

## Productivity in Derivational Morphology – A Case Study of Russian Secondary Suffixes

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### 1. Introduction

This paper examines Russian secondary suffixes and their productivity in derivational morphology. Specifically, this paper will discuss five suffixes, namely, *-ovat-* as in *bel-ovat-yj* 'whitish'; *-en'k-*, *vkus-n-en'k-ij* 'delicious and small'; *-enn-*, *tjažel-enn-yj* 'very heavy'; *-ušč-*, *bol's-ušč-ij* 'very big'; and *-ejš-* as in *važ-n-ejš-ij* 'most important'. These five suffixes were chosen because they belong to the narrowly defined semantic field expressing *degree of quality X*. Various criteria will be used to investigate the difficult concept of productivity. It will be shown that these suffixes display varying degrees of productivity as judged according to the criteria of semantic coherence, number of recent formations, innumerability, obvious joining, and qualified by the existence of external restrictions.

The suffixes concerned are called secondary as opposed to the primary suffixes which form adjectives from bases of other word classes; secondary suffixes are those which form adjectives from already existing adjectives. Though they do not change word class, they do expand the semantics of the derived adjective. The secondary suffixes are interesting because their function is similar to that of prefixes; they change the semantics of the word without changing its grammatical properties. These suffixes are used to alter or enhance the basic meaning that is expressed by the primary adjective. Some of the secondary suffixes also express emotionality while others make more neutral statements. They allow the speaker's opinion, view, and feelings to enter into communication without their direct statement at the same time as there is a convenient, concise way to express degree. The semantics here is particularly interesting since these suffixes are so expressive, and since semantics provides crucial evidence for

productivity; a semantic analysis of the secondary adjectives will be an important part of this paper.

This type of study entails eliciting the native speaker's innate, subconscious knowledge about language's rules for word formation. The data comes from personal interviews with native speaking informants and is presented in table form as well as in illustrating examples. In addition some examples have been taken from reference works. This study does not adhere to the Russian structuralist tradition but follows a generative approach. Therefore this paper concentrates on how language users understand, combine, and analyze morphemes while actively producing and perceiving language (Coates 1987) instead of analyzing words into their constituent parts.

The second section of this paper represents the theoretical background to my own study on productivity. Section 2 includes a presentation on how these suffixes have been treated in the past and a discussion of the criteria used to determine the problematic concept of productivity. Section 3 is the main analysis of secondary suffixes expressing degree. The data on which this study is based is presented here along with some general remarks. The analysis begins with a discussion of semantics, continues with an examination of the other criteria for productivity, namely time, number, and obvious joining, and goes on to investigate some further restrictions on productivity. Section 4 will draw conclusions on the secondary suffixes' productivity.

## 2. Theoretical background

### 2.1 Previous treatments

The suffixes which can form secondary adjectives within the semantic field *degree of quality X* are presented in (1) with their standard meanings, taken from *Russkaja Grammatika* 1980 'The Russian Grammar of the Academy of Sciences of the USSR' (henceforth the *RG*), *Zemskaja* 1973, *Townsend* 1980, and *Zaliznjak* 1987.

(1)	<i>suffix</i>	<i>meaning</i>
	-ovat-/-evat-	attenuating
	-en'k-/-on'k-	diminutive, affectionate
	-ušč-	strengthening, coarse
	-enn-	strengthening, coarse
	-ejš-/-ajš-	superlative

This paper will refer to each suffix with the most common allomorph; the occurrence of each allomorph is conditioned by the phonology. The suffixes expressing degree combine with bases of various phonological and morphological structures. The exact morphological and phonological conditions on secondary suffixation will not be discussed as they have been sufficiently described in the *RG*, and because they contribute little to an examination of productivity.

The five suffixes -ovat-, -en'k-, -ušč-, -enn- and -ejš- form an interesting semantic field referring to degree of quality X. In this paper the strengthening suffixes -enn-, -ušč-, and -ejš- have been placed into one subfield and the weakening -en'k- and -ovat- into another (Figure 1).

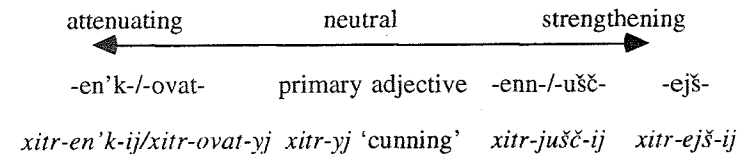


Figure 1. Degree Scale.

A second semantic dimension is present in the secondary suffixes, and that is the expression of emotion. Some suffixes are emotionally neutral while others can express the speaker's positive or negative feelings; the semantics range from positive and affectionate via neutral to coarse and pejorative (Figure 2).

