

# How do *Džon* and *Džejn* Read Russian? On-Line Vocabulary and its Place in the Reading Process

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The scope of reading texts now considered appropriate and accessible for beginning and intermediate foreign language (FL) learners has broadened significantly in the past two decades. Textbooks, even for some less commonly taught languages (LCTL) such as Russian, now contain advertisements, menus, tickets, transcripts, personal correspondence, and newspaper articles in addition to traditional literary selections in original or adapted forms. Researchers have just begun to consider the problem of how learners interact with these texts and how they derive meaning from them. Research is needed in this area because reading involves not only a knowledge of the language (the code) but also the abilities to predict or guess, to remember the previous cues, and to make the necessary associations between the different cues selected (Yorio 1971). This paper examines the complex issues of looking up vocabulary, inferring word meaning from context, and measuring comprehension based on data gathered as intermediate students of Russian read authentic newspaper texts in a computerized hypertextual environment.

In contrast to measuring comprehension, recording how students read has been difficult to document, since traditionally their abilities have been equated with their success in comprehension, as measured by their performance at various tasks, such as comprehension questions, cloze passages, and recall protocols. In addition to “think aloud” protocols (Davis and Bistodeau 1993), current research into FL reading as a process has turned to computers to monitor unobtrusively how students read texts, which computerized lexical and grammatical help they use, and how they comprehend what they read.

## Related Research

Two earlier studies in Spanish and French acquisition examined the relationship of students’ use of on-line vocabulary to their reading comprehension. In a study of fifth-semester Spanish students, Aust, Kelley and Roby (1993) found that students who had access to a computerized version of the text they were reading looked up more words in a bilingual gloss than a second group that had

access only to a monolingual computerized gloss. Both of the groups that read the computerized article looked up notably more words than either of the two control groups that had paper versions of the article and of a bilingual or monolingual dictionary. Moreover, researchers found no significant difference in comprehension among the four groups as measured by a recall protocol. In a study of third-semester students' comprehension of a computerized excerpt of a French literary text, Davis and Lyman-Hager (1997) reported that there was no apparent correlation between the frequency of the participants' consultations of lexical and grammatical glosses and their overall comprehension of the text. Nevertheless, in follow-up interviews, students expressed the belief that the glosses helped increase their comprehension of the text.\*

While encouraging L1 and L2 learners to try to guess the meanings of unfamiliar words based on context has been standard advice and is considered good pedagogical practice, Schatz and Baldwin (1986) have shown that context alone is not an efficient tool even for L1 readers to predict word meaning. Haynes (1984), working with ESL readers, found that relying on context does not always help L2 learners. When Haynes' subjects tried to guess the meanings of nonsense words in a reading passage, they were successful at guessing words supported by immediate sentence context, but not at guessing words that required global comprehension of the text. She also observed that students often mistook unknown words for similarly-spelled familiar words. In contrast, even when students have easy access to glosses, Hulstijn (1993) found that they are more likely to look up words they deem relevant than words easily inferred from contextual information. He also found that students used a wide range of strategies when reading the text: some read the text once, while others read twice; some read to determine the main idea of the text, while others attacked the text one word at a time. Students' choice of strategy, however, did not affect their overall comprehension. Hulstijn concluded that students should be instructed in reading strategies and then encouraged to choose the ones they find most helpful. Another study found that marginal glosses do help students learn new vocabulary: subjects in a control group who had access to paper dictionaries but not to on-line glosses learned fewer new words than peers in the experimental group, who did have on-line glosses (Hulstijn, Hollander and Greidanus 1996).

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\* This study appeared in print after we had already conducted our experiment and, therefore, part of our research duplicates it. The lack of correlation in both studies between the frequency of glossary use and comprehension strongly suggests that authors of computer programs designed for reading need to consider other assistance for the learner besides vocabulary glosses.

## Scope of This Investigation

The above studies, showing that guessing vocabulary from context is a limited reading strategy, were all carried out with English-language texts. Since all languages encode grammatical and morphological information differently, it is likely that language learners' success in guessing vocabulary would vary based on their native language and the foreign language being studied. Since current Russian journalistic language is so rich in cognates and foreign borrowings, and since much Russian vocabulary is built on recognizable prefixes, roots and suffixes, it seems reasonable to assume that guessing word meaning would be a more productive reading strategy in Russian than in English. For these reasons, we designed our program to record student guesses as well as their perceived guessing strategies, since this information would indicate the students' awareness of word-formation clues in making sense of unknown words.

