команде всего двое и больше надеяться не на кого <...>.

In addition, a large number of collective numerals were used as nouns (3 and 4), or lacked their nominal complements or heads as a result of textual ellipsis (5 and 6):

- (3) Хлеб делили на троих, всем поровну <...>.
- (4) <...> в истории человечества только **трое** решились публично вывернуть себя наизнанку до конца: Блаженный Августин, Руссо и Толстой.
- (5) Там висел такой же пробковый круг, как в дежурке, и несколько летчиков беспрерывно бросали в него стрелы. Двое или **трое** читали журналы, остальные болтали, развалясь на диванах.
- (6) Хрисан Андреевич протянул руку. Бим отдал. Новое его качество открылось для пастухов неожиданно. Все **трое** были в восторге.

The absolute use and ellipsis were not always easy to distinguish.

The share of examples where a collective numeral and an overt nominal made up a constituent referring to a group of human beings was only 32.1 % out of 549 examples. For comparison, in a random sample of 100 occurrences of cardinal numeral *три*, quantifying human beings, the share of constituents consisting of the numeral and an overt nominal was 87%. The corpus data also revealed that in those examples where a numeral and an overt nominal made up a constituent referring to a group of human beings, 87.5% of collective numerals were used in a direct case (N=176).<sup>4</sup> In phrases with *трое* the share of direct cases was as high as 91.8% (N=49). For comparison, only 56.3% of phrases with cardinal numeral *три* were in a direct case (N=87). The results parallel those presented in Ščerbakov (Щербakov 1969:18), where more than 84% of collective numerals, but only about 50% of cardinal numerals, were in a direct case. These

<sup>4</sup> In this paper the term *direct case* refers to the nominative and the nominative-accusative cases. The rest of the case forms are called *oblique*. The distinction between direct and oblique cases of all collective numerals and most of the cardinal numerals is reflected syntactically in that the direct cases govern the case of the noun, whereas the oblique cases function as modifiers of the noun.

observations support the general opinion that in oblique cases collective numerals are usually replaced with cardinal numerals.

Questions related to the use of collective numerals with nouns denoting animate beings are presented below in the following order. First I will discuss a number of morphological and semantic properties of nouns associated with the use of collective numerals. Since the nominative case is the most frequent case form in which collective numerals quantifying animate beings occur, I will concentrate mainly on phrases with a collective numeral standing in the nominative. After that I will discuss questions related to the oblique cases of collective numerals with animate nouns.

### 2.1.1 Nominative case: morphological and semantic properties of nouns associated with the use of collective numerals

As was stated above, 87.5% of collective numerals with an overt nominal in the corpora were in a direct case, usually the nominative. The figures in Table 1 suggest that in this form the choice of the numeral is influenced by the morphological and semantic properties of the noun. The second column gives the average distribution of various complement types with collective numerals from *двое* to *семь*. The third and the fourth columns contrast *три* with *четыре*. For the sake of comparison, complements expressed with plural-only nouns have been omitted, since they cannot be governed by *четыре*.

Table 1: Distribution of various complement types denoting human beings, with *три*, *четыре* and collective numerals from 2 to 7 standing in a direct case.

Complement type	двое-семь (N=126)	три (N=36)	четыре (N=49)
1st declension masculines	66.7	77.8	71.4
2nd declension masculines and common gender nouns	11.1	8.3	0.0
Adjectivals	19.8	11.1	2.0
Nouns denoting females	2.4	2.8	26.5

Adjectival in the first column refers to overt complements expressed with adjectives, participles and possessive pronouns such as *наши*. The figures indicate, first, that second declension masculines and adjectivals tend to be used with collective numerals. Second, the data supports the general opinion that collective numerals are rarely used with nouns denoting females. In what follows, these and a number of other factors governing the choice of the numeral will be discussed in light of the data provided by the experiment.

### 2.1.1.1 Non-feminine nouns denoting human beings

The term *non-feminine noun* refers here to first and second declension masculines and common gender nouns, as well as adjectival nouns denoting males or used in reference to males, or mixed groups of males and females. In the questionnaires second declension nouns and adjectival nouns were systematically contrasted with first declension nouns using pairs of sentences differing only in that one member in a pair had a first declension noun, while the other had a second declension noun or an adjectival noun. Of the three morphological types, second declension nouns and especially adjectival nouns clearly favored the use of the collective numerals.

The questionnaires included two pairs of sentences with nouns *милиционер* and *полицейский*, and *работник* and *рабочий*, respectively. As Table 2 shows, only 23% of subjects chose a collective numeral in sentences with a first declension noun, whereas in sentences with an adjectival noun, the share of collective numerals was as high as 81.3%.

Table 2: Distribution of responses in sentences with *милиционер* and *работник*, and *полицейский* and *рабочий*.

Declension	1st declension			Adjectival noun		
Subject groups	Students N=104	Children N=48	Total N=152	Students N=103	Children N=47	Total N=150
Cardinal numeral	61.5	64.6	62.5	8.7	10.6	9.3
Collective numeral	21.2	27.1	23.0	80.6	83.0	81.3
Both	17.3	8.3	14.5	10.7	6.4	9.3

Note: In reference to the results of the questionnaire, N indicates the number of responses related to the property under discussion. Ultimately, the value of N depends on the number of test sentences representing this property. In the same way, percentages indicate the distribution of responses related to this property. Hence, expressions such as "80.6% of the students (N=103) chose a collective numeral with adjectival nouns", should read: "In the two sentences, with an adjectival noun, 80.6% of the total of 103 responses provided by students had a collective numeral". For the sake of simplicity, I will keep using expressions of the former type, despite their apparent inaccuracy.

If the share of those who accepted both variants is also taken into consideration, the results approximate the figures presented in Ščerbakov (Щербakov 1969:14-15) and Suprun (Супрун 1959:8). In Ščerbakov's sample,

88.3% of examples with an adjectival noun had a collective numeral (N=60).<sup>5</sup> In Suprun's questionnaire, the largest share of collective numerals, 91.4% out of the total of 2000 responses, was observed in 20 phrases with an adjectival noun.

In the present study the contrast between first declension masculines and adjectival nouns was also observed in sentences where a quantifying expression in the nominative-accusative case signifies a measure. Sentences (7) and (8) were taken from Mel'čuk (Мельчук 1985:383), according to whom cardinal numerals would be preferred here:

- (7) Колонна была глубиной в четыре всадника/четверо всадников.

*Students: card 92.2 coll 7.8 both 0.0 N=51*

*Children: card 80.0 coll 20.0 both 0.0 N=25*

- (8) Их потери составляют всего четыре раненых/четверо раненых.

*Students: card 17.6 coll 80.4 both 2.0 N=51*

*Children: card 17.4 coll 69.6 both 13.0 N=23*

The figures, however, indicate that even in measure phrases the morphological type of the noun seems to be the strongest factor governing the choice of the numeral.

The same pattern was also observed in sentences with the preposition *по* in a distributive function. Here, according to Mel'čuk, collective numerals can be used, but as sentences (9) and (10) show, the collective numeral was even preferred if the complement was an adjectival noun:

- (9) В следующем купе тоже все было занято, — на лавках сидело по два мальчика/двое мальчиков.

*Students: card 69.2 coll 15.4 both 15.4 N=52*

*Children: card 65.2 coll 26.1 both 8.7 N=23*

- (10) В палаты клали по три больных/трое больных.

*Students: card 17.6 coll 80.4 both 2.0 N=51*

*Children: card 37.5 coll 58.3 both 4.2 N=24*

The effect of the second declension on the choice of the numeral was tested using two pairs of sentences. Table 3 demonstrates, that in sentences with second declension nouns *тыяница* and *убийца*, 63.3% chose a collective numeral, while in sentences with first declension nouns *наркоман* and *вор*, the share of collective numerals was only 18.4%.

<sup>5</sup> This figure concerns the numeral in the nominative. Of 22 examples with a numeral in an oblique case, only 27.3% had a collective numeral.

Table 3: Distribution of responses in sentences with *наркоман* and *вор*, and *пьяница* and *убийца*.

Declension	1st declension			2nd declension		
	Students N=104	Children N=48	Total N=152	Students N=102	Children N=48	Total N=150
Cardinal numeral	75.0	68.8	73.0	26.5	33.3	28.7
Collective numeral	15.4	25.0	18.4	64.7	60.4	63.3
Both	9.6	6.3	8.6	8.8	6.3	8.0

Again the results approximate those gained by Suprun (Супрун 1959:8). In his original study there was only one second declension masculine noun, *мужчина*. 86% of subjects chose the collective numeral with it (cf. sentence 19 below). In a supplementary study the share of collective numerals in phrases with ten other second declension masculine nouns was 67.7% out of 300 responses.<sup>6</sup> In Ščerbakov's sample the share of collective numerals in the nominative was higher, 90.2% out of 61 examples. Of seven examples in oblique cases, however, only one had a collective numeral.

