Source Language Difficulties in Learner Translation:
Evidence from an Error-annotated Corpus

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Abstract

This study uses an error-annotated, mass-media subset of a sentence-aligned, multi-parallel learner translator corpus, to reveal source language items that are challenging in English-to-Russian translation. Our data includes multiple translations to most challenging source sentences, distilled from a large collection of student translations on the basis of error statistics. This sample was subjected to manual contrastive-comparative analysis, which resulted in a list of English items that were difficult to students. The outcome of the analysis was compared to the topics discussed in dozens of translation textbooks that are recommended to BA and specialist-degree students in Russia at the initial stage of professional education. We discuss items that deserve more prominence in training as well as items that call for improvements to traditional learning activities. This study presents
evidence that a more empirically-motivated design of practical translation syllabus as part of translator education is required.

**Keywords**

translator education, learner translator corpus, translation error analysis, multi-parallel corpus, error-prone source items, translation competence

1. Aims and Motivation

Translation students are typically introduced to a set of source language (SL) items that are likely to cause difficulties in translation and provoke various errors. These difficult-to-translate items are used to develop a professional approach to translation, in which a learner can recognise a new translation problem by analogy and is able to come up with a solution coherent with some selected translation strategy. However, with learning time and effort limited, it makes sense to choose didactic items carefully and target those that most often lead to lower-quality translations.

This study aims to identify the SL items that cause the most problems in student translations based on a significant amount of corpus data. We regard this work as a step towards a more empirically-motivated educational curriculum which recognises the “areas of the learning curriculum where teaching is most needed” (Castagnoli et al. 2011, 234).

We believe that corpus approaches help to overcome limitations of individual studies, based on translation errors in a specific translation task, which may or may not be characteristic of a specific student population. While we accept that teachers’ professional intuition and experience can be a powerful tool in detecting common problems, introspective approaches that are not supported by sufficient evidence are prone to biases and could lack justification.
This study is positioned at the interface of corpus linguistics and applied translation studies: we employ automatic approaches to text processing, data extraction and sampling, as well as manual analysis. The data consisted of SL sentences that most students found challenging judging by the relatively low quality of their translations. Our estimation of translation quality was based on error annotations produced as feedback to students in a real-life practical translation course over a period of six years (2013-2018). The students who contributed data to the corpus were final-year BA or specialist-degree translation students (Russian L1) from the University of Tyumen (Russia).

The novelty of our approach consists in identifying SL-related translation problems that students systematically fail to solve and then contrasting these problems with a list of error-prone SL items that practical translation textbooks tend to focus on the most. These SL items also constitute the content of training received by the students who contributed data to this study. Do translation textbooks focus on the translation difficulties that students actually struggle with the most? We also offer an error-annotation-based method to reduce a large multi-parallel corpus to a non-random sample of especially challenging source sentences, manageable in manual analysis.

The rest of the article is structured as follows. In the next section we overview learner translator corpus projects, especially those featuring error annotation, and their applications in translation studies. Section 3 provides details on the data used in this study: translation textbooks used to generate an inventory of SL-related difficulties and the data sample extracted from a large error-annotated learner corpus. Section 4 presents the research methodology and results, while Section 5 discusses the observed areas of persistent difficulty in relation to what is actually taught at the initial stage of practical translation education. Finally, Section 6 offers a brief summary of this study and outlines its findings.
2. Related Work

In this section we overview research related to learner translator corpora, with a focus on error-annotation projects and studies dealing with challenging SL items.

2.1 Error-Annotated Learner Translator Corpora

Error-annotated and graded student translations are becoming increasingly popular to build research corpora.

The pioneering *MeLLange* project (Castagnoli et al. 2011)\(^1\) inspired half a dozen other learner translator corpus initiatives (Wurm 2013; Lapshinova-Koltunski 2013; Stepankova 2014; Espunya 2014; Kutuzov and Kunilovskaya 2014, Fictumova et al. 2017), many of which carry error annotation. More recent additions to this family of corpora are described in Granger and Lefer (2018) and Alfuraih (2020).

Most of these projects rely on the outputs of translation-teaching frameworks as their source of error-annotated data. The choice of error taxonomy underlying a learner translator corpus or an annotation project covering student translations is governed by studies and observations from translator education, teaching procedures in place and criteria for translation quality assessment (TQA).

One of the early and comprehensive overviews of human translation evaluation methods in educational contexts is offered by Secara (2005). That work also contained a description of *MeLLange* error typology, which was subsequently used in many learner translator projects (see Stepankova 2014; Fictumova et al. 2017; Verplaetse and Lambrechts 2019).

Typically, error classifications designed for annotating student translations include two broad, empirically-justified categories (based on Gideon Toury’s [1995] principles of

\(^1\) [http://corpus.leeds.ac.uk/mellange/about_mellange.html](http://corpus.leeds.ac.uk/mellange/about_mellange.html)
adequacy and acceptability): (1) content errors, “those which misrepresent the meaning (or style) of the source” (Chesterman 2010), and reflect the relations between source and target texts (adequacy/accuracy aspect of quality); and (2) language errors that reflect readability (fluency) and linguistic ‘well-formedness’ of the translated text; these errors can be revealed through comparison with non-translations in the target language (TL).

The subcategories of content errors sometimes include pragmatic sub-types, dealing with functional and communicative aspects of texts. In line with functional translation theories, it is accepted that translation quality, first and foremost, is dependent on the extralinguistic context of translation, including the purpose of translation, the intended audience and the medium (pragmatic aspect of quality, usually referred to as adequacy in Translation Studies (TS)). For example, in *UPF Learner Translation Corpus*, the error categories cover solutions that “compromise content, quality of linguistic and cultural expression and suitability for the purposes of the translation” (Espunya 2014, 36).

Error-annotated corpora of learner translations are often created in the context of, and directly used in, translation-teaching frameworks: annotated translations are made available to students as a form of feedback, error statistics are used for tracking and analysing students’ individual progress, and corpus data is used for generating exercises and tests (Kutuzov and Kunilovskaya 2014; Fictumova et al. 2017).