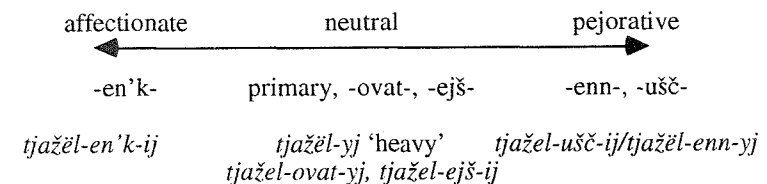


Figure 2. Emotionality Scale.

These figures represent the commonly stated semantics of these suffixes and are the starting point for my study. The semantic characteristics to emerge from this study will be slightly different (see Table 2).

## 2.2 Productivity

Productivity represents a concept which is problematic to define, test and prove, but which is nonetheless meaningful. Linguists have long shied away from the problem of defining productivity while they still make reference to this undefined term. A typical definition reads: an affix is productive if it can be used to form new words (Zemskaja 1973); this is a rather tautological statement which warrants further exploration.

The *RG* lists a level of productivity for each suffix dealt with in this paper, shown in (2), but does not outline the criteria used to reach these conclusions.

(2) highly productive	productive	rarely productive
-ejš-	-ušč-, -ovat-, en'k-	-enn-

It seems from their examples (some are given in section 3.3) that productive affixes are those found in contemporary literature. Thus a time factor has been used as a criterion for productivity. This may seem unscientific but does illustrate the intuition that a productive affix should be able to form new words in today's language. This criterion for productivity can be tested by presenting informants with experimental formations that are not generally considered standard and seeing if they are found acceptable.

The number of occurrences of a given affix is generally seen as indicative of its productivity. However, absolute number does not say anything by itself. The number of formations must be considered in relation to the number of possible bases; thus it is reasonable to consider number to be the percentage of bases that actually undergo affixation compared to the number of potential bases (Aronoff 1976). A related and important criterion discussed in the Russian literature is numerability, that is, whether or not all the formations in a given affix can be counted (Vinokur 1939; Zemskaja 1973). Assuming that the set of potential bases is unlimited, the criterion for productivity will be innumerability, and evidence of this is provided by the fact that all formations are not and cannot be exhaustively listed in the lexicon because there is no limit to them. Those affixes whose formations are numerable (can be counted) will be unproductive. All words which are derived with an unproductive affix must be listed in the lexicon. The concept of innumerability is a bit tricky because it is only seen clearly in its opposite instance, that is to say, when the words formed with an affix can be counted. Fortunately, this case is not difficult to distinguish, and

anything else will be considered innumerable by default. In order to test this criterion one must investigate whether or not informants can place boundaries on the set of existing words in any given affix.

Innumerability is fairly clean-cut, but the criteria of time and number pose certain difficulties, i.e. how should they be measured? These two concepts can be conflated to allow for the measurement of the number of recent formations in an affix. If a creative author takes liberties and uses an otherwise unproductive affix in a new formation, this fact does not make that affix generally productive. Only when a number of new formations arise during a recent period of time, can the affix be considered highly productive in today's language.

Two closely related criteria for productivity are semantic coherence (Aronoff 1976) and obvious joining (Coates 1987). Coherence implies that the derived word's meaning corresponds to our expectations of what it should mean. Coherence also implies that the sense of the resulting word equals the sum of its parts; its meaning can be analyzed analytically. Aronoff seems to conclude that semantic coherence is the only valid criterion for productivity. Coates points out that, when considering productivity, it is important to note how obvious the join between morphemes is to the lay speaker. The question thus becomes one of whether the speaker analyzes the constituent parts of a word in each instance of language use or whether the formation is understood synthetically. An obvious join implies that the meaning of the word is analytic and can be predicted from the sum of the parts, i.e. the affix is regular and thus productive. Both concepts make reference to the derived word's semantics equaling the sum of its parts. These criteria can be tested through detailed questioning on the meaning of the derived adjectives as opposed to their base adjectives.

Some qualifications on productivity should be mentioned. There may be word-external restrictions on productivity such as competing affixes, blocking, lexicalisations, and institutionalized formations or word-internal restrictions such as semantically incomprehensible combinations. Productivity must also be seen within specific spheres of language. Spoken language, slang, and to some extent, literary language are generally quite open to new formations as is technical language which creates new terms on demand. Productivity is usually measured at three arbitrary levels; affixes can be rarely, partially, or highly productive (cf. Zemskaja 1973). A partially productive affix is one that only builds on some of the possible

bases. This paper uses the concepts of number of recent formations, innumerability, semantic coherence, obvious join, and further restrictions to determine productivity.