Yet another morphological type of non-feminine noun should be mentioned. According to Mel'čuk (1985:383), collective numerals are acceptable and even preferable with neuter nouns denoting persons. In the present study two examples given by Mel'čuk, *лицо китайского происхождения* and *чудовище*, were contrasted with first declension masculines *китаец* and *чертик*, respectively. As can be seen from Table 4, irrespective of the grammatical gender subjects preferred the cardinal numeral. But it should be noted that sentences with a neuter noun gained higher shares of collective numerals than sentences with a first declension masculine, especially among children.

Table 4: Distribution of responses in sentences with *китаец* and *чертик*, and *лицо китайского происхождения* and *чудовище*.

<sup>6</sup> The fact that collective numerals are used or even preferred with second declension masculine and common gender nouns is also pointed out in many prescriptive sources. Golub (Голуб 1997:262) goes further, asserting that with second declension masculines only collective numerals are acceptable. In light of the data discussed here this is, however, too strong a position. According to Suprun (Супрун 1964:74), cardinal numerals are fully acceptable with second declension masculines as well as adjectival nouns.



Gender	Masculine			Neuter		
	Students N=103	Children N=48	Total N=151	Students N=101	Children N=48	Total N=149
Cardinal numeral	76.7	75.0	76.2	78.2	56.3	71.1
Collective numeral	10.7	18.8	13.2	16.8	41.7	24.8
Both	12.6	6.3	10.6	5.0	2.1	4.0

In addition to the morphological type, the choice of the numeral is often said to be governed by a number of semantic properties of a non-feminine noun. Many grammarians state that collective numerals are more acceptable with nouns denoting human beings occupying a low position in a social, professional, or administrative hierarchy than with nouns denoting human beings in a high position (see e.g. Розенталь 1987:176; Розенталь и др. 1994:232). The opinion is supported by Suprun's study (Супрун 1959:8). For example, with *профессор* and *генерал* only 1% of 100 subjects chose a collective numeral, whereas with *студент* the share of the collective numeral was 16%, and with *казак* 18%.<sup>7</sup> In the present study the effect of the social status of a person was investigated using two pairs of stylistically neutral narrative sentences contrasting *профессор* and *генерал* with *студент* and *солдат*, respectively. In all four sentences subjects preferred a cardinal numeral. Table 5, however, indicates that among the students the social status of a person influenced the choice of the numeral, while among the children the same effect was not observed.

Table 5: Distribution of responses in two pairs of sentences with the nouns *профессор* and *генерал*, and *студент* and *солдат*.

<sup>7</sup> Suprun observed the same pattern also in phrases with an adjectival noun. As already said, the share of collective numerals in these phrases was as high as 91.4%. The only clear deviation from this was found in a phrase with *заведующий*, where the share of the collective numerals was significantly lower, 68%. In a supplementary study the effect of social status was also observed in phrases with a second declension masculine noun. The average share of collective numerals in these phrases was 67.7%, but in a phrase with the noun *судья*, the share was as low as 26.7%. Interestingly, Ščerbakov's observation (Щербakov 1969: 11) contradicts this result: in his material there were twelve examples with *судья* and a numeral in the nominative, and nine of them had a collective numeral. This and other similar observations led Ščerbakov to the conclusion that the semantic distinction under discussion has no effect on the choice of the numeral (see also Щербakov 1968a: 106-107).

Status of a person	High social status			Low social status		
	Students N=104	Children N=48	Total N=152	Students N=102	Children N=48	Total N=150
Cardinal numeral	86.5	66.7	80.3	62.7	70.8	65.3
Collective numeral	6.7	22.9	11.8	23.5	22.9	23.3
Both	6.7	10.4	7.9	13.7	6.3	11.3

Mel'čuk (Мельчук 1985:392) associates the use of collective numerals with nouns denoting lower positions in a hierarchy as well as with nouns denoting a person's nationality or ethnic group with the remnants of the previous collective meaning of these numerals. Golub (Голуб 1997:262; see also Демиденко 1986:231), however, explains the unacceptability of phrases such as *трое министров* as a stylistic mismatch between the collective numeral associated with colloquial style and a noun associated with official literary style (cf. also *?десяток министров*).

There seems to be no general agreement among grammarians concerning the semantic distinction between collective and cardinal numerals. Many of them say that collective numerals express "значение нерасчлененной, целостной совокупности предметов" (e.g. Лекант и др. 1982:200; Демиденко 1986:230; Костромина и др. 1989:103). According to Ljustrova et al. (Люстрова и др. 1976:114), sentence (11) with a cardinal numeral refers to three separate visits, whereas sentence (12) with a collective numeral may refer to a single visit.

(11) Сегодня ко мне приходили три студента.

(12) Сегодня ко мне приходили трое студентов.

The authors consider the semantic distinction especially clear here. But it is noteworthy that they characterize sentence (11) with its cardinal numeral as unambiguous. Usually the collective numeral is considered the marked member of the semantic opposition. This position is taken by Mel'čuk (Мельчук 1985:394), who illustrates the opposition using practically the same pair of sentences as in (11) and (12). According to him, the phrase with the collective numeral can be understood only in the collective sense, whereas the phrase with a cardinal numeral is unmarked in this respect.

Other grammarians, however, explicitly state that there is no difference in meaning between collective and cardinal numerals (e.g. Галкина-Федорук и др. 1957:307; Isačenko 1962:539; Шербаков 1969:18; Гвоздев 1973:271; Шанский и др. 1981:269; Валгина и др. 1987:204). Graudina (Граудина 1980:237) notes that the expression of purely quantitative and collective meanings is undifferentiated to such an extent that the mixture of meanings has become

rather a norm than a deviation from it. Yet another position is taken in the Academy Grammar (ПГ-80 I:574). First the grammar states that cardinal numerals express quantity proper, whereas collective numerals denote quantities as aggregates (совокупность), but in a footnote it provides examples of undifferentiated use of the numerals. What is obviously meant is that collective numerals do not necessarily bring about the collective reading of a quantity.

The position taken by the Academic Grammar might in principle reflect the actual use. The distinction between collective and cardinal numerals cannot be made with inanimate nouns, but with animate nouns, in cases where both cardinal and collective numerals are acceptable, the distinction can manifest itself.<sup>8</sup> To establish the existence of such a distinction is, however, a tricky task. First, the notion of collective meaning is not explicitly defined. As far as can be determined, what is meant is a kind of secondary quantification. The primary quantification is based on the common properties of the quantified beings denoted by the noun. On this level collective and cardinal numerals are synonymous. The secondary quantification is based on some additional property which allows the categorization of individual beings as a single group or a unit. Collective numerals as such would not express this property, but only signal its existence (cf. Šereh 1952:25). This explains, in my opinion, the high degree of subjectivity in the assignment of collective meaning to particular occurrences of a collective numeral: the property which the secondary quantification is based on always remains implicit and can only be inferred from the context.

The questionnaires included three pairs of sentences with first declension masculines, where the unmarked vs. collective reading was supposed to emerge. As an example, the following sentences can be given:

- (13) В течение вечера ее приглашали танцевать три парня/трое парней.

*Students: card 36.5 coll 53.8 both 9.6 N=52*

*Children: card 39.1 coll 52.2 both 8.7 N=23*

- (14) Анна рассказывала, как недавно вечером к ней подошли три парня/трое парней.

*Students: card 15.4 coll 50.0 both 34.6 N=52*

*Children: card 52.0 coll 36.0 both 12.0 N=25*

Here it was expected that sentence (13) would render a neutral reading and, consequently, receive a higher share of the cardinal numeral, because the dancing of three boys with one and the same girl during an evening is hardly a property

<sup>8</sup> Каčevskaja (Качевская 1968:64-65) explicitly restricts the manifestation of the semantic and stylistic distinctions between cardinal and collective numerals to phrases with first declension masculine nouns denoting human beings.

which allows the categorization of the boys as a single group or a unit. In sentence (14), on the contrary, the three boys can readily be seen as a group carrying out a single action. However, no difference in the expected direction was observed, at least if the shares of those accepting both variants are omitted.

Another way to examine the semantic distinction is to find a context where the use of the collective numeral as the marked member of the opposition is excluded due to the lack of a property allowing for secondary quantification. The questionnaires included two sentences which might represent this kind of context:

- (15) У бабушки было два мужа/двое мужей. Первый погиб на войне, второй, Танин дедущка, умер от инфаркта лет пять тому назад.

