AN SFG APPROACH TO TRANSLATION: INSIGHTS FROM AN ANALYSIS OF TEXTS PRODUCED BY NOVICE TRANSLATORS

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ABSTRACT: *This paper reports on an ongoing research project – CORDIALL (Corpus of Discourse for the Analysis of Language and Literature) – developed at Faculdade de Letras, Universidade Federal de Minas Gerais, which adopts a systemic-functional approach to translation studies drawing on corpus evidence obtained through corpora and concordancing software. It analyses cohesion in five translations of an online article "The New Prize" published in 2005, taking into consideration aspects both of the process and the product of translation. Data was collected from an experiment in which five students of introductory translation courses translated the above article having their text production recorded through the software TRANSLOG©. These translations were analyzed according to Halliday (1994) and Eggins (1994) and the results discussed from the perspective of cohesive patterns recurrent in text production by novice translators as compared to expert translators' production.*

KEY-WORDS: *SFG, Empirical translation studies, Translation process, Novice translators, Cohesion*

RESUMO: *Este artigo vincula-se ao projeto CORDIALL (Corpus Discursivo para Análises Lingüísticas e Literárias) desenvolvido na Faculdade de Letras da Universidade Federal de Minas Gerais. Tendo como base a lingüística sistêmico-funcional, análise de corpora e o uso de softwares de concordância, o presente trabalho analisa a coesão de cinco traduções do artigo The New Prize: Alternative Fuels publicado em um sítio de notícias da internet. Aspectos do processo tradutório, bem como do produto textual foram considerados. As traduções foram obtidas através de um experimento realizado com cinco tradutores novatos, estudantes de tradução, no qual, por meio do software TRANSLOG© o processo tradutório foi mapeado. Os cinco textos de chegada foram analisados de acordo com Halliday (1994) e Eggins (1994) e os resultados discutem aspectos recorrentes na produção textual de tradutores novatos em oposição a produção de tradutores expertos.*

PALAVRAS-CHAVE: *GSF, Pesquisa empírico-experimental em tradução, Processo tradutório, Tradutores novatos, Coesão*

1. Introduction

Among the disciplines that have drawn on systemic functional theory as a linguistic theory for studying language phenomena, translation studies has greatly benefited from systemic approaches for the analysis of originals and translated texts particularly with the aid of corpus linguistics tools (cf. review of literature in Pagano & Vasconcellos, 2005). SFG based studies of parallel corpora (originals and translations) have provided insights into recurrent patterns of retextualization as well as stylistic idiosyncrasies of particular translators (see, among others, Munday, 2002; Gouveia & Barbara, 2003; Magalhães, 2005; Pagano, 2005). A new application of SFG within translation studies has been recently implemented in studies of translation process in order to analyze translations produced within the setting of experiments designed for observing cognitive processes during translation task solving and their correlation to textual features of the translation products (Alves, 2003; Alves & Magalhães 2004). This paper reports on one such experiment in which five students translated an online article having their text production recorded through the software TRANSLOG©. Their cognitive rhythm during task performance was analyzed and correlated to aspects of their text production as analyzed according to Halliday (1994) and Eggins (1994). Data obtained for translation process and product was analyzed with a view to discussing aspects of novice translators' performance as compared to results obtained in other studies for both novice and professional translators.

This paper is organized as follows. In the following section we briefly present the research assumptions underlying our experimental work; in the third section the experiment and method of analysis for the data are described, the forth section is dedicated to the discussion of the data, and in the fifth section some concluding remarks are presented.

2. Research assumptions

2.1 Translation process oriented research

The 1990s are characterized by the emergence and consolidation of different sub-areas within the discipline of translation studies. One of them is the investigation of translation competence (Hurtado Albir, 1999; PACTE, 2003) drawing on empirical-experimental research on translation process, that is, cognitive processes accounting for problem solving during translation tasks carried out within experiments. Process

oriented research focuses on particular profiles of translators within a continuum ranging from novices to professionals and experts and attempts to look at features of both process and product through a correlation of cognitive and textual patterns. (Alves 2005; Alves & Gonçalves 2003; Alves, Magalhães & Pagano 2004; Alves & Magalhães 2004; Magalhães & Alves, no prelo). Alves (2005) shows clearly different profiles in the cognitive rhythm of novices and professional translators, which can be correlated to the degree of *durability*, that is, "an outcome of a particular performance that signals a pattern of processing and monitoring text production assumed to be correlated with efficient cognitive management and reflective practice from a meta-cognitive perspective". As "an extension of this concept", Alves states, "target texts can therefore be said to be more or less durable". It is precisely this aspect of durability, namely its strong correlation with text production that shows adequacy and acceptability in terms of the results of the translation task assigned that has motivated researchers at *CORDIALL (Corpus of Discourse for the Analysis of Language and Literature)* – at Faculdade de Letras, Universidade Federal de Minas Gerais –, to pursue an SFG based approach to the analysis of originals and translated texts.

2.2 Text Analysis within process research

Among the experiments carried out to explore the interface between cognitive and discursive features of translators, Alves and Magalhães (2004) studied a group of 17 novice translators in order to examine their cognitive rhythm (Schilperoord, 1996), that is, patterns obtained when visualizing alternation between pauses and text production. The correlation of cognitive rhythms with the degree of durability of the novices' performance showed inconsistence and irregularity in the flux of their text production, with little orientation prior to carrying out the translation task, long drafting periods and very little revision after a first draft had been reached. Their cognitive rhythm and the outcome of their task – their translated texts – thus proved "less durable". Alves and Magalhães (2004) also observed little meta reflection on the part of the translators, that is, their protocols revealed little awareness of the nature of problems they were facing while carrying out their task and also the absence of a meta-language to account for their problem solving. Alves (2005) carried out another experiment in which a novice and two more expert translators took part in order to examine cognitive rhythm, meta-cognition and experience as parameters of expertise in translation. The results corroborated the findings of Alves and Magalhães (2004). Both studies drew on SFL categories to describe the texts produced by the

subjects in the experiments and to compare them to the original texts. SFG has thus proved a consistent theory to approach text production within the context of translation process experimental research as the study reported in this paper will attempt to show in the following sections.

3. Method

This section is dedicated to the description of the experiment carried at Núcleo de Estudos da Tradução (NET), as well as the methodological approach to the thereby data collected.

In *Section 3.1-Experiment design* we introduce the source text used and the subjects' profile and make general considerations about the experiment. In *Section 3.2- Data collection* we describe how the experiment was carried out and how the textual production was prepared for analysis, as well as the quantitative data obtained from both process and product features.

3.1 Experiment design

This research used triangulation as a way of working with different types of data, such as think-aloud protocols, target texts, linear representations from TRANSLOG©, and quantitative data. This approach relies on Alves (2003), who states that:

> O uso combinado de representações do programa TRANSLOG©, de verbalizações retrospectivas direcionadas pela função *replay* desse programa, e de análises de amostras textuais feitas através de tabelas do programa WORDSMITH TOOLS©, devidamente codificadas, anotadas e alinhadas de acordo com as propostas recentes sobre o uso de *corpora* de pequenas dimensões, possibilita controlar melhor as variáveis de análise e garantir resultados mais confiáveis e, em conjuntos mais abrangentes, passíveis de generalizações nas pesquisas sobre o processo de tradução.
>
> Alves (2003:25)

In the case of our data collection, TRANSLOG©, TAPs and observations were used in order to gather information about the process of translation. The software WORDSMITH TOOLS© was used to prepare the textual material for analysis, and the statistical package SPSS© was used to obtain quantitative data for the purpose of triangulating data.

3.1.1 Subjects

The experiment was carried out with five novice translators. We define novice following Alves (2005): "Novice translators have about one year or experience in translation and little practical experience as professionals."[1]

As students attending the Translation II course at Faculdade de Letras, Federal University of Minas Gerais, they had become acquainted with basic notions of translation and text analysis during the course. Further characteristics that are important to mention are those related to the fact that the subjects were native speakers of Brazilian Portuguese and were proficient in the target language – English – in the sense that they were attending a course for which students qualify after they have taken basic and intermediate English language courses.

The present project has obtained permission from Comitê de Ética at UFMG. Following requirements subjects volunteered to participate in the experiment, and signed a term of informed consent with details about the project.

Finally, it is important to state that none of the translators was familiar with the data collection instruments, which can have an impact on the task result, since they were not used to the TRANSLOG© User interface. However, we should bear in mind the fact that all students were familiar with text processing software and were used to typing on computers, which may somehow lessen the impact of non-familiarity with TRANSLOG©.

3.1.2 Source text and Brief

One source text was used in the experiment, taken from the online news site New York Times, titled *The New Prize: Alternative Fuels*, published in 2005. The text reports on a new alternative fuel named E85, and narrates how Benjamin Kleber, an engineer, realized that he could save money by using it.