Moreover, in contrast to earlier studies about word guessing and glossed vocabulary, we designed our program so that subjects would receive verification of the guessed word's meaning after making their guess. We hypothesized that the continuous guess-and-verification routine would lead to increased comprehension of the text because it would require them to recall the article's content at each guess. In addition, we expected that continuous verification of word meanings would help them correct misreadings of the text. We expected that students reading the text for the second time would still look up a large amount of unknown vocabulary and would guess the meaning of unknown words with a greater degree of accuracy. We also expected that the students' recall protocols would improve after the second reading.

While many have noted the importance of background knowledge in reading comprehension (Omaggio Hadley 1993; Kitao 1986; Barnitz 1986; Carrell 1986; Johnson 1982), we decided not to include pre-reading activities in this experiment, since these activities would likely have interfered with our observation of the students' use of the on-line glossary. We also did not explain the texts' structure to the students even though the rhetorical organization of texts is culture specific (Barry and Lazarte 1995). American students may have had difficulty with the texts because Russian newspaper articles differ structurally from American newspaper articles. The latter usually place the main information (answers to the questions: who? what? where? when? how?) in the initial paragraph. This information is often absent from the initial paragraph of Russian articles. In addition, Russian articles often contain more editorial commentary than analogous articles from American newspapers.

## Method

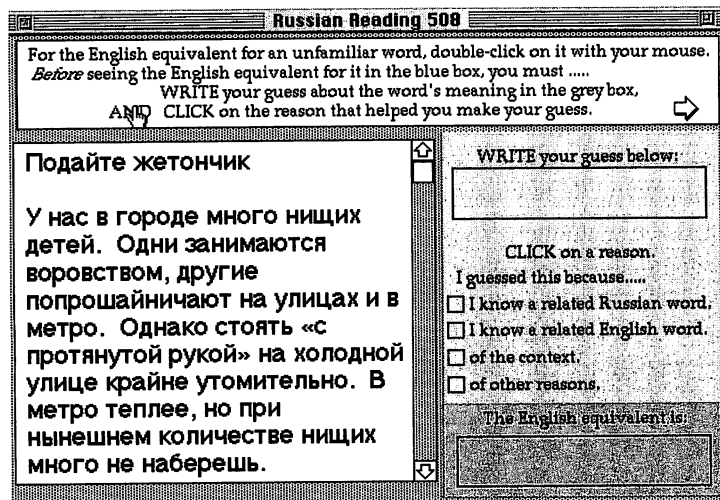
**Subjects.** Our subjects were nineteen American college students enrolled in intermediate-level Russian language classes, thirteen in their fourth semester of Russian, and six in their sixth semester.

**Texts.** Two articles, "Podajte žetončik" and "Golodnyj dol'še živet," were selected from a daily newspaper from St. Petersburg, Russia (see Appendix 1 for texts). The first article describes poor children who beg in the city's metro stations. The second treats somewhat ironically current Russian problems related to life-expectancy. Written in standard journalistic style, both articles were selected because they contain a mixture of recognizable and unfamiliar vocabulary and focus on topics accessible to a general audience. The first article consisted of 106 words; the second article was slightly abridged to 120 words. Neither article contained information likely to have been presented formally in class. The hypertext versions of the articles used in this study were created in the programming language **Hypercard**.

**Procedures.** Before the experiment, the participants received an explanation of the procedures, but they were not told about the purpose of the study. Students performed the reading tasks during their regular fifty-minute class period. The program began with an introductory screen providing directions for the subjects. The students then read a sample passage in English containing six nonsense words in boldface print and practiced the guess-and-verification procedure.

After the practice text, the students proceeded to the first Russian article "Podajte žetončik" shown below in Figure 1.

