THE NEW WORDS KIDS HEAR FROM TRANSLATED PICTUREBOOKS

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Abstract

This study shows how the language in translated picturebooks is enriched by the use of rare words. We document how the translation of picturebooks from English to Portuguese results in the use of rare words in Portuguese. Evidence indicates that children learn new vocabulary through readings of picturebooks (Noble et al., 2019) and that translators make choices that contribute to the use of rare words (Ketola, 2018). The sample of 86 picturebooks was selected from a list recommended by the Portuguese national reading plan for 3-5-year-olds. The identification of rare words was done using a frequency analysis in both Portuguese, using ESCOLEX, and English, using the ChildFreq tool. Findings indicate that translated picturebooks use rich and varied lexicon and include an average of 6.6 rare words. Twenty-two percent of these words originate from literal and non-literal translations and are not rare in the original texts. This indicates that the process of translation contributes to increasing children's exposure to rare words.

Keywords: translated picturebooks; 3–5-year-olds; language development; vocabulary learning; rare words.

1.   INTRODUCTION

Research indicates that reading stories to children contributes to their language development and makes them better readers in primary school (Shahaeian et al., 2018). It has been amply demonstrated that written language is more complex than oral language and that reading to young children should be a common practice because it has a direct impact on their language development (Golinkoff et al. 2019; Grolig, 2020). Studies show that books offer language input that is more complex than oral language and that children learn new words by listening to written stories (Dickinson et al., 2012; Elley, 1989; Penno et al., 2002). Books contain more lexical diversity than oral speech (Montag et al., 2015) and parents use more low frequency words when they read to their children than when they engage in other activities with them (Noble et al., 2019).

Children's books, namely picturebooks, are a medium that supports shared reading interactions between adults and children and play a crucial role in the interactional triad—child, adult and book (Grolig, 2020). Picturebooks are intended for young children, relying on the use of pictures to tell or complement the written story. They contain specific text-picture characteristics that facilitate talk about the text and the visual elements present (Breit-Smith et al., 2017). This talk often includes parents asking questions and asking children to point to the illustrations, which results in the learning of the words the illustrations depict (Sénéchal et al., 1995).

In the field of translation studies, recent studies have focused on picturebooks as a medium that invites *transcreation*, as the process of adapting the material for a new linguistic and cultural context (Ketola, 2018). It has been observed that the process of translating picturebooks "call[s] for extensive adaptations of verbal material in order to create multimodally coherent products for a new target audience" (p. 127). This means that translation is merged with (re)creation and, as a consequence, the resulting text may differ from the original one in terms of linguistic features.

Given the evidence that picturebooks, through the new linguistic input they provide, contribute to children's language development and specifically to vocabulary learning, we explore how translated picturebooks, recommended for 3–5-year-olds, may play a relevant role in this contribution. Specifically, our study analyzes how translated picturebooks—English-Portuguese—result in the use of rare, low-frequency words in Portuguese. The purpose is two-fold. First, to identify the rare words used in translated picturebooks. Second, to offer an interpretation of the process of transcreation that results in the use of rare words in the target language, which may or may not be a translation of high-frequency words in the source language. To our knowledge, this is the first study to address the role of translated picturebooks in providing new vocabulary for early language learning. As such, it brings new insights about how translated picturebooks offer opportunities for children to be exposed to new vocabulary and can inform research that looks at

the lexical quality of translated picturebooks and its relationship with children's language development.

2.   REVIEW OF THE LITERATURE

Shared reading, the act of reading a book to a child and discussing it (Zucker et al., 2012), is one type of language experience that toddlers, preschoolers and kindergarten children should be exposed to because it will make them better readers (Dickinson et al., 2012). Several longitudinal studies corroborate this notion that reading comprehension in the primary grades is largely dependent on early language experiences acquired during shared reading (Dickinson et al., 2012). This type of reading can be characterized as a conversation about the printed material during which parents or caregivers ask about experiences children had that are related to the story, ask them to name pictures and to explain situations (Whitehurst et al., 1988; Whitehurst & Lonigen, 2001).

Shared reading experiences with young children may occur in the home environment, as a part of the *Home Literacy Environment* (HLE) and as part of the *Child Care Literacy Environment* (CCLE), and evidence indicates that these experiences contribute to better reading performance in primary school (Grolig, 2020). Regarding the HLE, several studies show that frequent storybook reading in the home promotes preschool children's vocabulary acquisition, morphological and syntactic comprehension (Sénechal et al., 2008). Moreover, it is positively associated with an increase in children's reading performance in grade four, as measured by standardized tests. This evidence has been gathered in studies that investigate parental book reading in Canada (Sénéchal & Young, 2008), in Europe (Araújo & Costa, 2015), in the United States (Mol & Bus, 2011; Mol et al., 2008; Whitehurst & Lonigan, 2001) and Australia (Kalb & van Ours, 2014). For instance, Sénéchal´s studies with Canadian children show that "parents' reports of shared reading were a robust predictor of children's receptive and expressive vocabulary" in grade four (Sénéchal, 2011, p. 179).

Evidence gathered in the CCLE supports these findings. For example, Dickinson and Porche (2011) found that fourth grade vocabulary knowledge was related to shared reading experiences in preschool and kindergarten classrooms. Furthermore, the results of several studies suggest that what matters is not only the frequency of shared reading, but the kind of talk about books that teachers engage in with children (Zucker et al., 2012). Children learn more vocabulary when teachers use an interactional style of reading that includes explanations of word meanings and use inferential comments and questions (Beck & McKeown, 2007; NELP, 2008). This finding has important educational implications because vocabulary knowledge at the age of 5, in particular, is one of the strongest predictors of children's ability to learn to read (Durham et al., 2007; Snow et al., 1998). In fact, research indicates that direct teaching of word meanings during shared reading enhances the learning of the meaning of words, both in the CCLE and in home contexts (Biemiller, 2006).

Shared reading contributes to increasing children's vocabulary knowledge as well as to their acquisition of complex language knowledge (e.g., comprehension of long, grammatically complex sentences) and this predicts later reading ability in elementary school. As Dickinson et al. (2012) contend "Children learn new vocabulary through grammar and grammar through vocabulary" (p. 5). That is, the way sentences are constructed offers children clues as to whether a word is a verb or an adjective, for example.

2.1 Picturebooks as a medium for language learning

Picturebooks are unique in that they establish a link between pictures and text and are designed to entertain young readers (Massaro, 2015). This harmony in picturebooks constitute a semiotic whole, since the interaction between the verbal and the visual systems is a "*conditio sine qua non* for the construction of the narrative meaning and for the fruition and enjoyment of the genre" (Sezzi, 2020, p. 216). The pictures resemble objects or scenes and complement or even substitute part of the narrative text. When listening to picturebooks, four-year-old children have been observed to fixate the pictures 95% of the time (Evans & Saint-Aubin, 2005). We don't know much about the type of picturebooks children are exposed to in the HLE and in the CCLE. One indication from a survey by Hudson Kam and Matthewson's (2017) is that there is wide variability in household selection of picturebooks and that in the HLE a child will typically hear about 10 picturebooks in one month during shared reading experiences (Bradley et al., 2001; Young et al., 1998). Moreover, research indicates that the language input children receive when listening to speech from text may account for 3 to 10 percent of all speech children hear in one day, with that percentage varying according to how often a child is read to (e.g., twice daily, once a day, or less) (Shneidman et al., 2013; Weisleder & Fernald, 2014).

Picturebooks constitute a medium through which children not only hear rare words or more novel vocabulary during shared reading, but also more complex sentences, including passive sentences and sentences containing relative clauses (Cameron-Faulkner & Noble, 2013; Montag et al., 2015). Furthermore, children's exposure to books predicts their spoken production of complex sentences in eight-year-olds (Montag & MacDonald, 2015). Studies show that when parents read picturebooks to their children they tend to stick to print and read the text, although have been observed to engage in book-related talk beyond the text itself, (Montag, 2019). In short, picturebooks offer varied vocabulary and complex language input, which supports later reading achievement (Stanovitch, 2000), because adults attend to, and possibly expand, the printed texts during shared reading interactions (Grolig, 2020).

Importantly, research indicates that picturebooks include more diverse vocabulary than adults' spoken language (Cunningham & Stanovitch, 1997). Dickinson & Tabors (2001) and Hays (1988) have shown that picturebooks have more

low-frequency words than spoken words in everyday conversations. Hayes and Ahrens (1988) calculated that the percentage of rare words in children's books is 30.9, compared to 9.9 rare words in the speech of adults talking to children, commonly referred to as Child-Directed Speech (CDS). More recently, Massaro (2015) and Montag (2019) found, by comparing it to CDS, that picturebooks contain almost three times more rare words than CDS. Montag, Jones and Smith´s (2015) study of the new words that appear in picturebooks for children aged 0-60 months also corroborates this finding.

CDS does not include the same diversity of vocabulary and syntax as print, although it can also support children's language learning. Studies show that preschool, kindergarten and second grade children have larger vocabularies when their parents use a high proportion of rare words in CDS, regardless of the activity they engage in with their children (Golinkoff et al., 2018; Weizman & Snow, 2001). The more rare words parents use when talking to their children the higher they score on tests of receptive vocabulary knowledge, namely on the Peabody Picture Vocabulary Test (Rowe, 2012). Thus, CDS can also be a source of new vocabulary learning for children and parents have been observed to use between about 2-6% of rare words when talking to their children (Rowe, 2012; Weizman & Snow, 2001). Nonetheless, listening to stories increases children's exposure to more sophisticated language, rare words in particular, and this promotes their language development (Golinkoff et al., 2018; McLeod & McDade, 2011; Montag et al., 2015).

Taken together, these findings suggest that the text in picturebooks is an important source of vocabulary learning for young children and we know that "exposure to vocabulary is particularly likely to have beneficial effects when the input includes a high density of novel words relative to total words" (Dickinson et al., 2012, p. 4). Moreover, research indicates that the book-related talk that adults use during shared reading, namely the explanation of word meaning, is likely to contribute to children's language development.

2.2 Translated picturebooks

Translations constitute a very significant percentage of all picturebooks published in Portugal, especially considering the most popular ones, in both school and home environments. Translated picturebooks proliferate among editions released by the most successful and prestigious publishers, and also among the list of books recommended by the National Reading Plan (known as PNL). This may not be the case in other countries, but the situation in Portugal follows the general trend, whereby for "small languages, such as Czech, translations constitute a substantial part of the canon of children's literature" (Čermáková, 2018, p. 118), whereas in English-speaking nations the situation is reversed: "children's book production in the UK yearly involves only about 2% of translations" (Čermáková, 2018, p.118).

It is widely acknowledged that children's literature constitutes *crossover fiction*, in the sense that adults are frequent co-readers, mediators and sometimes

performers of the story (Sezzi, 2009; Spitz, 1999). Still, the main and final audience are children, and this implies that the choice of words in the translation of picturebooks is influenced by the desire to address the characteristics and needs of children, or what translators assume these characteristics and needs to be (Ketola, 2018). Thus, translators generally aim to achieve a version of the text whose language is simple and clear, so as to ensure that the young reader understands it (Thompson & Sealey 2007). The accepted principles of translation in children's literature—*simplification, explicitation* and *normalization* (Baker, 1996)—account for the tendency to use common, already known words to ensure comprehension. Simplification means literally "to simplify the language used in translation" (Baker, 1996, pp. 181-182), explicitation is "to spell things out rather than leave them implicit" (Baker, 1996, pp. 181-182), and normalization involves conforming "to patterns and practices which are typical of the target language, even to the point of exaggerating them" (Baker, 1996, pp. 176-177).

However, it should also be acknowledged that this intention is compatible with the choice of vocabulary which is not commonly used with or by children in translated children's books, whenever these words are thought to make meaning clearer or more accurate (for example if the rare word stands for a particular animal species)—often in harmony with the illustrations. Moreover, the purpose of ensuring that the text is easy to understand by children is not prioritized to the point of favouring repetition over novelty, in terms of vocabulary. On the contrary, it has been noted that repetition of words is generally deemed undesirable by writers and translators alike, and children's literature is no exception. This is evident, for example, in the number of verbs chosen to replace the English verb *said* in translated children's books, whenever reported speech is used (Corness, 2009 Fárová, 2016; Nádvorníková, 2017).

The need to preserve rhyme is another reason that accounts for the use of rare words in translated picturebooks (Ketola, 2018). In order to reproduce the harmonious musical qualities of the source language, translators often resort to vocabulary that is unfamiliar to children. If their choice implies a shift from the semantic or stylistic quality of the original text, the process is called *modulation* (van Leuven-Zwart, 1989, pp. 159-169). If translators reach the point of inserting words in the version they are (re)creating that have no counterpart in the original text, this shift is known as *mutation* (van Leuven-Zwart, 1989, pp. 159-169).

When the use of rare words in picture books derives from a felt need to add content to the text which cannot be attributed to the intention of clarifying meaning or make the underlying message more graspable, this might be called *manipulation* (Shavit, 1981). In that case, the translator is trying to make the message more complete or "acceptable" from an ethical or pedagogical point of view. For some scholars, this opens a discussion as to whether these adjustments are acceptable or unnecessary (Klingberg, 1986; Toro, 2020). As Oittinen points out, adaptation is not in itself a negative strategy and it may be argued that all translations entail some

degree of adaptation, as they are, inevitably, a transformation of a product into another (Oittinen, 2000).