The text has 297 words and corresponds to the beginning paragraphs of a longer article. The complete article was excessively large to be used in this task, so we selected its first five paragraphs. The main selection criterion was that these paragraphs are within a section, opening the text, so that no previous text is necessary for the reader to understand the topic being reported.

Sources of difficulty for carrying out the task were connected to extra-linguistic knowledge (contextual information about the fuel within the American economic context) and bilingual knowledge (thematic organization and cohesive resources within the flux of information). There is no translation available of this text as far as we know, so translators could not find translated texts for their orientation.

Subjects were provided with the following brief:

This task consists of the translation of a text originally published in September 10th in an international news site. Translate it into Portuguese considering that it will be published in a Brazilian site of news.[2]

Appendix 1 reproduces the full version of the source text in order to supply the contextual information needed during this analysis.

3.2 Data collection

During the experiment, two researchers remained in the room taking notes about the subjects' online searches outside the software TRANSLOG©. Subjects did not have time constraints to do their translation. No printed dictionary was provided during the task, but translators could perform searches on the Internet and access online dictionaries and other resources.

3.2.1 TRANSLOG©

The software TRANSLOG© was used in the data collection to record all keyboard and mouse actions, as well as for calculating translations' duration. Its linear representation illustrates the process of translation, and also shows pauses between movements. The symbols used by the software are illustrated below through an image reproduced from Buchweitz & Alves (2006:23)

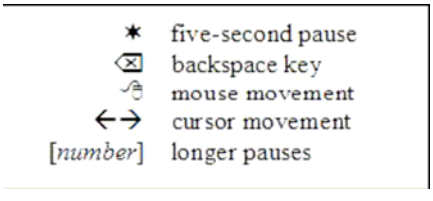


FIGURE 1.1 TRANSLOG© symbols Buchweitz & Alves (2006:23)

An example of TRANSLOG© linear representation taken from our data can be seen below:

[🖱]✶O•novo•pr~emio⌫⌫⌫⌫⌫êmio:•combustivés⌫⌫⌫⌫évei⌫⌫⌫⌫íveis✶✶•alternativos

⌦⌦⌦⌦⌦⌦brinde (Subject 2 translating the title)

The software presents two interfaces: TRANSLOG© User and Supervisor. Both interfaces are described in Buchweitz & Alves (2006) in the following quoted passages:

> The software comes in two different types of interface: the *user* and the *supervisor* interface. The Translog *user* interface is applied to carry out the translation, and its screen is divided in two: The top screen allows for displaying a source text, while the bottom screen is used to translate the text.
>
> Buchweitz & Alves (2006:6)

> The Translog *supervisor* interface, in turn, allows the researcher to replay the translation after the participant has completed the task. It thus provides an onscreen reenactment of the process. The supervisor interface also generates a chronological, linear representation of all keyboard and mouse actions that were performed during the translation. Translog, hence, provides a rich, descriptive, and timed illustration of the process of translation.
>
> Buchweitz & Alves (2006:6-7)

FIGURE 1.2 is an example of the interface displayed in TRANSLOG© during the task, and FIGURE 1.3 illustrates the Linear Representation and Replay taking place after the task.

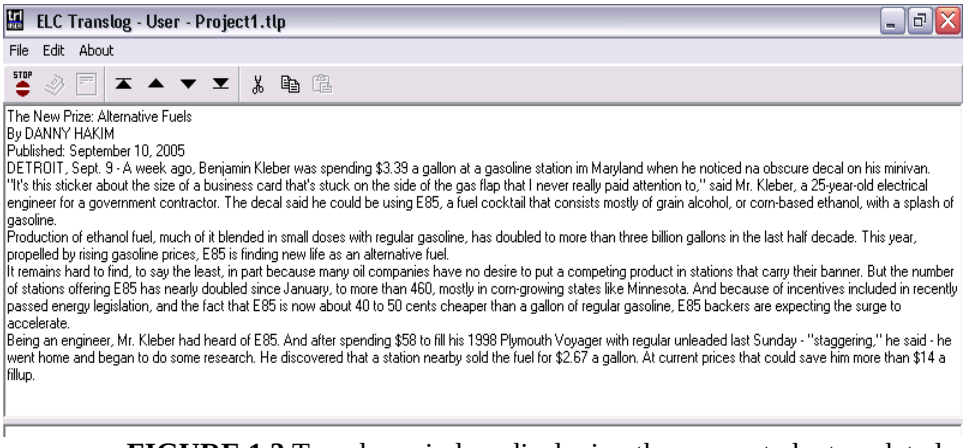


FIGURE 1.2 Translog window displaying the source to be translated

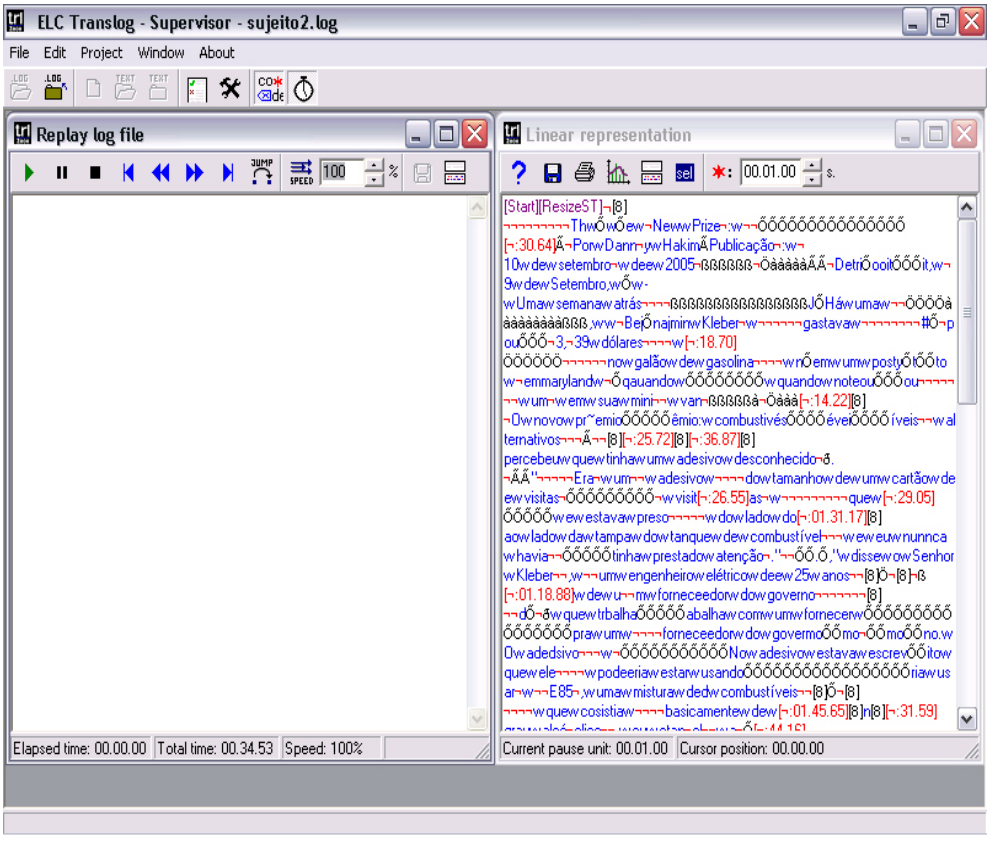


FIGURE 1.3 Translog Supervisor: Replay and Linear Representation

In Appendix 2, statistical data from the software TRANSLOG© illustrates other useful tools in the software.

3.2.2 Retrospective protocols

Participants were requested to verbalize their difficulties about the task and source text. This information was used for selecting problematic passages common to most or all of them. Protocols were carried out right after the end of the task with the aid of the replay function of TRANSLOG©. Replay is used for playing back and showing the process of translation so that the subjects can have a look at their movements as recorded by the software and comment on specific difficult points. All protocols were supervised by the researchers who also addressed translators so as to elicit information on the strategies used for problem solving during the task.