However, the subsequent studies based on these resources are scarce: we were able to identify only a handful of studies in English that relied on existing error-annotated learner translator corpora in order to inform the education process.

Wurm (2020) used several hundreds of annotated translations to test two assumptions on translation competence acquisition. She compared error statistics for groups of translator trainees with different backgrounds and grades to see whether the trainees’ profiles correlated
with the translation quality. She also measured the effects of intensive training on some aspects of students’ performance, including quality and speed of translation.

Kübler et al. (2018) described a teaching framework for specialised translation training, which centred on using comparable specialised corpora in the translation process and included a learner component used to evaluate the outputs. The authors reported error-analysis results for learner translations produced in different scenarios (with and without specialised corpora). They found clear evidence in favour of corpus use during translation production. The number of errors when using a corpus was lower for many error types, particularly: terms translated by a non-term; incorrect collocation; incorrect choice; and preposition errors. The paper suggests that error analysis can be informative with regard to SL units and language features that are particularly problematic for students. One example given by the authors linked many cases of “distortion” errors to the erroneous analysis of complex noun phrases (NPs). However, this direction of research was not developed: the authors focus on presenting corpus-based activities designed to address the most salient error types such as incorrect collocation.

A similar study is reported by Verplaetse and Lambrechts (2019). They investigated the impact of monolingual corpus resources and computer-assisted translation tools integrated into the translation process on the quality of the outcome. To this end, the authors annotated student translations into Dutch for several short fragments of English medical and legal texts.

There are several reasons that make the use of error-tagged corpora in quantitative research problematic. Even if error annotation is implemented to produce a machine-readable output, human errors are too idiosyncratic and defy generalisations, especially given typically small amounts of annotated data available. Then, there are always issues with reliability and validity of annotations produced outside properly controlled settings (for more on this, see Kübler et al. [2018] and Wurm [2020]). Another limitation of a typical error annotation setup
is no access to the source language: the annotation is usually performed on the target language of a parallel corpus, and it is difficult to identify SL items or phenomena that provoke errors. The overview of research in this field indicates that many researchers often rely on the ‘brat’ annotation tool (Daems et al. 2017; Kübler et al. 2018; Verplaetse and Lambrechts 2019), which does not accept bitext formats as input. Arguably, identifying the factors that systematically affect the quality of translations and increase the error rate, including error-prone source text items, is one of the main purposes of such research.

This paper intends to bridge this gap. It exploits an existing error-annotated learner translator corpus to determine which SL units and features are most challenging for students. We want to highlight that it might be a good idea to rely on the annotation setups that allow for the adding of tags on both sides of a parallel corpus.

2.2 Error Annotation for Identification of Error-Prone SL Items

In this section we focus on one of the major intended uses of error-annotated data, namely, identification of error-prone SL items.

The description of error-prone SL items is often grounded in the concept of ‘translation problems/issues’. However, this term appears to be ambiguous in the literature discussing translation-error annotation or translator education: it can be used to indicate (i) a translation error (or annotated solution) marked on the TL side of the parallel corpus or (ii) a translation challenge that can be defined following Nord (1991, 166) as “an objective (or intersubjective) transfer task which every translator (irrespective of their level of competence and of the technical working conditions) has to solve during a particular translation process.” Both types of problems are indiscriminately included in the language-pair-aware annotation scheme in Popović (2017). Error-prone SL items can be viewed as a source of translation
problems, with the latter understood as transfer tasks regarding linguistic units and phenomena of various types that may or may not lead to translation errors.

The typical sources of problems in translator education provide useful insights for the curriculum, and more specifically in the design of exercises or tests. In many cases, researchers start with a set of SL items known to cause problems in translation. Beeby et al. (2005) introduce the concept of ‘rich points’, defined as a varied selection of translation challenges that do not have immediate and acceptable solutions. They manually annotated a sample of parallel texts for a set of pre-defined ‘rich points’ to explore the specificity of the ‘decision-taking’ variable of translation competence as compared to the competence of other language professionals.

An alternative approach to reveal the SL items that influence the quality of translations is adopted in corpus-based TS and quality evaluation and is closely related to the concept of interference, one of the basic tendencies in translation proposed by Toury (1995). Translation problems within this approach are identified as deviations from the expected TL norm represented by the reference corpus. In translator education, this method, pioneered by Bowker (2001), is designed to help students produce more fluent and adequate renditions, especially in specialised translation. Teachers are encouraged to resort to reference corpora to support and justify their judgments about translation solutions offered by students. While this approach does not compare source text (ST) and target text (TT), and, therefore, does not account for accuracy errors, it is reported to be promising for evaluating learner translations (see Scarpa 2006). Learner translations are known to be distinct from professional output in terms of fluency to a greater degree than in terms of accuracy as demonstrated by Carl and Buch-Kromann (2010). From the educational perspective, being aware of typical translational tendencies can help reduce the specific foreign sound of translations.
A good example of this line of research is presented in Rabadán, Labrador, and Ramón (2009). The authors explore the frequencies of translation solutions for three pre-selected grammatical error-triggers in English-Spanish translation (quantifiers, modifiers of nouns and the translation of the English simple past form) employing univariate analysis. They relate any deviations from the frequencies of the same items in comparable non-translations to one of the known tendencies in translated language (simplification, interference and under-use of TL unique features, respectively). Related research following this approach includes Gledhill (2011), Cappelle and Loock (2017), De Sutter et al. (2017), Kunilovskaya and Kutuzov (2017) and Kunilovskaya, Morgoun and Pariy (2018).

To the best of our knowledge, there is no extensive research on error-prone SL items supported by evidence from a parallel corpus and translation quality information. Most of the existing research is focused on the in-depth analysis of several hand-picked ‘usual suspects’ and does not discuss the relative importance of these pre-selected SL items in comparison with other translation problems. The novelty of our approach consists in verifying the translation problems addressed in translation textbooks and routinely covered in training against evidence from a learner corpus. This research project starts with a comprehensive list of SL items that are discussed as potential translation problems in a large collection of translation textbooks. Then, we compare them to the actual issues revealed through contrastive analysis of challenging source sentences and their student translations.

