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Reading Russian for the Disciplines: Google Translate

RICHARD ROBIN

For many graduate students in areas such as history, economics, sociology, security policy studies, and arms control, the Russian reading requirement represents a significant barrier in terms of required coursework or reading proficiency, since Advanced-level reading proficiency at a minimum is necessary for reading in these disciplines. The question is, must that barrier be maintained? In a time when online machine translation (MT) is available on smartphones, is requiring a demonstration of L2 reading proficiency as part of the path to an advanced degree any more meaningful than requiring that statisticians be able to add up a column of figures in their heads? The answer revolves around another question: can those with little or no reading proficiency in Russian be taught to make use of Google Translate to extract information from Russian-language texts?

A casual glance at blog posts (e.g., Calico Spanish 2013; Sra Witten 2013; u/rayyychul, NikkitheChocoholic, topshelfesteem, theodore_boozevelt 2018) confirms the presence of widely held fears about the inadequacies of translation engines in the hands of students. Users complain about inaccuracies and misreading, even when translation engines feed fairly straightforward text. Studies of MT contain numerous cautionary if not disdainful tales of mistranslation (Steding 2009; Clifford, Merschel, and Munné 2013; White and Heidrich 2013); these tales often come from those who require a high degree of precision, such as translators.

For a scholastic purist, the notion that specialists in disciplines touching on regional area studies should be able to read material in the original language is axiomatic. Nevertheless, to insist on purism with regard to reading foreign languages for the disciplines is unrealistic. Those with less than adequate reading proficiency will turn to translation bots (nonhuman online translators), probably taking refuge in the world’s largest bot, Google Translate (GT). Schumann, referring to his own partial proficiency in Persian, Russian, French, and German, claims, “If I could quickly and easily receive usable information from a [machine translation] device, I might be able to make much more extensive use of these languages. But this enterprise would not be directed toward improving my ability to use these
languages, but rather toward learning to use MT technology effectively in order to obviate the need to increase my proficiency” (2013, 154).

If we desire to pursue the goal of using MT to “obviate the need to increase proficiency,” we must answer two questions:

1. Does GT render usable content for the task at hand?
2. If GT has comprehension-inhibiting inadequacies, can we prepare non-proficient users of the target language to overcome them so that the users’ needs for extracting the required information are met?

This article is concerned with reading requirements for graduate studies in disciplines other than language and literature. The target level is typically Advanced (minimal working capability) and, for some programs, Superior. When discussing MT and graduate reading-requirements, the notions of information extraction and argument summary are important. This paper does not propose that foreign language (FL) learners turn to GT to produce compositions in L2, although a number of people have suggested a path toward that activity—among these people are Garcia and Peña (2011), Korošec (2011), and White and Heidrich (2013). Nor is the suggestion being made that language learners should use GT as a translation crib-sheet for obscure literary works for which no literary translation is available.

The article will first examine the road that lies ahead of would-be Russian readers who have limited reading proficiency—ACTFL Novice or Intermediate—and then, by presenting a taxonomy of MT errors, it will look at the barriers to the successful use of GT. In that light, the breadth of the problems in using GT will be examined to determine whether they are insurmountable. For GT problems that are surmountable, potential interventions will be examined.

The article takes as its point of departure Aiken and Balan’s (2011) study on GT successes—situations in the recent past where FL readers were able to use GT to enhance their reading comprehension on established tests. The reading comprehension of 75 American students was tested on TOEFL-equivalent passages in Chinese, German, Hindi, Korean, Malay, and Spanish that were translated into English with GT. The subjects did not have access to the original FL texts. The average TOEFL-equivalent reading score of 21.9 exceeded the 21-point TOEFL minimum required by the graduate program at University of California, Los Angeles. In short, without pedagogical intervention in maximizing the comprehensibility of the GT-generated English text, the subjects’ comprehension of the passage was, on average, sufficient for graduate study. In a separate study, Karnal and Pereira (2013) determined that Brazilian Portuguese “non-proficient
undergraduate” readers of English understood 62% of a 170-word abstract that GT translated from English into Portuguese that appears to require Advanced Low comprehension without GT. In this case, GT provided the boost required to push these readers into the Advanced level—a promising result for those who seek to use GT in place of teaching students enough of the language to bring reading to that level. The question is, can the level of comprehension be brought higher than just 62%, and can it be done consistently? In fact, the mercurial accuracy of MT is due in large part to how it works.

1. Machine Translation
At this point, a primer on machine translation is in order, even if there is a risk of repeating what in the MT world is common knowledge.¹

1.1. Types of MT engines:
**Rule-based machine translation (RBMT)**, the oldest MT model, translates based on a lexicon/morphology, a set of rules, and a list of exceptions and phrasal units. RBMT engines include SYSTRAN, Moses, and OpenLogos. Most are no longer in use.

**Statistical machine translation (SMT)**, corpus-based, is the basis for GT, which accesses Google’s massive corpus of translated documents and looks for statistical matches, with priority given to adjacent words that form n-grams. (N is replaced by the number of words in the expression, so *в этом году* [in this year] is a trigram.) The strategy is to balance the search for equivalents based on competing factors: the length of the n-gram (*longer* is selected as the best translation) and the frequency of its occurrence (*more frequent* is selected as the best translation). Such a massive corpus allows GT to disambiguate previously recorded meaning while retaining regard for actual meaning. For example, GT correctly translates *Рыбак рыбака видит издалека* as ‘Birds of a feather flock together’ (literally, ‘one fisherman recognizes another fisherman from far away’) with *рыбак рыбака* as a digram. *Рыбак рыбака ненавидит* is rendered as ‘Birds of a feather hate.’ In terms of grammar, Google knows nothing. If you type ‘This year,’ GT first produces *В этом году*, a trigram that statistically predominates over *этот год*. Add ‘was,’ and the translation switches to *Этот год был*, the

statistically predominant form. Then complete the sentence with ‘hard,’ and GT produces В этом году было трудно.

**Example-based machine translation (EBMT)** is something of a predecessor to SMT from the 1990s and early 2000s. EBMT matches fragments against a database of real examples, tagging the corresponding translation fragments and then recombining them by analogy to give the target text (Nagao 1984, cited by Somers 1999).² For example, ‘<DET> that is almost <DET> a personal record <PREP> for <PRON> me <DET> this autumn!’ yields <DET> ce’est pratiquement <DET> un record personnel <PREP> pour <PRON> moi, <DET> cet automne!

**Hybrid MT** is most commonly data-driven: it processes SMT or EBMT and is the principle behind Microsoft’s Bing translator. Such systems might build a lexicon and grammar from an initial corpus of parallel texts or use a corpus to weight alternatives of rule-based output (Costa-jussà and Fonollosa 2015). Examples of post-processing include a part-of-speech parser to correct word-disorder (Mohaghegh, Sarrafzadeh, and Mohammadi 2012), which is a major problem in GT translations of Russian; proposals to deal with problematic multiword units such as those found in English separable phrasal verbs (Monti et al. 2011); and individual word disambiguation (Vintar, Fišer, and Vrščaj 2012). Other hybrid MT developers seek to add a dose of human correction. For Chinese, Huang et al. propose a “look-ahead” system add-on for human intervention for both GT and Bing. The system can be taught to inform the user of the target-language grammar and lexicon that one can expect to follow “the translation prefix” of a source text. The result is akin to a machine schema check: it offers “predictions of lexically translated grammar patterns following the current inputted translation prefix, and adapting to the user’s translation choices to resolve ambiguities [. . . ] in the source

² Consider Nagao’s example (1984):

(1) He buys a book on international politics.
(2) a. He buys a notebook.
   Kare wa no’to o kau.
   HE topic NOTEBOOK obj BUY.
   b. I read a book on international politics.
   Watashi wa kokusai seiji nitsuite kakareta hon o yomu.
   I topic INTERNATIONAL POLITICS ABOUT CONCERNED BOOK obj
(3) Kare wa kokusai seiji nitsuite kakareta hon o kau.

1.2. Evaluating MT
Most frequently MT is evaluated by programs that look for co-occurring n-grams, the two most common of which are BLEU and NIST. Shen (2010) found that on short sentences, GT performed better than the hybrid Bing or RBMT (Babel Fish), while Bing outperformed GT in sentences under 140 characters in some language pairs. Despite GT’s success in translating longer sentences, length remains the overall enemy of accuracy, as Seljan, Vičić, and Brkić (2012) found in both human and BLEU analyses of Croatian-English translations. Mohaghegh et al. summarize the differences between SMT and RBMT accuracy succinctly: RBMT is better at syntax, morphology, structural semantics, and lexical reliability, but SMT is stronger in lexical semantics and lexical adaptivity (2012, 874).