3.2.3 WORDSMITH TOOLS©

The software WORDSMITH TOOLS© was used to align the source text and the five translations as shown in FIGURE 1.4 below:

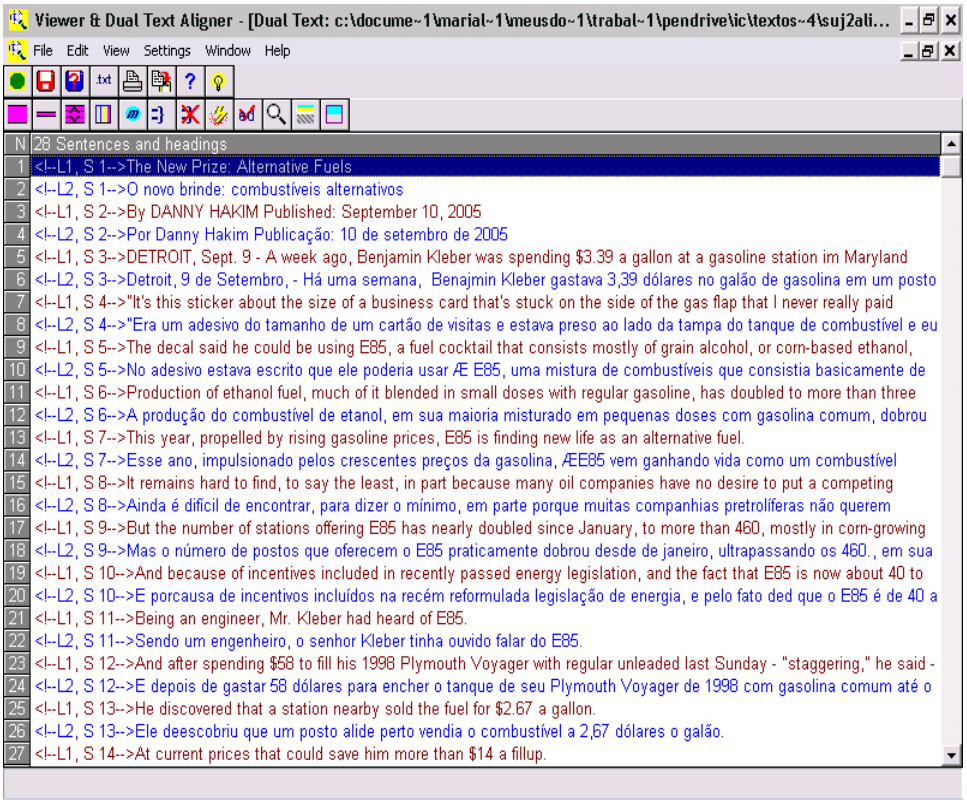


FIGURE 1.4 Example of the WORDSMITH TOOLS© Aligner

WORDSMITH TOOLS© also provided us with a quantitative analysis of the segmentation in the target texts. This data is transcribed in TABLE l.l.

	S1	**S2**	**S3**	**S4**	**S5**
Number of Source Segments	17				
Number of Target Segments	18	17	17	19	13
Number of Aligned Units	15	17	17	16	12
Number of Committed Units	0	0	0	0	0
Number of High Quality Units	3	9	7	1	2
Number of Medium Quality Units	10	8	10	14	7
Number of Low Quality Units	2	0	0	1	3
Number of Unconnected Source Segments	1	0	0	0	0

Number of Unconnected Target Segments	0	0	0	0	1
Number of 1:2 and 2:1 Units	4	0	0	4	5

TABLE 1.1 Quantitative data from WORDSMITH TOOLS©

Observing the text segmentation described quantitatively in TABLE 1.1, we can notice that translators followed the source text segmentation into sentences, since the number of sentences in both source and target texts are very similar.

In TAPs, on the other hand, translators expressed their need to adapt their textual product to the Brazilian context and how difficult that was:

[Researcher: Did you have any difficulties while translating the text?
S4: Well, I had some because of that, because I didn't know much about the subject, so it was difficult to choose the most used words, and stuff… The text's cohesion, .for example, I did it like this; I tried to replace the words by the same word, to give the text a logic. Because there were many passages I didn't understand.
Researcher: But apart from vocabulary, how about the structure itself?
S4: Yes… the structure itself, the structure itself… another passage I had problems with was to know what kind of text this was. If it is a written newspaper article, or a online article, I don't know.
Researcher: But the instructions clarified that, look. Published in September, 10th in an international site of news.
S4: Yes, it was also a problem. Which kind of language was the most used? Which was the structure of the text? In English, sometimes you invert the order of the sentences, right? And then, I didn't know if in Portuguese it would sound strange for this kind of text. It was also hard ... the structure. Also as regards the complexity and the text's structure, and how to tell the story in the right order.][3]

3.2.4 SPSS©

The software SPSS© *Statistical Package for the Social Analysis* was used for quantitative data analysis. All main features analyzed in the research were transformed into variables in order to make the analysis possible. TABLE l.2. below is a summary of the features analyzed and variables considered.

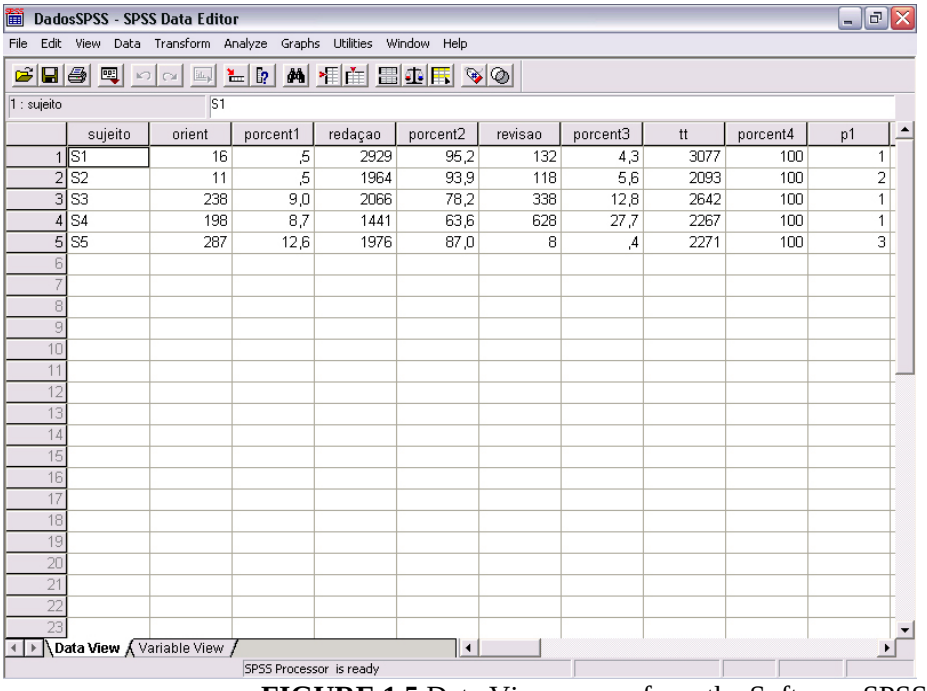
1. **subject** S1 S2 S3 S4 S5	2. **orient** *(Time spent in Orientation)* S1 16s S2 11s S3 238s S4 198s S5 287s	3. **percent1** *(Percentage of time spent in Orientation)* S1 0,5% S2 0,5% S3 9% S4 8,7% S5 12,6%	4. **draft** *(Time spent in Drafting)* S1 2929s S2 1964s S3 2066s S4 1441s S5 1976s	5. **percent2** *(Percentage of time spent in Drafting)* S1 95,2% S2 93,9% S3 78,2% S4 63,6% S5 87%
6. **revision** *(Time spent in Revision)* S1 132s S2 118s S3 338s S4 628s S5 8s	7. **percent3** *(Percentage of time spent in Revision)* S1 4,3% S2 5,6% S3 12,8% S4 27,7% S5 0,4%	8. **tt** *(Total time)* S1 3077s S2 2093s S3 2642s S4 2267s S5 2271s	9. **percent4** *(Percentage of total time spent in the task)* S1 100% S2 100% S3 100% S4 100% S5 100%	10. **p1** *(title) The New Prize: Alternative Fuels* I o novo prêmio: combustíveis alternativos II o novo brinde: combustíveis alternativos III uma nova escolha: combustíveis alternativos
11. **pause1** S1 ∅ S2 [00:44:86] S3 [03:02:51]* S4 [00:14:14] S5 [04:31:92]	12. **type1** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	13. **p2** **was spending/when/noticed** I gastava/quando/percebeu II estava gastando/quando/percebeu III pagava/foi quando percebeu IV pagava/quando/percebeu	14. **pause2** S1 [00:10:07] S2 [00:36:87] S3 ∅ S4 [00:11:96] (gastava) S5 [02:21:81]	15. **type2** I Conjunction II Ellipsis III Lexical Cohesion IV Reference