*Students: card 82.7 coll 5.8 both 11.5 N=52*

*Children: card 95.7 coll 4.3 both 0.0 N=23*

- (16) Если бы в сутках сорок восемь часов было и если бы вмещалось в вас три Тихона Степановича/трое Тихонов Степановичей, всем нашлось бы дело и все равно суток не хватило бы.

*Students: card 90.4 coll 5.8 both 3.8 N=52*

*Children: card 76.0 coll 20.0 both 4.0 N=25*

In sentence (15) the primary quantification is based on the property of being grandmother's husband. Additional properties necessary for the secondary quantification are hard to imagine, because in the capacity of grandmother's husbands the two persons do not coincide in time and space.<sup>9</sup> In sentence (16) the three imagined instances of the same individual share all properties, so the existence of an additional feature singling them out as a group or a unit is logically excluded. As the figures show, the two sentences, indeed, gained very low shares of the collective numeral. However, in the absence of positive evidence in the form of genuine minimal pairs, the question concerning the semantic distinction is left for further research.

To conclude, the morphological type seems to be the strongest factor governing the choice of the numeral with non-feminine nouns denoting human beings. For a significant number of subjects, the association between collective numerals and second declension non-feminines and adjectival nouns seems to be very strong indeed: 48.1% of the students and 35.4% of the children chose a

<sup>9</sup> In the pilot study, the predicate verb in sentence (15) was plural. Because some subjects considered the plural form unacceptable, it was replaced with the singular in the final draft of the questionnaire. As the number of the predicate can influence the choice of the numeral, the majority of sentences in the questionnaires were designed in such a way that the plural in the predicate is triggered not by the numeral but by a conjoined noun phrase (on predicate agreement with different types of numerals in Russian, see Corbett 1983:236-239).

collective numeral in ALL sentences representing the two morphological types. Against this background, semantic distinctions related to the social status of a person or the collective vs. the unmarked reading seem to play a minor role. Concerning first declension masculines, the findings of the present study suggest that the use of collective numerals might be expanding. In Suprun's questionnaire only 8% out of 2400 responses in phrases with a first declension masculine had a collective numeral, while in the present study the share of collective numerals in 21 sentences with a first declension masculine was on average higher, 18.7% among the students and 24.8% among the children.

### 2.1.1.2 Nouns denoting female human beings

In prescriptive grammars collective numerals with nouns denoting female persons are either not accepted or are characterized as colloquial or substandard (e.g. Зализняк 1977:67; Валгина и др. 1987:205; Розенталь 1987:175; Розенталь и др. 1994:231-232; Демиденко 1986:230-231). Graudina (Граудина 1980:236; see also Качевская 1968:66; ПГ-80:575), however, states that in practice the use of collective numerals with nouns denoting females is not uncommon: "В применении к лицам собирательные числительные сейчас употребляются достаточно широко, безотносительно к полу названного лица". Mel'čuk (Мельчук 1985:382) suggests that the use of collective numerals with nouns denoting females is a widespread though not yet totally prevailing syntactic neologism, and Ščerbakov (Щербakov 1969:16) goes even further, stating that it has become a literary norm (see also Щербakov 1968a:108).

The empirical data of the present study, however, indicate that the use of collective numerals with nouns denoting female persons is still quite restricted. In the investigated corpora there were only 14 examples of collective numerals quantifying groups of females. They make up 2.5% of examples where human beings were quantified.<sup>10</sup> The numeral was followed by an overt nominal only in three examples: *двое молоденьких девчушек*, *пятеро незнакомых старушек* and *трое молодых*. The rest of the examples represented the types of usage where the numeral lacks its nominal complement or head (see Section 2.1.1.2):

<sup>10</sup> That collective numerals quantifying groups of females were so rare may be partly due to the fact that the texts in the corpora are thematically biased in such a way that they tell more about males or mixed groups of males and females than about groups consisting solely of females. This is supported by the fact that in a sample of 100 examples with the cardinal numeral *три* quantifying human beings, the share of cases where groups of females were quantified was also relatively low (18%) compared with cases where groups of males or mixed groups were quantified (82%).

- (17) <...> четверо (i.e. баб — AN) впрягались в плуг, пятая шла по борозде <...>.
- (18) <...> а в течении одного страшного дня их (i.e. женщин — AN) было даже пятеро одновременно.

In Suprun's questionnaire (Супрун 1959:9) there were five phrases with a noun denoting a female person. In 9.6% out of the 500 responses a collective numeral was chosen. At first glance this may seem a very low figure, but actually it is a little bit higher than in phrases with first declension masculines, where the share of collective numerals was 8% — a fact not discussed by Suprun.

The questionnaires of the present study included 21 sentences with a first declension masculine headed by a numeral in the nominative and six sentences with a second declension feminine in the same syntactic position.<sup>11</sup> The results presented in Table 6 suggest that among students the declension in combination with the gender has an influence on the choice of the numeral.

Table 6: Distribution of responses in sentences with the numeral in the nominative, having as its complement a first declension masculine or a second declension feminine denoting a human being.

Gender	Masculine			Feminine		
	Students N=1085	Children N=505	Total N=1590	Students N=310	Children N=143	Total N=453
Cardinal numeral	67.3	68.7	67.7	81.9	67.1	77.3
Collective numeral	18.7	24.8	20.6	6.8	26.6	13.0
Both	14.0	6.5	11.6	11.3	6.3	9.7

That the restriction concerning the use of collective numerals with nouns denoting females might be a result of language instruction and training is suggested by the fact that 65.4% of the students but only 33.3% of the children chose a cardinal numeral in ALL phrases with a noun denoting a female person.

First declension masculines and second declension feminines were systematically contrasted in three pairs. The nouns contrasted were *старик*, *мальчик* and *брат*, and *старушка*, *девочка* and *сестра*, respectively. The results are summarized in Table 7.

<sup>11</sup> The first declension masculines were *брат*, *старик*, *муж*, *мальчик*, *китаец*, *парень* (in two sentences), *студент* (in three sentences), *летчик* (in two sentences), *милиционер*, *работник*, *солдат*, *профессор*, *генерал*, *наркоман*, *вор*, *чертик* and *Тихон*. The second declension feminines were *сестра*, *женщина*, *старушка*, *девочка*, *девчушка* and *молодуха*.

Table 7: Distribution of the responses in three pairs of sentences with the numeral in the nominative, having as its complement a first declension masculine or a second declension feminine denoting a human being.

Gender	Masculine			Feminine		
	Students N=154	Children N=73	Total N=227	Students N=155	Children N=71	Total N=226
Cardinal numeral	74.7	68.5	72.7	82.6	71.8	79.2
Collective numeral	13.0	26.0	17.2	7.7	22.5	12.4
Both	12.3	5.5	10.1	9.7	5.6	8.4

Table 7 shows that in both subject groups the share of collective numerals with feminine nouns was lower than with masculine nouns. Among the children the share of collective numerals with feminine nouns was considerably higher (22.5%) than among the students (7.7%). But even irrespective of the gender, in all six sentences the share of collective numerals was higher among the children than among the students. On the contrary, the students accepted more often both variants. The same pattern of distribution was also observed in many other sentence groups.

In addition, the questionnaires included one pair contrasting a second declension masculine *мужчина* with a second declension feminine *женщина*. As already can be expected, the share of the collective numeral with *мужчина* was significantly higher than in the three sentences with first declension masculines discussed above.

- (19) Кроме шофера, во дворе была пожилая женщина и три мужчины/трое мужчин.

Students: card 11.5 coll 75.0 both 13.5 N=52

Children: card 8.7 coll 91.3 both 0.0 N=23

- (20) Кроме шофера, во дворе был пожилой мужчина и три женщины/трое женщин.

Students: card 74.5 coll 9.8 both 15.7 N=51

Children: card 75.0 coll 20.8 both 4.2 N=24

The conclusion to be drawn is that the opposition in the choice of the numeral between masculine and feminine nouns concerns not so much the opposition between the two genders in general, but the opposition between feminines and second declension non-feminines.<sup>12</sup>

<sup>12</sup> In addition to the four pairs discussed here the questionnaires included the following two sentences with feminine nouns:

One of the hypotheses tested in the experiment was that the selectional restrictions concerning the use of collective numerals might be weakened if the noun is placed outside the phrase headed by the numeral. This hypothesis is contrary to the opinion that in cases where the noun is missing in the position after the numeral but is given in the context, the choice of the numeral is made according to the general rules. The results of the present study, however, corroborate the hypothesis to a certain extent. In a pair with a quantifier construction, where the numeral is related to the noun through an anaphoric pronoun, the share of the collective numeral with a feminine antecedent *женщина* was high, 48.1% among the students and 60.9% among the children (cf. sentences 19 and 20):

- (21) Потом мы заметили мужчин. Их было два/двое. Они тихонько брели по тротуару, словно стараясь спрятаться в тени.