1.3. MT Precision and Text Difficulty
Clifford, Granoien, et al. (2004) studied the correlation of the precision of SMT output in four languages, including Russian, to difficulty levels as measured by the proficiency guidelines of the Interagency Language Roundtable (ILR). Translation accuracy was measured by BLEU/NIST scores. None of the languages show a consistent fall in NIST scores as the proficiency level required to read the text increases. Figure 1 shows that for all the languages analyzed, NIST accuracy fell as the ILR level rose from 1 (~Intermediate) to 2 (~Advanced). But for Russian, NIST accuracy levels rise steadily as the proficiency level required to comprehend the text rises, suggesting that machine translations of material requiring high reading proficiency might be as comprehensible or more comprehensible than “easier” texts.

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3 The proposal is a logical outgrowth for the use of technology with Chinese because in a less sophisticated form it underlies the basic principle of Chinese word processing: writers enter text in Romanized pinyin, the device then predicts the possible characters letting the writer to select the correct one.

4 Unless otherwise noted, all references to proficiency levels in this article are based on the ACTFL Proficiency Guidelines (2012).
The date of the study should be noted: in 2003, SMT was still in its infancy. The translated corpus was much smaller than it is today, which means that precision was lower.\(^5\) Moreover, the authors admit that the corpus used in the calculations was also small, just a paragraph for each language. Whatever its faults, the study suggested (it turns out correctly, as we shall see) that difficulty level in terms of required proficiency is not the main determinant in the comprehensibility of a statistically based MT.

2. Taxonomies of Errors
Purely statistical analyses of MT performance suggest that in terms of raw accuracy, GT is not inferior to RMBT or hybrid engines, but BLEU and NIST numbers tell us little about error type. Taxonomies requiring human judgments have been proposed, many of them aimed at creating rule-based algorithms to post-edit SMT output. Farrús et al. (2010) created a taxonomy based on spelling, punctuation, and lexical, morphological,

\(^5\) In fact, the English translation of the Russian passage of 38 words was barely comprehensible using the SMT output of 2003, but in 2016 GT produced an almost perfect translation.
semantic, and syntactic (clitics, word order, missing elements, etc.) errors for use in evaluating GT as it translates between Spanish and Catalan. Ghassemiazghandi (2014) cites mostly lexical and semantic errors in his short study of English-Malay translations through GT. In their analysis on GT accuracy versus that of Moses, an RBMT system, Costa et al. (2014) categorize errors into those of “substance” (punctuation, capitalization, spelling), lexis (omission, addition, untranslated, wrong choice), grammar and semantics (collocational, idiomatic, confusion of homonyms—e.g., glasses: spectacles or dishware?), discourse (style, variety), and those that “should not be translated.”

Of course, any analysis of SMT errors addresses a moving target. As the corpus expands, accuracy increases. High-frequency collocations, even recent ones, are incorporated quickly. GT correctly renders вне зоны приема, a common collocation only as old as cell phones, as ‘out of range.’ On the other hand, easy-to-understand colloquial turns of phrases that are not common collocations are rendered inaccurately because of SMT’s low ability to handle disambiguation when the appropriate n-gram is not found.

2.1. Corpus-Based Taxonomy of Russian-English Errors
The taxonomies discussed above laid the foundation for the survey that follows. The corpus that informs the discussion consists of seven texts from multiple-choice graduate reading-comprehension tests used in an international affairs program at a U.S. university. The proficiency difficulty levels of these texts were assigned by the test-makers based on ACTFL guidelines:

Table 1. Core corpus (sample texts and their GT translations are in the appendix)

<table>
<thead>
<tr>
<th>Topic</th>
<th>Words</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to judge quality ice cream</td>
<td>659</td>
<td>AL</td>
</tr>
<tr>
<td>Easing of Moscow traffic jams</td>
<td>651</td>
<td>AM</td>
</tr>
<tr>
<td>AllaPugacheva’s childhood</td>
<td>731</td>
<td>AH</td>
</tr>
<tr>
<td>Why companies lay off employees</td>
<td>767</td>
<td>AH</td>
</tr>
<tr>
<td>Attracting Chinese tourists to Russia</td>
<td>791</td>
<td>AH</td>
</tr>
<tr>
<td>The decline of the Russian Academy of Sciences</td>
<td>789</td>
<td>S</td>
</tr>
<tr>
<td>Russia’s demographic decline</td>
<td>678</td>
<td>S</td>
</tr>
</tbody>
</table>
These texts were translated from Russian into English using GT. Normally, when readers suspect something is amiss in translation, GT can be coaxed into providing alternative translations. However, in a timed test (60 to 120 minutes), where readers are typically required to read through about 2500 to 4000 words and answer as many as 25 to 40 multiple choice questions, using GT that explores alternative translations might not be practical because this requires tedious manual intervention. For this reason, only the initial GT translation was considered in the analysis.

Before engaging in a detailed discussion of error taxonomy, we need to understand the proportion of correct and incorrect translations (translation incidents) in this corpus. The GT translation of the seven articles of about 700 words each (and 5,066 words total) produced 171 incidents that would require a human reader to consult with the original for clarification. This amounts to one such incident for approximately every 30 words. Of the seven texts, the colloquially written Alla Pugacheva article proved the most challenging for GT. This should not be surprising. The dry language characteristic of many Superior-level texts contains mainly frequently translated n-grams. More colloquial prose might have fewer n-grams or n-grams of low frequency (not often translated and not recognized by GT, even though human readers can figure out the meaning). Estimated to require Advanced High skills, the text about Pugacheva is not as challenging for human L2 readers as text at the Superior level. Even low-level readers who know the Russian grading system will understand that Alla was given тройки (‘Cs’) for certain subjects in school, but GT does not recognize выставить тройки (‘to give Cs’) as an n-gram, and it mistranslates, telling us that Alla ‘put troikas.’ If, therefore, we remove the one colloquially written article from the mix, thus raising the percentage of neutral, non-colloquially written texts, the GT translation incident average drops to 127 over 4335 words, or one incident every 34 words.

An example of more acceptable GT translation comes from a less colloquially written paragraph from the article on Moscow traffic jams, which requires Advanced Mid proficiency:

This trend [a decrease in traffic jams] was observed in the beginning of the year. We conducted a study in February, comparing the speed of traffic on major streets of Moscow on weekdays. It was found that on the first working day of the year on the roads of Moscow was somewhat freer than a year ago—said “KP” Leonid Mednikov, expert of the analytical center “Yandex”.—So, the situation between the Garden Ring and the Third Ring Road has improved. During the day the car is moving at 7–10% faster than last year. In the evening rush hour difference is even greater—13%.
For a central paragraph in an editorial on the demise of Soviet science, which requires Superior-level reading proficiency, GT gives us this paragraph in understandable if inelegant prose:

Today, we have already cut off from the many fruit-bearing branches. This—the scientific community, organically connected with the culture of the ancient civilizations of the Caucasus and Central Asia. This—the science of brotherly Ukraine and Belarus. Now these parts, once a single organism of Soviet science, became scientific community of sovereign states, and we need to build a relationship with them in the framework of international cooperation.

Such a text is comprehensible to any English-speaking scholar with near-zero Russian language proficiency but with a minimal background in the history of Soviet science and education.

To address comprehension issues that result from various degrees of GT imprecision, such as those provided above, a taxonomy of errors is required. An analysis of the GT inaccuracies produced the following taxonomy:

2.1.1. Lexicon
GT made mistakes between wrong word, wrong meaning, or GT’s failure to attempt to find an equivalent. Examples:

Wrong word—GT: ‘plant cream butter’ ← orig.: мороженое растительно-сливочное → correct: ‘creamy vanilla ice cream’

Wrong meaning—GT: ‘mass fraction’ ← orig.: массовая доля → correct: ‘big dollop’

Left untranslated—GT: ‘in place termoskleyki’ ← orig.: на место термосклейки → correct: ‘on the place of the heat-seal’

2.1.2. Semantics or idiomaticity
In instances involving semantic disambiguation, the translation is hard to decipher because, while lexically faithful, it simply misses the meaning in context:

GT: ‘appreciate the value of an open radio wave communications’ ← orig.: оценить значение открытой радиоволновой связи → correct: ‘appreciate the value of over-the-air communication’

GT (on the decrease in traffic jams): ‘[T]his summer the city has gone all free’ ← orig.: [Э]тим летом город поехал совсем свободно → correct: ‘[T]his summer the city started moving about freely’

GT: ‘[they] park their cars in two or three rows’ ← orig.: паркуют свои машины в два-три ряда → correct: ‘[they] double- and triple-park’
2.1.3. Word order
Overall, GT handles deviation from SVO poorly:

GT: ‘[T]he Chinese from Russian tourism scare high prices for a number of services’ ← orig.: [К]итайцев от российского туризма отпугивают высокие цены на целый ряд услуг → correct: ‘High prices for a number of services scare the Chinese away from Russian tourism’