16. **p3** ***it**'s **this*** I ∅/nesse II ∅/um III nesse	17. **pause3** S1 [00:30:90] S2 ∅ S3 ∅ S4 ∅ S5 ∅	18. **type3** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	19. **p4** *much of **it** (ethanol fuel) blended* I A produção do combustível etanol II combustível de etanol III ∅ IV combustíveis à base de etanol V etanol	20. **pause4** S1 [00:47:61] S2 [00:38:65] S3 ∅ S4 ∅ S5 [00:12:98]
21. **type4** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	22. **p5** ***it** (E85) remains hard to find* I -lo II ∅ III o E85	23. **pause5** S1 [00:12:14] S2 ∅ S3 [00:27:32] S4 [00:38:55] S5 [00:40:31]	24. **type5** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	25. **p6** ***but** the number* I Mas II No entanto III porque
26. **pause6** S1 ∅ S2 ∅ S3 ∅ S4 ∅ S5 [00:11:89] (porque)	27. **type6** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	28. **p7** ***and** because* I E por causa II ∅	29. **pause7** S1 ∅ S2 ∅ S3 [0024:23] S4 ∅ S5 [00:22:18]	30. **type7** I Conjunction II Ellipsis III Lexical Cohesion IV Reference
31. **p8** *staggering* I espantado II inquieto III tremendo IV isso é um roubo V	32. **pause8** S1 [01:27:21] S2 [00:48:21] S3 [01:08:39] S4 [00:43:24]	33. **type8** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	34. **p9** ***he** said – **he** went home and,* I ele/ele II ∅/∅	35. **pause9** S1 ∅ S2 ∅ S3 ∅ S4 ∅ S5 ∅

impressionante	S5 [00:47:52]			
36. **type9** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	37. **p10** (last sentence) *that (the fact that E85 is now about 40 to 50 cents cheaper than a gallon of regular gasoline)* I o combustível II preços atuais* III preços assim	38. **pause10** S1 [00:49:22] S2 ∅ S3 ∅ S4 ∅ S5 ∅	39. **type10** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	40. **p11** *Mr. Kleber* I Sr. Kleber II Senhor Kleber III Kleber IV ∅ / Benjamin
41. **pause11** S1 [0013:21]/∅ S2 ∅ S3 ∅ S4 ∅ S5 ∅	42. **type11** I Conjunction II Ellipsis III Lexical Cohesion IV Reference	43. **p12** (last sentence) *him* I -lo II ele III Benjamim ou ∅*	44. **pause12** S1 [00:14:45] S2 ∅ S3 ∅ S4 ∅ S5 ∅	45. **type12** I Conjunction II Ellipsis III Lexical Cohesion IV Reference

TABLE 1.2 Variables inserted for analysis in the software SPPS©

FIGURE 1.5 shows the *Data View* screen, in which we, researchers, type the data collected. FIGURE 1.6 illustrates the *Variable View* screen, in which the variables are built. And finally, FIGURE 1.7 is an example of the Output provided by SPSS©.


DadosSPSS - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

1 : sujeito S1

	sujeito	orient	porcent1	redaçao	porcent2	revisao	porcent3	tt	porcent4	p1
1	S1	16	,5	2929	95,2	132	4,3	3077	100	1
2	S2	11	,5	1964	93,9	118	5,6	2093	100	2
3	S3	238	9,0	2066	78,2	338	12,8	2642	100	1
4	S4	198	8,7	1441	63,6	628	27,7	2267	100	1
5	S5	287	12,6	1976	87,0	8	,4	2271	100	3
6										
7										
8										
9										
10										
11										
12										
13										
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15										
16										
17										
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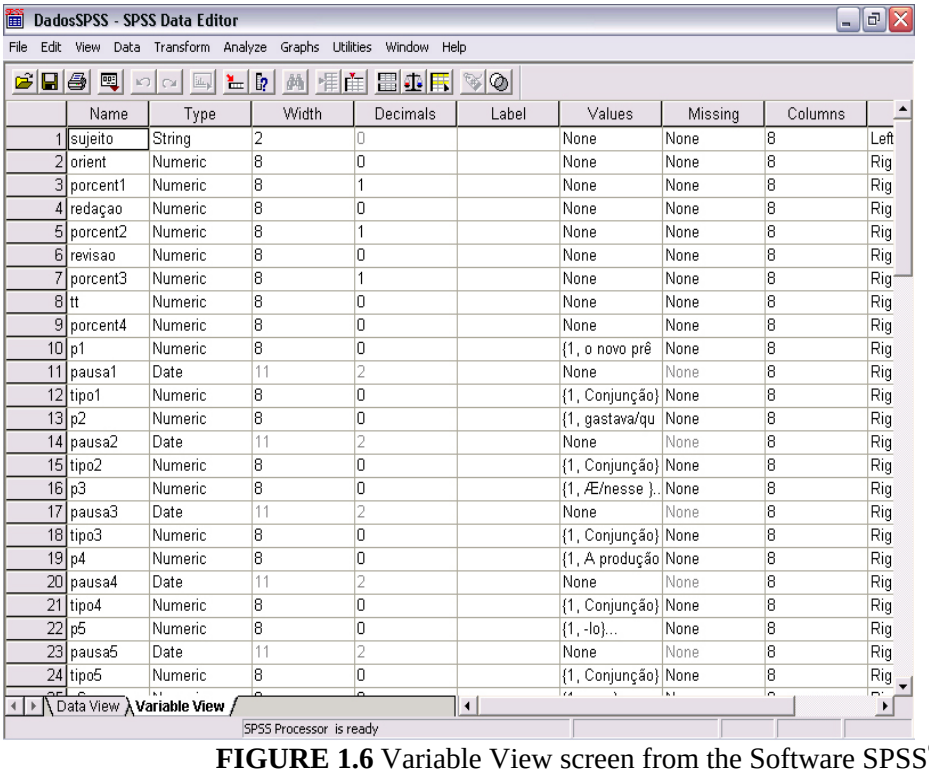
21										
22										
23										

Data View | Variable View

SPSS Processor is ready

FIGURE 1.5 Data View screen from the Software SPSS©


DadosSPSS - SPSS Data Editor

File Edit View Data Transform Analyze Graphs Utilities Window Help

	Name	Type	Width	Decimals	Label	Values	Missing	Columns	
1	sujeito	String	2	0		None	None	8	Left
2	orient	Numeric	8	0		None	None	8	Rig
3	porcent1	Numeric	8	1		None	None	8	Rig
4	redaçao	Numeric	8	0		None	None	8	Rig
5	porcent2	Numeric	8	1		None	None	8	Rig
6	revisao	Numeric	8	0		None	None	8	Rig
7	porcent3	Numeric	8	1		None	None	8	Rig
8	tt	Numeric	8	0		None	None	8	Rig
9	porcent4	Numeric	8	0		None	None	8	Rig
10	p1	Numeric	8	0		{1, o novo prê	None	8	Rig
11	pausa1	Date	11	2		None	None	8	Rig
12	tipo1	Numeric	8	0		{1, Conjunção}	None	8	Rig
13	p2	Numeric	8	0		{1, gastava/qu	None	8	Rig
14	pausa2	Date	11	2		None	None	8	Rig
15	tipo2	Numeric	8	0		{1, Conjunção}	None	8	Rig
16	p3	Numeric	8	0		{1, Æ/nesse }..	None	8	Rig
17	pausa3	Date	11	2		None	None	8	Rig
18	tipo3	Numeric	8	0		{1, Conjunção}	None	8	Rig
19	p4	Numeric	8	0		{1, A produção	None	8	Rig
20	pausa4	Date	11	2		None	None	8	Rig
21	tipo4	Numeric	8	0		{1, Conjunção}	None	8	Rig
22	p5	Numeric	8	0		{1, -lo}...	None	8	Rig
23	pausa5	Date	11	2		None	None	8	Rig
24	tipo5	Numeric	8	0		{1, Conjunção}	None	8	Rig