### 3. Analysis of secondary adjectives expressing degree

#### 3.1 *The present study*

The analysis of secondary suffixes is based on interviews with 14 native Russian speakers. The majority of the interviews were carried out in St. Petersburg in an informal environment with acquaintances as informants. I attempted to initiate a discussion of the meaning and usage of the test words, rather than to elicit correct answers. I asked questions such as: does word X exist? is it even thinkable? if so, what does it mean? can you imagine a meaning for it? when could one use it? what does it mean in combination with other words? Not all informants were questioned about each word as this would have been unnecessary. Once several informants give a uniform meaning and usage for a given word, it is uninformative to ask further.

Sometimes the explanation of a suffix's meaning deviated from the standard definitions. This prompted me to combine the same suffix with bases semantically similar to that of the deviating formation to see if they would bring on similar reactions and meanings. After receiving an unexpected answer, I also asked further questions in order to clarify the meaning, such as, how do you relate to this person or thing? What is the difference between the secondary adjective X and its base adjective?

The points to be investigated empirically were semantic coherence, the number of recent formations, innumerability, obvious joining, and restrictions on suffixation. How these points may be examined has already been indicated in the discussion on productivity. In order to test coherence (discussed in 3.2), the informants were presented with test words of two types – every day descriptive adjectives and odd or unlikely combinations of bases with suffixes. The number of recent formations is evidenced by examples from the *RG* and discussed in section 3.3 along with evidence for innumerability. Obvious joining is difficult to test through direct questions, but was clarified by the informants themselves through their comments, and will be discussed in 3.4. The experimental test words used to examine coherence also provide evidence for innumerability and semantic restrictions on combinations; the latter will be examined together with external restrictions in 3.5. The purpose of this kind of experimental test

word is to stretch the limits of semantic acceptability and thus determine the suffix's semantic boundaries.

There are several possible problems with a study like this. It has not been possible to interview a large population sample nor a wide cross section of the Russian speaking community. All of the informants were highly educated which is unrepresentative of the language community. They may also have been influenced by my presence and my desire to get clear descriptions of meanings and combinatorial possibilities. Most importantly, speakers allow varying amounts of freedom for new formations; informants range from accepting nothing other than the common words listed in a dictionary to allowing everything imaginable. Often there is discrepancy as to whether a given word exists or not, or if it is even possible. For example, informant IX said that *zl-enn-yj* 'very mean' is an impossible formation while *tjažel-enn-yj* 'very heavy' is correct, while informant VIII said the opposite. Both forms are listed in Dal's 1989 relatively extensive dictionary. That various arbitrary speakers may also understand words in different ways is problematic but typical for real languages where there are no ideal speakers.

Table 1 presents the data for this study. Adjectival stems are listed in the first column, and their translations in the second. The third through seventh columns show the responses to each suffix when joined with the corresponding adjective stem. Responses are listed in percentages where possible; if the number of responses to a given formation is under 4-5 the raw numbers are given. A question mark indicates uncertainty as to the existence and meaning of the formation.

#### 3.2 *Semantics*

3.2.1 *Attenuating suffixes.* The emotionally neutral suffix *-ovat-* usually has a purely attenuating meaning – 'weakened degree of X, not fully X, a little bit X'. *Kras-n-ovat-yj* means 'reddish', *mal-ovat-yj* means 'a little bit small', *p'jan-ovat-yj* 'a little bit drunk, tipsy', *pozd-n-ovat-yj* 'a little bit late', *plox-ovat-yj* 'somewhat bad'. But the data show that *-ovat-* can sometimes drift to a temporal meaning of 'sometimes, from time to time or now and then'. This component was found to be present in the words *skuč-n-ovat-yj*, *vred-n-ovat-yj*, and *bol'-n-ovat-yj*. *Skuč-n-ovat-aja lekcija* 'boring + *-ovat-* lecture' can mean that the lecture is boring sometimes but not continually. Likewise *vred-n-ovat-o* can apply to something which is at times harmful, but not always. One informant says that *vred-n-ovat-o* is

Table 1. Test word responses.