3. Data

This section offers a description of the empirical foundations of our work, which aims to reveal major SL-related ‘areas of difficulty’ encountered by students and to contrast them to the content of training the students received prior to producing translations used in this study.
3.1 Textbooks on Translation Practice

A collection of practical textbooks on English-to-Russian translation was used to extract the didactic items suggested by the authors as possible training content. The collection featured textbooks on the recommended reading lists of the courses offered to our students. This collection was extended to include editions generally available on the internet and in the University library to demonstrate that our students’ training followed the established practices and to offer more options for analysis in this work. To this end, we searched the Russian Book Chamber bibliographic catalogues for phrases typically included in the titles of didactic literature in this area of study. We also performed additional searches online for the same key phrases to complement the list with the books for the years missing from the catalogue and any omissions. As a result, a collection of more than 180 books published in Russia between 1963 and 2020 was compiled. The books were filtered to retain only those that target our student population: BA or specialist students on a professional translation degree programme. We excluded the textbooks that: (1) targeted general and non-specialist audiences, including students of part-time and non-core courses (such as English for Special Purposes, or where translation is essentially used for language learning); (2) addressed the translation of texts from specific domains (fiction, medical, engineering); or (3) dealt with interpreting and hybrid modes of translation (audiovisual translation, subtitling).

Additionally, while our aim was to reveal empirically-identifiable SL items that constitute the content of training usually covered in introductory practical translation courses during the penultimate year of study, we also excluded seven textbooks because they did not explicitly deal with ST problems and focused the higher levels of ST analysis. These editions are usually recommended for advanced translator training, which builds on the fundamentals for which we tested in this study. For example, Psurtsev (2013) in his textbook discussed translation strategies and addressed the textbook to final-year translation students.
These selection criteria narrowed down the material to 46 textbooks on methodology and translation practice designed for specialist/BA translation degree students or for translation teachers dealing with the technological aspects of solving standard translation problems in English-to-Russian translation. All textbooks rely on authentic sources of examples that are selected to demonstrate the discussed translation difficulties; the overwhelming majority of them offer sentence-level activities or discussions. Half of the books (24) were published in the last decade (2011-2020), and ten of the books date from 2001-2010. The least productive decade was from 1981 to 1990 with only one publication, while the late 60s and 70s produced six books that proved to be highly influential. Our analysis would suggest that these publications are shaped the content of the translation textbooks that followed to a considerable extent.

3.2 Learner Translations

3.2.1 Filtering

The learner data was extracted from the error-annotated part of the Russian Learner Translator Corpus (RusLTC, Kutuzov and Kunilovskaya 2014) following a set of data-selection criteria:

- homogeneity (in terms of register and learner): the STs were published in the broadsheet mass media (such as The Guardian, The New York Times, The Economist) and include argumentative essays, informational and educational texts, interviews and film reviews. All translations were produced by final-year BA/specialist degree students (Russian L1) majoring in translation. Their educational background included intensive English and practical translation training.

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2 The full list can be accessed here: dev.rus-ltc.org/static/misc/textbooks46.pdf
3 www.rus-ltc.org/search

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as well as a theoretical course in translation, which had introduced them to typical problems in English-to-Russian translation;

- evidence from multiple translations to overcome possible idiosyncrasies: each source had at least five translations with complete annotations;
- independent work: all translations were produced in exam, test or translation contest settings (as opposed to texts discussed in class prior to final submission).

This selection procedure yielded 34 English sources with 413 multiple translations, their sizes ranging from 127 to 712 tokens (averaging at 407) and totalling 168,000 Russian words. This subcorpus included 8,561 unique sentence pairs for the total 813 English sentences. Table 1 details the size of the multi-parallel data, extracted from *RusLTC*.

### 3.2.2 Error Annotation

The error annotation used in this study was produced within the learning and evaluation environment created for the practical translation course and for the annual translation contest assignments in 2013-2018 by three translation lecturers, including the authors of this article. The underlying error taxonomy is an adaptation of the well-known *MeLLange* classification (Castagnoli et al. 2011). It is a three-level hierarchy spanning 30 error types. There is also a special category of ‘good solutions’ (kudos) for positive evaluation of students’ work. It is used to highlight adequate solutions that are original and creative, especially in cases when most students failed to overcome a problem. The top-level distinction is made between content errors and language errors. A detailed description of the *RusLTC* classification as well as the annotation guidelines are available on the project website⁴.

Table 1. Multi-parallel learner subcorpus used in this research

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⁴ [https://www.rus-ltc.org/static/html/about.html](https://www.rus-ltc.org/static/html/about.html)
The annotation was performed in a brat online environment (Stenetorp 2012), which allowed collaboration and output stand-off annotation files for each translation. The annotation tool was set up to provide for assigning error severity (weight) attribute. It is a three-member scale which differentiates critical, major and minor errors. Critical content errors are detrimental to the transfer of the original message—they significantly misrepresent the content of the ST, when key information of any type appears lost or misunderstood. Language errors are critical if they are obviously binary (Pym 1992), violate a basic rule of the TL, or immediately spring to the reader’s eye without being typos. Solutions annotated as minor errors (or not at all) are rather recommendations for possible improvements or non-binary errors.

While the majority of the texts were marked up by one annotator, a portion of the data (44 translations of seven English source texts) was cross-annotated by three experts and used to study inter-annotator agreement. On the average, the agreement between raters was over Krippendorff’s alpha > 0.6 (see a detailed description in Knilovskaya 2015).

3.2.3 Downsizing to a Non-Random Sample for Manual Analysis

As the subcorpus extracted from RusLTC was too big for manual analysis, we had to define a sample that would give an idea of where the students failed most. In similar circumstances, corpus researchers rely on random sampling. In this section we propose a more justified approach to downsizing the data, using an index of source sentence complexity.
Source sentence complexity index (CI) is a normalised and weighted relative score based on the error statistics from all available translations. It is calculated as follows:

\[ \text{CI} = (\text{minor} \times 1 + \text{major} \times 2 + \text{critical} \times 3) / N \]

where \( N \) is the total number of translations available for a source sentence and \textit{minor}, \textit{major} and \textit{critical} are error attributes reflecting the impact of each error on the overall translation quality.