2.1.4. Pronouns
Despite Voigt and Jurafsky’s 2012 study showing a surprising degree of cohesion (often pronoun-dependent) in translations, in this corpus pronominal errors were frequent, because pronouns in Russian are often omitted or replaced by reflexive pronouns with antecedents of indiscernible gender (to GT):

GT: ‘Alla would sit at the piano and start his show’ ← orig.: А́лла садилась за рояль и начинала своё шоу → correct: ‘Alla would sit at the piano and start her show’

2.1.5. Verb tense and voice
GT has trouble with English aspect and, more confusingly, often mixes up the passive voice and active voice:

GT (in the context of “things are now better”): ‘Chinese citizens began to buy luxury items’ ← orig.: Гра́ждане Китая стали покупать предметы роскоши → correct: ‘Chinese citizens have begun to buy luxury items’

GT: ‘A method for transmitting information wirelessly cultivated for many years’ ← orig.: Спосо́б передачи информации без проводов совершенствовался многие годы → correct: ‘A method for transmission of information without wires was perfected over a period of many years’

2.1.6. Participles
Participles, especially when they appear to the left of the modified noun, pose challenges:

GT: ‘Ministers will report on the issue indirectly shifted responsibility’ ← orig.: Доложившие о проблеме министры косвенно переложили ответственность → correct: ‘Ministers who reported on the issue indirectly shifted responsibility’

GT: ‘[T]he reported lack of attention many of them linked to the index—in fertility’ ← orig.: [О]днако [он] доложил о
недостаточном внимании многих из них к связанному показателю — рождаемости → correct: ‘[He] reported on the lack of attention shown by many of them to the indicator involved — fertility rates’

2.1.7. Morphosyntax issues (grammar rules ignored)
As a pure SMT model, GT misses any morphological clues that would inform both word order and meaning:

GT: ‘the volume of its decline’ ← orig.: объем его уменьшится → correct: ‘its volume declines’
GT: ‘Class Pugacheva’ ← orig.: класс Пугачевой → correct: ‘Pugacheva’s class’
GT: ‘There’s also the school’ ← orig.: там же в училище → correct: ‘Right there in the school’

2.1.8. Proper names
GT is often stumped by names and uses several wrong variants in the same document:

GT: ‘from Allin class’ ← orig.: из аллиного класса → correct: ‘from Alla’s class’
GT: ‘no special brightness Allais did not notice’ ← orig.: никакой особой яркости в Алле не замечала → correct: ‘She found no particular spark in Alla’
GT: ‘Allah’ ← orig.: Алла → correct: ‘Alla.’ Apparently GT culled this form from an extant mistranslation of ‘Allah’ to Алла instead of Аллах. In most other places in the document, Алла is translated correctly.

It should be noted that proper names figure into nearly all cases of what Costa et al. (2015) label “unnecessary translation,” as well as into some instances of failure to translate. Translation failure includes instances where translation is simply not customary (e.g., specialized terms like nomenklatura) and where translation misleads by translating what should be left in the original:

GT: ‘For example, in “The Messenger” sales force’ ← orig.: К примеру, в компании «Связной» штат продавцов → correct: ‘For example, in the Svyaznoi corporation, the sales force’
GT: ‘[T]he country is unsafe to visit,” —explains the oil’ ← orig.: [Страна небезопасная для посещения], —объясняет Маслов → correct: ‘[T]he country is unsafe to visit,” explains Maslov’
2.1.9. Punctuation

Beyond easily discerned differences in convention, the Russian use of dashes and period conspire, sometimes in concert, to obscure GT’s meaning:

GT: ‘[N]atural population growth, which last year amounted to about 30 thousand. Man—started with the good news, Prime Minister Dmitry Medvedyev’

orig.: [П]рирост населения, который в прошлом году составил около 30 тыс. человек,— начал с хороших новостей Дмитрий Медведев → correct: “[N]atural population growth, which last year amounted to about 30 thousand people,” Medvedev began, citing the good news first.’ Obviously other types of errors are involved here, but punctuation and capitalization are the initiators of the incomprehensible translation.

2.2. Category summaries

The table below shows summary figures—the number of errors in each category. However, error types overlap, and even a short sentence can encompass a number of error types. In the analyzed corpus, 19 of 208 translation incidents happened in isolation, not a very high number.

Table 2. GT category error summaries

<table>
<thead>
<tr>
<th>Category</th>
<th>Lexicon</th>
<th>Idiom</th>
<th>Word Order</th>
<th>Pronoun</th>
<th>Tense/aspect</th>
<th>Participles</th>
<th>Grammar</th>
<th>Proper name</th>
<th>Punctuation</th>
</tr>
</thead>
<tbody>
<tr>
<td>n of 208*</td>
<td>88</td>
<td>65</td>
<td>34</td>
<td>23</td>
<td>26</td>
<td>5</td>
<td>73</td>
<td>17</td>
<td>8</td>
</tr>
</tbody>
</table>

This informal categorization is close to other such catalogues of errors, cited earlier (see previous pages 7–8), in which lexical problems and idiomaticity dominate numerically but in fact represent a minority of all errors involving grammar: morphosyntactic relationships, tense, pronoun cohesiveness, and writing conventions.

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6 The improper use of the quotation marks in the GT version is sic.

7 The total number of errors is larger than 208 because some incidents can be considered to belong to more than one error category.
2.3. Weighting errors

Costa et al. (2015, § 6.0–6.2) weighted taxonomized error difficulty — how much the errors interfered with comprehension for translation purposes — on a four-point scale. On the other hand, Popović, Avramidis, et al. (2013) weighted errors in their survey as minor or not. In order to predict how well GT will help readers rather than translation editors, we need a scale that reflects on-the-fly information gathering: to what extent they interfere with or slow down the reader. This article proposes the following scale:

(0) **Error is stylistically inappropriate but does not interfere with comprehension.** These kinds of errors were not catalogued.

(1) **GT text may confuse someone at the Novice level** (typically first-year college Russian) but otherwise can be understood without referring to the original: ‘Alla attended the 496th school,’ instead of School #496.

(2) **GT text becomes clear once the reader familiar with Russian structure consults the original.** (A dictionary might be required for an individual ambiguous word). Most of these errors originate in GT’s problems with morphosyntax, verb tense/aspect, and word order:

- GT: ‘which is now introducing the Moscow Department of Transportation’ ← orig.: которую сейчас внедряет департамент транспорта Москвы → correct: ‘which the Moscow Department of Transportation is now introducing’
- GT: ‘[“ . . . ”] continues to Eugene B. Pugachev’ ← orig.: [« . . . »]—продолжает Евгений Борисович Пугачев → correct: ‘[“ . . . ”,] adds Evgeniy Pugachev’
- GT: ‘Class Pugacheva’ ← orig.: класс Пугачевой → correct: ‘Pugacheva’s class’

(3) **Advanced Russian reading proficiency is required to retrieve meaning.**

- GT: ‘many companies today do cleaning staff’ ← orig.: многие компании занялись сегодня чисткой кадров → ‘today many companies have started laying people off’
- GT: ‘It is very similar and at the same time funny portrayed the then idols’ ← orig.: Она очень похоже и в то же время смешно изображала тогдаших кумиров → correct: ‘She impersonated the pop idols of the day very accurately and at the same time humorously’
3. Text Proficiency Level and GT Difficulty Rating

This article defines a word as a spellchecker would (i.e., as anything followed by a space, unhyphenated line break, or punctuation). We can make a rough estimate of a text’s difficulty rating after GT translation by adding up the difficulty levels of all the errors based on the proposed scale and dividing by the number of words in the text. This approach produces the results outlined in table 3.

The post-GT difficulty estimate for six of the seven texts falls in a narrow band from 6 to 10 with no discernible link to ACTFL level. The only outlier, as we mentioned, is the colloquial but uncomplicated Pugacheva text. Its many SVO inversions, along with a few references to Soviet realia (particularly a passage about Alla’s performance of “foreign” songs), might push an estimation of the text’s difficulty to Advanced High. But that discrepancy cannot explain the wide gap in the Google error ratings between the Alla texts and other texts of the same difficulty level or higher once low-level errors are removed. Most of the problem is in the colloquial nature of the Alla text. Less-frequent colloquial turns of phrase, especially those represented by what is best ascribed to authorial voice, create
disambiguation problems. GT disambiguates poorly unless the word in question is contained within an n-gram that has a close equivalent. Consider GT’s problem with Старшеклассники звали Пугачеву на свои вечера → GT: ‘High school students called Pugacheva its evening’ for ‘High school students invited Pugacheva to their parties.’ Does GT find any matchings for звать and ‘invite’? The closest comes in the translation of Вас никто не звал → GT: ‘You had not been asked.’ But change the pronoun and GT finds a different n-gram, in this case a common digram: Меня звали на вечер → GT: ‘My name was on the evening.’ Moreover, GT runs into a pronoun problem with свой. And obviously there is no n-gram for звали на свои вечера or for that matter even a trigram match for на свои вечера.