stem	meaning	-en'k-	-ovat-	-ušč-	-enn-	-ejs-
pozd-n-	late	25% * 75% atten	100% atten			
skuč-n-	boring	40% atten 60% ironic	73% atten 27% temp	1 * 1 strong	40% * 40%strong 20% ?	100% sup
vred-n-	harmful	34% ironic 50% atten 16% pejor	27% * 46% atten 27% temp			
plox-	bad	33% atten 66% comp	100% atten			
xoroš-	good	100%good looking	100% *			
p'jan-	drunk	25% atten 75% affec	87% atten 13% *			
bol'-n-	painful	100% *	77% atten 23% temp			
čern-	black	80% dim 20% atten	100% atten			
kras-n-	red	71% dim 29% atten	100% atten			
trezv-	sober	50% * 37% ironic 13% pejor	75%* 12% ? 12% atten			
pogan-	foul, vile	50% pejor 16% ironic 16% atten 16% dim	100% *			
protiv-n-	disgusting	43% pej 43% ironic 14% atten	50% * 25% ? 25% atten			
gad-(k)-	nasty	20% ironic 20% affec 60% pejor	1 * 1 atten			
zdor(ov)-	healthy, big	57% affec 28% dim 14% strong	100% *	100% 'very big'	100% 'very big'	100% 'biggest'
tjažel-	heavy	57% affec 43% dim		82%strong 18% affec	87%strong 13% *	100% sup
straš-n-	awful	2 comp 1 pejor			72%strong 14% pejor 14% comp	
zl-	evil			63%strong 25% sup 12% pejor	87%strong 13% *	100% sup
um-n-	wise			2 sup 1 strong		100% sup
xitr-	cunning			66%strong 17% pejor 17% *		
tolst-	fat			2 strong	2 strong 1 pejor	

sup = superlative, atten = attenuating, strong = strengthening, pejor = pejorative, comp = compassionate, dim = diminutive, temp = temporal, affec = affectionate, \* = impossible

always 'slightly harmful', but that it is expressed with some reservation as to the truth of the proposition. Thus the expression of uncertainty, intuitively connected to the attenuating meaning, may be another component in *-ovat-*; since only one instance of this was found, this possible component will not be discussed further. About 50% of the informants have the temporal component of meaning in some formations but not all, while the remaining informants lack the temporal component. The meaning of *-ovat-* has therefore partially drifted to include a temporal component.

The emotionally expressive suffix *-en'k-* has a number of different but related senses. The most common interpretation seems to be 'affectionate' and 'diminutive'. For example, *tjažel-en'k-ij rebënok* 'heavy + affectionate baby', *vkusn-en'k-aja buloč-ka* 'delicious + affectionate/little bun', *p'jan-en'k-ij* 'tipsy + affectionate'. Another component mentioned in Zaliznjak (1987:75) is compassion, e.g. *plox-en'k-ij* 'somewhat bad + compassion'. The informants for this study say all of the above as well as that *-en'k-* is "softening", "weakening" (shown in the previous example with "somewhat"), "pejorative", and "ironic". For example, *skuč-n-en'k-ij* is interpreted as 'boring + soft, weak'; *pogan-en'k-ij* 'foul, vile + pejorative' is described as both ironic and pejorative and even possibly more pejorative than its base adjective *pogan-yj*. *Trezv-en'k-ij* 'sober, abstinent + *-en'k-*', which could be used by a drunkard to describe a teetotaler with disgust, can only be interpreted pejoratively or ironically. *Vred-n-en'k-ij* 'harmful + *-en'k-*' was described as "lacking respect, scornful, and contemptible".

How can these different senses be united in one suffix? This dialectic may be easily explained because these different senses are clearly interrelated. The basic semantic elements in *-en'k-* can be assumed to be the diminutive and the expression of emotion. Two different semantic components are associated with smallness. One side is positive; people tend to feel affection towards little things. Smallness is also related to weakness; thus the quality X can be softened or lessened in degree. When things are weak and small, they can give negative associations. Finally, when a positive suffix is combined with a negative base, the meaning of the combination may become ironic and thus can be interpreted as pejorative. The pejorative semantic component is observed especially when the base expresses a negative quality. The abstract suffix always includes both a positive and a negative meaning, and the resulting formations are open to personal and contextual interpretation depending on the combination with adjective base and modified noun.

3.2.2 *Strengthening suffixes.* The suffixes *-enn-* and *-ušč-* are generally seen to have the same function – to strengthen the degree of quality X, and meaning – ‘very X’. Thus they are good candidates for competition and blocking. Both strengthen the quality named, and both express emotion. They combine the judgment of degree with the speaker’s subjective appraisal of the modified noun (Zemskaja 1973). These suffixes came from dialectal language and entered literary language during the 19th century (Zemskaja 1965), and they have preserved a flavor of crudity and coarseness from the dialect. In fact, this study shows that they both express emotionality which, as has been seen for *-en’k-*, can be either positive or negative depending on the meanings of the base adjective and the modified noun. For instance *tjažel-enn-yj reběnok* ‘very heavy baby’, and *tjažel-ušč-yj arbuz* ‘very heavy watermelon’ give positive associations, while *zl-ušč-ij čelovek* ‘very evil person’ and *zdorov-enn-yj paren’* ‘big guy’ are crude and pejorative.