Our interest in the presence of rare words in translated picture books is anchored in the evidence that reading texts with new, unknown vocabulary is beneficial, as it contributes to children's language development. Thus, in the present study, we investigate whether the translated texts offer opportunities for children to be exposed to novel or rare words. These words constitute low-frequency vocabulary that is not likely found in texts directed at children in the 3-5 age range.

In general, to understand how picturebooks can promote young children's language development, we have to understand the contribution of multiple factors—how the book text, extra-text talk, and the pictures all contribute to the learning environment (Montag, 2019). Specifically, the present work provides information about how one of these factors - the text in translated picturebooks— may contribute to the language learning environment.

3.   METHODOLOGY

In order to understand to what extent and how rare words appear in picturebooks translated from English to Portuguese, we identify the rare words and describe the options translators choose that result in their use. First, for identification purposes we conducted a frequency word count. Second, we conducted a qualitative analysis of the options made by translators in order to describe how the strategies they employ result in the use of rare words, or low frequency words in the target language. Specifically, our study addresses the following questions:

1) To what extent are rare words used in Portuguese translations of English picturebooks?
2) What is the correspondence of rare words in the target language with those in the source language?
3) What translation options are used and how do they result in the use of rare words?

3.1 Data collection

First, we selected all picturebooks translated from English to Portuguese, a total of 86, from a list of 167 books (fiction only) recommended by the Portuguese National Reading Plan between 2017 and 2020 for 3–5-year-olds. The National Reading Plan, known as PNL, is an initiative of the Portuguese Government intended to constitute an institutional response to the concern of the literacy level of the general population, and of the youngest in particular, which is significantly inferior to the European average (Decreto Lei no 64/2006). It is materialized in a set of defined strategies to promote the development of reading and writing skills, as well as the widening and deepening of reading habits, among the school population (Decreto Lei no 64/2006).

The listings of works suggested by the PNL, published in its website, include varied themes and are intended for a diverse audience, such as children, youngsters and adults. The books listed result from a first selection by publishing companies who suggest their inclusion in PNL age-specific lists and are subsequently evaluated by independent specialists of recognized merit and qualification in the field of literacy/children's literature.

The list of 167 books is composed mainly of translated works, 74%, of which 51% have English as the source language. Forty-four picturebooks, or 26% of the sample, are written by Portuguese authors.

Paper copies of the translated picturebooks were gathered from PNL headquarters. The original works in English were obtained by checking available written and/or read-aloud electronically versions. This list of 86 English picturebooks includes several well-known British and American authors, such as Beatrix Potter, Benji Davis, David McKee, Eric Carle, Jen Campbell, Kirsten Hall, and Roger Hargreaves. The linguistic corpus of these picturebooks was considered as follows: 1) total number of words in each picturebook, 2) all words that could be considered rare words in Portuguese and their translation equivalents in the source language. We excluded informational picturebooks, because this genre includes scientific terms and thus includes many more rare words than fiction. As Massaro (2015) notes, the presence of new words is expected to be larger in informational books.

3.2 Data analysis

In order to contextualize the linguistic corpus of the study, we categorized the collected 86 picturebooks translated from English to Portuguese in terms of their thematic focus and total number of words. In the categorization of themes, we considered the categories used in national school libraries and the books' synopses available in the publishers' site. From these, at times too general (animals, adventure, emotions) or too specific (books, grandparents and tenderness, mischief caused by a tiger) we created larger, more consistent categories.

In addressing the first research question, we considered all words present in the translated picturebooks that might constitute rare words for 3–5-year-olds. To ascertain whether the words identified as potential rare words could be considered as such we conducted a word frequency quantitative analysis using ESCOLEX. This database uses a Portuguese word corpus based on published school manuals from first through 6th grades (Soares et al., 2014). A search in ESCOLEX to determine the frequency with which words appeared in first grade manuals constituted our corpus search method, given that this constitutes the typical printed material Portuguese children will encounter once they move from early childhood education to grade school. For this grade level, ESCOLEX includes a total of 8.313 words collected from 25 textbooks (Soares et al., 2014). In the identification of rare words we counted words of the same lexical family, following the rationale offered by Nagy & Anderson (1984) that the meaning of the new word can be determined by using knowledge of

its root. For example, if no instances of a verb in the past tense were found in Escolex but the same verb was found in the present tense we counted its frequency and included it in the analyses.

We excluded acronyms, idiomatic expressions, and rare words that coincided with common words in graphic/phonemic terms (homonyms such as *parada*, which means *parade*, but can also be the past participle of the verb *to stop* (*stopped*). We established the threshold of 1 occurrence in Escolex to consider a word a rare one. High-frequency words are typically defined as having more than 100 occurrences per 1 million words (Brysbaert et al., 2018). Since the Escolex dataset is much smaller and includes only 8,313 words in the grade one textbook-based linguistic corpus we use, the threshold of 1 is equivalent to slightly less than 100 occurrences per 1 million words.

In order to understand if the rare words in the target language correspond to rare ones in the source language, we looked for all translation counterparts in the original English picturebooks. We counted the number of Portuguese rare words that did not have a translation counterpart and considered those that had a translation counterpart that was a high-frequency word in English. In order to determine the frequency of the latter, we used the tool ChildFreq (Bååth, 2010). The corpora in ChildFreq is taken from the English part of CHILDES (MacWhinney, 2000), which includes both British and American transcripts of talk between parents and their children. The ChildFreq tool comprises a total of 3.5 million word tokens, and children included in the sampled transcripts range from six months to seven years of age, with most children being three years old (Bååth, 2010). We used the age interval 3-5 years of age, with a corresponding word corpus of 1,000,000 words to ascertain if the words identified as rare words in Portuguese were also rare words in the source text in English. In checking words in this online child frequency tool, we considered individual words and, when the Portuguese target corresponded to more than one English word or expression we searched the frequency of each word (e.g., *sand-bank*, *lived in fear*; *mountain climber*).

Regarding our interest in vocabulary choices made by translators, we found it relevant to assess whether the new/rare words in the target language were necessary or not, considering their counterpart in the original text and possible alternatives to translate them. We were also interested in the possible motives that might explain why a translator chose to use a new or rare word instead of a common, known one, regardless of the frequency of the counterpart word in the original text.

4.   RESULTS

The 86 books analyzed fall into five categories: General knowledge, Life experiences and relationships, Humor, Adventure, and Fantasy. A book about planet Earth, animals, food, numbers, travels or jobs falls in the General knowledge category; a book about friendship, personal characteristics, manners, dealing with emotions and interacting with others falls into the Life experience and relationships category; a

book mainly intended to make children laugh about funny characters and situations falls into the Humour category; a book whose characters venture out of their comfort zones and into unknown environments, being scared and or surprised by novelty, falls into the category of Adventure; a book whose characters, settings and events are predominantly other-wordly, inviting the child to conceive an alternative reality where anything is possible, falls into the Fantasy category. Forty-six books are mainly about Life experience and relationships; 12 books focus on General knowledge; 4 books are dedicated to Humor, while no books were solely about Adventure or Fantasy. In many cases (28 titles), the picturebooks combine 2 or more themes, such as General knowledge & life experience (7 books), General knowledge & adventure (4 books), Life experience & Fantasy (4 books), Life experience & Adventure (3 books), and Adventure, General knowledge & Life experience (2 books). One book combined General knowledge & Fantasy, 1 book combined General knowledge, Fantasy & Life experience, 1 book combined Adventure & fantasy, and 1 book combined Fantasy and Humor.

The average book length in our sample is 540 words per book. Analyses show that, of the 86 picturebooks sampled, only 7 books, or 9% of the sample, did not contain any rare words. Our selection of potential rare words in the 79 remaining picturebooks yielded 629 words and our findings indicate that the overwhelming majority of the selected words, 565, are rare, because they never occur in the Escolex linguistic corpus or appear only one time. Most rare words have a frequency of zero in Escolex, while only 79 out of the 565 appear one time.

In the 86 picturebooks translated from English to Portuguese we find, on average, 6.6 rare words. The mode is two rare words and the median is 4.5. The fact that the average is larger than the median reveals a skewness in the data, clearly displayed in Figure 2. The variation in the sample (standard deviation) is considerable (Table 1).

*Table 1. Average book length, number of books and of rare words and average of rare words per book*

Number of books	86
Average book length	540
Number of rare words	565
Average number of rare words per book	6.6
Mode per book	2
Median	4.5
Standard Deviation	7.7

There are very few repetitions of rare words. Our sample is composed, almost exclusively, of unique types of rare words. More specifically, out of the 565 rare words identified, only 26 words appear more than once in different picturebooks. For example, the verb *sussurrar, the* nouns *alvoroço* and *fôlego*, appear two times and only the preposition *sob* for *under* appears four times, both word repetitions that occur in different books.

The number of rare words per picturebook varies, as Figure 2 shows, with most books having between 0-3 rare words. One book in particular, has almost 60 rare words, while another that stands out has 32 words. In the great majority of books the number of rare words varies between 0-15 words.

Figure 1 shows the rank distribution of rare words per book. It is evident that there is a Pareto-type inverse relationship: as the number of rare words increases the number of books that have them decreases.

Figure 1. Rank-frequency distribution of words per book
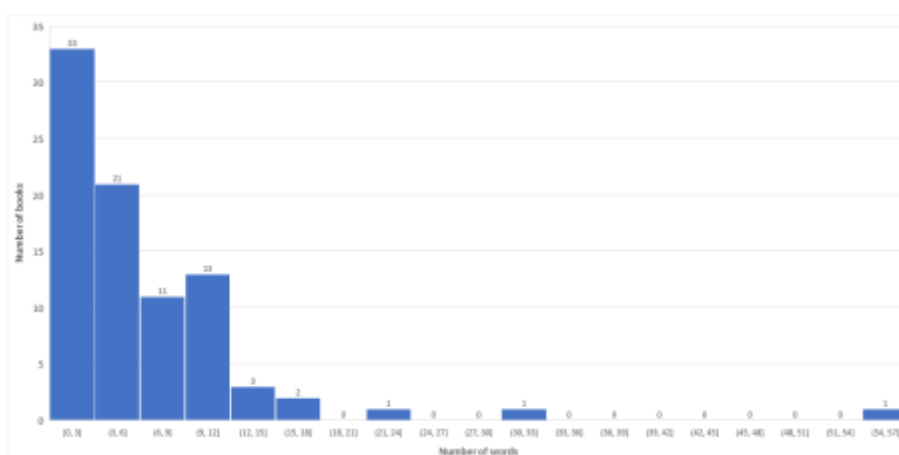
This Pareto-type distribution is well known in linguistics through the work of George Zipf (1935, 1949) and other researchers. It describes phenomena for which rare occurrences are more frequent than what is assumed by a normal distribution and other types of common probability distributions. Data here are not enough to conclusively indicate a particular probabilistic distribution or make a clear statement about the characteristic of the observed tail behaviour. At any rate, the following log-log plot of the tails for observed rare words suggests a heavy-tailed behaviour. In fact, instead of dropping abruptly as in a normal distribution, the almost linear log-log decrease suggests this statistical behaviour (see, e.g., Samorodnitsky & Taqqu, 1994).

Fifty-one, or 9% of the rare words that occur in Portuguese do not have a source equivalent in English. That is, the translator resorted to mutation. Of the 514 rare words that do have a translation counterpart in the original text, 76, or 13% are rare words in Portuguese but are not rare, or low-frequency ones in the original English texts. Table 2 summarizes these findings.
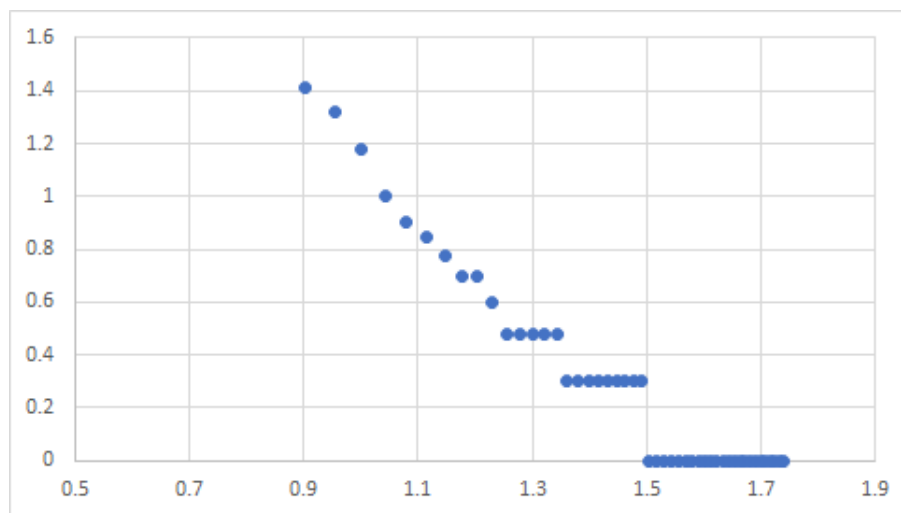
Figure 2. Log-log graph of rare word frequency

Table 2. Translation equivalents in Portuguese and English

Number of rare words *without* a source equivalent	51 (9%)
Number of rare words in Portuguese that are high-frequency in English	76 (13%)
Number of rare words in both languages	438 (78%)

This distribution indicates that 22% (9% + 13%) of rare words, or about 1.4 rare words per picturebook, were either created by the translator or had as a translation equivalent a frequent word in English. These two translation processes correspond to mutation and modulation, respectively. Appendix 1 shows the total number of words, their frequency in Escolex, their translation equivalent, whether the words are cognates, and associated translation process. Our analyses show that the use of cognate words is associated with translation, not with mutation or modulation, and that it corresponds to 18% of the total number of rare words (565) in the corpus.