Moreover, the level of the individual GT errors was low, not requiring reference to the original text, or requiring only a quick glance at the Russian by a low-proficiency reader. But the volume of GT errors per text adds up to a high per-word difficulty score. In short, a colloquially written text causes readers who have not yet reached the required level of proficiency to refer constantly to the original for the meaning of almost every sentence.

Table 3. Difficulty index, total, 208 incidents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Level⁹</th>
<th>Words</th>
<th>Difficulty Points</th>
<th>Rating (%)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to judge quality ice cream</td>
<td>AL</td>
<td>659</td>
<td>61</td>
<td>9</td>
</tr>
<tr>
<td>Easing of Moscow traffic jams</td>
<td>AM</td>
<td>651</td>
<td>43</td>
<td>7</td>
</tr>
<tr>
<td>AllaPugacheva’s childhood</td>
<td>AM</td>
<td>731</td>
<td>137</td>
<td>19</td>
</tr>
<tr>
<td>Why companies lay off employees</td>
<td>AH</td>
<td>767</td>
<td>62</td>
<td>8</td>
</tr>
<tr>
<td>Attracting Chinese tourists to Russia</td>
<td>AH</td>
<td>791</td>
<td>57</td>
<td>7</td>
</tr>
<tr>
<td>The decline of RAN</td>
<td>S</td>
<td>789</td>
<td>80</td>
<td>10</td>
</tr>
<tr>
<td>Russia’s demographic decline</td>
<td>S</td>
<td>678</td>
<td>61</td>
<td>9</td>
</tr>
</tbody>
</table>

⁸ Rating = Difficulty points divided by the Number of Words, which gives us a rough estimate of the amount of the text that was challenging.

⁹ Here and elsewhere, the article uses the following abbreviations for ACTFL proficiency: AL for Advanced Low, AM for Advanced Mid, AH for Advanced High, S for Superior
Table 4. Difficulty index with level 1 errors removed (see Weighting Errors on page 6), 171 incidents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Level</th>
<th>Words</th>
<th>Incidents</th>
<th>Difficulty Points</th>
<th>Rating (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to judge quality ice cream</td>
<td>AL</td>
<td>659</td>
<td>13</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td>Easing of Moscow traffic jams</td>
<td>AM</td>
<td>651</td>
<td>17</td>
<td>41</td>
<td>6</td>
</tr>
<tr>
<td>Alla Pugacheva’s childhood</td>
<td>AM</td>
<td>731</td>
<td>44</td>
<td>124</td>
<td>17</td>
</tr>
<tr>
<td>Why companies lay off employees</td>
<td>AH</td>
<td>767</td>
<td>23</td>
<td>59</td>
<td>8</td>
</tr>
<tr>
<td>Attracting Chinese tourists to Russia</td>
<td>AH</td>
<td>791</td>
<td>18</td>
<td>49</td>
<td>6</td>
</tr>
<tr>
<td>The decline of RAN</td>
<td>S</td>
<td>789</td>
<td>28</td>
<td>76</td>
<td>10</td>
</tr>
<tr>
<td>Russia’s demographic decline</td>
<td>S</td>
<td>678</td>
<td>28</td>
<td>58</td>
<td>9</td>
</tr>
</tbody>
</table>

Table 5. Difficulty index with level 1 and 2 errors removed (see Weighting Errors on page 17), 104 incidents

<table>
<thead>
<tr>
<th>Topic</th>
<th>Level</th>
<th>Words</th>
<th>Incidents</th>
<th>Difficulty Points</th>
<th>Rating (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to judge quality ice cream</td>
<td>AL</td>
<td>659</td>
<td>13</td>
<td>39</td>
<td>6</td>
</tr>
<tr>
<td>Easing of Moscow traffic jams</td>
<td>AM</td>
<td>651</td>
<td>9</td>
<td>19</td>
<td>3</td>
</tr>
<tr>
<td>Alla Pugacheva’s childhood</td>
<td>AM</td>
<td>731</td>
<td>25</td>
<td>86</td>
<td>12</td>
</tr>
<tr>
<td>Why companies lay off employees</td>
<td>AH</td>
<td>767</td>
<td>11</td>
<td>45</td>
<td>5</td>
</tr>
<tr>
<td>Attracting Chinese tourists to Russia</td>
<td>AH</td>
<td>791</td>
<td>10</td>
<td>33</td>
<td>4</td>
</tr>
<tr>
<td>The decline of RAN</td>
<td>S</td>
<td>789</td>
<td>18</td>
<td>56</td>
<td>7</td>
</tr>
<tr>
<td>Russia’s demographic decline</td>
<td>S</td>
<td>678</td>
<td>18</td>
<td>46</td>
<td>7</td>
</tr>
</tbody>
</table>

3.1. Stealth errors

Even GT errors that ordinarily are easily corrected with the help of the original can be treacherous. Like the monolingual post-editors studied by Resnik et al. (2010), readers relying on GT’s English output are cued to return to the original when something seems not quite right in the translation. However, GT errors sometimes produce smooth-sounding, logical, or close-to-logical text, while its meaning is far from the original and sometimes virtually the opposite:
Stealth errors can occur at any difficulty level. For example, старше на двадцать лет gives us ‘older than twenty years,’ rather than ‘twenty years older,’ but readers may miss stealth errors unless they perceive that the translated text does not match the original.

3.2. A summary of readers’ needs
The preliminary evidence from the analysis of GT errors described in the previous sections demonstrates a similarity to GT or SMT error-types catalogued in the literature. Using that information, we can prepare students to use GT to read in their fields. We need to determine the areas in lexicon and morphosyntax to allow readers to obtain the information they need.

Table 6. Error types and difficulty levels of texts in this corpus

<table>
<thead>
<tr>
<th>Topic</th>
<th>Level</th>
<th>Column A Lexico-semantic</th>
<th>Column B Grammar, convention</th>
<th>Column C Word/ Grammar %</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to judge quality ice cream</td>
<td>AL</td>
<td>21</td>
<td>23</td>
<td>91 (−9)</td>
</tr>
<tr>
<td>Easing of Moscow traffic jams</td>
<td>AM</td>
<td>10</td>
<td>11</td>
<td>91 (−9)</td>
</tr>
<tr>
<td>Alla Pugacheva’s childhood</td>
<td>AH</td>
<td>42</td>
<td>50</td>
<td>81 (−19)</td>
</tr>
<tr>
<td>Why companies lay off employees</td>
<td>AH</td>
<td>19</td>
<td>18</td>
<td>106 (+6)</td>
</tr>
<tr>
<td>Attracting Chinese tourists to Russia</td>
<td>AH</td>
<td>14</td>
<td>27</td>
<td>52 (−48)</td>
</tr>
<tr>
<td>The decline of RAN</td>
<td>S</td>
<td>32</td>
<td>28</td>
<td>114 (+14)</td>
</tr>
<tr>
<td>Russia’s demographic decline</td>
<td>S</td>
<td>15</td>
<td>27</td>
<td>56 (−46)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>153</td>
<td>184</td>
<td>83 (−17)</td>
</tr>
</tbody>
</table>

*Column C is the ratio of lexical issues (Column A) to grammar issues (Column B). Minus figures indicate more problems with GT grammar error types; plus figures show more problems with lexicon and semantics.
The types of errors encountered in GT can be categorized based on their frequency. Improper word choice accounts for the plurality of GT errors (88), and incorrectly translated idiomatic meanings came to 65, a total of 153 for lexico-semantic issues. Ignored grammar, word order, and writing conventions represent the majority of GT incidents in the corpus (186). This ratio is similar for five of the seven corpus articles as shown in the Table 6 above.

These results suggest that any preparation for using GT must include a comprehensive review of the structure of the Russian language, especially morphosyntax (e.g., case agreement, verb tense, and untangling word order).

Lexico-semantic problems must be handled individually. A large number of them are discernible by students who have taken a minimal amount of Russian, perhaps just one college year. In other cases, context makes it clear that the GT translation of a single word must be checked:

GT: ‘The company will still be grateful to the scientists’ ← orig.: общество еще будет благодарно ученым → correct: ‘society / people / our country will still be grateful to the scientists’

GT: ‘Evacuation vehicles of violators’ ← orig.: Эвакуация машин нарушителей → correct: ‘Towing violators’ cars’

GT: ‘Cleaning staff’ ← orig.: чистка кадров → correct: ‘labor cuts; personnel cuts; work force cuts’

Many other lexical/semantic errors might escape scrutiny and yet deal only a light blow to meaning. The article on Moscow traffic, which is estimated to require Advanced Mid reading proficiency, tells us Используя нашу интеллектуальную систему, позволяющую наблюдать за передвижением машин по городу, мы перестроили и скорректировали работу светофоров. The overall meaning is not lost if readers accept GT’s rendering of “intelligent system” for “system based on AI” or “smart system.”