Data View | Variable View

SPSS Processor is ready

FIGURE 1.6 Variable View screen from the Software SPSS©

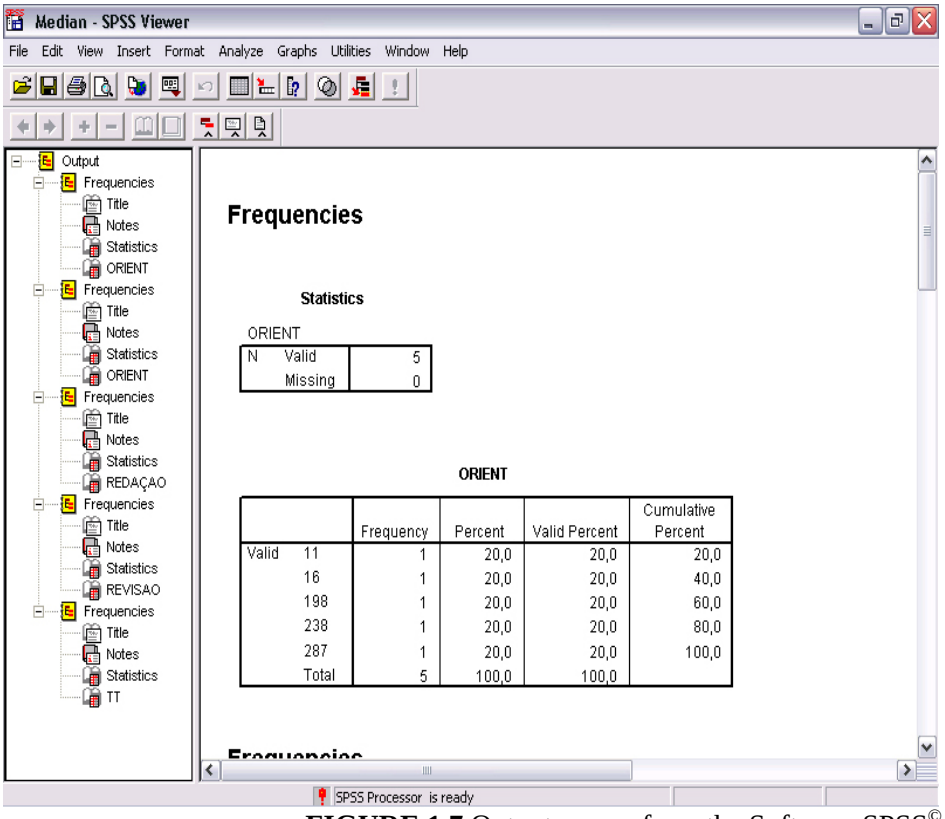


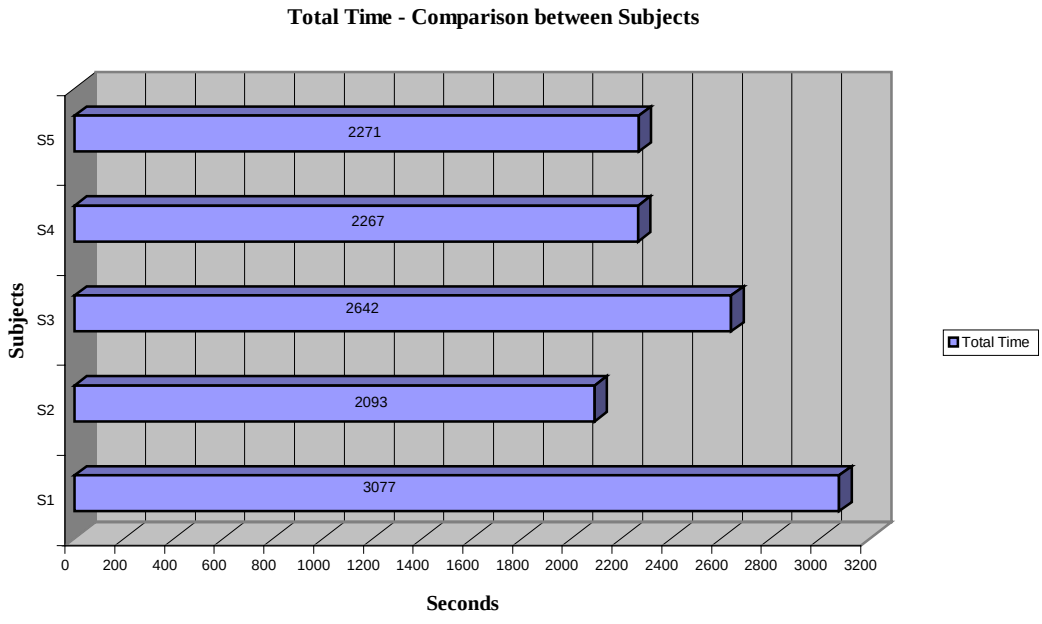
FIGURE 1.7 Output screen from the Software SPSS©

4. Results and Discussion

First we will discuss process features related to time spent in the translation process. Second, we will discuss product features related to cohesive devices in the five translations based on Systemic Functional Grammar categories. Finally, we will discuss awareness and meta reflection as a way of relating both process and product features in the analysis of the production by novice translators.

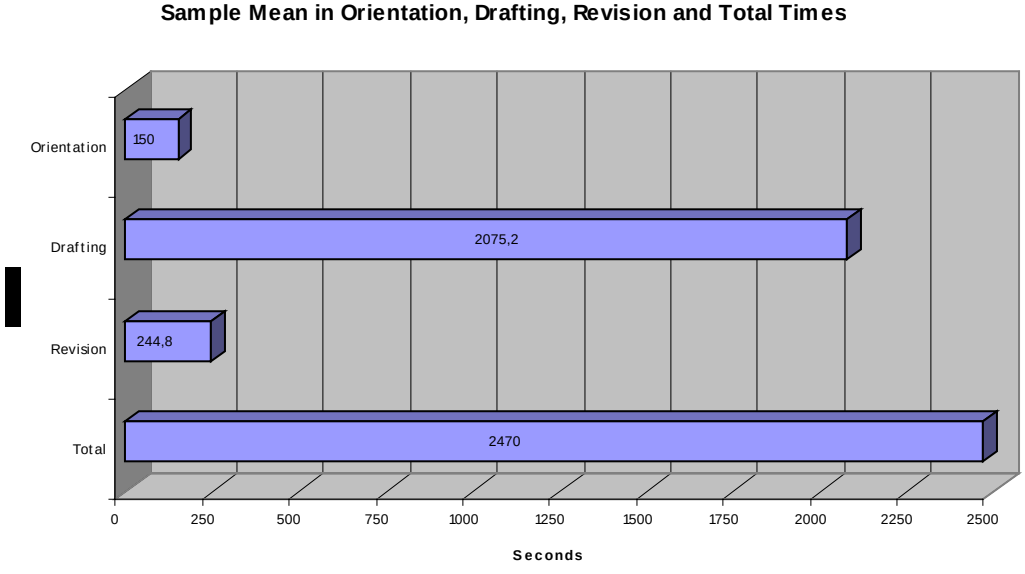
4.1 Process Features: Translation process time

Translators maintained the same pattern in their total time for the conclusion of the task. GRAPHIC 1.1 shows the total time (in seconds) spent by each subject for the translation of the source text. Examining the graphic we can conclude that there was a mean time devoted to the task: all translators took about 2470 seconds to conclude their texts.



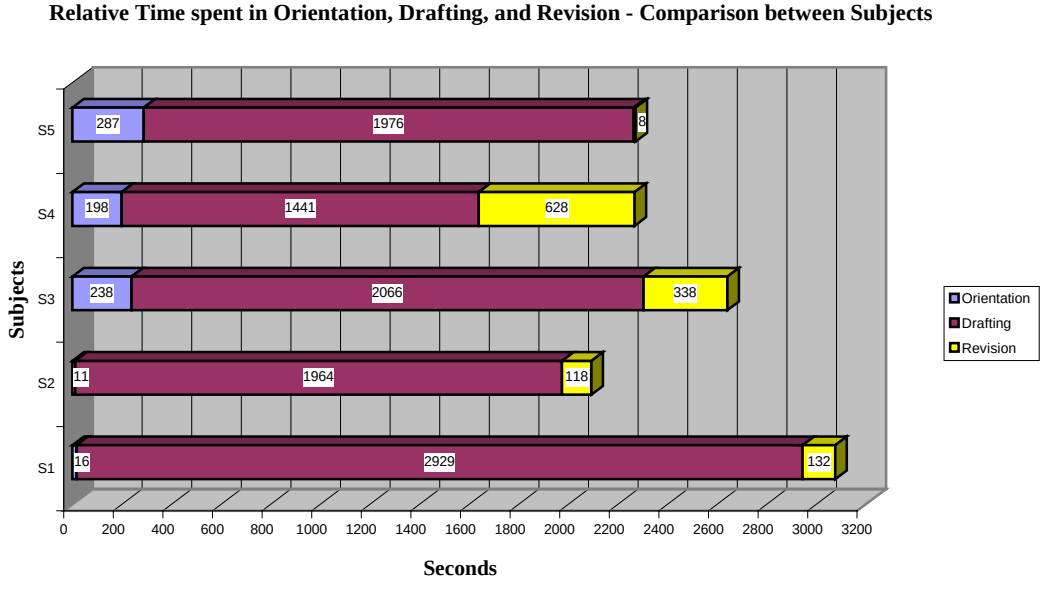
GRAPHIC 1.1 Total Time spent in translation task

GRAPHIC 1.2 illustrates the Mean in the translation stages and total time. It was built with the data analyzed in the software SPSS©.

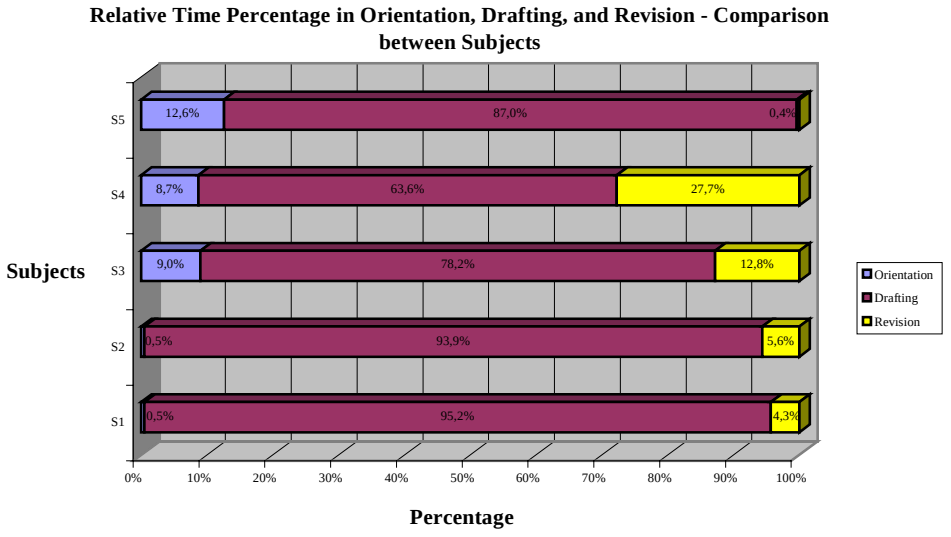


GRAPHIC 1.2 Mean in the three stages of translation task.