*Students: card 1.9 coll 98.1 both 0.0 N=52*

*Children: card 0.0 coll 100.0 both 0.0 N=25*

- (22) Потом мы заметили женщин. Их было две/двое. Они тихонько брели по тротуару, словно стараясь спрятаться в тени.

*Students: card 48.1 coll 48.1 both 3.8 N=52*

*Children: card 34.8 coll 60.9 both 4.3 N=23*

In another pair, the numeral functions as the head of an elative phrase and is related to the noun through an anaphoric pronoun given in the prepositional phrase. In this pair the shares of the collective numeral related to a feminine noun were the same as in (22).

- 
- (a) Ко мне навстречу шли Жуков, Настасья Петровна и еще три молодухи/трое молодух с ведрами в руках.

*Students: card 90.4 coll 5.8 both 3.8 N=52*

*Children: card 44.0 coll 52.0 both 4.0 N=25*

- (b) Две молоденькие девчухи/Двое молоденьких девчушек щебетали сущую ерунду, выбирая и примеряя блузки.

*Students: card 78.8 coll 1.9 both 19.2 N=52*

*Children: card 69.6 coll 17.4 both 13.0 N=23*

The same phrases with a collective numeral were found in the corpora.

According to Golub (Голуб 1997:262), nouns denoting females and belonging to substandard style are acceptable with collective numerals in colloquial speech. The results concerning sentences (a) and (b), however, indicate that the stylistic value of the noun does not necessarily increase the acceptability of a collective numeral. Curiously enough, however, 52% of the children chose a collective numeral in (a), but only 17.4% in (b). It is quite possible that children simply did not understand the meaning of the noun *молодуха*.



- (23) Мальчики собрались у главного входа. Три/Трое из них были в плащах, у остальных были зонтики.

*Students:* card 1.9 coll 94.2 both 3.8 N=52

*Children:* card 0.0 coll 91.3 both 8.7 N=23

- (24) Девушки собрались у главного входа. Три/Трое из них были в плащах, у остальных были зонтики.

*Students:* card 42.3 coll 48.1 both 9.6 N=52

*Children:* card 32.0 coll 60.0 both 8.0 N=25

It should be noted, however, that in the elative phrase, as well as in the quantifier construction, the share of the collective numeral related to a masculine noun was remarkably higher, over 90%. This means that even though the selectional restrictions in these constructions seem to be weakened, they are not totally cancelled.

### 2.1.1.3 Nouns denoting animals

Most grammars state that collective numerals are acceptable with nouns denoting the young of animals, although some grammars qualify this kind of use as colloquial or substandard (see e.g. Розенталь 1987:175; Розенталь и др. 1994:231-232; Голуб 1997:262). With the rest of the nouns denoting animals, collective numerals are usually not accepted (Валгина и др. 1987:205; see also Голуб 1997:262). Zaliznjak (Зализняк 1977:67), however, gives the example *двое (пятеро) волков*, characterizing it as substandard, and Graudina (Граудина 1980:236) notes that phrases such as *двое мишек* and *двое кукушек* do occur, though not so often as phrases with nouns denoting female persons (see also Граудина и др. 1976:263; РГ-80 I:575). According to Ščerbakov (Щербakov 1968a: 109) phrases such as *трое коней* are increasingly widely used in literature and press.

Twelve examples of collective numerals quantifying animals were found in the corpora. In five examples the numeral was followed by a noun, as in *трое щенков*. In the rest of the examples the noun was lacking but was usually given in the preceding context:

- (25) Широколобый сам трюх (i.e. волков — AN) убил.

- (26) Их (i.e. гусей — AN) было четверо.

In ten examples out of twelve the collective numeral quantified the young of animals. Only in the two examples given above did the numeral quantify animals irrespective of their age.

As for the case of the numeral, it should be noted that in five examples out of twelve the collective numeral was in the genitive-accusative case, as in the following example:

- (27) Скоро он вернулся, сказав, что нашел семерых щенков. Их владельцем оказался лучший в Инчоуне охотник — Антон Кымыровтын.

The genitive-accusative case of collective numerals will be discussed in Section 2.1.2.1.

The questionnaires used in the present study included nine pairs of sentences where the two members differed only in that one had a numeral quantifying the young of animals, and the other had a numeral quantifying animals of the same species but not specified by age. The numeral was in the nominative in four pairs. The nouns in these pairs were *волчонок*, *оленок*, *котенок* and *поросенок*, and *волк*, *олень*, *кошка* and *свинья*, respectively. The results concerning the four pairs are summarized in Table 8.

Table 8: Distribution of responses in four pairs of sentences with the numeral in the nominative having a noun denoting an animal as its complement.

Gender	Animals not specified by age			The young of animals		
	Students N=208	Children N=96	Total N=304	Students N=208	Children N=96	Total N=304
Cardinal numeral	81.7	72.9	78.9	53.8	47.9	52.0
Collective numeral	9.6	21.9	13.5	21.6	38.5	27.0
Both	8.7	5.2	7.6	24.5	13.5	21.1

Both among the students and children the semantics of the noun complement influenced the choice of the numeral. In each pair the share of the collective numeral was higher in the sentence with a noun denoting the young of animals. In each individual sentence the share of the collective numeral was higher among the children than among the students. It should also be noted that with nouns denoting animals irrespective of age, 65.4% of the students and 54.2% of the children chose a cardinal numeral in both sentences. The difference between individual pairs was, however, considerable. The highest shares of a collective numeral with both types of nouns were observed in the following pair:

- (28) Вдруг через тропинку пробежал заяц и за ним — три волчонка/трое волчат!

*Students:* card 34.6 coll 36.5 both 28.8 N=52

*Children:* card 28.0 coll 60.0 both 12.0 N=25

- (29) Вдруг через тропинку пробежал заяц и за ним — три волка/трое волков!

*Students:* card 63.5 coll 19.2 both 17.3 N=52

*Children:* card 56.5 coll 39.1 both 4.3 N=23

The lowest shares were observed in sentences (30) and (31):

- (30) Все три поросенка/Все трое поросят погибли от жестокого поноса.

*Students:* card 75.0 coll 9.6 both 15.4 N=52

*Children:* card 60.9 coll 30.4 both 8.7 N=23

- (31) Все три свиньи/Все трое свиней погибли от жестокого поноса.

*Students:* card 100.0 coll 0.0 both 0.0 N=52

*Children:* card 92.0 coll 8.0 both 0.0 N=25

The fact that in (31) the variant *все трое свиней* was chosen by only two subjects is, perhaps, due to the second declension of the noun. This would be natural since all nouns denoting the young of animals belong to the first declension. If the use of collective numerals is expanding to other nouns denoting animals, it would be probable that first declension nouns would be affected first. This assumption was not systematically tested in the present investigation, but it finds some support in the following pair, where the contrast between the two semantic types of nouns was sharp:

- (32) Теперь у Толи три котенка/трое котят.

*Students:* card 48.1 coll 19.2 both 32.7 N=52

*Children:* card 40.0 coll 36.0 both 24.0 N=25

- (33) Теперь у Толи три кошки/трое кошек.

*Students:* card 94.2 coll 0.0 both 5.8 N=52

*Children:* card 73.9 coll 17.4 both 8.7 N=23

The effect of the quantifier construction and the relative phrase on the choice of the numeral was also tested with nouns denoting animals. As sentences (34)-(37) below demonstrate, in these constructions the selectional restriction related to age is obviously weakened. This especially concerns the quantifier construction, where the distribution of the responses is nearly the same in both sentences:

- (34) Гусята направились на речку, переваливаясь с боку на бок.  
Их было четыре/четверо.

*Students: card 23.1 coll 67.3 both 9.6 N=52*

*Children: card 8.7 coll 91.3 both 0.0 N=23*

- (35) Гуси направились на речку, переваливаясь с боку на бок.  
Их было четыре/четверо.

*Students: card 29.4 coll 64.7 both 5.9 N=51*

*Children: card 4.0 coll 96.0 both 0.0 N=25*

With the elative construction in (36) and (37), the children preferred the collective numeral, although the effect of the semantic restriction and, perhaps, the declension type can be clearly observed. Among the students the shares of the collective numeral were also relatively high compared with sentences (31) and (33) above, in which the numeral also quantifies a second declension noun.