The semantics of the suffix *-ejš-* is fairly clear cut; it is neutral with respect to emotion and expresses the superlative. This study has not found evidence of *-ejš-* meaning anything other than the ‘highest degree of quality X’ or ‘extremely X’. In the latter sense the speaker expresses the view that the modified noun possesses such a high degree of X, that nothing could surpass it. For example, *um-n-ejš-ij čelovek* means ‘wisest man’ or ‘very wise man’ (implying that no other man could be wiser); *tjažel-ejš-aja sumka* ‘heaviest bag, extremely heavy bag’.

3.2.3 *Conclusions on semantics.* The basic semantic components in the secondary suffixes to emerge from this study are shown in Table 2.

Table 2. Semantic components.

	<i>-ejš-</i>	<i>-en’k-</i>	<i>-ovat-</i>	<i>-ušč-</i>	<i>-enn-</i>
attenuating	–	+	+	–	–
affectionate	–	+	–	+	+
pejorative	–	+	–	+	+
small	–	+	–	–	–
strengthening	+	–	–	+	+
superlative	+	–	–	–	–
temporal	–	–	+	–	–

At this point it is appropriate to comment on Table 2 and to compare the semantics outlined in Previous Treatments with what this study has found. Only the suffix *-ejš-* is fully described in the standard reference works. The

other four suffixes all contain semantic components not indicated in the literature. *-ovat-* has a temporal meaning in addition to the basic attenuating sense. *-en’k-*, standardly thought of as diminutive and affectionate, also includes compassionate and attenuating senses as well as the emotionally opposite pejorative and ironic senses. *-enn-* and *-ušč-* are described as coarse, but can actually express either positive or negative emotion. Thus the standard Russian literature seems to be rather incomplete on this issue.

The crucial question in this study is what this semantic analysis implies about the productivity of the secondary suffixes. More concretely, are the meanings of the secondary adjectives predictable? On the basis of this study, the temporal component in *-ovat-* is not predictable. There may be some suffix-external semantic reasons for this component which have to do with the adjective base and/or modified word. One possibility is that the latter refers to something which has continuity in time, but further study would be necessary to determine exactly when the temporal component arises. Thus the conclusion must be drawn that suffixation with *-ovat-* is not a coherent process. The suffix *-ejš-* alters the meaning of primary adjectives in precisely the same way every time; thus it is a highly coherent derivational model. As regards the emotionally expressive suffixes *-en’k-*, *-ušč-*, and *-enn-*, the assumption that these three express emotionality without further specification allows for their uniform treatment. Any given occurrence will be interpreted either positively or negatively within the context of the base adjective, the modified noun, the speaker’s tone of voice, and the general language context. When analyzed in this way, the three suffixes *-en’k-*, *-ušč-*, and *-enn-* are semantically coherent since no unexpected meanings have been found.

### 3.3 Time and number

Number should not be understood in absolute terms; the secondary suffixes do not occur that frequently in absolute terms, but this does not hinder them from being fully productive. Recall that the term number here means the ratio of actual formations to the number of potential bases. In this study the potential bases for secondary suffixation are assumed to be all qualitative adjectives. The number of listings of a certain suffix in a reference work like Zaliznjak 1987 does not say anything directly about productivity, but it does give an idea about how common the suffix is, and how many combinations are established in the language. This in turn points to the relative productivity of the suffix. For example the suffix *-ejš-* is listed in

Zaliznjak with ca 160 bases, *-en'k-* with ca 140, and *-ovat-* with 110. Since *-enn-* and *-ušč-* coincide with other suffixes (same phonological realizations, different semantics) it is difficult to count them just by looking at the listings; however the *RG* lists them fairly extensively. *-enn-* is listed there with fewer than ten bases, while *-ušč-* is given with twice that number. It is important to note that Zaliznjak's grammatical lexicon does not pretend to be a complete listing of words, which would be an impossible task precisely for the reason that people can use forms created at the moment of production and recreated at the same moment by the listener.