We find that translators often choose to use new words that are rare words in the target language due to the need to make words rhyme as in the original text. This requirement sometimes even makes translators resort to words that have no counterpart in the original text (mutation), thus adding or changing the meaning of the text for the sake of ensuring terminal sound identity between words at the end of each verse or line. This accounts for the use of rare words such as adejar, celestial, a definhar, detalhado, euforia and triunfante, among others (most of which have no counterpart in the original text). These words seem to not only serve the most immediate purpose of rhyming with another, more mundane, word used previously in the text, but also the purpose of lending it a poetic quality.

The intention of rendering the text more "literary" (as well as of avoiding repetition) sometimes seems to explain less literal choices made by translators, as they employ rich and varied vocabulary that has no counterpart in the original text. We found many examples of rare words whose source in English is a common word. Translators seem to have intentionally refrained from choosing the most literal equivalent in order to make written language more diversified and sophisticated than speech. This is the case with aconchegam-se, a desabar, estacaram, garridas and bramiu, for example, which are used to translate amass, falling, stared, so bright and said, respectively (their literal equivalents would be "juntam-se", "a cair", "pararam" / "olharam", "tão vivas'' and "disse", respectively).

In some instances, it seems that translators intentionally wish to offer young readers the opportunity to learn a new word while they are enjoying the story. That seems to be the only valid reason to explain why, for example, the sentence «Eventually, we stopped wandering» (Bunting, 2019) becomes «Antes, nunca parávamos no mesmo sítio, éramos nómadas», where the word nómadas (nomads) is provided as extra lexical information in the translation.

Also, the translated picturebooks present a lot of new vocabulary to children because, on many occasions, translators choose not to use the literal equivalents to common original words. This is most obvious in the case of the verb said, as documented in the literature (Corness, 2009 Fárová, 2016; Nádvorníková, 2017). Through the process of modulation, it turns into a number of different verbs, be it to use a verb that refers to the specific sounds that the different species of animals make when they "speak" (thus "teaching" specific vocabulary as the story is told, as with relinchou, bramiu, mugiu, to translate said), be it to convey a clearer idea of the attitude or intention with which animals speak (for example, through the use of tranquilizou-o, advertiram, desabafou and rezingou to translate said). However, this also happens with other verbs, for example the verb to "eat", which is sometimes translated as "devorar" (to devour), instead of the immediate equivalent comer (eat), possibly to cause a more striking impression in terms of meaning (as it refers to a stronger, more intense kind of eating), as well as to conform the text to the illustrations and the imagery suggested by the characters and the plot (a starving caterpillar or a scary monster, for example).

The translated picturebooks we analyzed also present rare words whose counterpart in the original text is a common word due to grammar differences, especially when it comes to verb tenses. We found several situations where the future tense results in a rare word, because in spoken Portuguese proper future conjugation (e.g., ouvirei) is replaced with a periphrastic combination of auxiliary verb in present tense + infinitive of the main verb (e.g., vou ouvir). This means that whenever a child is confronted with a verb that is conjugated in the future, he/she is faced with a rare word, a fact that is aggravated when there is a pronoun in the middle of the verb word, which in spoken language practically never happens. So, concedê-lo-ei and enfeitar-se-á are rare words, whereas their original counterparts glad to grant it and will decorate are not. But it should be added that the future is

not the only tense where this happens, as there are other conjugations in Portuguese that do not exist in English. This explains why common forms like kept and thought are translated as the rare words mantiveram and tencionasse, respectively. Moreover, grammatical reasons behind the use of rare words in translations are not always related to verbs. They can also derive from the need or choice to use adjectives, for example, rather than nouns, as is the case with river beach and had feathers, which result in praia fluvial and emplumadas, respectively.

Another motive for translators to opt for rare words might be the desire to make the text funny. This happens, for example, in the translation of Do Not Open This Book (Lee, 2018), where the English words wow, gold, right and something awful are not literally translated as "uau", "ouro/dinheiro", "bom / muito bem" "uma coisa horrível", but rather as arre, guito, porreiro and cataclismo, respectively, all of which are uncommon words for children. It appears that this choice is meant to make the character sound comically idiosyncratic, as they are informal but mostly outdated (the kind of slang that their parents or grandparents would use).

Finally, it should be noted that, in some cases, it simply happens that the literal translation of a concept is a rare word, even though in the source language it might be a common word. This is the case, for example, with frame, from, puff, sign and slid, which in Portuguese result in estrutura, sob, baforada, letreiro and deslizou, all of which are probably unfamiliar for most native speakers aged 3-5. This could be seen as a fortunate coincidence, if we regard picturebooks as a welcome source of new words that children thus have the chance to learn.

In the instances described above, different reasons or translation options account for particular kinds of modulation or mutation: a change from high-frequency words in the source language to low-frequency words in the target language. In many situations, though, the rare word in the translated picturebook corresponds to an equally rare word in the original text, and in such situations we might say that the process in question is translation rather than modulation (transcreation). In such cases, the words in question sometimes belong to technical or scientific lexicon (as with names of animal and plant species, objects in outer space, instruments used in certain activities, types of materials, etc. Such is the case with asteroids, harpies, honeycomb, nymphs, reeds, telescope, tilapia and many more, which inevitably become asteroides, harpias, favos, Ninfas, juncos, telescópio, and Tilápia.

It also happens that rare English words result in rare Portuguese words because they are outdated or old-fashioned, as in the case of Beatrix Potter's Kitty in Boots, whose "difficult" words sometimes refer to objects, concepts and practices that children can no longer observe in their daily lives, such as muffs, gun-powder, pellets, sportsman, gaiters and brandishing (Potter, 2016).

Sometimes rare words are used in both original and translation because the author has opted for a formal, literary style, which the translator is naturally compelled to maintain. This is the case with feasted, overjoyed, slithery and spluttered, which are duly translated as banquete, radiantes, serpenteante and

balbuciou. We also found that unfamiliar vocabulary in picturebooks may be present because the text refers to abstract realities that are not normally conceived by or mentioned to children, but rather belong to a more grown-up conceptual universe, such as ambition, wraiths and confiscated, which translate as ambição, assombrações, and confiscar, respectively.

Another, albeit infrequent reason for rare words to appear in picturebooks—in the original as well as the translation—is the fact that some authors use neologisms, words that they invent for stylistic purposes. This accounts for the appearance of new and strange vocabulary such as mermish, stratosthingy and great, great, great–times a trillion, zillion, squillion–granny, which in Portuguese is translated as sereiês, estratocoisa and tetetetetetterararararavó, respectively.

5.   DISCUSSION

Our findings reveal that picturebooks translated from English to Portuguese are well represented in the PNL list of recommended books for 3–5-year-olds, since they represent 86 out of a total of 167 books recommended for 3-5 year-olds between 2017 to 2020. The 86 picturebooks analyzed have an average book length of 540 words, a lower figure than that reported by Montag et al. (2015). In their study of the 100 most commonly read picturebooks in the United States, they found the average number of words, or the average book length to be about 680 words. In this sense, our findings suggest that the children's books we analyzed are shorter than those typically read to American kids.

This study shows that translated picturebooks present many opportunities for children to hear and learn rare words. A total of 565 rare words are present in the 78 picturebooks that have such words, as Escolex searches revealed. These rare words in the translated picturebooks are non-existent or extremely low-frequency words that 3–5-year-old children are not likely to be exposed to when they encounter the typical written material in textbooks designed for grade one instruction. First grade textbooks are designed to teach children to read and, as such, we can expect that they do not include unfamiliar words or words that are not commonly used. This, however, highlights the importance of exposing children to the less common, rich and varied vocabulary found in picturebooks. This study suggests that the translated books we analyzed, due to the choices made by translators - the use of 22% of rare words that were not in the original texts - are a good source of vocabulary learning for young children.

Moreover, the linguistic corpus we examined includes very few repetitions of rare words. This is in accord with previous findings that stories, when compared to playtime, for example, include more rare words (Montag et al., 2018). In our study, we find an average of 6.6 rare words per picturebook. This figure is higher than that reported in studies of the amount of rare words in CDS (Rowe, 2012; Weizman & Snow, 2001). However, in this study the comparison of interest was text-to-text, the

occurrence of rare words in the target language versus counterparts in the source language.

The picturebooks in our sample exhibit a pareto-like distribution of words that resembles a Zipf probabilistic law, which belongs to a type of probability distributions that are commonly labelled as "heavy tailed" and have been subject to much research in the economic and social sciences since the work of Mandelbrot and others (see, e.g., Mandelbrot 1983) about fractal behaviour of natural and human phenomena. This is an interesting finding because it indicates that rare words appear with higher-than-normal frequency in these translated works.

The finding that a little over one fifth (22%) of the rare words identified in Portuguese were created by the translators or had a high-frequency equivalent in English indicates that the very process of translating picturebooks offers young Portuguese children the opportunity to hear rare words. This is an important finding because research shows that "the earlier the age of acquisition of words, the better their memory and processing in adulthood" (Massaro, 2015, p. 515). It goes without saying that Portuguese children can be exposed to new words via literature in their mother tongue or via translations from other source languages. However, the focus in this study was on uncovering the extent to which translated picturebooks from English provide Portuguese children opportunities for word learning. They do, not only because they are picturebooks, but also because of the choices made by translators.

Additionally, in documenting the choices made by translators we describe how they make different options to render the books' meaning to young Portuguese children. In this respect, we found that translators do not prioritize the principle of *simplification* to the point of favouring the repetition of common words over introducing novel vocabulary, even in picturebooks aimed at young children aged 3-5. The percentage of titles with no new words (9.5%) indicates this, as it would be much higher if the translators' main concern was for the text to be essentially *simple*, since this priority would lead them to use already known words to ensure understandability. Our analysis allowed us to conclude that Portuguese translators of English picturebooks focus more on the principle of *explicitation*, even if applying it leads to the use of new vocabulary for children: whenever meaning is more accurately conveyed with an unfamiliar word, they use it—and this is not only true of nouns (which refer to specific animal and plant species, abstract concepts and other uncommon notions in children's lexicon), but also of adjectives and verbs, especially those that refer to emotions, states of mind, attitudes and intentions. Moreover, other motives make translators choose rare vocabulary, such as rhyme, rhythm, humor, and other stylistic exigencies. As to the principle of *normalization*, we did not find relevant, conclusive evidence to show that it is applied frequently and consistently.

Thus, with regard to the vision that picturebooks for children—and their translations—are written in "a 'scaled-down' version of 'language in general', simplified to be made accessible to these young readers" (Thompson & Sealey 2007,

p. 2), our findings suggest that both writers and translators often make texts intentionally challenging, vocabulary wise, given that the percentage of new words in translations whose original counterpart is also a rare word is as high as 77%. In addition, we found that translated picturebooks include a considerable percentage of words that are either common, high frequency words or non-existent in the original text: 22%. These instances are the ones that provide evidence that translated picturebooks involve *transcreation*, the process of adapting the material for a new linguistic and cultural context (Ketola, 2018).

The rare words that result from the process of creating the text in the target language reflect the translators' choices of modulation, mutation, and translation processes. Interestingly, when translation occurs, some of the rare words in the Portuguese version of picturebooks are not cognates of the English original words even when there is a cognate equivalent. For example, when *alvoroço* is used instead of *excitação* to translate *excitement*; when *deparou* is chosen instead of *encontrou* to translate *encountered*; or when *prediletos* is preferred to *favoritos* to translate *favourite*. However, we did find that some of the rare words in the Portuguese translations are cognates of the original words (e.g., *extravagância/extravaganza*, *fascinante/fascinating*, *platina/platinum*, *ventríloquo/ventriloquist*). The percentage of cognates in the total number of rare words (18%) is in accordance with the lexical similarity between English and Portuguese, which is estimated to be 20.4% (García & Souza, 2014). Nonetheless, translators opt more for the use of cognate words when the words are rare in both languages (95/438) than when they chose a rare word in Portuguese to render the meaning of a high-frequency word in English (7/76).

All of the new words present in our sample of translated picturebooks, whether or not their counterpart in the original text is another rare word, confirm the idea that literature aimed at children contributes to enhance and enlarge their vocabulary, as it resorts to a language that is more varied and sophisticated than oral speech, especially speech directed at children. The fact that children are confronted with unfamiliar words as they listen to stories being told and shown to them is positive in that it enables them to increase their lexical knowledge (Malvern et al., 2004). Plus, it should be noted that their reading experiences are in fact conducted by adults, who play a key role in explaining the meaning of more challenging words, sentences and parts of the texts (Flack et al., 2018). In any case, the number of rare vocabulary in our sample of picturebooks aimed at children 3-5 is not that high, in most cases, an average of 6.6 per book, so it does not compromise understandability of the work as a whole.