- (36) Шенки проснулись и насторожились. Увидев меня, три/трое  
из них вскочили и подбежали ко мне.

*Students: card 7.7 coll 78.8 both 13.5 N=52*

*Children: card 0.0 coll 100.0 both 0.0 N=25*

- (37) Собаки проснулись и насторожились. Увидев меня, три/трое  
из них вскочили и подбежали ко мне.

*Students: card 65.4 coll 26.9 both 7.7 N=52*

*Children: card 34.8 coll 56.5 both 8.7 N=23*

Obviously, the frequent use of collective numerals in quantifier constructions and elative phrases is one of the factors paving the road for them to be used in phrases with an animate noun complement irrespective of the semantics of the noun.

### 2.1.2 Oblique cases

The opposition between direct and oblique cases is mentioned in most grammars as a factor governing the choice between cardinal and collective numerals. Although collective numerals are said to be acceptable in all case forms with animate nouns (see e.g. Граудина и др. 1976:263; Демиденко 1986:231), many grammarians note that collective numerals in oblique cases are usually replaced with cardinal numerals, except in absolutive use (see e.g. Галкина-Федорук и др. 1957:307; Супрун 1964:56; Валгина и др. 1987:205). According to Mel'čuk (Мельчук 1985:395), this is particularly true of the instrumental and dative cases. Table 9 shows that, except for the genitive-accusative

case, the oblique cases of collective numerals were infrequent in the investigated corpora.

Table 9: Distribution of the case forms among collective numerals from *двое* to *семеро* in sentences where the numeral is related to a group consisting of men, or to a mixed group of men and women.<sup>13</sup>

	двое- четверо	пятеро- семеро	Total
Nom	76.7	69.0	75.7
Gen	4.3	2.8	4.1
Gen-Acc	13.6	23.9	14.9
Nom-Acc	2.4	0.0	2.1
Dat	2.8	4.2	3.0
Instr	0.0	0.0	0.0
Prep	0.2	0.0	0.2
Total	(N=464)	(N=71)	(N=535)

It should be particularly noted that in the genitive-accusative case, the numeric value of the numeral correlates with the relative frequency of this case form. With collective numerals from 2 to 4 the share of the genitive-accusative is 13.6%, while with collective numerals equal to or higher than 5, it is considerably higher — 23.9%. This is probably due to the fact that cardinal numerals equal to or higher than 5 lack the genitive-accusative form, in other words, they do not express the animate vs. inanimate distinction.

### 2.1.2.1 Accusative

Concerning the choice of the numeral in phrases denoting animate beings in the accusative, two hypotheses were put forward. The first hypothesis was based on Mel'čuk's statement (1985:393; cf. also Щербakov 1968a: 100; Щербakov 1968b: 257; Щербakov 1969: 7, 11, 12, 17, 18) that collective numerals are preferred in the accusative if the numeric value of a numeral is equal to or higher

<sup>13</sup> In addition to the collective numerals from 2 to 7, the corpora included the following examples with *восемь* and *десять*, both in oblique cases:

(a) <...> взял под наблюдение группу родственников — их всех было двадцать пять человек. Заметил, у восьмерых сужались сосуды слева. Через какое-то время все восемь перенесли инфаркт.

(b) <...> отработала женщина за десятерых, оставила миру трудовых детей <...>.

than 5, and the noun is animate, especially when the numeral is preceded by a premodifier in the genitive-accusative, as in the following example:<sup>14</sup>

- (38) Он пригласил всех шестерых (?шесть) мальчиков к себе в кабинет. (Мельчук 1985: 393.)

Discussing examples such as (38) with my native-speaking Russian colleagues, I found out that many were inclined to use a collective numeral even in sentences without a genitive-accusative premodifier, and irrespective of the semantics of the animate noun. This observation led to a stronger hypothesis according to which collective numerals equal to or higher than 5 are used as general genitive-accusative forms of numerals.

In order to test the hypotheses, I included four pairs of sentences with numeral 5 in the questionnaires. In two pairs the numeral was in a slot between the genitive-accusative premodifier *всех* and a noun in morphosyntactically ambiguous, but morphologically unambiguous, genitive plural form. In the other two pairs the numeral was without a premodifier. As sentences (39)-(42) below demonstrate, the first hypothesis proved to be right: over 90% of the subjects chose the collective numeral *пятерых* in all sentences.

- (39) Учитель пригласил всех пять мальчиков/всех пятерых мальчиков к себе в кабинет.

Students: card 6.0 coll 94.0 both 0.0 N=50

Children: card 8.0 coll 92.0 both 0.0 N=25

- (40) Учитель пригласил всех пять девушек/всех пятерых девушек к себе в кабинет.

Students: card 6.3 coll 93.8 both 0.0 N=48

Children: card 4.3 coll 95.7 both 0.0 N=23

<sup>14</sup> Animacy as a factor governing the choice of a numeral in the accusative is also reflected in the so-called multiple chain construction (кратная цепь) consisting of two numerals and expressing an approximate number. In this construction both numerals must be in the same morphological case. Because the cardinal numbers equal to or higher than 5 do not have a genitive-accusative form, while collective numerals do have one, the cardinal number *пять* must be replaced with a collective numeral in the following sentence:

Три раза в год нутрия приносит трех-пятерых (\*трех-пять) детенышей. (Мельчук 1985:389.)

Note also that the semantic restrictions on the use of collective numerals with an animate noun are cancelled in the multiple chain. This is illustrated in the following example:

За один рейс им удавалось добыть четырех-пятерых китов. (Мельчук 1985:387.)

- (41) В тот день охотникам удалось поймать всех пять волчат/всех пятерых волчат.

Students: card 7.8 coll 92.2 both 0.0 N=51

Children: card 4.2 coll 95.8 both 0.0 N=24

- (42) В тот день охотникам удалось поймать всех пять волков/всех пятерых волков.

Students: card 6.0 coll 94.0 both 0.0 N=50

Children: card 0.0 coll 100.0 both 0.0 N=23

The questionnaires also included a pair of sentences where the numeral 4 was preceded by premodier *всех*. In this pair only 32% (N=75) of the subjects chose *всех четверых сыновей*, and only 28.6% (N=77) chose *всех четверых дочерей*. Comparison of these figures with those for sentences (39)-(42) leads to the conclusion that in this particular syntactic slot, cardinal numerals are preferred if they have a genitive-accusative form, otherwise collective numerals are given preference.

Sentences (39)-(42) also show that the need to express animacy using a genitive-accusative form is strong enough to eliminate differences related to the semantics of the noun. In other words, the collective numeral was preferred not only with nouns denoting male persons or the young of animals, but also with nouns denoting female persons and animals irrespective of age. Further evidence for this was provided by two additional sentences, where the alternatives *всех семь женщин/всех семерых женщин* and *всех восемь женщин/всех восьмерых женщин* were given. In both sentences, over 80% of the subjects chose the collective numeral.

Results concerning sentences (43)-(46) below give support for the second hypothesis, suggesting that the use of *пятерых* is not restricted to the syntactic slot discussed above. Even in the absence of the premodifier *всех*, subjects preferred the collective numeral, although to a lesser degree than in sentences with the premodifier and although the effect of the semantics of the noun can be traced.

- (43) На набережной Иван совершенно случайно встретил пять мальчиков/пятерых мальчиков, которые вчера вместе с ним ездили на экскурсию.

Students: card 5.8 coll 90.4 both 3.8 N=52

Children: card 24.0 coll 76.0 both 0.0 N=25

- (44) На набережной Иван совершенно случайно встретил пять девушек/пятерых девушек, которые вчера вместе с ним ездили на экскурсию.

*Students: card 19.2 coll 75.0 both 5.8 N=52*

*Children: card 21.7 coll 60.9 both 17.4 N=23*

- (45) Лобанову очень хотелось увидеть пять жеребят/пятерых жеребят, недавно привезенных из Польши.

*Students: card 15.7 coll 80.4 both 3.9 N=51*

*Children: card 26.1 coll 69.6 both 4.3 N=23*

- (46) Лобанову очень хотелось увидеть пять коней/пятерых коней, недавно привезенных из Польши.

*Students: card 30.8 coll 67.3 both 1.9 N=52*

*Children: card 8.3 coll 91.7 both 0.0 N=24*

So it seems that there is, indeed, a tendency to use the genitive-accusative form of collective numerals as a general genitive-accusative form for numerals equal to or higher than 5. This is also suggested by the fact 63.5% of the students and 56.3% of the children chose *пятерых* in ALL sentences discussed above. But it should also be noted that in the absence of the premodifier, the semantics of the noun still appeared to have a certain effect on the choice of the numeral.