The secondary suffixes are all documented in recent formations to greater or lesser degrees. The documentation of new formations does not imply that the newly derived words have gained common usage, nor does it imply that they have never been used previously in the language. The *RG* cites many examples of formations in *-ovat-*, *-en'k-*, *-ušč-* and especially *-ejš-*. One single example of *-enn-* is given, i.e. *užas-n-yj proliv-enn-yj dožd'* 'terrible, very pelting rain'. Some examples of recent formations follow: with *-ovat-*: *exid-n-ovat-aja ulyb-ka* 'a somewhat malicious smile', *kurnos-ovat-yj* 'a bit stub-nosed' (Nikolaeva), *proxlad-n-ovat-yj* 'a bit chilly' (Nagibin); with *-en'k-*: *v ran-en'k-ix sumerkax* 'in the early + weak/affectionate twilight' (Bulgakov), *puxov-en'k-oj perinuš-ke* 'downy + affectionate feather bed' (Bokov); with *-ušč-*: *medvedixa ryž-ušč-aja* 'a very reddish-brown she-bear' (Evtušenko), *bogat-ušč-ij mužik* 'very rich fellow' (Zalygin); with *-ejš-*: *samoe volev-ejš-ee iz volevyx rešenij* 'the most resolute of resolute decisions' (Kočetov), *otmenn-ejš-ij večer* 'most excellent evening' (Nagibin). Despite the appearance of these formations (and many more not given here) in modern literature, some informants have reservations about accepting these unusual examples. This study has not examined these examples systematically, so it shall suffice to assume that the documentation of such formations is proof of the possibility of their existence.

Evidence for innumerability is provided by the informants' reactions to non-standard and experimental formations as well as by the existence of recent formations (cf. previous paragraph). Possible formations are innumerable since they need not, and cannot, be listed exhaustively in the lexicon. Uncertainty as to the existence of certain formations would indicate the possibility of their existence. Categorical certainty as to the impossibility of formations in a given suffix indicates that its formations are numerable. The fact that some informants can understand and use forms

created by analogy like *množ-ajš-ij* 'most many, extremely many', *vred-n-ovat-o* 'a bit harmful', *trezv-en'k-ij* 'sober + pejorative/ironic', and *vysok-ušč-ij* 'very high (with nonstandard suffix)', none of which is listed in Zaliznjak or considered standard by some other informants, shows that the lexicon does not list all of the possible formations for these suffixes. The conclusion must be drawn that formations in the four suffixes *-ejš-*, *-en'k-*, *-ovat-*, or *-ušč-* are innumerable. Most experimental examples that I could think of with *-enn-* were found unacceptable by informants (see 3.5.2); thus the number of formations in *-enn-* can be counted.

### 3.4 Joining

The secondary adjectives seem to be analyzed most readily as consisting of separate parts where each has its own clear function. Primary adjectives are presumably learned as a whole made up of the adjectival root and the primary suffix if there is one, whereas secondary adjectives are the result of a suffix being obviously joined to an adjective stem. The first piece of evidence for this statement is that the meaning of the secondary adjectives (as opposed to the primary adjectives) may be expressed analytically (at least the degree aspect, not the emotional aspect) as in example (3) without its being a marked construction.

(3) secondary adj	meaning	analytic construction	meaning
kras-n-ovat-yj	'reddish'	nemnož-ko kras-n-yj	'a little red'
mokr-ušč-ij	'very wet'	očen' mokr-yj	'very wet'
dorož-ajš-ij	'most expensive'	sam-yj dorog-oj	'most exp.'
zl-enn-yj	'very evil'	očen' zl-oj	'very evil'
bel-en'k-ij	'white + small'	bel-yj + mal-en'k-ij	'white+small'

The second piece of evidence that secondary adjectives are formed by an obvious join comes from the informants' comments. Native speakers have no difficulty in separating the suffix from the stem and saying for example, "the suffix *-ovat-* means diminutive", "this *-ejš-* always indicates highest degree", "*-en'k-* is softening". It is not likely that they could describe the primary suffixes with the same ease since their meaning is significantly less specific and thus less evident to the lay speaker.

### 3.5 Restrictions on productivity

3.5.1 *Internal restrictions.* This section will discuss the semantic restrictions on suffixation that exist internal to the secondary adjectives. In general the degree suffixes may only build on qualitative adjectival bases.

The suffix *-ejš-* presents an interesting case; in addition to combining with most qualitative adjectives, it is observed in some new formations with relational bases. For example *xristiann-ejš-ee istreblen-ie* 'most Christian extermination' (the *RG*). The suffix *-enn-* combines with semantically unmarked adjectives with simple descriptive meanings which in themselves express a high degree of quality *X* (the *RG*); the following seven combinations are established: *zdorov-enn-yj* 'very big', *tjažel-enn-yj* 'very heavy', *tolst-enn-yj* 'very fat', *široč-enn-yj* 'very wide', *vysoč-enn-yj* 'very high', *gluboč-enn-yj* 'very deep', *straš-enn-yj* 'very awful'. Its rival suffix *-ušč-* combines with bases from a wider semantic area such as *mokr-ušč-ij* 'very wet', *grjaz-n-jušč-ij* 'very dirty', *žad-n-jušč-ij* 'very greedy', among others. The suffixes *-ovat-* and *-en'k-* are free to combine with a large number of qualitative bases (as shown in 3.3) as long as the semantics of the combination makes sense. For example the base *zdorov-* 'big, healthy' cannot be combined with *-ovat-* 'a little bit', because living creatures can only be big and healthy or not; 'a little bit big and healthy' is impossible. On the other hand they can be *bol'-n-ovat-yj* 'a bit sick'. Other impossible formations are *\*xoroš-evat-yj* 'a little bit good', *\*bol'-n-en'k-ij* 'painful + affectionate'. Some informants even consider examples like *pozd-n-en'k-ij* 'late + weakening' and *protiv-n-ovat-yj* 'somewhat disgusting' to be ill-formed. It is generally true that when the semantics of the base and suffix are not compatible, the formation will be impossible. The two suffixes *-ovat-* and *-en'k-* do suffer from some internal restrictions on their productivity. However, internal restrictions do not seem to directly decrease productivity, rather they limit the set of bases that a suffix can build on.