It is well documented in the literature that a reader needs to know about 95% of the words in a text to comprehend its meaning (Adams, 2009). Considering that, on average, the translated picturebooks have 6.6 rare words, this seems appropriate as they are not readers themselves but instead hear the text read to them and can look at the illustrations in the picturebooks to construct meaning from text. At the same time, it seems that translators do not allow their version of the text to become so

filled with new words that it becomes too complex, unless the original is inevitably rich in rare vocabulary, as is the case with Beatrix Potter's *Kitty in Boots*, the most lexically challenging book in our sample, which corresponds to the extremely high peak in Figure 1.

These linguistic-based findings can inform future research, education practices and translation studies. First, they provide new information about lexical quantity and type of lexicon used in translated picturebooks. Second, they can inform educationalists/practitioners about the language learning opportunities, specifically the vocabulary they are likely to find in translated picturebooks. Third, they can prompt translators to consider how many words they are/should be using that are likely to be new words children hear.

It would be interesting to have similar studies conducted in different languages. It is possible that translations of picturebooks from other languages might yield similar results. Also, the use of rare words by translators may be associated with the degree of similarity between languages and/or by their training. It would also be interesting to look into whether the same or similar types of rare words are present in picturebooks written by Portuguese authors because we know that the learning of new words is enhanced when children have multiple opportunities to hear the same words used in diverse contexts (Jones, Jones & Recchia, 2012). This repetition of new vocabulary optimizes word learning and contributes to children's passive and active word learning. Research indicates that comprehension (passive knowledge) precedes production (active knowledge) and that 3- and 4-year-olds can understand a word after only a few exposures (Childers & Tomasello, 2002). Studies also show that the more adults expose children to novel words, the more children produce them (Wasik & Hindman, 2014), and that familiarity with a word is achieved after 3 or more exposures (Mikk, 2000).

Since we did not have access to a dataset with a printed corpus similar to Escolex, either for British or American English, we used the Childes dataset to determine if the rare words in Portuguese were also rare words in English. This is a limitation in the present study. Nonetheless, given that CDS contains fewer rare words than picturebooks, if the words are already present in the oral (receptive or productive) vocabulary of 3–5-year-old children, this indicates that they are not rare words in written texts in the source language.

Lastly, the sample of picturebooks is composed of those books recommended by PNL. The list can be thought of as equivalent to a librarian-recommended list. In fact, librarians in public schools are encouraged to acquire books from PNL lists. Nonetheless, this does not ensure that these picturebooks are actually read to children, either in CCLE or in HLE contexts. Thus, future research should look at whether these are representative of picturebooks children are actually exposed to (Kam & Matthewson, 2017) and at how parents and teachers scaffold language development and teach word meanings (Biemiller, 2006). Research clearly shows that pointing to and commenting illustrations and the explanation of word meanings by adults contribute to vocabulary learning (Şimşek & Işıkoğlu Erdoğan, 2021).

In conclusion, the very fact that picturebooks are translations makes them a good source of new vocabulary for children.

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REFERENCES

Adams, M. J. (2009). The challenge of advanced texts: The interdependence of reading and learning. In E. Hiebert (Ed.), *Reading more, reading better* (pp. 163-189). Guilford Press.

Araújo, L., & Costa, P. (2015). Home book reading and reading achievement in EU countries: The Progress in International Reading Literacy Study 2011 (PIRLS). *Educational Research and Evaluation: from Theory to* Practice, *21*, 422-438. https://doi.org/10.1080/13803611.2015.1111803

Bååth, R. (2010). *ChildFreq: An online tool to explore word frequencies in child language*. [Publisher information missing].

Baker, M. (1996). Corpus-based translation studies: The challenges that lie ahead. In H. Somers (Ed.), *Terminology, LSP and translation* (pp. 175-186). John Benjamins.

Beck, I., & McKeown, M. (2007). Increasing young low-income children's oral vocabulary repertoires through rich and focused instruction. *The Elementary School Journal*, *107*(3), 251-271. https://doi.org/10.1086/511706

Biemiller, A., & Boote, C. (2006). An effective method for building meaning vocabulary in primary grades. *Journal of Educational Psychology, 98*(1), 44-62. https://doi.org/10.1037/0022-0663.98.1.44

Bradley, R. H., Corwyn, R. F., McAdoo, H. P., & García Coll, C. (2001). The home environments of children in the United States part I: Variations by age, ethnicity, and poverty status. *Child Development, 72*, 1844-1867. https://10.1111/1467-8624.t01-1-00382

Brysbaert, M., Mandera, P., & Keuleers, E. (2018). The word frequency effect in word processing: An updated review. *Current Directions in Psychological Science*, *27*(1), 45-50. https://doi.org/10.1177/0963721417727521

Bunting, P. (2019). *How did I get here?* Little, Brown Books for Young Readers.

Cameron-Faulkner, T., & Noble, C. (2013). A comparison of book text and child directed speech. *First Language*, *33*, 268-79. https://doi.org/10.1177/0142723713487613

Carle, E. (1988). *Do you want to be my friend?* Philomel Books.

Čermáková, A. (2018). Translating children's literature: Some insights from corpus stylistics. *Ilha do Desterro*, *7*(1), 117-133. https://doi.org/105007/2175-8026.2018v71n1p117

Childers, J. B., & Tomasello, M. (2002). Two-year-olds learn novel nouns, verbs, and conventional actions from massed or distributed exposures. *Developmental Psychology*, *38*(6), 967-978. https://doi.org/10.1037/0012-1649.38.6.967

Corness, P. (2009). Shifts in Czech translation of the reporting verb *said* in English fiction. In F. Čermák, P. Corness & A. Klégr (Eds.), *InterCorp: Exploring a multilingual corpus* (pp. 159-176). NLN.

Cunningham, A. E., & Stanovich, K. E. (1997). Early reading acquisition and its relation to reading experience and ability 10 years later. *Developmental Psychology*, *33*, 934-945. https://doi.org/10.1037/0012-1649.33.6.934

Decreto Lei nº 64/2006 de 12 de julho da *Presidência do Conselho de Ministros*. Diário da República: nº 133 (2006). Retrieved from https://dre.pt/application/conteudo/537246. Accessed April 23, 2021.

Dickinson, D. K., Griffith, J. A., Golinkoff, R. M., & Hirsh-Pasek, K. (2012). How reading books fosters language development around the world. *Child Development Research*, 1-15. https://doi.org/10.1155/2012/602807

Dickinson, D. K., & Porche, M. V. (2011). Relation between language experiences in preschool classrooms and children's kindergarten and fourth-grade language and reading abilities. *Child Development*, *82*, 870-886. https://doi.org/10.1111/j.1467-8624. 2011.01576.x

Dickinson, D. K., & Tabors, P. O. (Eds.). (2001). *Beginning literacy with language: Young children learning at home and school*. Paul H Brookes Publishing.

Durham, R. E., Farkas, G., Hammer, C., Tomblin, J., & Catts, H. (2007). Kindergarten oral language skill: A key variable in the intergenerational transmission of socioeconomic status. *Research in Social Stratification and Mobility*, *25*, 294-305. https://doi.org/10.1016/j.rssm.2007.03.001

Elley, W. B. (1989). Vocabulary acquisition from listening to stories. *Reading Research Quarterly*, *24*, 174-187. https://doi.org/10.2307/747863

Evans, M. A., & Saint-Aubin, J. (2005). What children are looking at during shared storybook reading. *Psychological Science*, *16*(11), 913-20. https://doi.org/10.1111/j.1467-9280.2005.01636.x

Fárová, L. (2016). Uvozovací slovesa v překladech třech různých jazyků. In A. Čermáková, L. Chlumská, & M. Malá (Eds.), *Jazykové paralely* (pp. 145-161). NLN. https://doi.org/10.1075/lic.00016.nad

Flack, Z. M., Field, A. P., & Horst, J. S. (2018). The effects of shared storybook reading on word learning: A meta-analysis. *Developmental Psychology, 54*, 1334-1346. https://doi.org/10.1037/dev0000512

García, M. I. M., & Souza, A. M. B. (2014). Lexical similarity level between English and Portuguese. *ELIA: Estudios de Lingüística Inglesa Aplicada, 14,* 145-163. http://dx.doi.org/10.12795/elia.2014.i14.06

Golinkoff, R., Meredith, E. Rowe, M., Tamis-LeMonda, C., & Hirsh-Pasek, K. (2018). Language matters: Denying the existence of the 30-million-word gap has serious consequences*. Child Development, 90*(3)*, 985-992.* https://doi.org/10.1111/cdev.13128

Greenhoot, A., Beyer, A., & Curtis, J. (2014). More than pretty pictures? How illustrations affect parent-child story reading and children's story recall. *Frontiers in Psychology*, *5*, 738. https://doi.org/10.3389/fpsyg.2014.00738

Grolig, L. (2020). Shared storybook reading and oral language development: A bioecological perspective. *Frontiers in Psychology*, *26*(11), 1818. https://doi.org/10.3389/fpsyg.2020.01818.

Hayes, D. P. (1988). Speaking and writing: Distinct patterns of word choice. *Journal of Memory and Language*, *27*, 572-585. https://doi.org/10.1016/0749-596X(88)90027-7

Hudson Kam, C. L., & Matthewson, L. (2017). Introducing the Infant Bookreading Database (IBDb). *Journal of Child Language*, *44*, 1289-1308. https://doi.org/10.1017/S0305000916000490

Jones, M. N., Johns, B. T., & Recchia, G. (2012). The role of semantic diversity in lexical organization. *Canadian Journal of Experimental Psychology/Revue canadienne de psychologie expérimentale, 66*(2), 115-124. https://doi.org/10.1037/a0026727

Kalb, G., & van Ours, J. C. (2014). Reading to young children: A head-start in life? *Economics of Education Review*, *40*, 1-24. https://doi.org/10.1016/j.econedurev.2014.01.002

Ketola, A. (2018). Picturebook translation as transcreation. In J. Hanne, K. Sandberg, & M. K. Kocabaş (Eds.), *In search of meaning: Literary linguistic, and translational approaches to communication* (pp. 127-143). Universität of Tampere.

Klingberg, G. (1986). *Children's fiction in the hands of the translators*. Liber/Gleerup.

Lexical, D., Anders, Y., Flöter, M., Wieduwilt, N., Rossbach, H. -G., & Tietze, W. (2018). Differential effects of home and preschool learning environments on early language development. *British Educational Research Journal*, *44*, 338–357. https://doi.org/10.1002/berj.3332

Lee, A. (2018). *Do not open this book.* Templar Publishing.

MacWhinney, B. (2000). *The CHILDES project: Tools for analyzing talk* (3rd ed). Lawrence Erlbaum Associates.

Malvern, D., Richards, B. J., & Chipere, N. (2004). *Lexical diversity and language development: Quantification and assessment*. Palgrave Macmillan.

Mandelbrot, B. (1983). *The fractal geometry of nature*. Freeman.

Massaro, D. W. (2015). Two different communication genres and implications for vocabulary development and learning to read. *Journal of Literacy Research*, *47*, 505-527. https://doi.org/10.1177/1086296X15627528

McLeod, A. N., & McDade, H. L. (2011). Preschoolers' incidental learning of novel words during storybook reading. *Communication Disorders Quarterly*, *32*, 256-266. https://doi.org/10.1177/1525740109354777

Mikk, J. (2000). *Textbook: Research and writing*. Frankfurt am Main: Peter Lang.

Mol, S. E., & Bus, A. G. (2011). To read or not to read: A meta-analysis of print exposure from infancy to early adulthood. *Psychological Bulletin*. Advance online publication. https://doi.org/ 10.1037/a0021890

Mol, S. E., Bus, A. G., de Jong, M. T., & Smeets, D. J. (2008). Added value of dialogic parent–child book readings: A meta-analysis. *Early Education and Development*, *19*, 7-26. https://doi.org/10.1080/10409280701838603

Montag, J. L. (2019). Differences in sentence complexity in the text of children's picture books and child-directed speech. *First Language*, *39*, 527–546. https://doi.org/10.1177/0142723719849996

Montag, J. L., Jones, M. N., & Smith, L. B. (2015). The words children hear in picture books and the statistics for language learning. *Psychological Science*, *26*, 1489–1496. https://doi.org/10.1177/0956797615594361

Montag, J. L., Jones, M. N., & Smith, L. B. (2018). Quantity and diversity: Simulating early word learning environments. *Cognitive Science*, *42*(2), 1-38. https://doi.org/10.1111/cogs.12592

Montag, J. L., & MacDonald, M. C. (2015). Text exposure predicts spoken production of complex sentences in eight and twelve year old children and adults. *Journal of Experimental Psychology: General*, *144*, 447-468. https://doi: 10.1037/xge0000054

Nádvorníková, O. (2017). Les proportions des verbes SAY/DIRE/ŘÍCI dans les propositions incises et leurs équivalents en traduction: étude sur corpus parallèle. *Linguistica Pragensia*, 35-57. Charles University.