True challenges come from places where disambiguation requires background knowledge:

GT: ‘a building gathered at the new “the block” method’ ← orig.: строение собранное по новому “блочному” методу → correct: ‘prefab building.’ Both Google and Yandex searches of блочный метод produce references first to psychology and education, then to computer programming, followed by prefabrication in construction—and this final meaning is only in “dictionary” Russian with no links to multiple language
pages such as those found in Wikipedia. In short, собрать по блочному методу poses a challenge for translation.

GT: ‘Almost one girls gathered—there was nothing else here and wait’ ← orig.: Собрались практически одни девицы — другого тут нечего было и ждать → correct: ‘Just about the only ones who came were girls. What else could one expect?’ A click in the GT target translation box gives the alternative “alone” but not “only.” For нечего, no GT alternative is close to “there is no reason.” The meaning of this sentence would probably be lost.

Such examples suggest that any pedagogical approach to teaching Russian reading through GT will still, as before, require some glossing.

4. Proposals for student preparation
It should be obvious by now that pedagogical interventions should take two routes: (1) a comprehensive survey of the structure of Russian and (2) strategies for dealing with disambiguation and idiomaticity.

Comprehensive grammar-coverage has been a staple of materials for reading for the disciplines since pre-proficiency days (see Dewey and Mercereau 1963; Arnt 1981). Back then, students were required to translate sentences featuring the grammatical point being covered. Now we might present students with the Russian input and flawed GT output and ask the students to untangle using what was just covered.

Handling lexicon is less straightforward than dealing with grammatical structure. How should we go about building the core lexicon required for the most basic check on the accuracy of the GT translation? Two solutions are apparent: (1) traditional brute-force lexical presentation, where students are given glosses for core vocabulary that is served up in texts containing examples of the grammar being presented; or (2) selected lexical presentation, where students are required to build up a core lexicon from clean (or cleaned) GT output. Both routes assume the same requirement: disambiguation requires a core lexicon—probably something that can be acquired for receptive purposes—along with the basic morphosyntactic structure, over the course of a semester (45 hours) and honed during the next semester.

Once a core vocabulary is in place, lexical and semantic disambiguation is easy in the majority of cases, specifically those involving high-frequency vocabulary items as well as words where GT errs but where the context (and translation of the word in question) is clear or GT itself provides lexical alternatives to be plugged into context. Consider the
GT sentence: ‘People are constantly leaving and had to re-look footage’ translated from Люди постоянно уходили, и приходилось заново искать кадры. The easily detectable tense error aside, readers will have seen GT’s rendering of кадры as ‘staff’ a half dozen times previously in this article about cutting labor costs. Highlighting the verb ‘look’ in the output box gives students the alternative ‘search,’ helping them to better understand the sentence as a whole.

Disambiguation for less frequent vocabulary presents greater challenges. We can envision preparatory materials with various amounts of scaffolding containing standard instruction in reading strategies, particularly those strategies surrounding the use of background knowledge, context, and textual-cohesion detection. However, the goal is not to decipher meaning directly but to fill in GT’s gaps. At its most dense, scaffolding would simply provide a glossed bridge over GT’s lexical thin ice. For example:

GT: ‘Stripping Dobor permanent staff and recruits solve performance problems is not always’ ← orig.: Зачистки персонала и постоянный добор новобранцев решают проблемы эффективности далеко не всегда → correct: ‘Firing staff and constantly looking for new people is hardly a good way to solve issues of efficiency in every case’

Here we would create exercises with glosses for зачистки, постоянный добор, and далеко не.

Ultimately the scaffolding crutch must lead to self-directed strategies, at first through hybrid devices—hints for difficult places and clues about background knowledge and context. The following sample assignment shows students how they can figure out that GT has erred, by asking them questions that directly compare the two texts:

Look at the highlighted part of the GT text and then answer the questions that follow.

Text 1

Russian

В этом году на туристов из КНР приходится уже 16% от общего турпотока в РФ.

GT

This year, tourists from China accounted for 16% of the total tourist traffic in Russia.
But it will not only increase the longer talk to the Chinese about Russia, but also improve the quality of services.

Does the italicized passage make sense as written for the context given?
If the quality of services must also be improved, what other improvement is suggested in the first part of the sentence? Hint: придется is similar to надо but “harder.” (Not only this, but also that.)

Text 2

Russian

Но главное — это процесс разрушения нашего научного потенциала как целостной системы. Надежды на то, что можно финансировать и спасти хотя бы одну ее часть (например, только фундаментальную науку) — иллюзорны.

But the main thing—it’s the process of destruction of our scientific potential as an integrated system. I hope that can be financed and save at least one part of it (for example, only basic science)—illusory.

Does the second sentence make sense as written?
What is the subject noun of the second sentence? Is it singular or plural?
Are there any plural long-form or short-form adjectives that modify the subject?
How might the answers to those questions change the GT translation?

The two example exercises above use local context to lead students into detecting and correcting GT errors, but less obvious cases require students to examine a snippet of GT text in an article’s much longer context. Consider how students might be instructed to handle the following impenetrable GT output:

GT: “Basically, we travel to the Chinese firms engaged and purposeful development of the Russian policy to promote services in China is not”—said the orientalist.’ ← “В основном поездками к нам занимаются китайские фирмы, и целенаправленной развитой российской политики по продвижению услуг в Китае нет”,—говорит востоковед.
Even before looking at grammatical form, readers should consider the overall context. So far in this piece, readers have followed a discussion of the reasons why few Chinese tourists visit Russia. The person quoted is a Russian expert on East Asia. That sets up an expectation that it is the Chinese companies that are engaged in something (setting up tour groups to Russia) and that something is missing in China—a developed policy on Russia’s part for providing tourist services to Russia.

5. Problems Left Unsolved

Preparing students to use GT will not lead to universal comprehension of all texts, even those that do not require Superior reading proficiency. We have touched on three issues that remain as barriers to total comprehension:

(1) **Stealth errors.** It can be assumed that GT users start with GT output and look at the original only when they detect problems. However, GT output that makes sense but is incorrect might not be caught. Yet of the five stealth errors cited in this article, only one (‘the ice cream was stored properly,’ instead of ‘stored improperly’) would have led to thematic communication problems. Even the latter error is likely to be discovered in the larger context of the article.

(2) **Difficult prose.** Visibly bad GT output might lead back to a difficult original passage whose cultural references and inventive use of lexicon make it impenetrable for those with meager L2 reading proficiency, especially where context is not supportive enough. In such cases, dictionaries are unlikely to help.

(3) **Authorial rhetoric.** We often associate authorial rhetoric with Superior reading. But the Alla Pugacheva text shows that authorial rhetoric, even when easily followed by human readers, runs GT into the ground. In such cases, readers must check every bad GT expression against the original, a process that is likely to frustrate those readers who thought that GT would save effort. At the level of defended opinions and hypothetical suppositions, authorial rhetoric varies. Consider a straightforward, dryly written editorial in which the author makes an argument based on assembled facts as compared to a brightly written op-ed dripping with authorial enthusiasm. A more strident authorial voice could be the one additional element that turns much of the GT output into mush, while the other Superior-level textual characteristics in the piece could make it hard for non-Superior readers to comprehend the meaning.
6. Implications for the Profession

In this article we have explored GT’s pitfalls in rendering Russian into understandable English for Russian readers who have minimal proficiency at the Novice and Intermediate levels. However, the analysis of GT’s errors suggests that minimally proficient readers can acquire just enough knowledge of Russian structure and enough of a core vocabulary to allow use of GT to simulate reading proficiency at the Advanced and even Superior level if the readers’ background knowledge of the subject is sufficient to make up for output that is often gibberish. We predict that preparation to use GT successfully might take a college year for beginners. To say the least, such an approach represents a paradigm shift in how we treat reading in a foreign language for a specialty. Larger legitimate questions remain as to whether such a direction is good or bad as a matter of educational philosophy. Should an area specialist be allowed to substitute GT proficiency for an independent capacity to handle L2 texts? Or in other words, what kinds of experts on Russia are real experts if they cannot pick up a Russian newspaper and understand what is written on the front page?

For many years Soviet-era graduate programs did not require scholars to demonstrate that they could read newspaper articles of any significant length. Until the proficiency revolution of the late twentieth century, most graduate reading tests consisted of something like a translation of several hundred words from L2 over a period of time with a dictionary. This slow and labor-intensive process was a meaningless formality.