Figure 1



The students had twenty minutes to read the article and ten minutes to write a detailed summary of what they had read. They could receive an English gloss of unknown words pointing and clicking their mouse on them. Before the gloss appeared on the screen, they had to guess the unknown word's meaning, and then indicate the strategy that led them to that guess from the four possible choices listed above on the right-hand side of Figure 1: 1) I know a related Russian word; 2) I know a related English word; 3) from context; or 4) for other reasons. After selecting a reason for the guess, the English translation of the unknown word appeared at the bottom of their screen. The translations did not provide grammatical information (e.g., for the conjugated form *poprošajničajut*—literally, “they beg, are begging, do beg”—the gloss was simply “beg”); plural nouns, however, were glossed in the plural (e.g., *jajca*—“eggs”). After the students had read the article, they moved to the next screen where they were instructed to write a detailed summary in English of what they had read.

During the second session, the fourth-semester students reread the article “Podajte žetončik” in the same manner. They then read a second article “Golodnyj dol’še živet.” Once again they selected unknown words, guessed their meanings and selected a strategy in order to receive the English gloss. The sixth-semester students met with us for one session in which they read both Russian texts. Reading time limits did not seem to affect students significantly as most students finished the readings before the end of the allotted time.

The reading program kept a log of the words that the students selected, their guesses of the words' meanings, and the strategies they reported using for their guessing. Their summaries were saved with the above information.

## Data Analysis

A) *Varieties of guesses.* We labeled each student guess according to the following categories.

- 1) Correct.
- 2) Synonym. The guess was close to the exact definition.
- 3) False friend. The guess suggested that subjects mistook the word for a similar, but unrelated word. *Sposob* was guessed as “thanks,” probably by false analogy with *spasibo*. *Golod* was guessed as “city” (*gorod*) or “head” (*golova*). *Pozže* was guessed as “train” (*poezd*).
- 4) Incorrect, but possible from context. For example, many students looked up *niščix* in the first sentence of the first article. “Poor” or “destitute” were accepted as correct guesses, while guesses, such as “homeless,” “young,” or “small,” were labeled as incorrect, but possible in the context of this sentence.

- 5) Random. The guess seemed completely unrelated to context and could not be explained by false analogies.
- 6) Multiple. We separated out guesses that the students made when they looked up a word the second or third time within the same article.
- 7) Lacking. Students sometimes put question marks or nonsense words in the box.

Table 1. Summary of Guess Types

Type of Guesses	Article 1	Try 1	Article 1	Try 2	Article 2	
	Raw No.	%*	Raw No.	%*	Raw No.	%*
Correct	36	10%	31	18%	44	10%
Synonym	7	2%	2	1%	5	1%
False Friend	22	6%	7	4%	30	7%
Incorrect, but...	161	46%	68	40%	201	48%
Random	83	24%	33	20%	86	20%
Multiple	11	3%	5	3%	5	1%
Lacking	28	8%	23	13%	49	12%
Totals	348		169		420	

\*Because of rounding, totals for the percentages do not equal 100%.

The data in Table 1 reveal three interesting facts. The relative percentages of guess types are remarkably similar for all three readings—10% of guesses were correct for the first reading of both articles. On the first reading guesses that are incorrect but possible from context account for almost half of the guesses, while random guessing accounts for less than a quarter. The number of correct guesses increased only by 8% when the students reread the first article.

**B) Words looked up.** The students looked up an average of 18 words (SD 8.59) when they read the “Podajte žetončik” article the first time; but only 12 (SD 8.27) when they read the same article a second time. They looked up an average of 23 words (SD 8.1) when they read the second article. When we analyzed the vocabulary of these articles, we anticipated that 49% of the words in the first article should be in the students’ lexicon already. Indeed, the data showed that of the 106 words in the first article they looked up a total of 43 different words or 41% of the article’s vocabulary. In the second article we predicted that only 40% of the words would be known vocabulary. Of the 120 words, they looked up a total of 75 words or 63%. This suggests that students generally do not spend much time looking up previously learned vocabulary. Indeed, of the words they looked up in the second article, only 16% were words that we expected them to know (e.g., *xolodnoj*, *teplee*, *kupil*). However, when looking up

such words, students guessed the correct meanings more frequently, which suggests that they looked them up to verify their meaning.

We found that the students read the articles almost exclusively in a linear manner, looking up words in the order in which they were encountered. When they did go back to look up an earlier word, it was usually a modifier of the most recently looked-up word. Few students went back and looked up words after reading through the entire article; and in those cases the most commonly checked words were *niščix* and *golodnyj*.