From each ST, we extracted the top five sentences with the highest complexity score.

The parameters of the final data appear in Table 3.

Table 3. Downsized sample of learner data for manual analysis

<table>
<thead>
<tr>
<th></th>
<th>sentences</th>
<th>words</th>
<th>error tags</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>170</td>
<td>5,568</td>
<td>-</td>
</tr>
<tr>
<td>Russian</td>
<td>1,524</td>
<td>47,755</td>
<td>3,955</td>
</tr>
</tbody>
</table>

To demonstrate that this sample aggregates the negative properties of the learner data, we compared the error statistics from all annotated data (see Table 1) to the selection of translations for the most challenging source sentences (see Table 3). As seen in Table 4, the selected sample (17.8% of all target sentences) had almost 45% of all annotated errors. The relatively high proportion of good solutions in this dataset indicates that a few students managed to overcome the translation problems that were pervasive among their peers.

Table 4. Distribution of errors in downsized sample compared to subcorpus (100%)

<table>
<thead>
<tr>
<th></th>
<th>Sample</th>
<th>Subcorpus</th>
</tr>
</thead>
<tbody>
<tr>
<td>target sentences</td>
<td>1,524 (17.8%)</td>
<td>8,561</td>
</tr>
<tr>
<td>content errors</td>
<td>1,653 (46.15%)</td>
<td>3,582</td>
</tr>
<tr>
<td>language errors</td>
<td>2,302 (43.57%)</td>
<td>5,284</td>
</tr>
<tr>
<td>total</td>
<td>3,955 (44.9%)</td>
<td>8,806</td>
</tr>
<tr>
<td>good solutions</td>
<td>123 (25.73%)</td>
<td>478</td>
</tr>
</tbody>
</table>
This dataset was arranged in a table, where each source sentence was aligned with all available translations. Each translation was characterised by additional information from the annotation files, including annotated spans, assigned error types, and the annotator comments (if available). However, this information did not constrain the annotators in their task and was viewed as optional.

4. Methodology and Results

The methodology of this study consisted of:

1. obtaining a representative and relevant collection of translation textbooks;
2. drawing up a list of the most addressed translation issues to be used in annotation of parallel data;
3. building a register-homogeneous error-annotated corpus of independent multiple student translations;
4. reducing the selected subcorpus described in Section 3.2 to a motivated sample manageable in manual analysis;
5. performing manual contrastive-comparative analysis of source sentences and their translations to annotate ST phenomena that triggered inadequacies in translations;
6. comparing the frequency lists of problems discussed in the textbooks with the list of problems revealed in parallel data analysis.

4.1 Textbook Analysis

To define a comprehensive set of didactic items commonly found in the textbooks, we examined their contents and noted the linguistic and translation phenomena discussed in each publication. For the purposes of this research, we defined a didactic unit as a named shift
(translation solution) or a focused SL item with dedicated exercises or some reasonably extended discussion.

More than half of the textbooks reflected the problematic SL features at the top level of their structure. According to the prefaces, the choice of the issues was motivated by the authors’ experience and the results of cross-linguistic contrastive analysis as well as the usual workload on the respective course. The average number of topics covered per book was ten. These textbooks would typically discuss contrastive aspects of a given SL phenomenon or feature, highlight its less obvious uses, reveal the pitfalls around it and offer worked-up examples and explanations followed by materials for independent activities.

The major difficulties in identifying didactic items and evaluating their salience had to do with the differences in the granularity of approach and terminological variants. For example, it is common to treat each English non-finite form or clause separately, especially in the grammar-oriented textbooks. However, sometimes they are brought to the learners’ attention as a single SL phenomenon, which can be potentially dangerous in translation.

Several relevant textbooks followed a different approach to translator education. Namely: (i) nine books were designed around translational shifts, i.e. types of standard ways to solve translation problems like the ones discussed in (Pym 2018), including transcription, modulation and sentence splitting; (ii) eight books employed text-based exercises (as opposed to sentence-level activities typical to the majority of the books) or discussed complex and abstract structures rather than surface items and categories, and (iii) six books targeted teachers rather than students and discussed the best ways to arrange translator education. The analysis of their contents, nonetheless, revealed the SL items that the authors consider to be worth highlighting.

The resulting list of the most-addressed difficulties is based on the close analysis of 46 translation textbooks that are designed to help translation degree students at the beginning
of their professional training (usually in the penultimate year of study on a BA programme) to recognise and overcome standard translation problems related to the SL.

We identified 41 didactic items and ordered them according to the frequency of appearance in the textbooks. On average a didactic item from this list appeared in 13.5 books, the maximum being 34 and minimum being 1.

In keeping with the approach taken by the textbooks, the items were arranged into two groups: grammar (25 issues in 39 books) and lexis and stylistics (16 issues in 31 books). In cases when an item fell under different categories with different authors, we counted how often that item was treated as belonging to, for instance, a grammatical or stylistic category.