Discussing examples with the numeral in the accusative, Mel'čuk (Мельчук 1985:396, 400-401) also refers to definiteness as a factor favoring the use of collective numerals. But it should be noted that the accusative case and definiteness are treated as independent parametres in his rules. The results of the present study, however, clearly indicate that definiteness as such does not necessarily favor the use of collective numerals (see e.g. sentence 30). I suppose that definiteness as a factor governing the choice of the numeral might be related to the animacy hierarchy in the accusative position: in this hierarchy definite phrases are placed higher than indefinite phrases. The fact that collective numerals were preferred in sentences (43)-(46) may be partly due to the definiteness of the phrases, if definiteness is understood as a high degree of the identifiability or individualization of the referents. Unfortunately, the questionnaires did not include phrases in the accusative which would be unambiguously indefinite. However, some of the examples provided by Mel'čuk (id., 393) are indefinite, suggesting that collective numerals equal to or higher than 5 might be preferred in the accusative even irrespective of the definiteness vs. indefiniteness distinction.

One of the limitations of the present experiment should be pointed out here. Because the questionnaires provided only two alternatives of quantifying expressions, the possibility remains that in some of the sentences subjects might



have used some other expression, if it were given. For example, instead of *пять коней* or *пятерых коней* in (46), someone might have preferred the nominative-accusative of the collective numeral, i.e. *пятеро коней*. Concerning the contemporary language, none of the sources mentions this variant, but it should be noted that as late as in the beginning of the 18th century, collective numerals practically lacked the genitive-accusative form (for details and further references, see Граннес 1998:273).<sup>15</sup> In order to get a full picture of the relationship between animacy and numerals, further research should also take into consideration the distribution between accusative variants of cardinal numerals such as *четыре коня* and *четырёх коней*, and *двадцать четыре коня* and *двадцать четырех коней*.

### 2.1.2.2 Dative and instrumental

According to Rozental' (Розенталь и др. 1994:231-232), collective numerals occur more often in oblique cases than in the nominative with nouns denoting females. Concerning the accusative case, the results presented in the previous section confirm this view. But to a certain extent this might also be true of the dative case. The effect of the dative case on the choice of the numeral was investigated using two pairs of sentences with the numerals 3 and 5. In the latter case the numeral was preceded by the premodifier *всем*. The share of the collective numeral differed in the two pairs. In the pair with the numeral 3, the effect of the gender of the noun can be observed.

- (47) *Играл он плохо, но это казалось музыкой Шурке и еще трем мальчикам/тремя мальчикам, собравшимся возле музыканта.*

*Students: card 50.0 coll 30.8 both 19.2 N=52*

*Children: card 39.1 coll 43.5 both 17.4 N=23*

<sup>15</sup> On the other hand, variants such as *пяти коней* were also not given, nor are they mentioned in the literature. But historically, cardinal numerals such as *пять* were nouns, and as the genitive-accusative of nouns emerged and started to spread, cardinal numerals of this type were also occasionally used in the genitive accusative form. The following example is from 1598 and cited in Krysko (Крысько:1994:142-143; see also Дровникова 1962, Boguslawski 1966:120-123): *Отпустили... Кучюмовых дѣтей, пяти царевицей...*

The results of Mayer's study (1978:215) concerning the variation in the declension of cardinal numerals suggest that even in Contemporary Russian — at least in compound numerals — some speakers may occasionally use genitive forms in the accusative position with an animate noun. In this study subjects were asked to replace figures with written numerals. It turned out that six subjects out of thirty (20%) used the genitive form *тридцати двух студентов* in the sentence *Профессор хорошо знает 32 студент-*. Two subjects used *тридцать двух студентов* and the rest, the normative variant *тридцать два студента*.

- (48) Играл он плохо, но это казалось музыкой Шурке и еще трем девочкам/тремя девочкам, собравшимся возле музыканта.

Students: card 65.4 coll 17.3 both 17.3 N=52

Children: card 52.0 coll 40.0 both 8.0 N=25

In sentences (49) and (50), where the numeral 5 is preceded by *всем*, the share of the collective numeral was significantly higher, especially among the children, who actually preferred it. On the other hand, the effect of the gender of the noun was weaker here.

- (49) У него не хватило бы средств дать образование всем пяти мальчикам/всем пятерым мальчикам.

Students: card 40.4 coll 48.1 both 11.5 N=52

Children: card 21.7 coll 78.3 both 0.0 N=23

- (50) У него не хватило бы средств дать образование всем пяти девочкам/всем пятерым девочкам.

Students: card 44.2 coll 48.1 both 7.7 N=52

Children: card 24.0 coll 76.0 both 0.0 N=25

On the basis of the two pairs it is hard to say whether it is the presence of the premodifier, the morphological shape of the numeral, or some other factor that increased the share of the collective numeral in the latter pair.

In two pairs the numeral was in the instrumental. As in the dative case, the numerals were 3 and 5, the latter preceded by the premodifier *всему*. As Table 10 shows, of the four cases investigated in the experiment, the instrumental appears to be least prone to the use of collective numerals with nouns denoting human beings.

Table 10: Distribution of the responses in two pairs of sentences with a phrase denoting human beings in the instrumental.

Gender	Masculine			Feminine		
	Students N=103	Children N=49	Total N=152	Students N=104	Children N=46	Total N=150
Cardinal numeral	88.3	77.6	84.9	86.5	87.0	86.7
Collective numeral	9.7	20.4	13.2	10.6	10.9	10.7
Both	1.9	2.0	2.0	2.9	2.2	2.7

The share of the collective numeral was higher in the pair with the numeral 5 than in the pair with 3, cf. *тремя сыновьями* 6.5% and *тремя дочками* 5.3%,

but *всеми пятерыми мальчиками* 20% and *всеми пятерыми девочками* 16%.

## 2.2 Collective numerals quantifying inanimates

According to grammars and reference books, collective numerals can be used with two types of inanimate nouns: plural-only nouns and nouns denoting paired objects. However, opinions concerning these types of usage vary to a considerable degree. Many grammarians point out restrictions related to the semantics of a noun, its case form, and the numeric value of the numeral.

### 2.2.1 Collective numerals in direct cases with inanimate plural-only nouns

All grammars state that collective numerals are used with plural-only nouns, giving standard examples such as *сутки* and *сани*. This leaves the non-native reader with the impression that all countable plural-only nouns are acceptable with collective numerals. The issue is, however, controversial. According to Mel'čuk (Мельчук 1985:385), collective numerals are rarely used with nouns denoting events such as *похороны* or dishes such as *щи*. Lopatin et al. (Лопатин и др. 1989:71), however, give examples such as *двое родов* and *трое похорон*, and even stylistically colloquial expressions such as *двое щей* 'two kinds of cabbage soup' or 'two portions of cabbage soup' and *трое духов* 'three kinds of perfume' or 'three bottles of perfume'. This indicates that in the use of collective numerals with inanimate plural-only nouns, there is a considerable degree of variation among speakers.

The corpus data suggest that the use of collective numerals might be restricted to a few nouns. The corpora provided 39 examples of collective numerals related to inanimate plural-only nouns. In all examples, except one with *двое шаровар*, the noun was *сутки*, and the numeral was *двое*, *трое* or *четверо* standing in a direct case.<sup>16</sup> If the numeral was equal to or higher than 5, or if it was in an oblique case, then a cardinal numeral was used with *сутки*. This supports the opinion according to which the use of collective numerals with inanimate plural-only nouns is restricted to phrases where the use of a cardinal numeral is grammatically ruled out.<sup>17</sup>

<sup>16</sup> In addition, the following example where *двое* is related to an inanimate noun was found:

При параметрическом рассеянии фотоны рождаются по двое, они как бы сгруппированы в пары.

As the example probably represents a kind of personification, it was not included in the sample of 605 examples.

<sup>17</sup> Note also the following difference between collective numerals quantifying human beings and inanimate plural-only nouns. Only 32.1% of examples with a collective numeral quantifying human beings were phrases where the numeral and an overt nominal made a

In order to investigate the means of quantification with various types of plural-only nouns, twelve sentences with a plural-only noun preceded by a collective numeral from 2 to 4 and its paraphrase were included in the questionnaires. The nouns were *сани, носилки, щипцы, часы, бусы, наушники, очки, брюки, трусы, щи, биточки* and *похороны*. As Table 11 demonstrates, the majority of subjects preferred the paraphrase.

Table 11: Distribution of the responses in twelve sentences with a collective numeral from 2 to 4 and its paraphrase in a direct case having an inanimate plural-only noun as a complement.