**C) Reported Guessing Strategies.** Table 2 summarizes the number of times that students selected each strategy.

Table 2. Summary of Strategy Use

Strategy	Article 1	Try 1	Article 1	Try 2	Article 2	
Related Russian word	35	10%	16	9%	30	7%
Related English word	8	2%	2	1%	7	2%
Context	152	44%	76	45%	216	51%
Other	153	44%	75	44%	167	40%

Approximately 19% of words in the first article might have been guessed based on Russian roots and prefixes, yet the subjects selected the strategy “I know a related Russian word” only 10% of the time; in the second article 25% of the words could have been guessed using roots and prefixes, but subjects selected that strategy only 7% of the time. This suggests, contrary to our hypothesis, that students do not consciously employ strategies of word recognition based on Russian word formation. In the second article, “Golodnyj dol’še živet,” twelve words (10%) have English cognates, but students rarely (2% of all guesses) selected the related strategy “I know a related English word” even when they looked up a cognate. The poor awareness of word-formation strategies probably accounts for the inordinately high frequency of the “for other reasons” choice. Regrettably, we did not have the students clarify their reasons when they selected this choice.

**D) Comprehension and Number of Words Looked Up.** The results of the recall protocol were almost identical between the first and second readings of the first text. Their overall average was 79% correct statements for first reading of the first article, 80% correct for the second reading, and 77% correct for the second article. Regression analysis showed a moderate correlation between the number of words looked up and the number of correct statements in their recall protocols for the two readings of the first article (correlation coefficients of .49 and .63 respectively). However, no correlation was observed between these two variables for the second reading (correlation coefficient .10).

## Discussion of Guessing Behavior

It is clear that when students attempt to guess the meaning of a word that is a cognate, they do not indicate the corresponding strategy, "I know a related English word." The second article, "Golodnyj dol'še živet" contains twelve cognates, and students looked up eight of these: *Kavkaz*, *gerontologi*, *moral'nogo*, *situacii*, *produktov*, *turetskie*, *ekonomičeskoi*, and *deficita*; and four *klimata*, *specialisty*, *minimum*, and *rekomendujutsja* that were not. *Gerontologi* and *deficita* were both looked up by 7 students. Table 3 summarizes the students' guesses for these two words and their perceived strategies.

Table 3. Analysis of Cognates

Context: **Геронтологи США** считают, что недоедание увеличивает продолжительность жизни.

Context: —«Яйца есть вредно!»—говорили «специалисты» в пору дефицита этих продуктов.

Guess	Strategy	Guess	Strategy
gerontology	context	deficit	related Russian word
guarantee	context	deficit	other
generally	other	definition	related English word
council	context	time	other
officials	other	don't know	context
research	context	department	context
some sort of doctor	context	factory	context

While these words have clear English cognates, none of the subjects reported that they had guessed the meaning of the word because they know a related English word; even the one person who guessed the word meaning correctly attributed this to context—which is highly unlikely. *Deficita* had similar results. The only person who thought that it was a cognate, produced the wrong equivalent "definition."

In the first article the words looked up by the most subjects during the first reading were: *vorovstvom* (16 subjects); *niščix*, *poprošajničajut*, *utomitel'no* (15 subjects); *golod ne tetka*, *protjanutoj* (13 subjects); *nabereš'* (12 subjects), *žetončik* and *suščestvovaniju* (11 subjects). During the second reading these words were once again the most frequently looked up. Words like *žetonov* and *žetončik* were looked up by far fewer subjects during the second reading, probably because most subjects learned these words in the first reading of the text due to their frequency and their importance for comprehension. This corresponds with earlier findings that students learn vocabulary encountered in



marginal glosses (Hulstijn, Hollander, Greidanus 1996). However, this learning may not be very efficient. While we anticipated that those students who looked up *žetončik* and *žetonov* during the second reading of the article would show significantly better abilities to guess the word's meaning, this turned out not to be true. Five people looked up *žetonov* during the second reading of the article, and only one of their guesses was correct (and that was a repeated look-up); three people looked up *žetončik*, and only one of them guessed the correct answer ("token").