Table 2. The didactic units addressed in the textbooks

<table>
<thead>
<tr>
<th>Grammar</th>
<th>Freq.</th>
<th>Lexis and style</th>
<th>Freq.</th>
</tr>
</thead>
<tbody>
<tr>
<td>non-finite forms and clauses</td>
<td>34</td>
<td>false friends</td>
<td>26</td>
</tr>
<tr>
<td>complex NP</td>
<td>32</td>
<td>neologisms</td>
<td>24</td>
</tr>
<tr>
<td>modal verbs</td>
<td>28</td>
<td>idioms and proverbs</td>
<td>24</td>
</tr>
<tr>
<td>ambiguous function words</td>
<td>25</td>
<td>ambiguity</td>
<td>20</td>
</tr>
<tr>
<td>passive voice</td>
<td>25</td>
<td>SL-specific items</td>
<td>17</td>
</tr>
<tr>
<td>determiners</td>
<td>24</td>
<td>proper names</td>
<td>11</td>
</tr>
<tr>
<td>causative constructions</td>
<td>15</td>
<td>metaphor and metonymy</td>
<td>9</td>
</tr>
<tr>
<td>emphatic means</td>
<td>14</td>
<td>other stylistic tropes</td>
<td>8</td>
</tr>
<tr>
<td>elliptical clauses</td>
<td>14</td>
<td>(economic/political) terms</td>
<td>5</td>
</tr>
<tr>
<td>comparative constructions</td>
<td>9</td>
<td>collocational differences</td>
<td>5</td>
</tr>
<tr>
<td>information structure</td>
<td>8</td>
<td>discourse markers</td>
<td>4</td>
</tr>
<tr>
<td>complex syntax</td>
<td>7</td>
<td>paired synonyms</td>
<td>3</td>
</tr>
<tr>
<td>prop words</td>
<td>5</td>
<td>cliché</td>
<td>3</td>
</tr>
<tr>
<td>contrastive word order</td>
<td>4</td>
<td>archaisms</td>
<td>1</td>
</tr>
<tr>
<td>tenses (inc. sequence of)</td>
<td>4</td>
<td>abbreviations</td>
<td>1</td>
</tr>
<tr>
<td>negation</td>
<td>4</td>
<td>differences in conventionalised referencing</td>
<td>1</td>
</tr>
<tr>
<td>non-human subjects as</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
acting agents
number of (abstract) nouns 3
subjunctive mood 3
descriptive (adverbial) verbs 3
non-homogeneous verbal complements 2
nominalisation 2
economy of grammatical expression 1
contrastive use of pronouns 1
adverbial adjectives 1

Table 2 presents all identified didactic items attributed to the linguistic levels, as it is done in the textbooks, along with the number of mentions in our textbook collection.

While most categories in Table 2 are self-explanatory, we would like to comment on some of them (see Section 5 for more details). Many textbooks agree that one of the most challenging English syntactic structures is the complex NP, which is also recognised as a translation difficulty in a sidenote by Kübler et al. (2018) for English-to-French translation. It is a strong contrastive point with the Russian language which cannot create phrases such as *tree-lined avenues, a fierce ‘love-me-love-my-dog’ look, or the target growth rate* with similar ease. The ambiguity of content words (such as *funny, token, interest*) as well as function words (especially conjunctions such as *while, as, since*) is another very commonly-addressed issue. Unlike the previous case, in which the problem can hardly remain unnoticed, polysemy or contextual overtones can go undetected and result in semantically less accurate or incoherent renditions. For example, in our material *flim-flam survey data* which in the context denoted ‘unreliable data’ was translated as ‘false, intentionally deceptive or amateurish data’.

The practical translation course that was offered to the students who contributed data had a focus on the types of translation solutions rather than on the challenging SL items (see
Ilyushchenya 2017). The latter were discussed as typical use cases for specific translation solutions. For example, the rules of English-Russian transcription and transliteration were introduced in conjunction with the discussion of (1) proper names in English texts. The importance of context and the choice of contextual variants was demonstrated on a set of (2) polysemous items (rich food, soft pressure) and (3) ‘false friends’ (notation, public debt, accurate data). Various types of transformations, defined as legitimate and motivated deviations from the formal correspondence between ST and TT, were taught in activities based on (4) English highly ambiguous semantically weak words (thing, stuff, get), (5) neologisms and new coinages, including figurative uses (pyramidologists, voluntarily leisured, “disposable” workforce), (6) determiners, (7) passives, (8) causative constructions, (9) specificity of English tense and aspect categories, (10) non-finite verbs and constructions and (11) attributive noun phrases. These 11 features are displayed in the upper part of Table 2, which indicates that this course follows the established tradition with regard to the content selection. The taught syllabus as presented above was also stable throughout the data collection years.

4.2 Learner Data: Manual Analysis

The tabulated data described in Section 3.2.3 was submitted to manual analysis by three experts with experience in translator education. The experts were provided with examples and descriptions of the 41 grammatical and lexico-stylistic English categories from the textbooks and were offered training prior to the task. For each source sentence, the experts, working independently, were instructed to compare all available translations to each other and to the source, and to identify the parts of the source sentences that appeared to consistently trigger inadequacies in translations. The respective SL elements were highlighted and categorised using the inventory of SL items derived from the textbooks.
For example, eight translators out of ten did not successfully resolve ambiguity of funny in: *I hunted out the longest titles and the authors with the funniest names, I scoured the library for completely unread books*. Despite the contextual indications to the contrary (the speaker describes his attempts to become a book-learned intellectual), students translated the adjective as забавный, смешной, нелепый with the meaning ‘causing laughter or amusement’, instead of opting for the other, less familiar meaning ‘difficult to explain or understand’. In the same sentence, five translators had difficulties rendering the phrase unread books, which featured a special type of modifier, sometimes referred to as adverbial adjectives (cf. *to stretch a careless hand, an attempted overthrow, an ill-conceived production*). Instead of contextually acceptable and structurally transformed variants similar to книг, которые никто никогда не читал [books that nobody has read], they offered a variety of solutions wanting for various reasons: в поисках абсолютно нетронутых экземпляров [in search of absolutely untouched copies] (choice of word), что-то совершенно новое, мною непрочитанное [something totally new, unread by me] (distortion, awkward structure), в поисках непрочитанных книг [in search of unread books] (unclear).

We relied on the experts’ discretion to decide whether a sufficient number of translators stumbled over a SL item to consider it a persistent error-trigger. However, the discussed and agreed threshold was about half of the translations for each source sentence. It was explained by the varying number of translations available for source sentences (from five to 17): seven students failing over the same item is not half of 17, but an indicator of a negative pattern.

The experts could mark source sentences as ‘unclear’, if they were unable to detect a negative commonality in multiple translations, i.e. if the flaws in translations were unique and individual to each translation. This excluded idiosyncratic instances where individual translators stumbled over unspecific and uncommon items. Though idiosyncratic
inadequacies can be a sign of cognitive overload (Ehrensberger-Dow and Massey 2014; Ovchinnikova and Pavlova 2016), we were interested in capturing SL items that were systematically responsible for less acceptable solutions.