Subject groups	Students N=614	Children N=286	Total N=900
Paraphrase	75.2	72.0	74.2
Collective numeral	15.8	21.3	17.6
Both	9.0	6.6	8.2

For a considerable number of subjects the use of collective numerals with inanimate plural-only nouns seems to be very restricted indeed: 37.5% of the students and 27.1% of the children chose a paraphrase in ALL sentences. The lowest share of the collective numeral was observed in two sentences with nouns denoting dishes (*биточки* and *щи*). Only 1.3% of the subjects chose the collective numeral *двое*, the majority preferring its paraphrase *две порции*. In the rest of the sentences, differences between individual nouns were considerable. Among the students the share of the collective numerals ranged between 4% (*двое бус*) and 48% (*трое носилок*), among the children, between 16% (*двое часов*) and 34.8% (*трое носилок*). The shares of the collective numeral in descending order are presented in Table 12. In order to get a more general picture of the acceptability of collective numerals, the percentages of those who either chose a collective numeral or underlined both variants were summed up. These figures are given in the third and the sixth column.

Table 12: Distribution of the responses in twelve sentences with a collective numeral from 2 to 4 and its paraphrase in a direct case having an inanimate plural-only noun as a complement.

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constituent, whereas all examples with *сутки* were full-blown phrases with a numeral and its complement. The difference shows that collective numerals are functionally close to cardinal numerals when they quantify inanimates, but have a number of additional functions when they quantify animate beings.

Students:	Coll. num.	Coll. num. or both	Children:	Coll. num.	Coll. num. or both
трое носилок	48.0	52.0	трое носилок	34.8	34.8
двое саней	37.3	52.9	двое похорон	29.2	50.0
двое часов	21.6	31.4	двое трусов	26.1	39.1
двое трусов	21.2	32.7	четверо шипцов	26.1	30.4
четверо шипцов	16.0	26.0	двое очков	26.1	34.8
двое брюк	11.5	25.0	двое бус	26.1	34.8
двое очков	11.5	19.2	двое саней	24.0	24.0
двое похорон	9.6	26.9	двое брюк	24.0	28.0
двое наушников	5.8	11.5	двое наушников	24.0	32.0
двое бус	4.0	14.0	двое часов	16.0	20.0
двое биточков	2.0	4.0	двое биточков	0.0	4.4
двое шей	1.9	1.9	двое шей	0.0	4.2
Total	15.8	24.8	Total	21.3	28.0

The figures confirm Mel'čuk's (Мельчук 1985:397) opinion that there are idiosyncrasies in the choice of the means of quantification related to individual nouns. For Mel'čuk, phrases such as *двое весов* and *трое трусов* sound normal, while phrases such as *двое очков* and *трое брюк* are questionable.<sup>18</sup> In the questionnaires, sentences containing *трусы* and *брюки* were identical, but despite this, the share of *двое трусов* was indeed lower than the share of *двое брюк*, especially among the students. The same concerns a pair with *очки* and *наушники*. There were also differences between the two groups. For example, in a sentence with *сани* over half of the students but only 24% of the children chose the collective numeral or underlined both variants, while in a sentence with *похороны* the distributions were reversed.<sup>19</sup>

<sup>18</sup> To take another example, Rozental' (Розенталь и др. 1994:232; see also Демиденко 1986:231) accepts phrases such as *двое часов* along with its paraphrase *две штуки часов*, but according to Mel'čuk (Мельчук 1985:379), as well as my Russian colleagues, collective numerals cannot be used with *часы*. The paraphrase provided by my colleagues was *две пары часов* (see also Isačenko 1962:540). This indicates that in these kind of phrases, *пара* may have become a kind of a classifier used with countable plural-only nouns and, hence, deprived of its original quantitative meaning. Interestingly, Demidenko (Демиденко 1986:231) explicitly denies the use of *пара* with nouns such as *брюки* and *ножницы*, because these objects are counted "не на пары, а на штуки".

<sup>19</sup> The questionnaires also included two quantifier constructions with inanimate plural-only nouns. In these sentences the shares of the collective numeral were higher than in sentences with a collective numeral governing a noun (cf. *двое саней* 32.9%, and *саней оказалось <...> четверо* 46.8%; *двое часов* 19.7%, and *часов <...> обнаружили только трое* 30.6%). This might suggest that with plural-only nouns the restrictions concerning the use of collective numerals are weaker in sentences where the numeral and the noun stand apart from each other.

Another question related to inanimate plural-only nouns is the effect of the numeric value on the choice of the numeral. Some grammarians explicitly restrict the use of collective numerals to the direct cases of *двое*, *трое* and *четверо*, in other words, to phrases where the use of cardinal numerals governing the genitive singular of the noun complement is ruled out (see e.g. Мельчук 1985:385-386; Голуб 1997:263).<sup>20</sup> Other grammarians, however, allow for the use of collective numerals equal to or higher than 5, giving examples such as *пятеро носилок*, *пятеро ножиц*, *шестеро саней*, *шестеро суток*, etc. (see e.g. Галкина-Федорук и др. 1957:306; Шанский и др. 1981:268-269; Валгина и др. 1987:205; РГ-80:575; Лекант и др. 1982:200; Демиденко 1986:230). In order to investigate the effect of the numeric value on the choice of the numeral, four sentences with the numeral 5 in a direct case were included in the questionnaires. The nouns in these sentences were *сани*, *щипцы*, *вилы*, and *ясли*.

Table 13: Distribution of the responses in four sentences with the numeral 5 in a direct case, having an inanimate plural-only noun as its complement.

Subject groups	Students N=206	Children N=94	Total N=300
Cardinal numeral	86.4	75.5	83.0
Collective numeral	10.7	20.2	13.7
Both	2.9	4.3	3.3

Both subject groups preferred cardinal numerals. Again, the share of collective numerals was higher among the children than among the students, except for a sentence with *вилы*, where 23.5% of the students but only 13.6% of the children chose the collective numeral.

In addition, the effect of the increasing numeric value was systematically investigated using four sentences with *сутки*, and a numeral ranging from 5 to 8 and standing in the nominative-accusative case. As expected, subjects preferred cardinal numerals.

Table 14: Distribution of the responses in four sentences with numerals from 5 to 8 in a nominative-accusative case, having *сутки* as their complement.

<sup>20</sup> It should be noted that this restriction does not apply to the use of collective numerals with animate nouns. Animate nouns, including a few animate plural-only nouns (*люди*, *дети*, *ребята* and *девчата*), are acceptable with all collective numerals in all their case forms.

Subject groups	Students N=208	Children N=96	Total N=304
Cardinal numeral	77.4	82.3	78.9
Collective numeral	11.5	13.5	12.2
Both	11.1	4.2	8.9

The use of the collective numeral seems to end at 7, since all subjects chose the cardinal numeral in the sentence with numeral 8. Interestingly, in the rest of the sentences the lowest shares of the collective numeral were observed with the numeral 6 — 5.8% among the students and 8.7% among the children, while with the numeral 7 the shares were considerably higher — 17.3% and 32%, respectively. In this sentence the share of those who accepted both variants was also relatively high, averaging 16.9% (N=77). So it seems to be the case that the use of cardinal numerals does not necessarily increase monotonically as the numeric value of the numeral grows.

### 2.2.2 Collective numerals in oblique cases with inanimate plural-only nouns

Concerning the use of oblique cases with inanimate nouns, the ultimate position is taken by those who explicitly deny this kind of use. Some grammars, however, give casual examples such as *двух саней*, suggesting that these kind of phrases are nonetheless acceptable.

The questionnaires included eight sentences with a plural-only noun *сутки*, *ворота* or *сани* in the genitive, dative or instrumental case. As the table below shows, cardinal numerals prevailed in all case forms.

Table 15: Distribution of responses in eight sentences with the numeral preceding an inanimate plural-only noun in an oblique case.

Oblique case	Genitive N=303	Dative N=151	Instr. N=151
Cardinal numeral	92.4	86.8	99.3
Collective numeral	6.3	10.6	0.7
Both	1.3	2.6	0.0

The only notable deviations from the mean figures were found in genitive phrases *у всех трех ворот/трех ворот* and *у всех пяти ворот/пяти ворот*, where 20% of the children chose the collective numeral. On average, the share of the collective numeral was again higher among the children than among the students. The figures allow the conclusion that although the use of collective numerals in

oblique cases with inanimate nouns is not totally ruled out, a strategy of avoiding them is taken by the majority of subjects.