Appendix 2 contains data about three of the most frequently looked up words in the two texts: *nabereš'*, *poprošajničajut* and *vyvody*. Some of the students' guesses were appropriate to context: "beg" and "survive" for *nabereš'*. Students' guesses sometimes did not match the part of speech of the unknown word, as seen by such responses as "good" and "few" for *nabereš'*. The second time the students read the article, fewer students looked up *nabereš'*, but their guesses were just as erratic. The students who looked up *poprošajničajut* had a higher success rate in guessing the meaning, and almost all the subjects felt they had determined the meaning from context. This is quite possible since clues from the local context could aid the reader in determining the meaning of the word. The word *vyvody* caused problems for several students. Three students guessed "water," from the false friend *voda*. It is interesting that two students guessed "weapons," probably misunderstanding the meaning of the expression *voz'mut na vooruženie* in the local context. More appropriate guesses were "data," "research" and "treatment" which did relate to the global context of the article.

Our hypothesis that the repeated guess-and verification routine would have a significant positive effect on the students' comprehension was not supported. Although students were given accurate glosses of every word looked up, a consistent 20% of statements in the recall protocols were incorrect. Despite many correct statements, most students failed to mention some of the main points and features of the articles. For example, in the first article, many students did not understand that the children begged for the tokens and then sold them back for money. No one commented on the ironic tone of the second article which they seemed to have read as a purely scientific, informational text. In their recall protocols they commented on the straightforward factual information (e.g., eggs are unhealthy, one should sleep nine hours per day). The chief reasons for misreading seem to have been confusion over idioms, syntax and inappropriate use of background knowledge. While previous scholarship emphasizes that background knowledge aids in the comprehension process, we found that it can also cause students to 'read in' additional information, sometimes even contradictory to the explicit meaning of the text. For example, in their summaries of the second article, a few students wrote that exercise helps increase life ex-

pectancy, a claim not mentioned in the article. Three students seriously misconstrued the sentence *Nynče naši vlasti, navernoe, s udovol'stvie'm voz'mut na vooruženie vyvody amerikanskix učenyx*, coming up with an interpretation involving Russian average life spans and nuclear waste.

### Conclusions and Recommendations

While computers are becoming an important medium in FL reading, authors of programs that teach reading need to reconsider how reading is presented to the students. Clearly, the claim that marginal glosses are helpful to students who still read at the word-by-word decoding level (Davis 1989) needs to be examined critically. We need to recognize that while glossed vocabulary is a regular part of most reading software, the presence of glosses does not automatically lead to increased comprehension. Perhaps glosses fail because they unintentionally suggest to students that reading is mostly a bottom-up process where one needs to know all the words in order to determine a text's meaning. Reading software should counterbalance this implicit bias towards bottom-up reading strategies by incorporating top-down reading activities (such as skimming, scanning, schema activation, etc.). Additional research is needed to determine what kinds of top-down activities are most beneficial for increasing comprehension in a hypertextual environment.

A corollary to this recommendation is that effective reading software needs to teach reading strategies in general. Studies show that the main reason for poor strategy use is lack of exposure; when students receive instruction in the use of strategies, they believe that it has a positive effect on learning (Chamot 1993). Diverse kinds of strategy instruction and practice activities can (and need to) be incorporated into reading software. For example, since our findings show that the students sometimes employ ineffective strategies in figuring out the meaning of an unfamiliar word, it might be beneficial if reading software made vocabulary recognition more interactive by giving students hints about a word's meaning (word root, prefixes, etc.) before presenting a gloss. In the case of cognates, the software might point out to students that the word is a cognate, and then suggest that they pronounce it aloud to help them recognize the familiar word. As part of pre- or post-reading materials, reading programs might include instruction and activities to familiarize students with Russian's regular system of word formation. Similarly, such activities can alert students to the dangers of guessing words through "word deformation" (altering or misreading a word by one letter, such as reading *golod* as "city"). These kinds of activities can teach the importance of decoding visual information (low-level processing) for improvement in comprehension (Koda 1992).

Reading software for Russian needs to offer beginners assistance with reading beyond the individual word level, including pointing out syntactic features (especially impersonal constructions and passives), discourse features, and rhetorical organization. For example, effective reading software would need to address word order in Russian: perhaps graphic enhancements that help students see and break down a sentence into clauses and phrases might be helpful in improving their global comprehension.