The problems of measuring inter-annotator agreement for this analysis are similar to the ones reported for error annotation (see, for example, discussions in Artstein and Poesio [2008]; Lommel, Popović and Burchardt [2014]). As in error analysis, the annotation for this project involved (1) selecting spans of interest on the SL side of the parallel data and (2) categorising these spans using 41 tags for categories from the textbooks. The scheme allowed overlapping or embedded items of various length and number in each sentence as well as assigning several tags to the same ST item. To study reliability at each stage, the three experts cross-annotated a sample of 30 source sentences, which was used to calculate (1) the average ratio of the spans annotated in the same place of the source sentence by every pair of raters; and (2) the average pair-wise similarity of the three frequency-ranked lists of annotated ST items. For the latter we used weighted Kendall's tau (τ) correlation index for ranked data. The coefficient was chosen because it gives preference to the agreement in the top of the lists, and we are interested in exactly that - the ST items with the highest frequencies in our analysis. We use the tau-b version which accounts for ties that are possible in our small validation sample.

Note that ten additional source sentences were used as a training and calibration set to adjust the understanding of the categories and the task between the experts before the annotators produced the cross-annotated set; these sentences were excluded from the data used for measuring reliability.

To account for the agreement on the location of spans, we manually aligned all selected items in the cross-annotated sample for each pair of annotators. We ignored the mismatches in the precise scope of the tagged item because some of our categories (such as syntactic
complexity or causative constructions) allowed flexible annotation. The average ratio of spans that coincided in the three annotations amounted to 81% of the average number of spans for each pair of annotators.

To evaluate the agreement in the categorisation subtask with Kendall τ, the lists of tags produced by the annotators were converted into category-aligned frequency lists. These lists were used to estimate the coefficient. For this metric values close to 1 indicate strong agreement, and values close to -1 indicate strong disagreement. After averaging the values for the three annotator pairs, we obtained the weighted τ > 0.76.

Table 5 reflects the results of the analysis and contains a list of the top 20 English categories that cause persistent inadequacies in translations and, therefore, present observed translational difficulties.

<table>
<thead>
<tr>
<th>Category or unit</th>
<th>cases</th>
<th>nominalisation</th>
<th>idioms and proverbs</th>
<th>discourse markers</th>
<th>non-human subjects as agents</th>
<th>prop words</th>
<th>contrastive use of pronouns</th>
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</thead>
<tbody>
<tr>
<td>collocational differences</td>
<td>81</td>
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<tr>
<td>complex NP</td>
<td>20</td>
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<tr>
<td>proper names</td>
<td>17</td>
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</tbody>
</table>
The ranking in Table 5 is dominated by English lexis, which seems to generate the greatest number of inadequacies. Cross-linguistic collocational differences defy literal renditions and require changes, sometimes quite substantial ones, including on syntactic level. Highly polysemous English words, contextual ambiguities and words of general semantics are other sources of persistent errors in learner translations. The types of corresponding errors can vary from distortions of the ST meaning and nonsensical sequences to awkward wordings. From the point of view of translation competences, these errors can mean an inability to identify the contextual meaning of the SL items, a lack of knowledge of their semantic structure (see the example with funny above), an inability to critically review the target text for coherence and fluency, or a lack of flexibility in the target language, i.e. inability to re-phrase.

The frequencies for the other categories form a descending order with no gaps. The three categories that were not used by any of the annotators are archaisms, elliptical clauses and abbreviations.

5. Discussion

This section discusses the cases of difficulty encountered by students with regard to the syllabus taught and taking into account the scope of potential problems anticipated in the textbooks. This comparison is limited to the 20 most frequent items observed in the learner translations, shown in Table 5. In what follows we offer a comparison between a typical training syllabus (i.e. our module) informed by the textbooks and the major areas of difficulty as exposed in this study. Our observations cover three major SL items: (1) SL items not included in the taught syllabus and only occasionally mentioned in the textbooks, but found among the major translation difficulties encountered by students; (2) SL items discussed during training but still presenting a problem for students; and (3) SL items frequently discussed but not revealed as a major problem empirically. In each group items are treated in
the order of importance. Due to space constraints, we cannot afford to detail all translation problems in each category.

5.1 Observed SL-Related Problems Underrepresented in Textbooks

We found that our students have more issues with processing SL lexis than grammar, which is in contrast with the content of the textbooks, which give preference to grammatical issues. The two most salient lexical issues are discussed in 5.2 as they are recognised as important in the textbooks and in our training course. Here we draw attention to the ones that are largely neglected.

A number of errors were caused by multi-word terms from various domains that occur in mass-media texts. The students relied on the general language correspondences for the components, instead of looking for the established variants. For example, in the shift of income away from the middle class toward a small elite, the term/phrase never received an adequate rendition similar to ‘redistribution of income in favour of’, but only various literal translations for ‘shift’. The same tendency to treat terminological phrases as free word combinations is noticeable in the translations of ‘social divergences in European societies’, ‘social exclusion’, ‘analyses of ice cores taken from Greenland’ (archaeology), ‘qualifying places in the Olympics’ (sports). This type of problem is totally neglected in both the textbooks and the practical translation course attended by our students. Phraseology sections, often included in translation textbooks, usually cover figurative set phrases such as proverbs.

The other two error-prone lexical categories worth highlighting include cliché and language-specific conventions of referring to real-world situations. Neither were formally covered in the training course the students received, and they have low visibility in the textbooks.
Cliché can be defined as a collocation, often a non-figurative semi-set phrase or a phrasal verb, especially frequently used in mass media (to show promise, to control the narrative, to step away from). The nature of solutions aligned with these items demonstrates that the students do not recognise them as indivisible translation units.