3.5.2 *External restrictions.* An affix's level of productivity may be lessened due to the existence of word-external restrictions such as lexical blocking (Aronoff 1976) and competition from other affixes. Semantic drift and lexicalised formations in a suffix decrease its productivity because they make it less semantically coherent. One example is the word *mal-en'k-ij* 'small', etymologically a secondary adjective derived from *mal-yj* 'small (different usage)', which has been totally lexicalised, and there is no competing word for the same sense. *Mal-en'k-ij* has become the primary adjective meaning 'small'. The join between stem and suffix has become so blurred, that it is doubtful whether the majority of speakers even connect the suffix in *mal-en'k-ij* with the secondary suffix *-en'k-*. Another common

example is *xoroš-en'k-ij* which means 'good-looking' instead of the expected 'good + affectionate and/or small'. Semantic drift is seen in *zdorov-enn-yj* which only means 'very big' instead of the possible 'very big' or 'very healthy'.

When two or more affixes have the same semantics and function, they are said to be in competition for bases on which to build. One affix can block another by already being institutionalized with a given base or by combining with other bases according to a fully productive model. The second affix will not be able to combine with the same bases since redundant (and thus unnecessary) words are not derived. In other words, a suffix can be blocked by the existence of formations in a different suffix with the same meaning or by the other suffix's high level of productivity.

As stated earlier *-enn-* and *-ušč-* are good candidates for lexical blocking and competition. Some experimental formations were examined to test this hypothesis as shown in (4-5).

	base	meaning	standard	experimental	responses
(4)	vysok-ij	'high'	vysoč-enn-yj	vysok-ušč-ij	75% */25% ok
	straš-n-yj	'awful'	straš-enn-yj	straš-n-jušč-ij	50% */50% ok
	širok-ij	'wide'	široč-enn-yj	širok-ušč-ij	75% */25% ok
	glubok-ij	'deep'	gluboč-enn-yj	gluboč-ušč-ij	75% */25% ok
(5)	um-n-yj	'wise'	um-n-jušč-ij	um-enn-yj	65% */35% ?
	bol'š-oj	'large'	bol'š-ušč-ij	bol'š-enn-yj	100% *
	dlinn-yj	'long'	dlinn-jušč-ij	dlinn-enn-yj	100% *
	xitr-yj	'cunning'	xitr-jušč-ij	xitr-enn-yj	50% */50% ok

The responses to the above experimental forms indicate that both *-enn-* and *-ušč-* are blocked to some extent by already institutionalized formations in the other suffix. Formations with the nonstandard suffix are more often than not deemed impossible. The responses to formations in *-ušč-* (4) show slightly more freedom for derivation than those with *-enn-* (5), which only has limited possibilities for new formations. The fact that informants have stronger reservations about new formations in *-enn-* indicates that *-ušč-* has taken the overhand in new formations. It is interesting to note that a small number of bases including *zdorov-* 'big, healthy', *tolst-* 'fat', *tjažel-* 'heavy', and *zl-* 'evil' can combine with both strengthening suffixes. This study has not found conclusive evidence to explain the phenomenon.

The suffix *-ejš-* is also affected by blocking; it is barred from certain combinations by the existence of superlatives in *-š-*. *-ejš-* cannot combine



with semantically basic adjective roots such as *xoroš-* 'good' and *plox-* 'bad' among others because the suplicative superlatives *luč-š-ij* 'best' and *xud-š-ij* 'worst', already exist with the same meaning. However there are fewer than ten examples of superlatives in the improductive *-š-* (cf. Garde 1980).