Concerning the Relative Time in the task, that is, the amount of time spent in each stage, we have it exemplified in seconds and percentage in GRAPHICS 1.3 and 1.4 respectively. GRAPHIC 1.2 reveals that translators spent most of the translation time in the second stage (drafting). This corroborates Campos & Alves (2005) analysis of time spent by novice translators.



GRAPHIC 1.3 Relative Time spent in each stage of translation task



GRAPHIC 1.4 Relative Time percentage in each stage of translation task

Also from SPSS© we get the Median from each stage of the task as exemplified in the following tables:

ORIENT		
N	Valid	5
	Missing	0
Median		198,00

DRAFTING		
N	Valid	5
	Missing	0
Median		1976,00

REVISION		
N	Valid	5
	Missing	0
Median		132,00

TT		
N	Valid	5
	Missing	0
Median		2271,00

TABLE 1.3 Medians taken from the SPSS© Output

4.2 Product Features

In this section, we analyze product features and cohesive devices used by the five novice translators in question. The first subsection is dedicated to the analysis of the four major cohesive devices described by Halliday (1994), and Eggins (1994), namely Lexical Cohesion, Reference, Conjunction, and Ellipsis. Next we discuss meta reflection, also providing data from TRANSLOG© linear representation.

Appendix 3 provides the full versions of the texts produced by the translators discussed in this paper.

4.2.1 Cohesion

The product of translation was analyzed according to Halliday's *An introduction to functional grammar* (1994) and Eggins (1994). The tables presented in this analysis were based on the ones in Eggins (1994) and show quantitative data regarding the cohesive features used by the five translators.

Translation problems analyzed were first identified by pauses detected in the linear representations from TRANSLOG©. From this first analysis, we concluded that not every translation problem could be identified through pauses; in consequence, the segment most recalled by subjects also guided us in the selection of problems to be analyzed. Four passages were chosen to exemplify the analysis. These passages are transcribed below:

The New Prize: Alternative Fuels (TITLLE)
DETROIT, Sept. 9 - A week ago, Benjamin Kleber **was spending** $3.39 a gallon at a gasoline station im Maryland **when** he **noticed** na obscure decal on his minivan.[4] **(FIRST SENTENCE)**
It remains hard to find, to say the least, in part because many oil companies have no desire to put a competing product in stations that carry their banner. **(FORTH PARAGRAPH)**
And after spending $58 to fill his 1998 Plymouth Voyager with regular unleaded last Sunday - **"staggering,"** he said - he went home and began to do some research. **(LAST PARAGRAPH)**

TABLE 1.4 Translation problems analyzed

TABLES 1.4 and 1.5 summarize quantitative data of the cohesive sources used in the texts. As we can see, referential cohesion was the most productive device used.

Feature	Source Text	S1 Translation	S2 Translation	S3 Translation	S4 Translation	S5 Translation
Conjunction	9	9	12	14	11	11
Reference	33	72	68	54	61	71
Lexical cohesion	28	28	27	27	28	30

TABLE 1.4 Conjunctive relations in The New Prize: Alternative Fuels texts

Feature	Source Text	S1 Translation	S2 Translation	S3 Translation	S4 Translation	S5 Translation
Conjunction	+ Extending	+ Extending	+ Extending	+ Enhancing	+ Enhancing + Extending	+ Extending
Reference	33	72	68	54	61	71
Lexical cohesion	28	28	27	27	28	30

TABLE 1.5 Conjunctive relations in The New Prize: Alternative Fuels texts

4.2.1.1 Lexical Cohesion

Concerning Lexical Cohesion, the title was our unit of analysis. It was chosen because translators classified it as a difficult translation unit. It is important to make clear that the title refers to information not present in the excerpt of the source text given to subjects. Hence the word “prize” cannot be retrieved through the text, which made the five translators opt for choices that relied on interpretations other than the one built in the full version of the source text.

TABLE 1.6 provides a summary of quantitative analysis with respect to Lexical cohesion in all texts.

Feature	Source Text	S1 Translation	S2 Translation	S3 Translation	S4 Translation	S5 Translation
Number of strings (2 + items)	5	5	5	5	5	5
Number of major strings (4 + item)	5	5	5	5	5	5
Lexical items in strings/all words in text	297	335	338	327	343	343
Head items of three longest chains (no. of words in string)	2	2	2	2	2	2
Meronymy	1	1	1	1	1	1
Expectancy	19	14	15	18	18	16
Number of sentences	17	18	17	17	19	13

TABLE 1.6 Lexical strings in the The New Prize: Alternative Fuels texts

4.2.1.2 Reference

Reference caused some misinterpretations in the products analyzed. As shown in previous studies, the novices in our experiment could not fully build referential strings to strengthen their cohesive links. In the passage chosen, *"**It remains hard to find**, to say the least, in part because many oil companies have no desire to put a competing product in stations that carry their banner"*, "it" refers to the fuel E85 in the source text. However, translators took this as a functional "it" in a thematized comment clause. This was the most important problem not detected in the pauses of TRANSLOG's linear representations, since the translators did not consider it a problematic structure.

TABLE 1.7 provides a quantitative analysis of references chains in the text

Feature	Source Text	S1 Translation	S2 Translation	S3 Translation	S4 Translation	S5 Translation
Number of head items	5	5	5	5	5	5
Number of major participant chains (three + item)	4	4	4	4	4	4
Head items of three longest chains (no. of items in chains)	2	2	2	2	2	2
Homophoric	17	14	17	20	19	18
Exophoric	2	2	2	1	2	1
Cataphoric	2	4	3	3	1	0
Esphoric	4	5	2	1	2	1
Bridging	9	11	9	12	15	17
Number of sentences	17	18	17	17	19	13

TABLE 1.7 Reference chains in The New Prize: Alternative Fuels texts

4.2.1.3 Conjunction

Cohesive relations made through the use of conjunctions were not very problematic for the translators. In general, they tended to use more explicit constructions than the source text, that is, they turned implicit conjunctions in the source text into explicit ones, as for example in:
SOURCE TEXT
And after spending $58 to fill his 1998 Plymouth Voyager with regular unleaded last Sunday - "staggering," he said - **he went home and began to do some research. He discovered that** a station nearby sold the fuel for $2.67 a gallon.

SUBJECT 1
E depois de gastar $58 para abastecer seu Plymouth Voyager 98 com gasolina comum no último domingo - "espantado" ele disse - **ele foi**

para casa e, ao pesquisar, descobriu que um posto próximo vendia o combustível por $2.67 o galão.

The conjunctions used in their texts were very much the same ones used in the source text.

TABLE 1.8 summarizes the kind conjunctive relations present in the texts.

Feature	Source Text	S1 Translation	S2 Translation	S3 Translation	S4 Translation	S5 Translation
Elaborating	0	0	0	0	0	0
Extending	6	5	7	5	4	5
Enhancing	4	3	4	6	4	4
Implicit	1	0	0	0	0	0
Explicit	9	9	12	14	11	12
Number of sentences	17	18	17	17	19	13

TABLE 1.8 Discourse-semantic characterizations of the The New Prize: Alternative Fuels texts

4.2.1.4 Ellipsis

The elliptical construction “staggering” was one of the most recalled segments in retrospective protocols. As it was a problematic structure, all linear representations showed that subjects stopped at this point.

TABLE 1.9 presents a contrastive analysis of the elliptical construction “staggering” present in source text’s last paragraph.

SOURCE TEXT	TRANSLATIONS	
And after spending $58 to fill his 1998 Plymouth Voyager with regular unleaded last Sunday - **"staggering,"** he said - he went home and began to do some research.	**S1**	**"espantado"**
	S2	**"inquieto"**
	S3	**"tremendo"**

	S4	**"isso é um roubo!"**
	S5	**"impressionante"**

TABLE 1.9 Contrastive Analysis of elliptical construction from the texts

In order to solve the problem, translators searched the Internet to find dictionary entries and texts that used the word *staggering*. This focus on a word disregarding its context of use and aspects of the clause construction in which it is used corroborates previous researchers who describe novice translators as being much more concerned about isolated lexical items instead of contextual clues (Alves, 2003).