Although differences in conventionalised referencing are well addressed in theoretical discussion of translation, they seem to be very neglected in practical training. This category has to do with cross-linguistic differences in how typical situations of the real world are evoked in the speaker’s mind. The examples to illustrate this category are ‘We will do this later in the day’ and ‘He had a few books to read in his bag’, where the parts in italics, when literary reproduced in Russian sound very odd. In our data there were quite a few cases where many independent translators reproduced the English way to identify the situations and only a few of their peers came up with more natural renditions. For example, a reference to one’s early years in English can be ‘when Dorothy was a little girl, she believed…’ A functionally similar reference in Russian is likely to be (in back-translation) ‘In (early) childhood, Dorothy believed…’. Literal renditions are translationese giveaways. This can be confirmed by the frequencies of the respective renditions in the Russian National Corpus\(^5\), for example.

In terms of grammatical categories, our translators demonstrated an overall sound grasp of them. The leading grammatical factor that affected translation quality was complex syntax, especially if it involved parenthetical appositives (e.g. Current photovoltaic-cell technology, typically a semiconductor-based system, is expensive) or structurally homogeneous elements, which were difficult to fit into the same syntactic structure in translation due to combinability issues. At the same time, whenever the students had to restructure a sentence and rearrange information, the translations would lack fluency. This demonstrates that students can lack the ability to reformulate and recast the same message in a number of forms. Dedicated exercises

to develop this skill are not usual in textbooks, and should be introduced at the early stages of professional training. Unfortunately, fluency issues associated with syntactically challenging SL sentences are only part of the problem. In many cases, students could not interpret the message of such sentences and invented their own meanings, misrepresenting the ST.

This SL issue was not specifically addressed in the actual training course offered to students. In fact, they dealt with simpler texts that did not carry long and structurally challenging sentences. As a result only three out of 14 students were able to provide acceptable renditions for the sentence: Similar assumptions held in the UK, right up until the results of the 2017 election: the young didn't vote, and couldn't be persuaded to; if your manifesto had any money kicking around for vote-winning promises, they should be made to the old, who would at least be listening.

A much-discussed and theoretically anticipated problem in English-Russian translation is word order and associated issues with the thematic and information structure (or in Firbas’ [1992] terms, the functional sentence perspective) which receives substantial treatment in Mona Baker’s practical translation textbook (2011). For the language pair discussed here, word order is a prominent contrastive point. In our experience, the translation-teaching community is well aware of this problem. At the same time, the analysed textbooks largely ignore this issue, and it was not formally brought up in the training received by our students. One explanation is that this category is difficult to address in sentence-level exercises preferred in many manuals. Unlike many editions, especially earlier ones, our practical module includes text-level activities, which invite students to apply their skills in coherent mini-contexts, but word order and the issues with the flow of information in the text are not focused.

Finally, we have registered repetitive dysfluencies associated with contrastive use of pronouns, especially of indefinite and possessive types. This problem deserved more
prominence in textbooks and training. Pronouns such as *every* and *any* are often translated with their direct correspondences, which does not create an ungrammatical structure but leads to frequency errors that produce a characteristic foreign sound in translations. The observation is confirmed by previous research into translationese trends in English-to-Russian learner translation (Kunilovskaya et al. 2018). The same is true for personal pronouns that are more frequent in English, especially in the descriptions of human poses and actions (e.g. *she smiled through her tears*, or *every member of our modern society*), where they are usually not used in Russian.

5.2 Cases of persistent problems: SL items inadequately learnt

This section discusses some of the issues that rank highly on the training agenda, but still prove very challenging for students. This raises questions about the effectiveness of the learning activities.

Quantitatively, an overwhelming number of the observed translational difficulties is generated by collocational differences, when a straightforward rendition of a valid English collocation is either impossible or problematic with regard to the context. For example, *the great myth that every high school student must go on to college to be successful* would probably be better rendered as ‘a widespread misbelief’ than literally. See also a typical inadequate rendition of *to ensure* which ignores cross-linguistic differences in collocational properties of semantically similar items in the two languages:

*I now invite the Greek authorities to ensure that these projects are well and efficiently implemented.* - *И сейчас я призываю власти Греции убедиться в эффективности внедренных проектов* [And now I call for the Greek authorities to assure themselves that the implemented projects are effective].
The solution based on structural parallelism and a very literal rendition (instead of the contextually more appropriate обеспечить) resulted in a distortion of meaning: in this translation the projects appear to have been implemented, while in the source these are future projects.

The problems with the lexical choice observed in our corpus are also typically provoked by English lexical/contextual ambiguity and generic words that require narrowing in translation. An example of the former is the word agency in *They no longer took pride in their democratic agency*. The students erroneously interpret the word as meaning ‘a business or organisation established to provide a particular service’ instead of ‘action or intervention, especially such as to produce a particular effect’. A similar problem is presented by a host of semantically weak English words that function as structure-filling words. They are notoriously difficult to fit in translations that retain the original syntactic structure. These include such words as thing, matter, pattern, staff, wrong, to suffer, to enjoy, and to address. In many cases the most adequate solution would be to avoid translating these words as separate units.

Translation problems are also triggered by seemingly familiar lexical items. While our students do not make outright errors with the well-known English-Russian ‘false friends’ (e.g. actual, dramatic, complexion and fabric were successfully tackled in our sample), they occasionally fall victim to the misleading similarity of form or morphemic structure. We have registered multiple misinterpretations of national in phrases like *decisions made at national level* (национальный instead of государственный), literal renditions of composite modifiers in NPs like *well-documented cultures* (хорошо задокументированные культуры instead of хорошо изученные культуры) and words of Latin origin with a different collocational pattern in Russian (e.g. dominant position). Significant problems were caused by anecdote in *a brilliant polling anecdote that came up during interviews* from an article in *The Economist*. 
on the electoral behaviour of spouses. Predictably, the students uncritically followed the association with the frequent Russian word that means ‘a joke, a funny story’, instead of selecting a more contextually-appropriate variant similar to ‘an interesting observation’.

An effective teaching strategy for this set of problems is proposed by Kübler et al. (2018) and other researchers promoting corpus-based approaches to translator education. To address these issues, we have introduced *Corpora in Translation Practice*, a dedicated training module described in detail in Kunilovskaya (2018), but we were unable to trace its effects, as our current data does not include translations from students who have taken that course.