Nagy, W. E., & Anderson, R. C. (1984). How many words are there in printed school English? *Reading Research Quarterly*, *19*, 304-330. http://dx.doi.org/10.2307/747823

National Early Literacy Panel (NELP). (2008). *Developing early literacy: Report of the National Early Literacy Panel.* National Institute for literacy. https://www.nichd.nih.gov/publications/pubs/documents/NELPReport09.pdf, https://doi.org/10.1037/e563852009-001

Noble, C., Sala, G., Peter, M., Lingwood, J., Rowland, C., Gobet, F., & Pine, J. (2019). The impact of shared book reading on children's language skills: A meta-analysis. *Educational Research Review*, *28*, 100290. https://10.1016/j.edurev.2019.100290

Oittinen, R. (2000). *Translating for children*. Garland Publishing.

Penno, J. F., Wilkinson, I. A. G., & Moore, D. W. (2002). Vocabulary acquisition from teacher explanation and repeated listening to stories: Do they overcome the Matthew effect? *Journal of Educational Psychology*, *94*(1), 23-33. https://doi.org/10.1037/0022-0663.94.1.23

Potter, B. (2016). *The tale of kitty in boots.* Frederick Warne/Penguin Random House.

Rowe, M. L. (2012). A longitudinal investigation of the role of quantity and quality of child directed speech in vocabulary development. *Child Development*, *83*, 1762-1774. https://doi.org/10.1111/j.1467-8624.2012.01805.x

Samorodnitsky, G., & Taqqu, M. S. (1994). *Stable non-gaussian random processes: Stochastic models with infinite variance*. Chapman and Hall.

Sénéchal, M. (2011). A model of the concurrent and longitudinal relations between home literacy and child outcomes. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research*, *3* (pp. 175-188). Guilford.

Sénéchal, M., Pagan, S., Lever, R., & Ouellette, G. P. (2008). Relations among the frequency of shared reading and 4-year-old children's vocabulary, morphological and syntax comprehension, and narrative skills. *Early Education and Development*, *19*, 27-44. https://doi.org/10.1080/10409280701838710

Sénéchal, M., Thomas, E., & Monker, J.-A. (1995). Individual differences in 4-year-old children's acquisition of vocabulary during storybook reading. *Journal of Educational Psychology*, *87*(2), 218-229. https://doi.org/10.1037/0022-0663.87.2.218

Sénéchal, M., & Young, L. (2008). The effect of family literacy interventions on children's acquisition of reading from kindergarten to grade 3: A meta-analytic review. *Review of Educational Research*, *78*(4), 880-907. https://doi.org/10.3102/0034654308320319

Sezzi, A. (2009). The translation of preschool picturebooks: Towards a different child image and of a different voice of the adult aloud reader. In D. Torretta, M. Dossena, & A. Sportelli (Eds.), *Proceedings of the 23rd AIA Conference – Forms of migration/Migration of forms* (pp. 352-368). Progedit.

Sezzi, A. (2020). Translating crossover picturebooks: The Italian translations of *Bear Hunt* by Anthony Browne. In J. V. Coillie & J. McMartin (Eds.), *Children's literature in translation: Texts and contexts* (pp. 215-230). Leuven University Press.
https://library.oapen.org/bitstream/handle/20.500.12657/42580/9789461663207.pdf?sequence=1#page=216

Shahaeian, A., Wang, C., Tucher-Drob, E., Geiger, V., Bus, A., & Harrison, L. (2018). Early shared reading, socioeconomic status, and children's cognitive and school competencies: six years of longitudinal evidence. *Scientific Studies of Reading*, *22*(6), 485-502.
https://doi.org/10.1080/10888438.2018.1482901

Shavit, Z. (1981). Translation of children's literature as a function of its position in the literary polysystem. *Poetics Today*, *2*(4), 171-179. https://doi.org/10.2307/1772495

Shneidman, L., Arroyo, M., Levine, S., & Goldin-Meadow, S. (2013). What counts as effective input for word learning? *Journal Child Language 40*, 672-686. https://10.1017/S0305000912000141

Şimşek, Z. C., & Işıkoğlu Erdoğan, N. (2021). Comparing the effects of different book reading techniques on young children's language development. *Reading and Writing, 34*, 817-839.
https://doi.org/10.1007/s11145-020-10091-9

Snow, C. E., Burns, M. S., & Griffin, P. (1998). *Preventing reading difficulties in young children*. National Academy Press.

Soares, A. P., Medeiros, J. C., Simões, A., Machado, J., Costa, A., Iriarte, Á., de Almeida, J. J., Pinheiro, A. P., & Comesaña, M. (2014). ESCOLEX: A grade-level lexical database from European Portuguese elementary to middle school textbooks. *Behavior Research*, *46*, 240-253.
https://doi.org/10.3758/s13428-013-0350-1

Spitz, E. H. (1999). *Inside picture books*. Yale University Press.

Stanovich, K. (2000). *Progress in understanding reading: Scientific foundations and new frontiers*. The Guilford Press.

Thompson, P., & Sealey, A. (2007). Through children's eyes?: Corpus evidence of the features of children's literature. *International Journal of Corpus Linguistics*, *12*(1), 1-23.
https://doi.org/10.1075/ijcl.12.1.03tho

Toro, C. G. (2020). Translating children's literature: A summary of central issues and new research directions. *Sendebar: Revista de Traducción e Interpretación, 31*, 461-478.
https://doi.org/10.30827/sendebar.v31i0.13605

van Leuven-Zwart, K. (1989). Translation and original: Similarities and dissimilarities, *I. Target, 1*(2), 151-181. https://doi.org/10.1075/target.1.2.03leu

Wasik, B., & Hindman, A. H. (2014). Understanding the active ingredients in an effective preschool vocabulary intervention: An exploratory study of teacher and child talk during book reading. *Early Education and Development, 25*(7), 1035-1056. https://doi.org/10.1080/10409289.2014.896064

Weisleder, A., & Fernald, A. (2013). Talking to children matters: Early language experience strengthens processing and builds vocabulary. *Psychological Science*, 24, 2143-2152.
https://10.1177/0956797613488145

Weizman, Z. O., & Snow, C. E. (2001). Lexical output as related to children's vocabulary acquisition: effects of sophisticated exposure and support for meaning. *Developmental Psychology*, *37*, 265-279.
https://doi.org/10.1037/0012-1649.37.2.26

Whitehurst, G. J., Falco, F. L., Lonigan, C. J., Fischel, J. E., DeBaryshe, B. D., Valdez-Menchaca, M. C., & Caulfield, M. (1988). Accelerating language development through picture book reading. *Developmental Psychology*, *24*, 552-559. https://doi.org/10.1037/0012-1649.24.4.552

Whitehurst, G. J., & Lonigen, C. J. (2001). Emergent literacy: Development from prereaders to readers. In S. B. Neuman & D. K. Dickinson (Eds.), *Handbook of early literacy research* (Vol. 1, pp. 11-29). Guilford Press.

Young, K. T., Davis, K., Schoen, C., & Parker, S. (1998). Listening to parents: a national survey of parents with young children. *Archives of Pediatrics & Adolescent Medicine*, *152*, 255-262.
https://doi.org/10.1001/archpedi.152.3.255

Zipf, G. K. (1935). *The psychobiology of language*. Houghton-Mifflin.

Zipf, G. K. (1949). *Human behavior and the principle of least effort*. Addison-Wesley.

Zucker, T. A., Justice, L. M., Piasta, S. B., & Kaderavek, J. N. (2010). Preschool teachers' literal and inferential questions and children's responses during whole-class shared reading. *Early Childhood Research Quarterly*, *25*, 65-83. https://doi.org/10.1016/j.ecresq.2009.07.001