Reading in an on-line environment invites us to test and reexamine approaches that have proven effective with reading print materials and to explore their applicability to this new form of reading. The need for future research in this area is pressing since computers and hypertext will occupy an ever greater role in second language acquisition.

### Works Cited

- Aust, Ronald, Mary Jane Kelley, and Warren Roby. "The Use of Hyper-Reference and Conventional Dictionaries." *Educational Technology, Research and Development* 41 (1993): 63-73.
- Barnitz, John G. "Toward Understanding the Effects of Cross-Cultural Schemata and Discourse Structure on Second Language Reading Comprehension." *Journal of Reading Behavior* 18 (1986): 95-116.
- Barry, Sue, and Alejandro A. Lazarte. "Embedded Clause Effects on Recall: Does High Prior Knowledge of Content Domain Overcome Syntactic Complexity in Students of Spanish?" *Modern Language Journal* 79 (1995): 491-504.
- Carrell, Patricia. "Review of Reading Development and Cohesion." *Language Learning* 36 (1986): 377-85.
- Chamot, Anna Uhl. "Student Responses to Learning Strategy Instruction in the Foreign Language Classroom." *Foreign Language Annals* 26 (1993): 308-21.
- Davis, James N. "Facilitating Effects of Marginal Glosses on Foreign Language Reading." *Modern Language Journal* 73 (1989): 41-48.
- Davis, James N., and Linda Bistodeau. "How Do L1 and L2 Reading Differ? Evidence from Think-Aloud Protocols." *Modern Language Journal* 77 (1993): 459-72.
- Davis, James N., and Mary Ann Lyman-Hager. "Computers and L2 Reading: Student Performance, Student Attitudes." *Foreign Language Annals* 30 (1997): 58-72.

- Haynes, Margot. "Patterns and Perils of Guessing in Second Language Reading." *On TESOL '83: The Question of Control*. Ed. Jean Handscombe, Richard A. Orem and Barry P. Taylor. Bloomington: Pantagraph Printing, 1984. 163–76.
- Hulstijn, Jan H. "When Do Foreign-Language Readers Look up the Meaning of Unfamiliar Words? The Influence of Task Learner Variables." *Modern Language Journal* 77 (1993): 139–47.
- Hulstijn, Jan H., Merel Hollander and Tine Greidanus. "Individual Vocabulary Learning by Advanced Foreign Language Students: The Influence of Marginal Glosses, Dictionary Use and Reoccurrence of Unknown Words." *Modern Language Journal* 80 (1996): 327–39.
- Johnson, Patricia. "Effects on Reading Comprehension of Building Background Knowledge." *TESOL Quarterly* 16 (1982): 503–16.
- Kitao, Kathleen, S. *Reading, Schema Theory and Second Language Learners*. Tokyo: Eichosha Shinsha, 1986.
- Koda, Keiko. "The Effects of Lower-Level Processing Skills on FL Reading Performance: Implications for Instruction." *Modern Language Journal* 76 (1992): 502–12.
- Omaggio Hadley, Alice C. *Teaching Language in Context: Proficiency-oriented Instruction*. 2d ed. Boston, Massachusetts: Heinle & Heinle Publishers, Inc., 1993.
- Schatz, Elinore Kress, and R. Scott Baldwin. "Context Clues are Unreliable Predictors of Word Meanings." *Reading Research Quarterly* 21 (1986): 439–53.
- Yorio, Carlos A. "Some Sources of Reading Problems for Foreign Language Learners." *Language Learning* 21 (1971): 107–15.

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## Appendix 1: Text of Russian Articles

### Article 1: «Подайте жетончик»

У нас в городе много нищих детей. Одни занимаются воровством, другие попрошайничают на улицах и в метро. Однако стоять «с протянутой рукой» на холодной улице крайне утомительно. В метро теплее, но при нынешнем количестве нищих много не наберешь.

Но голод не тетка, и появился новый способ добывать средства к существованию. На оживленных станциях метро (таких, как «Гостинный двор») у пункта продажи жетонов можно увидеть бедно одетых детей. Увидев человека, который купил много жетонов, они подходят к нему и просят один-два жетона «на метро». Так повторяется не один раз. Затем дети сдают жетоны в этот же пункт или продают их тем, кто торопится и у кого нет времени на их покупку.