6. Conclusion

This research project presents a corpus-based method to verify the content of translator training against empirical evidence. A large error-annotated multi-parallel learner corpus was used to establish SL categories that are likely to lead to less adequate translation solutions. The corpus was collected over several years and included translations produced by final-year translation degree undergraduate students. The error annotation was performed as part of the feedback and evaluation procedure adopted in our translation degree programme; the annotation process was based on a publicly available error taxonomy and followed annotation guidelines.

The research methodology is largely based on contrastive-comparative manual analysis, which aims to reveal SL-related difficulties shared by most/many students in our learner translator population. A significant portion of the annotated data called for a motivated downsizing method to produce a sample condensing negative commonalities of the corpus for manual analysis. To this end, we used error statistics from multiple translations and calculated an empirical source sentence translation complexity index: more errors led to
lower quality of translation which itself was indicative of a more difficult source sentence and was quantified as having a higher complexity index.

The analysis and annotation of SL-related issues was based on an inventory of the 41 items discussed in the 46 published translation textbooks as potential translation problems.

Textbooks on translation practice tend to emphasise English grammatical categories on the assumption that L1 Russian translators find it more difficult to interpret structural properties English ST, especially where there is a stark contrast between the two language systems. The authors invariably discuss the use of English determiners, passive voice, causative constructions and sequence of tenses. These topics rank highly in translation textbooks and are included in translator training. However, we have not seen these items causing major problems to our learners.

Contrary to our expectations and the expectations reported in the literature, in their independent work our students effectively differentiated the meanings of English modal verbs and counteracted the natural pull to use structurally parallel modal predicates with the epistemic can. Similarly, English passive, causative and elliptical structures appear to have been handled well in translation.

Generally, the analysis of multiple learner translations indicates that there are few translation problems that go undetected. Senior translation undergraduates are mostly aware of the problems that need solving: they refrain from literal renditions and attempt various coping strategies, including omitting the difficult parts. The errors often occur because these attempts are not always successful. This can be indicative of poor TL writing skills.

Before we turn our attention to the pedagogical implications, we would like to point out a few methodological limitations of the proposed approach. First, the SL categories used for categorisation of annotated spans in STs intersect in some cases. The experts were seen to offer alternative but quite legitimate interpretations for the same ST item. They were
instructed to assign either of the competing tags or both of them, depending on their understanding of which property of the ST item induced more problems in translations. For example, various awkward renditions of the clause *corporate interests are actually doing better in a somewhat depressed economy* can be attributed either to the combination of the non-human subject with an agentive predicate, or to the semantic ambiguity of the subject, or to cross-linguistic collocational differences. Similarly, the category of information structure and word order (as well as determiners and emphatic means when they functioned as markers of the information arrangement) appeared to have a wide intersection, which led to disagreements between the experts. Another limitation of our approach is that it does not account for cases where students were successful in coping with hypothesised SL challenges. To obtain a probability of a source item to trigger translation issues would require a different research design.

The findings from this research can be used to improve teaching practices in translator education along at least three lines.

First, these findings call for changes to the content of the practical course offered to students at the initial stages of their professional education. It is worth reconsidering the priorities on this course and giving preference to currently ignored items that proved challenging in actual translations. They include (in order of importance): multi-word terms, clichés and language-specific referencing conventions, sentences with complex syntax, word order, etc. (see 5.1). The choice of focused items must take into account the frequency of their occurrence in a typical translation task. For mass-media texts, socio-political terminology, neologisms and complex syntax with non-finite clauses have higher priority than translating archaisms and stylistic devices other than metaphor. It seems that by the time our learners start professional training they have good understanding of English tenses,
determiners, comparative constructions and passive voice forms, so these didactic items can probably give way to more relevant topics.

Secondly, our findings indicate that some of the most popular teaching techniques might be not ideal. It makes sense to introduce students to available reference corpora and develop their corpus query skills to equip students with an effective strategy to overcome fluency problems associated with incorrect collocations, wrong word choice and sub-optimal solutions for proper names, as well as for finding more natural wordings around contextual key words.

We would like to emphasise that translation is an essentially discourse-based activity. The number of sentence-level exercises should be reduced to give preference to text-based tasks. Some of the issues identified in this analysis are better suited for discourse-based rather than sentence-based translation tasks. It is especially relevant for contrastive word order and diverging means of arranging information in the text, for selecting the appropriate level of detail to present a referent and for producing a naturally coherent TT, especially with regard to the use of discourse markers and pronouns. Some deficiencies of translations such as frequency calques can only be captured at the text level.

Finally, the empirically-motivated list of translation problems can be used to construct remedial exercises and diagnostic tests, and to raise both students’ and teachers’ awareness of them.

Generally, the comparison of the problems attested in learner translations and those hypothesised in the textbooks (as well as covered in actual training received by translators) suggests that there is room for adjusting teaching materials to actual students’ needs. We demonstrated that a wide range of SL items, which our students struggled with most, are under-represented in the textbooks and neglected in training. Some SL categories remained challenging despite the fact that they were covered in training and in the textbooks. This
might call for a change in teaching methodology used to address them. We can tentatively suggest that some SL items can afford to lose their prominence in a practical translation syllabus as they do not generate persistent problems in translations.

This study also explored the usability of a typical error-annotated learner translator corpus for solving one of the key tasks such resources are supposed to address: detecting SL items that systematically cause problems for students. One general take-away message of this study is that the common setup of translation error annotation – marking-up spans on the target language side only – makes it difficult to access the SL triggers of the errors. At the same time, it is crucial to understand where the current students make the most errors to allocate training time and effort effectively. This study indicates that, maybe, it makes sense to look for and adopt new annotation formats that allow routine error annotation of both sides of parallel data. This will help to quickly access the troublesome SL items, without the need to painfully re-annotate the data later. However, the methodology suggested in this study can be used for the existing learner translator projects that do not have SL annotation.

Acknowledgements

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