APPENDIX 1

Total number of words = 565

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
	Rare words without a source equivalent (51)			
0	adocicaria	---	---	mutation
0	algazarra	---	---	mutation
0	alvos	---	---	mutation
0	amena	---	---	mutation
0	ancas	---	---	mutation
0	apuros	---	---	mutation
0	aqueloutros	---	---	mutation
0	arfar	---	---	mutation
0	aterradora	---	---	mutation
0	bem-posta	---	---	mutation
0	cabisbaixo	---	---	mutation
0	calafrio	---	---	mutation
0	capeta	---	---	mutation
0	cisco	---	---	mutation
0	coice	---	---	mutation
0	confesso	---	---	mutation
1	constantemente	---	---	mutation
1	crer	---	---	mutation
0	delicadeza	---	---	mutation
0	detalhado	---	---	mutation
0	deveras	---	---	mutation
0	embaraço	---	---	mutation
0	empenhou-se	---	---	mutation
0	endiabrado	---	---	mutation
0	esboçou	---	---	mutation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	espavorido	---	---	mutation
0	euforia	---	---	mutation
0	exibir	---	---	mutation
0	expositor	---	---	mutation
0	frangalhos	---	---	mutation
0	interativas	---	---	mutation
0	invulgar	---	---	mutation
0	lustroso	---	---	mutation
0	manobra	---	---	mutation
0	nicles	---	---	mutation
0	nómadas	---	---	mutation
1	patusco	---	---	mutation
0	pelagem	---	---	mutation
0	pensativo	---	---	mutation
0	persistiu	---	---	mutation
0	quão	---	---	mutation
0	realeza	---	---	mutation
0	reluzente	---	---	mutation
1	revelar	---	---	mutation
1	rodopia	---	---	mutation
0	sideral	---	---	mutation
0	sob	---	---	mutation
0	sob	---	---	mutation
0	terço	---	---	mutation
0	triunfante	---	---	mutation
0	zelo	---	---	mutation
	Rare words in Portuguese that are high-frequency in English (76)			
0	abalar	go	---	modulation
0	abandonam	left behind	---	modulation
0	advertiram	said	---	modulation
1	aguda	high	---	modulation
1	algures	somewhere	---	translation
1	algures	somewhere	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	amenas	warm	---	translation
0	arduamente	very hard	---	translation
0	arre	wow	---	modulation
0	assomava	walked up to the door	---	translation
0	atulhada	full	---	translation
0	avistam	see	---	translation
0	borrifado	with sprinkles	---	modulation
0	carabina	gun	---	translation
0	celestial	space	---	mutation
0	cerrada	dark	---	modulation
1	chata	flat	x	translation
1	circular	driving	---	modulation
0	coices	kick	---	translation
0	comprimido	air-gun	---	translation
0	creio	I think	---	modulation
0	desabafou	said	---	modulation
0	desabar	falling	---	modulation
0	descendentes	children	---	translation
0	devorar	eat	---	modulation
1	embalar	bedtime song	---	translation
0	encalhado	stuck	---	translation
0	envergando	in	---	modulation
0	estardalhaço	crash	---	translation
0	esvoaçar	flying	---	translation
0	exceção	except	x	translation
0	expira	(great big breaths) in	---	translation
0	generosa	lots	---	modulation
0	grasnou	called	---	modulation
0	graúdo	big	---	translation
0	imóveis	still	---	translation
1	inspira	take deep breaths in	---	translation
0	limitou-se	only	---	modulation
0	lingueta	catch	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	magicar	thought	---	modulation
0	manto	ground	---	modulation
0	matinal	morning	---	translation
0	mugiu	said	---	modulation
0	novato	new	x	translation
0	oco	hole	---	modulation
0	ocorrer	will happen	---	translation
0	ouvir-te-ei	hear	---	translation
0	penosa	hot	---	modulation
0	picle	pickle	x	translation
0	pilim	money	---	modulation
0	pintarroxo	robin	---	translation
0	porreiro	right	---	modulation
0	receando	lived in fear	---	modulation
1	rechonchudo	fat	---	translation
0	redor	round	x	translation
1	redor	all around	---	translation
0	regalo	fun	---	modulation
0	relinchou	said	---	modulation
0	replicou	said	---	modulation
0	resvalar	falling	---	modulation
0	rezingou	said	---	modulation
0	rondando	work	---	modulation
0	ruim	funny	---	modulation
0	saciar	drink	---	modulation
0	sob	under	---	translation
0	sob	in	---	translation
0	sob	from	---	translation
0	sombria	dark	---	translation
0	sombria	dark	---	translation
0	talude	sand-bank	---	translation
0	tencionasse	thought	---	modulation
0	topo	top	x	translation
0	topo	top	(x)	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
1	tranquila	quiet	---	translation
0	tranquilizou-o	said	---	modulation
0	troçava	would say	---	modulation
	Rare words in both languages (438)			
0	(sem) fôlego	breath	---	translation
0	(sem) rodeios	matter-of-factly	---	modulation
0	abafam	gasp	---	modulation
0	abalado	upset	---	translation
0	abeto	fir-tree	---	translation
0	aconchegada	curled up	---	translation
0	aconchegam-se	amass	---	modulation
0	acrobatas	acrobats	x	translation
0	adejar	flapping	---	translation
0	adornava	chugged	---	modulation
0	aeróbica	aerobics	x	translation
0	afincadamente	long and hard	---	modulation
1	agente	manager	---	translation
0	agraciar	to grace	x	translation
0	alcatra	omoto	---	modulation
0	alce	moose	---	translation
0	alpinista	mountain climber	---	translation
0	alvéolos	cells	---	translation
0	alvoroço	for hours and hours	---	modulation
0	alvoroço	excitement	---	translation
0	amador	amateur	x	translation
0	ambição	ambition	x	translation
1	âncora	anchor	x	translation
1	âncora	anchors	(x)	translation
0	anfíbio	amphibian	x	translation
0	aninhando-se	snuggling	---	translation
0	antepassados	ancestors	---	translation
0	aparenta	seem	---	translation
0	aperaltados	fancy dress	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	ápice	rushed	---	modulation
0	apoderado	seized	---	translation
0	apontamentos	notes	---	translation
0	aprumadinho	neat	---	translation
0	arqueio	arch	x	translation
0	arrepiante	eerily	---	translation
1	asseadas	neat and tidy	---	translation
1	asseado	neat	---	translation
0	assegurando	making sure	---	translation
0	assegurou	assured	x	translation
0	assombrações	wraiths	---	translation
0	asteroide	asteroid	x	translation
0	aterrada	terrifying	x	translation
1	aterrorizada	in terror	x	translation
0	baforada	puff	x	translation
0	bagas	berries	x	translation
0	balbuciou	spluttered	---	translation
0	baliu	bleated	---	modulation
0	banquete	feasted	---	translation
1	banzé	fuss	---	translation
0	barrir	trumpet	---	translation
0	bazar	big store	---	translation
0	beberica	sips	---	translation
0	betoneira	mixers	---	translation
0	boi-almiscarado	musk- ox	---	translation
0	bombear	pump	---	translation
0	boreal	northern lights	---	translation
0	brandindo	brandishing	x	translation
0	brandindo	waving	---	translation
1	brasa	wink	---	modulation
0	brinde	toast	---	translation
0	bruscamente	suddenly	---	translation
0	buffet	bar	---	modulation
0	Buldózer	Dozer	x	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	bulício	hustle and bustle	---	translation
0	camomila	camomile	x	translation
0	candidamente	very slowly	---	modulation
0	candidatura	application	---	translation
0	capachinho	wig	---	translation
0	carrancudos	frowned	---	modulation
0	carrapicho	burr	---	modulation
0	carretel	cotton spools	---	translation
0	carvalho	oak tree	---	translation
0	cataclismo	something awful	---	modulation
0	catastróficas	major	---	modulation
1	cautela	carefully	---	translation
0	cauteloso	cautiously	x	translation
0	cavalheiro	sportsman	---	modulation
0	ceroulas	knickers	---	translation
0	certificar	make sure	---	translation
0	chocalheira	rattling	---	translation
0	cintilantes	glitter	---	translation
0	cintilar	blinking	---	translation
1	clareira	clearing	x	translation
1	clareira	clearing	(x)	translation
0	colina	hill	---	translation
0	colina	hill	---	translation
0	colisões	collisions	x	translation
0	compact	firm	---	modulation
0	concedê-lo-ei	grant	---	translation
0	condutas	drains	---	translation
0	confiscados	taken away	---	translation
0	confiscar	confiscated	x	translation
1	constelações	patterns	---	modulation
1	constelações	constellations	x	translation
0	constrangedor	embarrassing	---	translation
0	contesto	object	---	translation
0	contorço	wriggle	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	contrabaixo	double bass	---	translation
R	convés	deck	---	translation
0	convés	decks	---	translation
0	corava	blushed	---	translation
0	corcunda	hump	---	translation
0	corrompem	corrupt	x	translation
0	costeleta	pork chops	---	translation
0	cotoveleiras	elbow patches	---	translation
0	coxeio	limp	---	translation
0	crateras	craters	x	translation
1	creio	shan't	---	modulation
0	crepitarem	popped	---	translation
0	croquet	croquet	x	translation
0	curvou-se	bowed down	---	translation
0	debandada	stampeded	---	translation
0	dececionado	disappointed	---	translation
0	definhar	softer rays	---	modulation
0	definitivamente	definitely	x	translation
0	definitivamente	definitely	x	translation
0	densa	thick	---	translation
0	dentadura	false teeth	---	translation
0	deparou	encountered	---	translation
1	derrubar	knock over	---	translation
0	desconcertado	confused	---	modulation
0	descontroladamente	wildly	---	translation
0	desembaraço	swift	---	translation
0	desesperadamente	desperately	x	translation
0	desfrutar	having the time of her life	---	modulation
0	desgarrada	and pick up the pace	---	modulation
1	deslizaram	slid	---	translation
1	deslizou	slid	---	translation
0	desolador	droopy	---	modulation
0	despenhou	crashed	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	desprezo	silent treatment	---	modulation
1	destacava-se	stood out	---	translation
0	destemido	brave	---	translation
0	detalhes	details	x	translation
0	deteve-se	stopped	---	translation
0	digressão	tour	---	translation
0	diplomatas	diplomat	x	translation
0	dirigiu-se	drove	---	modulation
0	dispenso	No, thank you	---	modulation
0	dissipou	cleared	---	translation
0	ditava	was that	---	modulation
0	dolorosa	painfully	---	translation
0	donzela	maiden	---	translation
0	ecoavam	echoing	x	translation
1	elegância	such grace	---	translation
0	elfos	selkies	x	translation
0	empedrado	pebblepath	---	translation
0	empilhadora	forklift	---	translation
0	emplumadas	had feathers	---	modulation
0	empoleiraram-se	sat on	---	modulation
0	empolgado	excited	---	translation
0	empolgantes	thrilling	---	translation
0	encosta	hills	---	translation
1	enfeitar-se-á	will decorate himself	---	translation
0	entredentes	chuckled	---	modulation
0	entulho	rubble	---	translation
1	equivale	matches	---	translation
0	erguida	fluffed-up	---	modulation
0	erupções	eruptions	x	translation
0	esbaforido	puffing	---	modulation
0	esbarrasse	run into	---	translation
0	esbarrou	ran into	---	translation
0	esbelto	handsome	---	modulation
0	escapulia	was afoot	---	modulation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	escapulir	ran out	---	translation
0	escultor	sculptor	x	translation
0	esfriar	cool off	---	translation
0	esgotadíssimos	sold-out	---	translation
0	esgotados	sold out	---	translation
0	esgravatar	dig	---	translation
0	esgueirou-se	squeezed under	---	translation
1	esmeralda	emerald	x	translation
0	espadachins	sword fighters	---	translation
0	espalhafatosa	a little	---	modulation
0	espesso	thicker	---	translation
1	espesso	thick	---	translation
0	espiã	spy	x	translation
0	espiasses	spy	x	translation
0	estacara	stopped in their tracks	---	translation
0	estacaram	stared	---	modulation
0	estalido	snap	---	translation
0	estetoscópio	stethoscope	x	translation
0	estocadas	pokes	---	translation
0	estoqueava	prodding	---	translation
0	estratocoisa	stratosthingy	x	translation
1	estreito	narrow	---	translation
0	estremecia	twitched	---	translation
0	estrépitos	thumping	---	translation
0	estrondo	booms	---	translation
0	esvoaça	searching	---	modulation
0	esvoaçantes	soaring	---	translation
0	esvoaçavam	fluttered	---	translation
0	expositores	display	---	translation
0	extravagância	extravaganza	x	translation
0	faisão	pheasant	x	translation
1	fanfarrão	a stout buck rabbit	---	modulation
0	farfalhuda	fluffy	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	farfalhuda	fluffed-up	---	translation
0	farrapos	bones	---	modulation
0	fascinante	fascinating	x	translation
0	favos	honeycomb	---	translation
0	felpuda	fuzzy	---	translation
0	fera	beast	---	translation
0	fiorde	fjord	x	translation
0	firmemente	firmly	x	translation
0	fixamente	straight in the eye	---	translation
0	floco	flake	---	translation
0	floresceram	to make the most of life	---	modulation
0	fluorescentes	fluorescent	x	translation
0	fluvial	river beach	---	modulation
0	fôlego	out of breath	---	translation
0	fôlego	puffed itself up	---	modulation
0	folheto	brochure	---	translation
0	folhos	lace	---	translation
0	franzir	frowned	---	translation
1	frequente	generally	---	modulation
0	furões	ferrets	x	translation
0	furtiva	poaching	---	translation
1	gaguejou	exclaimed	---	modulation
0	galáxia	galaxy	x	translation
1	ganancioso	greedy	---	translation
0	garça	heron	---	translation
0	gargarejar	gargle	x	translation
0	garridas	bright	---	translation
0	gatilho	trigger	---	translation
0	geração	generations	x	translation
0	germinou	sprouted	---	translation
0	glaciares	towering icebergs	---	translation
0	Googlaram	googled	x	translation
0	gracejou	chuckled	---	modulation
1	graciosamente	gracefully		translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	graciosidade	gracefully	x	translation
1	gracioso	feathery	---	modulation
0	grisalho	gray	---	translation
0	grunhiu	grunted	x	translation
0	guito	gold	---	modulation
0	harpias	harpies	x	translation
0	herdade	field	---	modulation
0	horrorizada	horrified	x	translation
0	içam	hoist	---	translation
0	içar	hoist	---	translation
0	içaram-no	upwards	---	modulation
0	impaciência	impatiently	x	translation
0	impaciente	impatiently	x	translation
0	implorando-lhe	implored	x	translation
0	imploro-te	begging	---	translation
0	imundas	filthy	---	translation
0	incansável	hardworking	---	modulation
0	indeciso	confused	---	modulation
0	indignada	indignantly	x	translation
0	infindável	endless	---	translation
0	inspiram	take a long deep breath	---	translation
1	inspirar	out	---	translation
1	integral	brown	---	translation
0	jatos	puffs	---	translation
0	ladainha	rhyme	---	modulation
0	lamacento	some mud	---	modulation
0	lamechas	kissy-kissy	---	translation
0	lamparina	oil lamp	x	translation
0	liana	creeper	---	translation
0	licoroso	watery	---	modulation
0	ligaduras	bandages	---	translation
0	lisonjeada	rather flattered	---	translation
0	louva-a-deus	praying mantis	---	translation
0	lunar	Moon	---	modulation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	lustrava	scoured	---	translation
0	maldição	doom	---	translation
0	manada	herd	---	translation
0	mantiveram	kept	---	translation
1	marujos	barnacles	---	modulation
0	medonhos	bad	---	modulation
0	meigo	meekest	---	translation
0	meloso	sugary	---	modulation
0	meteoritos	meteors	x	translation
0	meteoros	meteor	x	translation
0	milha	mile	x	translation
0	mira	took a long aim	---	translation
0	mirou	shot at	---	translation
0	missão	job	---	translation
0	munições	pellets	---	translation
1	murmurou	whispered	---	translation
0	Ninfas	nymphs	x	translation
0	niveladoras	fixers	---	translation
0	no aconchego	snuggled up	---	modulation
0	obreiras	foragers	---	translation
0	ofegante	panting	---	translation
0	ofegou	gasped	---	translation
0	ofegou	puffed	---	translation
0	ofício	trade	---	translation
0	ofuscante	handsome	---	modulation
0	ousado	mighty	---	translation
0	pagode	jiggle	---	modulation
0	parda	grizzly	---	translation
0	partículas	bits, particles	x	translation
0	patolas-de-pés-azuis	blue-footed boobies	---	translation
0	pavoneavam	pranced	---	translation
0	peneira	sieve	---	translation
0	penetravam	peered into	---	translation
0	penhasco	cliff	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	persiana	shutter	---	translation
0	picles	pickles	(x)	translation
1	pilha	lots	---	modulation
1	pilhas	a row of	---	modulation
0	pingente	icicle	---	translation
0	pires	saucers	---	translation
1	pirilampos	fireflies	---	translation
0	planou	flew	x	translation
0	planou	swooped	---	translation
0	platina	platinum	x	translation
0	poedeiras	egg layers	---	translation
0	polainas	gaiters	---	translation
0	pólen	pollen	x	translation
0	polia	polished	x	translation
1	polvilhava	puffed	---	translation
0	polvilhou	plopped on	---	translation
0	pólvora	gun-powder	x	translation
0	pomposas	fancy	---	translation
0	pontiagudo	pointy	x	translation
0	porte	decent sized	---	modulation
0	prado	meadow	---	translation
0	precipício	edge	---	translation
0	precipitou-se	pounded into	---	translation
0	prediletos	favourite	---	translation
1	preparativos	preparations	x	translation
0	prestes	about to	---	translation
0	privativa	private	x	translation
1	profundezas	Deep	---	translation
0	prosseguiu	moved forward	---	translation
0	prosseguiu	went on	---	translation
0	proveito	much good	---	modulation
1	provocava	the cause was	---	modulation
0	pulgões	aphids	---	translation
0	punhados	bunches	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	radiantes	overjoyed	---	translation
1	rajada	with a squall	---	modulation
0	rasto	trailed	---	modulation
1	reacendeu	makes it light again	---	modulation
1	reflexo	reflection	x	translation
1	refresco	sip	---	modulation
0	regalos	muffs	---	translation
0	reluzia	shimmered	---	modulation
1	remate	neatly sews	---	modulation
0	remetente	sender	---	translation
0	remotas	remote	x	translation
0	rendilhada	ruffled	---	translation
0	repletos	filled	---	translation
1	residência	dwelling	---	translation
0	resplandecia	shone	---	translation
0	restolhar	rustled	---	translation
0	retalhos	patchwork	---	translation
0	retalhos	patchwork	---	translation
0	retorquiu	replied	---	translation
1	revolver-se	swirling	---	translation
1	rodopiar	dance round	---	translation
1	rodopiar	spinning	---	translation
1	rodopiava	wobbled	---	modulation
0	rodopiava	whirled	---	translation
0	rogo-lhe	beg you	---	translation
0	romance	romance	x	translation
0	romântica	romantic	x	translation
0	rumaram	set off	---	translation
0	sachar	hoeing	---	translation
0	sacrifício	loss	---	modulation
0	sagui	ape	---	modulation
0	saliência	bulge	---	translation
0	sapudas	stubby	---	translation
0	scones	scones	x	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	sedoso	thread	---	modulation
0	sensatez	sense	x	translation
0	sereiês	mermish	---	translation
0	serpenteante	slithery	---	translation
0	serpenteante	snaking	---	translation
0	sibilar	hiss	---	translation
0	sirene	whistle	---	translation
0	sistema solar	solar system	x	translation
0	sobressalto	fear	---	modulation
0	sóis	suns	x	translation
1	soleira	stone doorstep	---	translation
1	solha	slap	---	modulation
0	sonora	swarming and teeming	---	modulation
0	sonoramente	with a splash	---	modulation
1	subitamente	suddenly	x	translation
0	subsolo	underground	---	translation
0	sugar	suckle	x	translation
0	supersónico	supersonic	x	translation
0	suplicar	coax	---	modulation
0	suponho	suppose	x	translation
0	suponho	suppose	x	translation
0	suspiram	sigh, sighs	---	translation
0	suspirou	sighed	---	translation
0	sussurrar	whispering	---	translation
0	sussurrar	whisper	---	translation
0	tagarelas	parrots	---	modulation
1	tagarelou	chattered	---	translation
1	tecer	spinning	---	translation
1	teimou	screeched	---	modulation
0	telescópio	telescope	(x)	translation
0	telescópio	telescope	x	translation
1	tenazes	claws	---	translation
1	tencionava	intended	---	translation
0	terno	cuddle	---	modulation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	terrier	terrier	x	translation
0	teteteteteterarararavó	great, great, great, times a trillion, zillion, squillion granny	---	modulation
0	torreão	turret	x	translation
0	trapézio	trapeze	x	translation
0	trapos	rags	---	translation
0	trauteava	hum a hum	---	translation
0	tremeluzentes	shimmering	---	translation
0	tremeluzia	flickering	---	translation
0	trémula	quivering	---	translation
0	trémulas	quavered	---	modulation
0	trespassou-me	went through	---	translation
0	trilho	path	---	translation
0	triliões	trillion	x	translation
1	trombone	trombone	x	translation
0	trotou	trotted	x	translation
0	trouxa	bundle	---	translation
0	tumulto	ruckus	---	translation
0	unicelulares	single-celled	x	translation
0	valente	sneaky (trick)	---	modulation
0	vasculhou	searched	---	translation
0	vasto	wide	---	translation
0	vedação	fence	---	translation
0	vedação	fence	---	translation
0	velejar	sailing	---	translation
1	vénia	twirl	---	modulation
1	ventríloquo	ventriloquist	x	translation
0	vergar	bend down	---	translation
0	via láctea	milky way	---	translation
0	Via Láctea	Milky Way	---	translation
0	vikings	Vikings	x	translation
0	viscoso	like glue	---	modulation
0	volteiam	shifting	---	translation