4.3 Meta-reflection: TRANSLOG© linear representation and Retrospective protocols

In this section, we will present an analysis of verbalization together with the linear representations collected in the software TRANSLOG©. All passages in TRANSLOG© linear representation that were important for the analysis are quoted in the following pages. In these representations, it is possible to gather important information about how translators solved problematic structures. We can also take into consideration their cognitive rhythm, and analyze how they segmented the source text during the task.

SUBJECT 1

[Start][ResizeST][✶:17.33]O◆no✶vo◆pr✶✶êmio✶:◆✶combust✶✶í✶✶veis◆✶alternativos

◆✶A◆uma◆semana◆atrás✶,◆Be✶✶njamim✶✶◆Kleber✶✶✶✶◆gastava✶✶✶◆✶✶✶$✶✶3✶.✶39✶◆✶✶✶✶por◆ga✶✶lâo✶⌫⌫✶ão✶✶✶✶◆no◆posto✶✶◆de◆✶gasolina✶✶◆em◆✶Maryland✶✶✶✶✶✶✶✶◆quando◆✶ele[✶:10.07]◆percebeu✶✶◆uma◆✶mancha[✶:01.30.24]⌫⌫⌫⌫⌫⌫⌫⌫⌫◆estranho◆adesiv✶✶o◆na◆sua◆minivam⌫n

Ainda◆✶é◆difícil◆encontrá✶lo✶✶✶✶,◆[✶:01.24.70]em◆parte[✶:15.21][🖱]✶Pode-se◆no◆⌫⌫⌫⌫,◆no◆mínimo◆dizer◆que◆✶✶[🖱]⌫✶✶[🖱]✶⌫a✶✶✶✶[🖱]

E◆depiis⌫⌫⌫ois◆✶de◆gastar✶✶✶✶✶✶$✶58✶✶para◆✶✶✶abastecer✶✶✶✶✶✶✶✶seu✶✶✶✶✶✶✶P✶ly✶✶mouth✶◆Voyager✶✶✶✶◆98✶✶✶✶◆com[✶:25.33]◆o✶✶✶✶✶⌫gasolina◆comum✶✶◆no◆✶último◆domingo✶✶✶✶✶◆-◆[✶:01.27.21]espantado✶✶[🖱]"✶[🖱]"✶✶✶✶◆ele◆disse✶◆-◆✶ele◆✶✶foi◆p✶ara◆casa◆✶e◆começou✶✶✶✶✶✶✶✶⌫⌫⌫⌫⌫⌫⌫⌫✶✶,◆pesquisando,◆descobriu✶✶◆que◆✶✶um◆a⌫⌫◆pot⌫sto✶✶✶✶◆pr✶óximo✶✶✶◆vendia◆o◆combustíval✶⌫⌫✶el✶◆por✶◆✶$2✶,✶67[✶:12.44]◆o◆✶galão

In the previous linear representations, we see that translator 1 spent [17:33] seconds before providing a translation to the title. The pause in the elliptical structure *staggering* signs the difficulty faced while translating this passage. The fast orientation stage presented is typical in novice translators according to Alves (2003). The most significant pause in this linear representation is the one related to staggering, in which subject 1 took [01.27.21] minutes to provide a translation.

SUBJECT 2

[Start][ResizeST]¬[🖱]✶✶✶✶✶✶✶✶✶Thw⌫w⌫e⬥✶New⬥Prize✶:⬥✶✶ ⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫

[🖱]✶O⬥novo⬥pr~emio⌫⌫⌫⌫⌫êmio:⬥combustivés⌫⌫⌫⌫évei⌫⌫⌫⌫íveis ✶✶⬥alternativos

⌦⌦⌦⌦⌦⌦brinde

Bej⌫najmin⬥Kleber✶⬥✶✶✶✶✶✶gastava⬥✶✶✶✶✶✶✶✶#⌫✶pou⌫⌫⌫✶3,✶39 ⬥dólares✶✶✶✶⬥[✶:18.70]⌦⌦⌦⌦⌦⌦✶✶✶✶✶✶no⬥galão⬥de⬥gasolina✶✶✶✶ ⬥n⌫em⬥um⬥posty⌫t⌫⌫to⬥✶emmaryland⬥✶⌫qauando⬥⌫⌫⌫⌫⌫⌫⌫⌫⌫⬥q uando⬥noteou⌫⌫⌫ou✶✶✶✶✶✶✶⬥um✶⬥em⬥sua⬥mini✶⬥van✶←←←←←←→- ✶⌦→→→[✶:14.22][🖱]✶O⬥novo⬥pr~emio⌫⌫⌫⌫⌫êmio:⬥combustivés⌫⌫⌫ ⌫évei⌫⌫⌫⌫íveis✶✶⬥alternativos✶✶✶🖋✶✶[🖱][✶:25.72][🖱][✶:36.87][🖱]perceb eu⬥que⬥tinha⬥um⬥adesivo⬥desconhecido✶⇨.✶🖋🖋

Ainda⬥é⬥difícil⬥de⬥✶✶✶encontrrar,⬥✶✶⌫⌫⌫⌫⌫ar,⬥pra⬥⌫⌫⌫ara⬥dizer⬥o⬥ mínimo,

E⌫⌫⌫✶.⬥E⬥depois⬥de⬥✶✶gastar⬥58⬥dólares⬥para⬥encher⬥seu⬥tanque✶✶✶⌫ ⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫o⬥tanque⬥de⬥seu⬥✶✶Pl✶✶ymouth✶⬥Voyager⬥de⬥✶✶✶19 8✶⌫✶98[✶:17.47]⬥com⬥gasolina✶✶✶⬥comum⬥[✶:58.15][🖱][✶:20.81][🖱]até⬥o⬥últi mo⬥✶domingo⬥⬥[✶:48.21]"inquieto"⬥✶⌫,⬥ele⬥disse✶⬥- ⬥ele⬥começou⬥a⬥✶⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⬥foi⬥para⬥casa⬥e⬥✶come✶çou⬥a ⬥fazer⬥✶✶⌫⌫⌫⌫⌫⌫✶pesquisar✶.

In second linear representation, we see a much more recursive production, with more pauses and mouse actions than in the first representation. This second translator changed his for translation for the title, probably moved by the different context provided by the test. On the other hand, translator 1, for example, maintained his first translation for the title.

SUBJECT 3

[Start][ResizeST][✶:39.29]↓↓↓↓↓✶↓✶✶✶✶✶✶✶✶[ResizeST]✶✶✶[ResizeST]✶[ResizeST][✶:03.02.51]O◆novo◆prêmio:◆✶✶combustiv⌫⌫✶íveis◆alternativos

Benjamim◆✶Kleber◆✶✶✶s✶e⌫⌫estava◆gastando◆✶✶✶✶✶✶✶✶✶US✶$✶3.✶39[✶:17.59][🖱]◆(cerca◆de◆R✶$✶8✶✶✶.⌫✶✶[🖱][Shft→],✶[🖱][🖱]✶,✶✶00✶)✶[🖱]✶⌫✶✶✶✶por◆✶gal✶ão[✶:01.10.68]◆✶de◆ga✶solina◆(cerca◆de✶✶✶✶[🖱]◆R$✶◆⌫2,15◆por◆litrro✶⌫⌫o✶✶[🖱]◆✶[🖱]◆✶✶[🖱]✶✶✶)◆✶em◆um◆posto◆✶em◆Maryland✶✶,◆✶Estados◆Unidos,◆✶✶quando◆✶✶✶✶✶ele◆ér⌫⌫percebeu◆✶✶um◆✶decalque◆✶ob[✶:38.04]⌫⌫estranho◆✶em◆sua◆miniva✶n.

[✶:27.32]Ainda◆✶é◆no◆mínimo◆difícil◆encontrá✶✶k⌫lo

E◆dedpois◆dee◆✶⌫⌫◆gastar◆✶US$✶◆58✶◆para◆encher◆o◆tanque◆de◆✶sua◆✶Py⌫lymouth◆Voyager✶◆ano◆1998✶✶✶✶✶✶com◆✶gasolina◆rea⌫gu⌫⌫⌫⌫normal✶✶✶domingo◆passado✶✶✶◆[✶:01.08.39]"tremendo"✶,◆ele◆disse◆-◆✶✶✶✶✶✶[🖱]⌫✶✶✶✶[🖱]ele◆voltou◆para◆casa◆e◆✶começou◆a◆pesquisar.

In this third set of linear representations, we see features related to translator three. He spent 238 seconds in orientation, and had a different distribution in the time devoted to the task. He also spent more time to complete his revision stage the two previous translators, and presented a great capacity of meta reflection and a rich meta-language during verbalization.