In more recent times, graduate programs have used timed comprehension tests covering a wider range of material with limited or no dictionary use. Such tests demonstrated reading proficiency, but the effort required to reach the necessary proficiency has increased. Advanced proficiency might be attainable in a reasonable amount of time at the cost of great effort (two to four semesters of coursework), and attaining Superior proficiency takes longer. But armed with those higher levels of proficiency, what might the potential MA or PhD graduate be reading professionally? That depends on the task at hand. GT would prove a valuable tool for skimming through large amounts of material, such as in an initial search for sources in research. Even after an initial filtering, GT permits comprehension of a complex text by someone with receptive grammatical competence and a first-year core vocabulary. However, GT is only of little use where researchers need to handle original texts that cannot be photocopied and then scanned (such as archival material or material in
old orthography), but otherwise it can be a powerful tool for specialists dealing with Russia.

Moreover, a Russian area specialist today more than ever might need more than one area language—for example, Ukrainian\textsuperscript{10} or any number of Central Asian Turkic languages. GT allows such specialists to acquire reading skills for two or three area languages in the same two years that used to be required to acquire reading skills in one language. Of course, the agglutinative Turkic languages of Central Asia have their own problems in GT, a fact noted by both Google (2011) and Microsoft Developer (2014).

A shift in a reading-proficiency requirement that emphasizes handling large amounts of material, even if Superior-level nuance is occasionally missed, may represent a realistic compromise, especially for those whose disciplines are highly quantitative. A researcher using target-language source material to examine trends in demographics, economics, climate, etc., or whose research involves reading formulaic texts such as government regulations, could use GT to economize on language training. Even a project involving changes in the media’s presentation of the image of the United States could conceivably involve initial data collection of texts that could be filtered through GT, although the final study might involve Superior-level nuance requiring background knowledge that is typical of higher levels of reading proficiency.

7. GT Beyond Reading
The use of GT for reading in the disciplines goes to the heart of the role of foreign-language learning in academia. If we accept GT as an imperfect but useful \textit{information extraction} tool, then its use should be uncontroversial. That is a separate issue from using GT as a \textit{language acquisition} tool, something beyond the immediate scope of this article. Nevertheless, a widespread acceptance of GT for reading is sure to segue into a discussion of GT for language production, specifically writing. Godwin-Jones (2011) and Garcia and Peña (2011) have speculated about how GT might play a role in language acquisition. Korošec (2011) found in a survey that only ten percent of translation students reported not using GT. If students can be taught to use GT to aid reading, why not teach the methods that work in getting more accurate renditions of things that students want to express?

\textsuperscript{10} Users of GT for Ukrainian can expect to experience the same problems that face readers of Russian. GT translates Russian as the intermediary language. For other language pairs, English is often the intermediary language, which explains the frequent loss of the T/V distinction when translating from Russian to Romance languages.
Would a combination of GT-use strategies, combined with Google searches for correct context, be inferior to trusting the L1 to L2 half of a bilingual dictionary? Such issues will come into even sharper focus as SMT improves with an ever-increasing corpus.

8. Conclusion
In this study we have analyzed GT translation inaccuracies from reading materials at the Advanced and Superior levels. We have found that because of the high number of incidents generated by the failure of GT’s statistical approach to account for grammar, word order, and blind copying of writing conventions, readers who are prepared with knowledge of Russian morphosyntax, a core vocabulary, and an awareness of circumstances under which GT is likely to err, can expect to be able to extract meaning from the kind of material required for graduate study in a range of related disciplines. The estimated ACTFL difficulty level of a text has little bearing on GT accuracy. Texts with low-frequency colloquial turns of phrase or styles with authorial voice, while not necessarily difficult for L2 human readers, result in GT mistranslations that will require closer comparison with original text in order to be understood. Some GT stealth errors, unless exposed by context, might escape detection. Overall, however, a certain level of acquired-language competence allows GT users to function as effectively as the students who pass the reading requirements of many graduate programs. That speculation, fueled by the textual evidence presented, suggests that such practices be tested on a wide scale.

Appendix A: Selections from the corpus of translated texts
These passages have been condensed for space.

How to judge quality ice cream

Как найти самое лучшее холодное лакомство, подсказывают эксперты Росkontроля [. . .]
Упаковка—без дыр. Следите, чтобы упаковка не была порвана. Тогда меньше шансов, что внутрь попадут disease-causing microbes.

How to find the best cool treat, suggest experts Roskontrolya [. . .] Packaging—without holes. Make sure that the packaging has not been damaged. Then less likely fall into the disease-causing microbes.
болезнетворные микробы. Пробуем читать этикетку. Если состав не читается (нанесен на место термосклейки или напечатан мелко), это нарушение правил маркировки, не покупайте такое мороженое. [. . . ]
Повторно замороженную сладость легко распознать, если она в прозрачной упаковке: мороженое будет расслоившимся, с кристаллами льда, объем его уменьшится. Когда мороженое упаковывают на заводе, оно насыщено воздухом, это называется взбитостью. Так оно держит форму и кажется объемным. А на вкус—легким, воздушным. Подтаивший экземпляр этот воздух теряет и на вкус становится хуже.
Ищем в составе растительные жиры. Внимательно прочитайте состав. В настоящем мороженом отсутствуют растительные жиры и химические добавки. Но часто, чтобы снизить себестоимость продукта, молоко в мороженом заменяют растительным маслом, обычно пальмовым, рапсовым или кокосовым. В таком случае производитель обязан честно написать на этикетке: «мороженое растительно-сливочное» или «мороженое с растительным жиром». Если в состав продукта входит заменитель молочного жира, применение понятий «молочное», «сливочное», «пломбир» в наименовании в маркировке не допускается.

We try to read the label. If the composition can not be read (is applied in place termoskleyki or finely printed), is a violation of labeling rules, so do not buy ice cream. [. . . ]
Re-frozen sweet easy to recognize if it is transparent packaging: ice cream will exfoliate with ice crystals, the volume of its decline. When ice cream is packed in the factory, it is saturated with air, it is called overrun. So it keeps its shape and it seems three-dimensional. And the taste—light, airy. Melted copy of the air and loses the taste becomes worse.

We are looking at the composition of vegetable fats. Read carefully the composition. This frozen vegetable fats and no chemical additives. But often, to reduce the cost of the product, milk substitute in ice cream vegetable oil, typically a palm, rapeseed and coconut. In this case, the manufacturer must honestly write on the label: “Plant-cream butter” or “ice cream with vegetable fat.” If the product includes milk fat substitute, the use of the concepts of “milk”, “butter”, “cream” in the name in labeling is not allowed.
Easing of Moscow traffic jams

ГОРОД ЕДЕТ ДАЖЕ В ЧАСЫ-ПИК И ЗИМОЙ, И ЛЕТОМ НЕ ТОРМОЗИМ
Ситуация с пробками в Москве за последние полгода действительно существенно улучшилась: «Яндекс. пробки» еще весной в утренние и вечерние часы-пик фиксировали заторы не более 5–6 баллов, а уж этим летом город поехал совсем свободно.
Специалисты называют наступивший сезон отпусков одной из причин разгрузки дорог: люди массово уезжают отдыхать. Меньше всего заторов, как правило, во второй половине июля—первой половине августа. Но отпуска—далеко не единственная причина разгрузки города. [...] Получается, что Москва теперь едет не только летом, но и в другое время года, чего с ней давно не случалось. Это подтверждают и эксперты нидерландской компании TomTom, выпускающей устройства для автомобильной и персональной GPS-навигации. Когда в начале апреля компания опубликовала ежегодный рейтинг загруженности дорог за 2014 год, Москва в нем впервые за последние два года перестала быть безусловным лидером, откатившись на четвертое

CITY GOES EVEN PEAK HOURS AND IN WINTER AND SUMMER IS NOT INHIBITED
The situation with the traffic jams in Moscow for the past six months really has improved significantly, “Yandex” in the spring in the morning and evening rush hours congestion recorded no more than 5–6 points, and only this summer the city has gone all free.
Experts call the holiday season comes one reason for unloading the road: people en masse leave the pitch. Least of all congestion is usually in the second half of July—early August. But holiday—not the only reason for unloading the city.
[...] It turns out that Moscow is now coming not only in summer but also in the rest of the year, which it had not happened. This is confirmed by experts of the Dutch company TomTom, which produces devices for automotive and personal GPS-navigation. When, in early April, the company published an annual ranking of the traffic congestion in 2014, Moscow For the first time in the last two years, he has ceased to be the undisputed leader, fell back to fourth
Алла училась в 496-й школе, которая находилась в Лавровом переулке. Школа была новой и открылась именно тогда, когда наша героиня пошла в первый класс—в 1956 году. (Сейчас это пятиэтажное здание занимает Центр детского творчества.) Класс Пугачевой был большим и, что называется, трудным. “Мы все время качали права”,— вспоминают одноклассники Аллы. Сама она тоже нередко проявляла строптивость, несмотря на регулярные нагоняи от Зинаиды Архиповны. Правда, за активность Аллу как-то выбрали старостой класса.