Word Frequency in Escolex	Words in Portuguese	Words in English	Cognates	Translation Process
0	vulcânicas	volcanic	x	translation
1	vulgar	ordinary	---	translation
0	zarpar	had swum back to shore	---	modulation
0	zoar	buzzing	---	translation
1	zumbir	humming	---	translation
			Total number of cognates: 102	

Note: (X) refers to word repetitions or words that appear more than once in the entire corpus

APPENDIX 2

Total number of words = 565

Portuguese word category	Words in Portuguese	Words in English	English word category
	Rare words without a source equivalent (51)		
adjective	lustroso	---	---
verb	rodopia	---	---
adjective	triunfante	---	---
noun	euforia	---	---
adjective	detalhado	---	---
noun	terço	---	---
noun	pelagem	---	---
adjective	reluzente	---	---
noun	expositor	---	---
preposition	sob	---	---
preposition	sob	---	---
adverb	deveras	---	---
adjective	espavorido	---	---
adjective	patusco	---	---
noun	zelo	---	---
noun	embaraço	---	---
adjective	aterradora	---	---
noun	apuros	---	---
verb	persistiu	---	---
pronoun	aqueloutros	---	---
adjective	pensativo	---	---
verb	revelar	---	---
adjective	interativas	---	---
noun	capeta	---	---
noun	calafrio	---	---
noun	coice	---	---
adjective	endiabrado	---	---
verb	esboçou	---	---

Portuguese word category	Words in Portuguese	Words in English	English word category
verb	empenhou-se	---	---
verb	arfar	---	---
pronoun	nicles	---	---
adverb	quão	---	---
adjective	cabisbaixo	---	---
adjective	invulgar	---	---
noun	manobra	---	---
verb	confesso	---	---
adjective	sideral	---	---
noun	realeza	---	---
noun	delicadeza	---	---
verb	adocicaria	---	---
noun	nómadas	---	---
verb	crer	---	---
noun	algazarra	---	---
adverb	constantemente	---	---
noun	ancas	---	---
noun	alvos	---	---
adjective	amena	---	---
noun	cisco	---	---
verb	exibir	---	---
noun	frangalhos	---	---
adjective	bem-posta	---	---
	Rare words in Portuguese that are high-frequency in English (76)		
noun	picle	pickle	noun
verb	relinchou	said	verb
verb	mugiu	said	verb
verb	grasnou	called	verb
verb	rondando	work	verb
verb	avistam	see	verb
verb	circular	driving	verb
verb	embalar	bedtime song	noun
verb	devorar	eat	verb
verb	ouvir-te-ei	hear	verb
verb	desabar	falling	verb
verb	tranquilizou-o	said	verb
noun	topo	top	noun
adjective	celestial	space	noun
preposition	sob	under	preposition
preposition	sob	in	preposition
verb	tencionasse	thought	verb
verb	abandonam	left (behind)	verb
verb	inspira	(take deep breaths) in	verb + preposition
verb	expira	(great big breaths) in	noun + preposition
noun	estardalhaço	crash	verb
noun	pintarroxo	robin	noun
adverb	arduamente	very hard	adverb
verb	ocorrer	will happen	verb

Portuguese word category	Words in Portuguese	Words in English	English word category
noun	carabina	gun	noun
adjective	comprimido	air-gun	noun
verb	resvalar	falling	verb
verb	envergando	in	preposition
noun	lingueta	catch	noun
verb	rezingou	said	verb
adjective	aguda	high	adjective
adjective	graúdo	big	adjective
noun	coices	kick	verb
preposition	sob	from	preposition
noun	redor	round	adverb
adjective	sombria	dark	adjective
interjection	arre	wow	interjection
adjective	porreiro	right	adverb
adjective	generosa	lots	noun
noun	talude	sand-bank	noun
verb	creio	think	verb
adverb	algures	somewhere	adverb
adjective	rechonchudo	fat	adjective
verb	limitou-se	only	adverb
noun	exceção	except	preposition
adjective	imóveis	still	adjective
adjective	matinal	morning	noun
verb	advertiram	said	verb
verb	esvoaçar	flying	verb
adverb	algures	somewhere	adverb
verb	desabafou	said	verb
adjective	chata	flat	adjective
adjective	ruim	funny	adjective
adjective	atulhada	full	adjective
adjective	encalhado	stuck	verb
adjective	penosa	hot	adjective
verb	magicar	thought	verb
noun	pilim	money	noun
verb	replicou	said	verb
adjective	tranquila	quiet	adjective
noun	novato	new	adjective
verb	abalar	go	verb
verb	saciar	drink	verb
noun	regalo	fun	noun
adjective	cerrada	dark	adjective
noun	manto	ground	noun
adjective	sombria	dark	adjective
adjective	oco	hole	noun
noun	descendentes	children	noun
adjective	amenas	warm	adjective
verb	assomava	walked up to the door	verb
verb	troçava	would say	verb
verb	receando	lived in fear	verb + noun
verb	borrifado	with sprinkles	preposition + noun
noun	redor	all around	adverb

Portuguese word category	Words in Portuguese	Words in English	English word category
	Rare words in both languages (438)		
verb	baliu	bleated	verb
noun	prado	meadow	noun
verb	grunhiu	grunted	verb
noun	rasto	trailed	verb
verb	zoar	buzzing	verb
verb	zumbir	humming	verb
verb	esvoaça	searching	verb
noun	pólen	pollen	noun
adjective	garridas	bright	adjective
noun	refresco	sip	verb
adjective	meloso	sugary	adjective
adjective	licoroso	watery	adjective
verb	beberica	sips	verb
adjective	sonora	swarming and teeming	verb
verb	adejar	flapping	verb
noun	alvoroço	for hours and hours	preposition + noun
adjective	sedoso	thread	noun
verb	tecer	spinning	verb
verb	volteiam	shifting	verb
noun	desgarrada	and pick up the pace	verb + noun
noun	obreiras	foragers	noun
noun	pagode	jiggle	verb
noun	ambição	ambition	noun
verb	sugar	suckle	verb
adjective	viscoso	like glue	preposition + noun
noun	favos	honeycomb	noun
noun	alvéolos	cells	noun
adjective	espesso	thicker	adjective
verb	definhar	softer rays	adjective + noun
verb	aconchegam-se	amass	verb
adjective	terno	cuddle	verb
adjective	lamacento	some mud	adjective + noun
adjective	incansável	hardworking	adjective
verb	içar	hoist	verb
noun	Buldózer	Dozer	noun
noun	sirene	whistle	noun
noun	entulho	rubble	noun
noun	baforada	puff	noun
verb	dissipou	cleared	verb
verb	dirigiu-se	drove	verb
verb	gracejou	chuckled	verb
noun	trilho	path	noun
adjective	estreito	narrow	adjective
adverb	bruscamente	suddenly	adverb
noun	penhasco	cliff	noun
verb	mantiveram	kept	verb

Portuguese word category	Words in Portuguese	Words in English	English word category
noun	precipício	edge	noun
noun	liana	creeper	noun
adverb	firmemente	firmly	adverb
verb	içaram-no	upwards	adverb
verb	estacaram	stared	verb
adjective	rendilhada	ruffled	adjective
noun	folhos	lace	noun
noun	cotoveleiras	elbow patches	noun
adjective	aconchegada	curled up	verb
adjective	fluorescentes	fluorescent	adjective
noun	sereiês	mermish	noun
noun	elfos	selkies	noun
noun	harpias	harpies	noun
adjective	aperaltados	fancy dress	adjective + noun
noun	Ninfas	nymphs	noun
verb	Googlaram	googled	verb
noun	telescópio	telescope	noun
adjective	infindável	endless	adjective
noun	galáxia	galaxy	noun
adjective	lunar	Moon	noun
noun	crateras	craters	noun
noun	meteoros	meteor	noun
adjective	cintilantes	glitter	verb
noun	scones	scones	noun
noun	pilha	lots	noun
noun	fera	beast	noun
noun	tumulto	ruckus	noun
noun	banquete	feasted	verb
noun	brinde	toast	noun
noun	carvalho	oak tree	noun
noun	maldição	doom	noun
noun	assombrações	wraiths	noun
verb	curvou-se	bowed down	verb
verb	concedê-lo-ei	grant	verb
noun	pilhas	a row of	noun
noun	dentadura	false teeth	adjective + noun
adjective	serpenteante	slithery	adjective
verb	destacava-se	stood out	verb
noun	telescópio	telescope	noun
noun	trombone	trombone	noun
verb	deslizou	slid	verb
verb	balbuciou	spluttered	verb
verb	confiscar	confiscated	verb
adjective	imundas	filthy	adjective
adjective	confiscados	taken away	verb
adjective	radiantes	overjoyed	adjective
verb	deslizaram	slid	verb
noun	saliência	bulge	noun
adjective	desolador	droopy	adjective
verb	inspirar	out	preposition
verb	germinou	sprouted	verb
adjective	fluvial	river beach	noun + noun