### 3.6 Spheres of language

Earlier in this paper it was stated that it is important to specify in which spheres of language an affix is productive. This study has been concerned with common, everyday qualitative adjectives in conversational and literary language and has not fully explored the possible variation of the secondary suffixes in different areas of language. It would take a much larger study to determine this. However, the standard assumptions can be stated along with some vague intuitions concerning their suitability to different spheres of language. The meaning of *-ovat-* is not appropriate to precise, technical language, but this suffix is widely used in both conversational and literary language. The suffix *-en'k-* occurs primarily in conversational and artistic language. The superlative suffix *-ejš-* is widely used in many different spheres of language and occurs quite frequently as it can be joined with many bases. *-enn-* and *-ušč-* occur mainly in conversational language and popular dialects.

## 4. Conclusions

This paper has critically examined the standard descriptions of Russian secondary suffixes and compared these with the results of an empirical study based on interviews with native Russian speakers. Regarding the suffixes' semantics, only *-ejš-* is fully described in the literature. It has been shown that *-ovat-*, in addition to its regular attenuating meaning, can drift toward a temporal meaning in an unpredictable manner. Of the emotionally expressive suffixes *-en'k-*, *-enn-*, and *-ušč-* the first is described in the literature as emotionally positive, and the other two as pejorative. But this study has found that both sides of emotionality are present in all three. It has also been shown that *-enn-* and *-ušč-* block each other, a fact which is not mentioned in the previous descriptions.

Productivity can be analyzed by examining the criteria of semantic coherence, obvious join, innumerability, and the number of recent formations. Once a level of productivity is assigned, it can be decreased somewhat by external restrictions on the suffix. These criteria allow for different levels of productivity within different spheres of language. There

is no absolute scale along which to measure productivity as language is in constant flux, but affixes can be classified as rarely, partially, and highly productive. This study has explored and found principled reasons for rating the secondary suffixes at different levels of productivity.

Semantic coherence is a valid criterion for productivity, but cannot be taken as the single defining factor as suggested by Aronoff 1976. An obvious join is also necessary, but does not constitute a sufficient criterion for productivity; it must be considered together with other factors. Evidence from the number of recent formations and innumerability are necessary in determining productivity. Table 3 lists the four criteria for productivity, the existence of external restrictions, and their values for each of the five examined suffixes.

Table 3. Productivity criteria.

	-ejš-	-en'k-	-ovat-	-ušč-	-enn-
joined	+	+	+	+	+
coherent	+	+	-	+	+
innumerable	+	+	+	+	-
many new formations	+	+	+	+	-
external restrictions	+	+	-	+	+

All adjectives which include these degree suffixes are seen as clearly joined from two parts, a stem and a modifying suffix. *-ejš-* is semantically coherent, builds on many different bases (qualitative as well as relational) and has innumerable new formations within various spheres of language. Its high productivity is slightly decreased by lexical blocking, but not significantly since the competitor *-š-* is improductive. Thus the suffix *-ejš-* has the highest level of productivity. The basic meaning of *-en'k-* is predictable which makes this suffix coherent. Specific semantic components are dependent on what it modifies. *-en'k-* also has lots of new formations and can combine with many bases from literary and spoken language. Although seemingly insignificant, the two above mentioned lexicalisations in *-en'k-* cause a slight lowering in productivity, so *-en'k-* must be classified as partially productive. The suffix *-ovat-* is not coherent since the occurrence of the temporal component cannot be predicted. At the same time new formations with *-ovat-* do exist and thus cannot be counted. No further restrictions on *-ovat-* have been found. The combination of these factors makes *-ovat-* partially productive. The strengthening suffixes *-enn-* and *-ušč-* are semantically coherent; the degree component is totally

predictable as is the expression of emotionality. Both suffixes are blocked by the other; however, *-enn-* seems to be more blocked in new formations than *-ušč-*. Thus the latter suffix dominates the semantic field and has succeeded in taking over most new formations, which indicates that its combinations are innumerable. The suffix *-enn-* is found in at least one recent formation, but doesn't readily form others; therefore its formations can be counted and limited to under ten. *-ušč-* has all the characteristics of being highly productive, but suffers from competition from *-enn-*. The existence of *-ušč-* seems to have decreased the productivity of *-enn-* and vice versa. It must be concluded that *-ušč-* is only partially productive due to strong external restrictions, while *-enn-* is rarely productive due to numerability, the lack of new formations, and competition. In conclusion it may be stated that *-ejš-* is highly productive, *-en'k-*, *-ovat-* and *-ušč-* are partially productive, and *-enn-* is rarely productive. This happens to be precisely the same result stated in the *RG*; however, this study has arrived at the conclusion based on principled arguments instead of intuitions.

Productivity in derivational morphology has long been a somewhat vague, intuitive notion. But this study has shown that it is possible to examine productivity more extensively than is generally done. The criteria suggested in this paper have been useful in analyzing Russian secondary suffixation and should be generally valid for the analysis of productivity in derivational morphology.

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