*from: «Večernij Peterburg», November 22, 1994.*

### “Give a token”

There are many poor children in our city. Some steal; others beg on the streets and in subway stations. However, standing “with an outstretched hand” on the cold street is extremely tiring. In the subway station it is warmer, but with the current number of poor people, one doesn’t collect much.

But hunger is no friend, and there has appeared a new way to obtain the means for existence. In the busy subway stations (those like *Gostinyj dvor*) at the token sale window, one can see poorly dressed children. Having caught sight of a person, who has bought many tokens, they go up to him and ask for one or two tokens “for the subway.” This is repeated more than once. Later the children turn back the tokens to the same sale window or sell them to those who are in a hurry and who don’t have time to purchase them.

### Article 2: «Голодный живет дольше»

Жизнь россиян сокращается. Я не спрашиваю почему. И так ясно. Но на улучшение экономической ситуации и морального климата в стране надежды в ближайшее время нет. Не могут ли ученые дать какой-нибудь совет: как жить долго?

— «Яйца есть вредно!» — говорили «специалисты» в пору дефицита этих продуктов. Нынче наши власти, наверное, с удовольствием возьмут на вооружение выводы американских ученых. Геронтологи США считают, что недоедание увеличивает продолжительность жизни. Например, недокормленные мыши и крысы живут в 1,5 раза дольше. У голодных мышей, кроме того, возрастные изменения в тканях происходят значительно позже.

А вот турецкие геронтологи связывают долголетие в первую очередь, со сном. Долгожители Кавказа спят как минимум 9 часов в сутки (в среднем 11–13 часов). Особенно полезен сон пожилым людям. А в качестве средства от бессонницы рекомендуются вечерняя прогулка и стакан молока на ночь.

*from «Večernij Peterburg», May 23, 1995*

### “The Hungry Live Longer”

Russians' lives are getting shorter. I don't ask why. It is clear. In the near future there is no hope for improvement in economic conditions or moral climate in the country. So can't scholars give some advice about how to live a long time?

“Eating eggs is bad for you,” said the “specialists” when there was a shortage of these foodstuffs. Now, with pleasure our authorities will probably add to their arsenal the conclusions of American scientists. Gerontologists of the U.S. think that undernourishment increases the length of life. For example, underfed mice and rats live one and a half times longer. Besides that, age changes in the tissues of hungry mice occur significantly later.

Turkish gerontologists link longevity primarily with sleep. Those who have lived remarkably long in the Caucasus sleep a minimum of 9 hours a day (on average 11–13 hours). Sleep is especially helpful for the elderly. As a means against insomnia, they recommend an evening stroll and a glass of milk before bed.

## Appendix 2: Analysis of Individual Words

Sample Word 1 from Article 1: наберешь

Context: В метро теплее, но при нынешнем количестве нищих много не **наберешь**.

Try 1

Try 2

Guess	Strategy	Guess	Strategy
not to give	context	beg	other
allowed	context	decreased	other
beg	other	steal	context
known	other	succeed	context
survive	context	large	context
given	other	guess	other
fear	other	increasing	context
run	other	opportunities	context
stay	context	side	other
few	context		
good	other		
usual	context		

Sample Word 2 from Article 1: попрошайничают

Context: Одни занимаются воровством, другие **попрошайничают** на улицах и в метро.

Try One

Try Two

Guess	Strategy	Guess	Strategy
begged	other	beg	context
begging	context	begged	context
pan-handle	context	begging	context
panhandle	context	panhandling	other
panhandling	context	to give	context
passing	context	wait	context
play	context	?	other
ride	context		
spend time	context		
study	context		
travel	context		
wait	context		
together	context		
beg	context		
ways	context		

Sample Word 3 from Article 2: выводы

Context: Нынче наши власти, наверное, с удовольствием возьмут на вооружение **выводы** американских ученых.

Guess	Strategy
water	related Russian word
water	context
water	other
advertisements	context
data	context
opinion	other
research	other
treatments	other
weapons	context
weapons	other
?	other
health	context
have	other
released	context