Portuguese word category	Words in Portuguese	Words in English	English word category
adjective	carrancudos	frowned	verb
noun	pires	saucers	noun
adjective	empedrado	pebblepath	noun
adjective	trémula	quivering	verb
verb	vasculhou	searched	verb
noun	fôlego	breath	noun
verb	restolhar	rustled	verb
noun	esmeralda	emerald	noun
noun	garça	heron	noun
noun	faisão	pheasant	noun
noun	poedeiras	egg layers	noun
noun	aeróbica	aerobics	noun
noun	amador	amateur	noun
adjective	ganancioso	greedy	adjective
verb	assegurou	assured	verb
noun	sobressalto	fear	noun
noun	regalos	muffs	noun
adjective	dolorosa	painfully	adverb
noun	persiana	shutter	noun
verb	contesto	object	verb
noun	graciosidade	gracefully	adverb
verb	deteve-se	stopped	verb
verb	creio (não)	shan't	verb
verb	suplicar	coax	verb
noun	terrier	terrier	noun
noun	chocalheira	rattling	verb
noun	trapos	rags	noun
noun	farrapos	bones	noun
noun	proveito	much good	adjective + noun
adjective	furtiva	poaching	noun
noun	furões	ferrets	noun
noun	rajada	squall	noun
noun	estalido	snap	noun
noun	pólvora	gun-powder	noun
adjective	lisonjeada	rather flattered	adjective
noun	cavalheiro	sportsman	noun
noun	trouxa	bundle	noun
verb	trotou	trotted	verb
verb	suponho	suppose	verb
noun	mira	aim	noun
noun	gatilho	trigger	noun
verb	mirou	shot at	verb
noun	herdade	field	noun
noun	munições	pellets	noun
noun	polainas	gaiters	noun
verb	corrompem	corrupt	verb
noun	detalhes	details	noun
noun	subsolo	underground	noun
adjective	fanfarrão	stout	adjective
verb	estoqueava	prodding	verb
verb	apoderado	seized	verb
noun	estocadas	pokes	noun

Portuguese word category	Words in Portuguese	Words in English	English word category
verb	brandindo	brandishing	verb
verb	certificar	make sure	verb + noun
noun	fôlego	breath	noun
noun	sensatez	sense	noun
noun	condutas	drains	noun
verb	penetravam	peered into	verb
verb	trespassou-me	went through	verb
verb	rogo-lhe	beg you	verb
noun	sacrifício	loss	noun
noun	coxeio	limp	noun
adjective	prestes	about to	adverb
noun	convés	deck	noun
noun	milha	mile	noun
noun	âncora	anchor	noun
adjective	densa	thick	adjective
verb	adornava	chugged	verb
noun	pirilampos	fireflies	noun
noun	pulgões	aphids	noun
adverb	fixamente	straight in the eye	adverb
verb	teimou	screeched	verb
noun	fôlego	puffed itself up	verb
noun	louva-a-deus	praying mantis	noun
noun	tenazes	claws	noun
adjective	arrepiante	eerily	adverb
verb	esbarrou	ran into	verb
verb	deparou	encountered	verb
noun	solha	slap	noun
noun	empilhadora	forklift	noun
noun	expositores	display	noun
adjective	boreal	northern (lights)	adjective
noun	fiorde	fjord	noun
noun	pingente	icicle	noun
noun	torreão	turret	noun
noun	estrépitos	thumping	noun
adjective	farfalhuda	fluffy	adjective
noun	bazar	big store	adjective + noun
verb	sussurrar	whispering	verb
verb	equivale	matches	verb
adjective	felpuda	fuzzy	adjective
adverb	definitivamente	definitely	adverb
verb	gargarejar	gargle	verb
noun	profundezas	Deep	noun
noun	carrapicho	burr	noun
verb	polia	polished	verb
verb	lustrava	scoured	verb
adjective	asseado	neat	adjective
adjective	ousado	mighty	adjective
noun	betoneira	mixers	noun
noun	niveladoras	fixers	noun
verb	arqueio	arch	verb
verb	contorço	wriggle	verb
noun	trapézio	trapeze	noun

Portuguese word category	Words in Portuguese	Words in English	English word category
noun	vikings	Vikings	noun
verb	velejar	sailing	verb
noun	agente	manager	noun
noun	constelações	patterns	noun
noun	croquet	croquet	noun
adjective	remotas	remote	adjective
noun	acrobatas	acrobats	noun
noun	espiã	spy	noun
noun	espadachins	sword fighters	noun
adjective	empolgantes	thrilling	adjective
adjective	prediletos	favourite	adjective
verb	içam	hoist	verb
verb	abafam	gasp	verb
verb	estacara	stopped (in their tracks)	verb
preposition + noun	sem rodeios	matter-of-factly	adverb
adjective	parda	grizzly	adjective
adjective	farfalhuda	fluffed-up	adjective
adjective	erguida	fluffed-up	adjective
verb	escapulir	ran out	verb
noun	vedação	fence	noun
noun	desprezo	silent treatment	adjective + noun
verb	imploro-te	begging	verb
noun	guito	gold	noun
noun	cataclismo	something awful	adjective + noun
noun	estrondo	booms	verb
verb	reacendeu	makes it light again	verb
adjective	empolgado	excited	adjective
verb	polvilhou	plopped on	verb
noun	vénia	twirl	noun
adjective	espalhafatosa	a little	adjective
verb	rodopiava	wobbled	verb
noun	missão	job	noun
noun	floco	flake	noun
noun	abeto	fir-tree	noun
adjective	integral	brown	adjective
verb	esgueirou-se	squeezed under	verb + preposition
verb	brandindo	waving	verb
verb	esbarrasse	run into	verb
noun	alvoroço	excitement	noun
verb	implorando-lhe	implored	verb
noun	peneira	sieve	noun
verb	tencionava	intended	verb
noun	soleira	stone doorstep	noun + noun
verb	estremecia	twitched	verb
verb	sachar	hoeing	verb
noun	camomila	camomile	noun
noun	preparativos	preparations	noun
adjective	repletos	filled	adjective
advérbio	entredentes	chuckled	verb
verb	espiasses	spy	verb
verb	ditava	was that	verb

Portuguese word category	Words in Portuguese	Words in English	English word category
noun	manada	herd	noun
noun	retalhos	patchwork	noun
verb	provocava	the cause was	noun + verb
noun	bagas	berries	noun
noun	punhados	bunches	noun
verb	enfeitar-se-á	will decorate himself	verb
adjective	fascinante	fascinating	adjective
noun	cautela	carefully	adverb
noun	porte	decent sized	adjective + adjective
noun	debandada	stampeded	verb
adjective	cauteloso	cautiously	adverb
verb	prosseguiu	moved forward	verb
noun	clareira	clearing	noun
adjective	abalado	upset	adjective
noun	ventríloquo	ventriloquist	noun
adverb	subitamente	suddenly	adverb
verb	vergar	bend down	verb
noun	extravagância	extravaganza	noun
noun	bulício	hustle and bustle	noun + noun
verb	crepitarem	popped	verb
noun	folheto	brochure	noun
noun	buffet	bar	noun
verb	gaguejou	exclaimed	verb
verb	tagarelou	chattered	verb
adjective	supersónico	supersonic	adjective
adjective	meigo	meekest	adjective
adjective	destemido	brave	adjective
noun	alce	moose	noun
verb	aparenta	seem	verb
noun	ladainha	rhyme	noun
verb	escapulia	was afoot	verb + adverb
verb	cintilar	blinking	verb
noun	ceroulas	knickers	noun
noun	lamparina	oil lamp	noun
noun	carretel	cotton spools	noun
noun	desembaraço	swift	adjective
noun	remate	neatly sews	adverb + verb
noun	sagui	ape	noun
verb	agraciar	to grace	verb
noun	residência	dwelling	noun
adjective	privativa	private	adjective
noun	remetente	sender	noun
adjective	indeciso	confused	adjective
adjective	grisalho	gray	adjective
adjective	asseadas	neat and tidy	adjective
noun	capachinho	wig	noun
verb	despenhou	crashed	verb
adjective	espesso	thick	adjective
verb	tremeluzia	flickering	verb
verb	revolver-se	swirling	verb
noun	jatos	puffs	noun

Portuguese word category	Words in Portuguese	Words in English	English word category
adjective	dececionado	disappointed	adjective
noun	reflexo	reflection	noun
verb	planou	flew	verb
adverb	graciosamente	gracefully	adverb
adverb	descontroladamente	wildly	adverb
noun	colina	hill	noun
adjective	indignada	indignantly	adverb
adjective	impaciente	impatiently	adverb
adjective	vulgar	ordinary	adjective
adjective	sapudas	stubby	adjective
noun	clareira	clearing	noun
adjective	esgotadíssimos	sold-out	adjective
noun	elegância	such grace	noun
noun	platina	platinum	noun
verb	precipitou-se	pounded into	verb
noun	ofício	trade	noun
noun	digressão	tour	noun
verb	assegurando	making sure	verb
adjective	esgotados	sold out	adjective
noun	contrabaixo	double bass	noun
adjective	trémulas	quavered	verb
verb	murmurou	whispered	verb
verb	franzir	frowned	verb
verb	derrubar	knock over	verb
verb	esgravatar	dig	verb
adjective	esbaforido	puffing	verb
adjective	ofegante	panting	verb
noun	retalhos	patchwork	noun
noun	candidatura	application	noun
adverb	afincadamente	long and hard	adverb
verb	barrir	trumpet	verb
adjective	emplumadas	had feathers	verb + noun
noun	picles	pickles	noun
adjective	tagarelas	parrots	noun
verb	retorquiu	replied	verb
noun	impaciência	impatiently	adverb
noun	ápice	rushed	verb
verb	prosseguiu	went on	verb
adverb	candidamente	very slowly	adverb
adverb	desesperadamente	desperately	adverb
verb	corava	blushed	verb
adjective	aterrada	terrifying	adjective
adjective	aterrorizada	in terror	preposition + noun
adjective	horrorizada	horrified	adjective
noun	brasa	wink	noun
verb	desfrutar	having the time of her life	verb + noun
adjective	desconcertado	confused	adjective
verb	ofegou	gasped	verb
adjective	glaciares	towering icebergs	adjective + noun
verb	ecoavam	echoing	verb

Portuguese word category	Words in Portuguese	Words in English	English word category
verb	polvilhava	puffed	verb
verb	rumaram	set off	verb
adjective	serpenteante	snaking	verb
verb	rodopiava	whirled	verb
adjective	aninhando-se	snuggling	verb
adjective	valente	sneaky (trick)	adjective
verb	sibilar	hiss	verb
verb	esvoaçavam	fluttered	verb
verb	suspirou	sighed	verb
adjective	gracioso	feathery	adjective
adverb	definitivamente	definitely	adverb
noun	patolas-de-pés-azuis	blue-footed boobies	noun
adjective	ofuscante	handsome	adjective
verb	ofegou	puffed	verb
adjective	pomposas	fancy	adjective
verb	pavoneavam	pranced	verb
adjective	medonhos	bad	adjective
noun	corcunda	hump	noun
noun	encosta	hills	noun
noun	ligaduras	bandages	noun
noun	estetoscópio	stethoscope	noun
noun	no aconchego	snuggled up	verb
verb	resplandecia	shone	verb
verb	reluzia	shimmered	verb
adjective	vasto	wide	adjective
adverb	sonoramente	with a splash	preposition + noun
adjective	tremeluzentes	shimmering	adjective
noun	boi-almiscarado	musk- ox	noun
adjective	esvoaçantes	soaring	verb
verb	sussurrar	whisper	verb
noun	romance	romance	noun
noun	costeleta	pork chops	noun
noun	donzela	maiden	noun
adjective	lamechas	kissy-kissy	adjective
adjective	constrangedor	embarrassing	adjective
adjective	romântica	romantic	adjective
noun	alcatra	omoto (?)	noun
noun	alpinista	mountain climber	noun
adjective	compacta	firm	adjective
adjective	esbelto	handsome	adjective
verb	dispenso	No, thank you	adverb + interjection
adjective	aprumadinho	neat	adjective
verb	zarpar	had swum back to shore	verb
noun	marujos	barnacles	noun
noun	convés	decks	noun
noun	âncora	anchors	noun
adjective	pontiagudo	pointy	adjective
noun	estratocoisa	stratosthingy	noun
noun	constelações	constellations	noun

Portuguese word category	Words in Portuguese	Words in English	English word category
noun	via láctea	the milky way	noun
verb	bombear	pump	verb
adjective	frequente	generally	adverb
noun	apontamentos	notes	noun
verb	empoleiraram-se	sat on	verb
verb	planou	swooped	verb
noun	banzé	fuss	noun
verb	suspiram	sigh, sighs	verb
verb	inspiram	take a long deep breath	verb + noun
noun	partículas	bits, particles	noun
noun	sóis	suns	noun
noun	meteoritos	meteors	noun
adjective	unicelulares	single-celled	adjective
noun	tetetetetererararavó	great, great, great, times a trillion, zillion, squillion granny	noun
quantifier	triliões	trillion	noun
noun	geração	generations	noun
noun	antepassados	ancestors	noun
verb	floresceram	to make the most of life	verb
noun	anfíbio	amphibian	noun
verb	rodopiar	dance round	verb
noun	vedação	fence	noun
verb	trauteava	hum a hum	verb
noun	sistema solar	solar system	noun
noun	Via Láctea	Milky Way	noun
verb	rodopiar	spinning	verb
verb	esfriar	cool off	verb
noun	asteroide	asteroid	noun
noun	erupções	eruptions	noun
adjective	vulcânicas	volcanic	adjective
noun	colisões	collisions	noun
adjective	catastróficas	major	adjective
noun	diplomatas	diplomat	noun