Ее ценили в школе за музыкальное образование. Старшеклассники звали Пугачеву на свои вечера, чтобы она аккомпанировала их выступлениям. Понятно, какую зависть это обстоятельство вызывало у девчонок из аллиного класса.

Она сходу подбирала любые песни, но на публике сама петь не решалась. Отчасти и потому, что место и пропустив вперед Стамбул, Мехико и Рио-де-Жанейро. А ведь еще в 2012 и 2013 годах столица России занимала в рейтинге совсем не почетное первое место [ . . . ]

 Alla Pugacheva’s childhood

 Alla attended the 496th school, which was located in Laurel Lane. The school was new and opened just when our heroine went to the first class—in 1956. (Now this five-story building occupies the center of children’s creativity.)

Class Pugacheva was great and they say, difficult. “We always swing right”—says Alla classmates. She herself is also often showed obstinacy, despite regular scolding from Zinaida Arhipovna. However, for the activity Alla somehow chose his class.

She appreciated the school for musical education. High school students called Pugacheva its evening that she accompanied their performances. Clearly, some envy this circumstance caused the girls from Allin class.

She immediately picked up any of the songs, but in public she did not dare to sing. Partly because shy gap
стеснялась щели между передними зубами. Поэтому, общаясь с мальчиками, улыбалась несколько неестественно, прикрывая верхней губой свой “недостаток” [. . .]

“Во дворе Алла тоже всегда была заводилой,— продолжает Евгений Борисович Пугачев,— Я-то был маменькиным сынком, а она наоборот всегда общалась с местной шпаной”. В районе Крестьянки на местную молодежь наводил страх парень по кличке Дагага. Кроме неприятной внешности, он славился еще и как обладатель “финки”, финского ножа, воспетого всей блатной лирикой. Но Алла и с ним разговаривала достаточно вызывающе. Возможно, после этих диалогов у нее дрожали руки-ноги, но своей смелостью она всех поражала. [. . .]

На курсе у Аллы собрались практически одни девицы—другого тут нечего было и ждать. Поэтому она с интересом присматривалась к симпатичному однокурснику Мише Шуфутинскому, и скоро они стали приятелями. (Там же в училище Алла познакомилась еще с Людмилой Зыкиной и Екатериной Шавриной—вот они-то как раз оказались на вокальном отделении. С Зыкиной особой дружбы не завязалось: все-таки она была уже известной певицей и вообще старше на двадцать лет. А с Шавриной Пугачева приятельствует по сей день.)

between his front teeth. Therefore, dealing with the boys, she is smiling somewhat unnatural, covering his upper lip “deficiency” [. . .]

“In the courtyard Alla also always been the ringleader—continues to Eugene B. Pugachev.—I was a mama’s boy, but on the contrary it has always communicated with the local punks. “In the area of peasant women in the local youth troubling guy named Jag. In addition to the unpleasant appearance, he was known also as the owner of the “finca” Finnish knife thug lyrics sung throughout. But Allah and spoke to him quite challenging. Perhaps after these dialogues in her trembling hands and feet, but his courage it all hit. [. . .]

The course Alla gathered almost one girls—there was nothing else here and wait. So she looked eyeing the handsome classmate Misha Shufutinskii, and soon they became friends. (There’s also the school Alla got acquainted with Lyudmila Zykina and Catherine Shavrina—that they somehow just appeared in the vocal department. With no Zykina special friendship ensued: after all, she was a famous singer and generally older than twenty years. And Shavrina Pugacheva friendship to this day.)
“Она бывала у меня дома,—с улыбкой вспоминает Шуфутинский,—и моя бабушка гоняла ее за короткую юбку”. [ . . . ]

Алла садилась за рояль и начинала свое шоу. Она очень похожа и в то же время смешно изображала тогдашних кумиров—Эллу Фицджеральд и даже Луи Армстронга. Но лучше всего ей удавалась, разумеется, Эдит Пиаф. Пугачева, кстати, умела помимо прочего петь на разных “языках”, что тоже невероятно забавляло окружающих. Она просто придумывала иностранный текст, который очень походил то на французский, то на английский язык. Иногда таким образом у нее получались чуть ли не целые “импортные” песни.

**Why companies lay off employees**


Под разговоры о кризисе и сокращениях персонала многие компании занялись сегодня чисткой кадров, говорят эксперты рынка труда. Расчет прост: на рынке сейчас полно кандидатов, которых можно нанять на меньшее жалование, а стараться новички будут не меньше, а то и больше старых сотрудников. Взять хотя бы строительные гипермаркеты, где в последнее время увольняют всех—
от продавцов до главного по залу, заменяя российский персонал на гастарбайтеров, приводит пример Наталья Курантова, директор по работе с ключевыми клиентами Kelly Services. По словам экспертов, часто для массовой замены персонала находит официальный повод—изменение стратегии или ввод нового продукта, реально же за этим стоит желание заменить менее эффективных сотрудников на более эффективных. Курантова рассказывает, что, например, в фармацевтических компаниях бывает так, что закупили новый рецептурный препарат, а все медицинские представители компании до этого продавали безрецептурные препараты. Их квалификация больше компании не устраивает, переучивать их не хочется, компании кажется, что легче и дешевле взять готовых специалистов с рынка, которые будут работать эффективнее. Однако компания, которая часто обновляет персонал, должна решать сразу несколько проблем: как интегрировать новичков, как их мотивировать, как при этом не потерять старых ценных, предупреждают эксперты. Если в компании не построены внутренние процедуры, то опасно уповать на то, что новые сотрудники повысят эффективность компании, замечает Анна Бурова, руководитель...
подразделений консалтинга и рекрутмента Manpower Group.
К тому же, добавляет
Виктория Филиппова, партнер
хедхантинговой компании
Cornerstone, часто зачистки
персонала заканчиваются тем,
что в компанию действительно
выстраивается длинная очередь
из кандидатов с рынка труда, но
эти кандидаты могут быть как
компетентные, так и не очень,
как мотивированные, так и лентяи.
«А чтобы разобрать 700 резюме,
которые упали в ящик в один день,
нужно как минимум иметь в запасе
больше 24 часов в сутки. Плюс к
этому растут расходы на поиск,
на адаптацию новых сотрудников
и на замену тех, кто не прошел
испытательный срок»,— добавляет
Филиппова [ . . . ]
Зачистки персонала и постоянный
dobor новобранцев решают
проблемы эффективности далеко
не всегда, но в некоторых случаях
они оправданы, говорят эксперты.
К примеру, в докризисные
хлебные времена компания
нанимала дорогих специалистов
и менеджеров. А в кризис объем
их обязанностей сократился и
платить им в прежнем объеме
стало слишком накладно, отмечает
Филиппова.
Вот работодатель и берет на их
места компетентных, но недорогих
профессионалов, вполне способных
выполнять сокращенный объем
задач их предшественников.

Besides, adds Victoria Filippova,
Partner headhunting company
Cornerstone, often stripping the staff
ends up in your company really a
long line of candidates from the labor
market, but these candidates can be
both competent and not as motivated
and lazy.

“And in order to make out 700
resumes, which fell into a box in
one day, you need to at least have
left more than 24 hours a day. Plus,
the rising costs of finding, in the
adaptation of new employees and to
replace those who have not passed the
probationary period”,—adds Filippov
[ . . . ]
Stripping Dobor permanent staff and
recruits solve performance problems
is not always, but in some cases
they are justified, experts say. For
example, in the pre-crisis times grain
companies hire expensive specialists
and managers. And in a crisis
reduced the volume of their duties
and pay them in the same volume
was too expensive, said Filippov.
Here the employer and takes their
place of competent, professional yet
affordable, it is able to perform an
abbreviated amount of problems of
their predecessors.
Attracting Chinese tourists to Russia

Chinese tourists in 2014 left Russia more than $1 billion. This year, tourists from China accounted for 16% of the total tourist traffic in Russia. But it will not only increase the longer talk to the Chinese about Russia, but also improve the quality of services, and to fight stereotypes about Russians, experts say. [. . .]

Tourism brings billions of dollars, but it is particularly advantageous in the case in one country or another come the Chinese. Citizens of China—the most wasteful in the world. The average tourist from China, according to market research company GfK, spending per trip about 15 thousand. Yuan, equivalent to $ 2,400, or about 138 thousand. Rub. [. . .]