### 2.2.3 Collective numerals in the nominative with nouns denoting paired objects

Many grammars note that collective numerals can be used with inanimate nouns denoting paired objects (see e.g. Галкина-Федорук и др. 1957:306; Шанский и др. 1981:269; Костромина и др. 1989:103-104). In such phrases collective numerals express the number of pairs, for example, *двое рук* 'two pairs of hands', *трие лыж* 'three pairs of skis', *двое сапог* 'two pairs of boots', *трие носков* 'three pairs of socks', and *пятеро чулок* 'five pairs of stockings'. These nouns also have a singular paradigm and in combination with a cardinal numeral they refer to a number of separate objects, for example, *две перчатки* 'two gloves'.

Rozental' (Розенталь 1987:175-176; Розенталь и др. 1994:231-232) qualifies the use of collective numerals with nouns denoting paired objects as colloquial or substandard. Rožkova et al. (Рождкова и др. 1975:233; cf. also РГ-80 I:575) consider it rare in Contemporary Russian, and Golub (Голуб 1997:263) gives preference to paraphrases such as *две пары перчаток*. Mel'čuk (Мельчук 1985:379, 385) states that the construction under discussion has become completely obsolete nowadays and is avoided by speakers of younger generations. The construction has survived only in the following fixed expression: *У меня (ведь) не двое рук (глаз)*.

In the investigated corpora there were only three examples of collective numerals quantifying paired objects. All of them represent fixed expressions, *продать в двое рук* or *ходить на своих на двоих*. The usual means of quantification of paired objects in the texts was a paraphrase. The questionnaires included six sentences with a noun denoting paired objects: *серьги*, *чулки*, *сапоги*, *лыжи*, *уши*, and *легкие*. The subjects had to choose between the collective numeral *двое* and its paraphrase *две пары*. As Table 16 shows, the paraphrase was clearly preferred. This was also true of each individual sentence.

Table 16: Distribution of responses in six sentences with *двое* and its paraphrase (*две пары*) in a direct case, having as their complement a noun referring to paired objects.



Subject groups	Students N=310	Children N=141	Total N=451
Paraphrase	89.0	83.0	87.1
Collective numeral	6.5	11.3	8.0
Both	4.5	5.7	4.9

As can be expected, the results also concern individual subjects: 83.7% of the students and 70.8% of the children chose the paraphrase in ALL sentences. To some extent the distribution between *двое* and *две пары* seems to be an idiosyncratic property of the noun. For example, *чулки* and *сапоги*, which belong to the same semantic field, got different shares of the collective numeral — 13% and 4.1%, respectively. On average the highest percentage of the collective numeral was observed with the adjectival noun *легкие* (students 14%, children 31.8%), the lowest with *серьезу* (students 0%, children 4.2%). In five sentences out of six the children had higher percentages of the collective numeral than the students.

The use of oblique cases with nouns denoting paired objects was not examined in the present study. For those who use phrases such as *двое сапог*, collective numerals should have full case paradigms in this function (cf. *двоих сапог* and *двух сапог*).

## 2.3 Conclusions

To summarize, the results of the present study suggest that in Contemporary Russian the use of collective numerals with inanimate nouns is quite restricted. They tend to be used only in phrases where the numeric value of the numeral is lower than 5 and the numeral stands in a direct case governing a limited number of plural-only nouns, such as *сутки*. The use of collective numerals with nouns denoting paired objects is clearly avoided. As a result, there is no more need to use oblique cases of collective numerals with inanimate nouns, and, consequently, the association between the oblique cases with animacy has become stronger.

Concerning the quantification of animate beings, the most frequent uses of collective numerals represent cases where the numeral is more or less autonomous and lacking an overt nominal, such as the absolutive use or collective numerals lacking the noun as a result of textual ellipsis. In phrases with an overt nominal, second declension and especially adjectival paradigm in combination with human, non-female semantics appeared to be the strongest factors favoring the use of collective numerals in the nominative. With the rest of nouns denoting animate beings, cardinal numerals are preferred over collective numerals. Yet the semantic restrictions related to the sex of human beings and the age of animals have a certain effect on the choice of the numeral. In the quantifier and relative

constructions they are, however, considerably weakened, if not totally cancelled. Concerning the oblique cases, in phrases where animacy is highlighted, genitive-accusative forms such as *пятерых* are preferred to nominative-accusative forms of cardinal numerals equal to or higher than 5, irrespective of the semantics of the noun.

### 3. Some remarks concerning the lexical description of collective numerals

Obviously, collective numerals used as nouns to denote animate beings are separate lexemes, just like cardinal numerals are when they denote mathematical concepts or graphical signs of numbers. Concerning the rest of the uses, however, it is hard to say whether collective numerals can be separated from corresponding cardinal numerals. Of course, from a strictly morphological point of view, collective and cardinal numerals do represent separate lexemes. Syntactically the former also differ from the latter in that they cannot be used in the formation of compound numerals. But from a functional point of view, the results of the study suggest that differences between the two types of numerals resemble differences between inflectional forms of lexemes. First, for those who accept collective numerals with inanimate nouns only when the use of cardinal numerals is grammatically ruled out, *двое*, *трое* and *четверо* function as direct case forms within the functional paradigms of the corresponding cardinal numerals (on the notion of functional paradigms, see Laskowski 1990). In other words, *двое*, *трое* and *четверо* can be seen as forms agreeing with the noun in accordance with the plural-only feature, or to use Zaliznjak's (Зализняк 1967) terminology, the seventh agreement class. In much the same way, for those who prefer *пятерых* for *пять* as an accusative form with animate nouns, *пятерых* functions as the genitive-accusative form in the paradigm of *пять*.

Even in the rest of the uses, collective numerals might be seen as some sort of inflectional variants of the corresponding cardinal numerals.<sup>21</sup> Here the choice of the numeral resembles gender assignment of targets in that it is also governed by a number of properties related to the morphology and semantics of the noun. For example, non-feminine nouns belonging to the second declension, as well as adjectival nouns, tend to take collective numerals just like masculine nouns take masculine targets in gender agreement. The resemblance between the gender assignment of targets and the choice of the numeral becomes more obvious if we take into consideration agreement with hybrid nouns such as *врач*. Here the

<sup>21</sup> An obvious exception are collective numerals used to express a number of pairs. For those who use phrases such as *двое canoe*, a separate lexeme *двое* with a full case paradigm exists. As said before, this hypothesis was not tested in the present investigation. Note also that the ability of a noun's plural forms to denote a pair should be given in the lexicon as a part of its lexical description (cf. *canoes* and *шляпа*). An alternative is to derive this information from common pragmatic knowledge.

gender assignment of targets is governed not only by the declension class of the noun, but also by its lexical meaning, its reference, and even its case form. For example, in reference to a female person it is possible to say *хорошенькая врач*, but not *\*хорошенькую врача* (for details, see Nikunlassi 2000).

It should also be noted that different morphological types of numerals have been in constant interaction in the history of Russian. For example, under the influence of cardinal numerals such as *пять*, collective numerals in direct cases have changed from agreeing modifiers (e.g. *трое суток*) to heads governing the genitive case of the noun (*трое суток*).<sup>22</sup> That the paradigms of collective and cardinal numerals can even be mixed is shown in Ukrainian, where, according to Šerch (1952:7 ff.), collective numerals have penetrated into the paradigms of corresponding cardinal numerals occupying the role the nominative case, especially with neuter nouns. The data of the present study suggest that an analogous process may be taking place in Russian with the genitive-accusative of collective numerals. At the same time it seems that the use of collective numerals with inanimate nouns has become very restricted. The two processes together suggest that collective numerals in Russian are becoming more and more closely associated with animacy.

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<sup>22</sup> In Barsov's unpublished grammar (Barsov 1981:172-174, 506) written in the second half of the 18th century, collective numerals still have two different direct case forms. One of them ended orthographically in *o* or *e* and functioned as the head of a noun, just like the modern collective numerals do. The other one ended in *u* or *u* and functioned as a premodifier of a plural noun. The notes and numerous examples provided by Barsov suggest that the former type was used with animate masculine and plural-only nouns, mainly of low social status, while the latter was used with inanimate plural-only nouns (*двои сани, трои часы*), and in addition, with any noun in the plural when the numeral referred to a number of pairs or sets (*двои сапоги, четверы перчатки; двои книги, четверы ключи*). Hence, the phrases in the minimal pair presented by Barsov, *двое детей* and *двои дети*, differed in that the former referred to two children while the latter referred to two sets of children resulting from two marriages.

## Literature

## Fowler Corpus

<http://heckel.sfb.uni-tuebingen.de/cgi-bin/koren.pl?trans=win&hello=hello>

## Uppsala Corpus

[ftp://ccl.net/pub/central\\_eastern\\_europe/russian/corpora](ftp://ccl.net/pub/central_eastern_europe/russian/corpora)

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