Chinese tourists spend a lot of money on travel due to the fact that the country went up the middle class, which is used to relatively cheap Chinese goods and does not consider their prestigious, explains the head of the School of Oriental HSE Alexei Maslov. For this reason, abroad they like to buy, such as handbags and shoes of prestigious brands, including in Russia. [. . .]
Российские маршруты в Китае слабо раскручен, отмечает Маслов. «В основном поездками к нам занимаются китайские фирмы, и целенаправленной развитой российской политики по продвижению услуг в Китае нет», — говорит востоковед. Для увеличения въездного турпотока из Китая в Россию необходимы комплексные меры по продвижению нашего туристического потенциала, соглашается Пятихатка. «Для российской стороны важно лично взаимодействовать с туристическими администрациями и туркомпаниями китайских провинций, организовывать и приглашать китайских туроператоров и СМИ в информационные туры по регионам нашей страны, а также активнее освещать туристический потенциал России в китайских СМИ и интернете», — пояснила она.

Немалое влияние на китайский турпоток оказывает убеждение, что российские курорты могут быть опасными. «В китайском интернете широко распространено мнение, что Россия — страна небезопасная для посещения», — объясняет Маслов.
Волею судеб мы стали не просто свидетелями, но и участниками исторической драмы, в которой многим — я не исключаю и себя — слышатся трагедийные ноты. В чем же драма и даже трагедия момента? Сегодня прекращает свое существование Академия наук Союза Советских Социалистических Республик. Та самая Академия, которая в бурях века спасла и сохраняла сердце и душу российской науки. Та академия, которая помогла создать сотни научных школ у себя и в братских республиках, достигла выдающихся мировых результатов практически во всех областях знаний. [ . . . ]

Сейчас наука всех суверенных государств бывшего СССР, включая Россию, скачкообразно становится структурно ущербной. Дай Бог, чтобы нам удалось компенсировать подобную ущербность интеграцией в мировое научное сообщество, достраивая недостающие звенья — но скоро и этого может не получиться, даже при самых благоприятных обстоятельствах, до которых весьма далеко. [ . . . ]

The will of fate we have not only witnessed but also members of the historical drama in which many—I do not exclude myself—we hear tragic note. What’s the drama and even tragedy moment? Today ceases to exist the Academy of Sciences of the Union of Soviet Socialist Republics. That academy, which has helped create hundreds of scientific schools at home and in the fraternal republics, has achieved outstanding results of the world in almost all fields of knowledge. [ . . . ]

Now science is all sovereign states of the former Soviet Union, including Russia, abruptly becomes structurally flawed. Would to God that we were able to compensate for such a flawed integration into the global scientific community, constructing additions missing links—but soon, and this may not be possible, even under the most favorable circumstances, to which are very far away. [ . . . ]
Но главное—это процесс разрушения нашего научного потенциала как целостной системы. Надежды на то, что можно финансировать и спасти хотя бы одну ее часть (например, только фундаментальную науку)—иллюзорны. Наука—единный живой организм, а не конгломерат автономных механизмов. К сожалению, концепции спасения отечественной науки, ее выживания и возрождения нет ни у политиков, ни у научной общественности. Реальные драматические процессы заслонены новыми идеологическими мифами, утопическими прожектами и абстрактными суждениями. [ . . . ]

Кризис Академии наук СССР—это, прежде всего, кризис нашего Союза. [ . . . ] Нелегкий путь, полный ежечасной работы и трудного поиска, предстоит пройти нашему научному сообществу в ближайшие годы. [ . . . ] Осилим ли мы его?

Я думаю, осилим. Залогом тому служат интеллектуальная мощь нашего сообщества, присущее ему понимание интересов народа и стремление служить благу России, всего народа!

Возьмем, к примеру, радио. Оно родилось в фундаментальных экспериментах нашего соотечественника А. С. Попова и итальянского ученого Г. Маркони.

But the main thing—it’s the process of destruction of our scientific potential as an integrated system. I hope that can be financed and save at least one part of it (for example, only basic science)—illusory. Science—a single living organism, not a conglomerate of autonomous arrangements. Unfortunately, the concept of salvation of domestic science, its survival and revival no politicians nor the scientific community. The real drama processes obstructed new ideological myths projects utopian and abstract judgments. [ . . . ]

The crisis of the Academy of Sciences of the USSR—is, above all, a crisis of our Union. [ . . . ] The hard way full hourly work and difficult search, to go to our scientific community in the coming years. [ . . . ] We mastered it?

I think the master. The key to this are the intellectual power of our community, its inherent understanding of people’s interests and the desire to serve the good of Russia, of all people!

Take, for example, radio. It was born in the fundamental experiments of our compatriot Alexander Popov and Italian scientist G. Marconi.
Способ передачи информации без проводов совершенствовался многие годы, и, наконец, мы получили сеть радиовещания. Но сейчас мало кто способен оценить значение открытой радиоволновой связи. И хотя об этом много написано в учебниках, перед глазами потребителя возникает не А. С. Попов и не Г. Маркони, а радиосистема, произведенная на таком-то заводе. Корни фундаментального открытия отошли далеко на задний план, а само открытие как бы воплощается в изделиях, технике, которые производят предприятия. Так, жизнь со множеством повседневных забот как бы забывает о первопроходцах, людях науки, без которых не было бы ни отрасли производства, ни постоянной модернизации.

Russia’s demographic decline

Прирост уровня смертности в России стал главной темой прошедшего вчера в правительстве совещания по реализации концепции демографической политики. “Сейчас подходит к концу второй этап ее выполнения, и, хотя еще десять лет назад ситуация казалась практически непреодолимой, сейчас мы

A method for transmitting information wirelessly cultivated for many years, and finally, we have broadcasting network. But now few people can appreciate the value of an open radio wave communications. Although much has been written about it in textbooks, before the eyes of the consumer there is no AS Popov and G. Marconi and radio produced at such a plant. The roots of the fundamental discoveries moved far into the background, and the discovery as it is embodied in products, technology, producing enterprise. So, life with a variety of everyday problems like forgetting pioneers, men of science, without which there would be neither industries nor the constant modernization.

The increase in mortality in Russia has become the main theme of the yesterday’s meeting of the government on the implementation of the concept of demographic policy. “Now coming to the end of the second phase of its implementation, and, although ten years ago the situation seemed almost insurmountable, we are now able to enter the natural population growth,
могли выйти на естественный прирост населения, который в прошлом году составил около 30 тыс. человек,— начал с хороших новостей премьер-министр Дмитрий Медведев.— Ожидаемая продолжительность жизни тоже выросла, сейчас это 71 год”. Но есть и тревожные тенденции, сразу же подчеркнул глава Белого дома,— начала расти смертность. За первые четыре месяца 2015 года число умерших в сравнении с сопоставимым периодом прошлого года выросло на 3,7%. “В этом необходимо самым капиталным образом разобраться”,— поставил перед министрами задачу премьер.

Доложившая по теме глава Минздрава Вероника Скворцова причастных к росту печального показателя косвенно определила— это профильные руководители отдельных регионов. Она пояснила, что до 2014 года смертность снижалась, однако примерно с его середины положительная динамика стала замедляться и по итогам года показатель остался практически на уровне 2013-го.

Впрочем, отметила министр, по регионам по части таких смертей ситуация сильно различается— и Минздрав ставит это в вину руководителям на местах. Министр сообщила, что по результатам совместных с Росздравнадзором и Фондом ОМС выездных проверок за последние два года было уволено

which last year amounted to about 30 thousand. Man—started with the good news, Prime Minister Dmitry Medvedyev Life expectancy also increased, now it’s in ‘71. “But there is a disturbing trend, once the head of the White House—began to grow mortality. In the first four months of 2015 the number of deaths compared to the same period last year increased by 3.7%. “This must be a way to figure out the most capital”—has set the task of prime ministers. [. . . ]

To report on the head of the Ministry of Health Veronika Skvortsova involved in the growth of the sad figure implicitly defined—is profiled heads of individual regions. She explained that until 2014, the death rate decreased, but about his middle positive trend began to slow, and at year-end figure remained almost at the level of the 2013th.

However, the minister said, in regions of the deaths of the situation is very different—and the Ministry of Health is putting the blame on the local leaders. The Minister said that the results of joint ventures with RZN and MHIF-site inspections in the past two years have been laid off 29 regional health ministers. Overall, in 2014 the

"Мы просто сейчас уже вынуждены выходить на ручное управление", — поделилась министр наболевшим с Дмитрием Медведевым.

"В ближайшее время фокус внимания при обсуждении демографических проблем будет смещаться в сторону темы смертности, как раньше он полностью был сосредоточен на приросте рождаемости", — сказала "Ъ" присутствовавшая на совещании глава Института социального анализа и прогнозирования РАНХиГС Татьяна Малева. При этом, по ее словам, проблемы прироста уровня рождений остались теми же — и сокращение финансирования социальных мер поддержки может существенно их усугубить.

References