SUBJECT 4

O◆✶Novo◆Prêmio✶:◆✶Combustíveis◆Alternativos

Há◆uma◆semana,◆Bemja⌫⌫⌫✶m⌫✶njamin◆Kleber✶✶✶✶✶◆[✶:11.96]gastava✶◆✶3✶,✶3✶9◆✶✶U✶✶✶$✶✶✶◆por◆galão◆de◆ga✶solina✶✶✶✶✶◆em◆um◆posto✶✶✶✶◆de◆Maryland◆quando◆✶percebeu◆✶✶✶u✶m◆adesiv✶o◆✶✶✶✶✶✶✶✶✶i✶mperceptivo✶◆✶✶✶✶em◆s✶✶ua◆✶✶✶✶van✶.

Ele◆ainda◆✶é◆dif´ci⌫⌫⌫´ci⌫⌫⌫✶ícil◆de◆ser◆encontrado⌦⌦⌦[✶:30.28]O◆✶✶E✶85

E,◆depois◆de◆gastar◆✶✶✶85,00✶✶✶←←←←←✶✶U✶✶✶$◆→→→→→→✶✶✶✶✶✶✶←←←←←⌦→✶8→→→→✶◆✶para◆en✶cher◆o◆tanque◆de◆seu◆✶✶P✶ly✶mouth◆Voyager✶◆1998✶✶✶✶✶✶✶✶✶✶com◆gasolina◆comum✶◆✶no◆pú⌫⌫último◆✶sábado[✶:17.18],◆[✶:26.06]disse✶◆✶""←✶engasgando→✶,◆✶✶✶✶✶←←→✶✶✶✶✶[ShftCtrl←][ShftCtrl←]⌦✶✶✶✶"'←✶sta✶ggering→←←←←←←←←←←←←disse◆→→→→→→→→→→→→→✶✶✶✶⌫.

isso◆é◆um◆roug⌫bo

Translator 4 was the one who spent more time revising the target text, and during this stage, he changed passages in order to built a more cohesive product. He also showed a greater capacity of meta-reflection and meta-language.

SUBJECT 5

[Start][ResizeST]¬¬¬¬¬[ST↓][ST↓][ST↓][ST↓][ST↓][ST↓][ST↓][ST↓][ST↓][ST↓]
✶✶[ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][✶:02.03.00][ST↓][ST↓][ST↓][ST↓][ST↓][ST↓][✶:01.17.60][ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][ST↑][✶:01.11.32]Uma•nova•✶escolha✶:•✶Combustíveis•alternativos

um•✶⌫a•nova•alternativa•em•✶xcob⌫⌫⌫⌫combustíveis.

Há•uma•semana•atrás⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫✶cerca•de•uma•semana✶,•Benjamim⌫n•Kleber✶✶✶✶✶✶•pagava•[✶:12.14]UsS⌫⌫✶S✶$•3,39✶✶✶✶✶✶•✶por•um•galão•de•gasolina•num•posto•in•⌫⌫⌫em•Maryland[✶:02.21.81]•qua✶✶✶✶✶ndo•ele•✶✶percebeu•um•✶estranho•adesivo•colado•em•sua•miniva✶.[✶:14.08]⌫n

É✶⇨de•entender✶⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫no•mínimo✶•✶✶✶difícil✶✶✶✶✶✶•de•entender[✶:11.89]•porque

Por•ser•engenheiro,•✶✶✶✶✶✶✶Benjamin•K✶l✶eber✶✶✶✶•✶já•tinha•ouvido•falar•✶✶do•✶combust~ivel•⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫essa•nova•alternativa[✶:11.00]•✶✶✶e,•no•mesmo•dia•em•que•✶gastou•cerca•cded⌫⌫⌫⌫de•✶✶✶US$•58✶⌫⌫⌫⌫⌫⌫⌫•58•sólares•d⌫⌫⌫⌫⌫⌫⌫⌫⌫✶dólares•pra•⌫⌫⌫ara•✶encher•o•tanque•✶✶do•seu•Plymouth•v✶⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫✶"Ply✶mouth•voyager⌫⌫⌫⌫⌫⌫⌫Voyager"•modelo•98[✶:11.21]•no•último•domingo[✶:02.57.42][🖱]•com•gasolina•comum[✶:11.71]•([✶:35.81]Incrível✶✶,•disse•ele✶⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫⌫✶"✶impressionante"✶✶,•disse•ele✶✶✶✶✶•resignando-se)

Translator 5 devoted 8 seconds to revise the source text. He was also the one who changed source text's structure, and number of sentences in a more significant way. He presents a very recursive production, and long pauses in problematic structures, as in *staggering*, in which he took [02.57.42] minutes to provide a translation.

In conclusion, in retrospective protocols above, we can see that Translators 1 and 2 did not verbalize much their problems and strategies for solving these problems. Therefore, they did not have a high level of meta reflection. Translators 3, 4 and 5 on the other hand, showed a greater capacity of meta reflection, but at the same time, they had problematic constructions in their target texts. Retrospective protocols revealed that translators were unable to cope with the necessary contextual clues to understand the topic discussed in the source text. This is an evidence of a problematic correlation between meta-reflection and translation outcomes: a high capacity for meta reflection does not necessarily imply the production of a cohesive target text.

5. Conclusions

This analysis drew on previous research carried by Alves (2003), Alves (2005) Alves & Magalhães (2004), relying on data triangulation as a method for analyzing data. Textual production analyzed according to Halliday (1994) and Eggins (1994) revealed features that corroborate previous works within CORDIALL. As a summary we have novice translators patterns in time distribution, which tend to spend more time in drafting without much orientations and revision. Referential structures were the most difficult cohesive link for the translators, who found problems to retrieve referents and draw on contextual information in order to build a cohesive target text.

ACKNOWLEDGEMENTS

We would like to thank Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) for providing financial support and also the translators involved in the experiment that have kindly consented to participate in this experiment.

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APPENDIX 1

SOURCE TEXT

The analyzed passages are in bold face.

The New Prize: Alternative Fuels

By DANNY HAKIM
Published: September 10, 2005

DETROIT, Sept. 9 - A week ago, Benjamin Kleber **was spending** $3.39 a gallon at a gasoline station im Maryland **when** he **noticed** na obscure decal on his minivan.

"It's this sticker about the size of a business card that's stuck on the side of the gas flap that I never really paid attention to," said Mr. Kleber, a 25-year-old electrical engineer for a government contractor. The decal said he could be using E85, a fuel cocktail that consists mostly of grain alcohol, or corn-based ethanol, with a splash of gasoline.

Production of ethanol fuel, much of it blended in small doses with regular gasoline, has doubled to more than three billion gallons in the last half decade. This year, propelled by rising gasoline prices, E85 is finding new life as an alternative fuel.

It remains hard to find, to say the least, in part because many oil

companies have no desire to put a competing product in stations that carry their banner. But the number of stations offering E85 has nearly doubled since January, to more than 460, mostly in corn-growing states like Minnesota. And because of incentives included in recently passed energy legislation, and the fact that E85 is now about 40 to 50 cents cheaper than a gallon of regular gasoline, E85 backers are expecting the surge to accelerate.

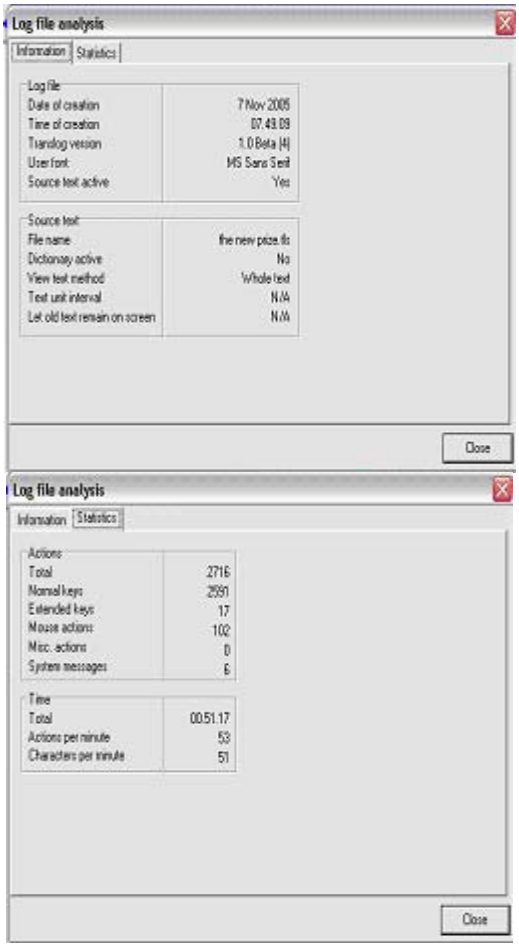
Being an engineer, Mr. Kleber had heard of E85. And after spending $58 to fill his 1998 Plymouth Voyager with regular unleaded last Sunday - **"staggering,"** he said - he went home and began to do some research. He discovered that a station nearby sold the fuel for $2.67 a gallon. At current prices that could save him more than $14 a fillup.

http://www.nytimes.com/2005/09/10/business/10alternative.html

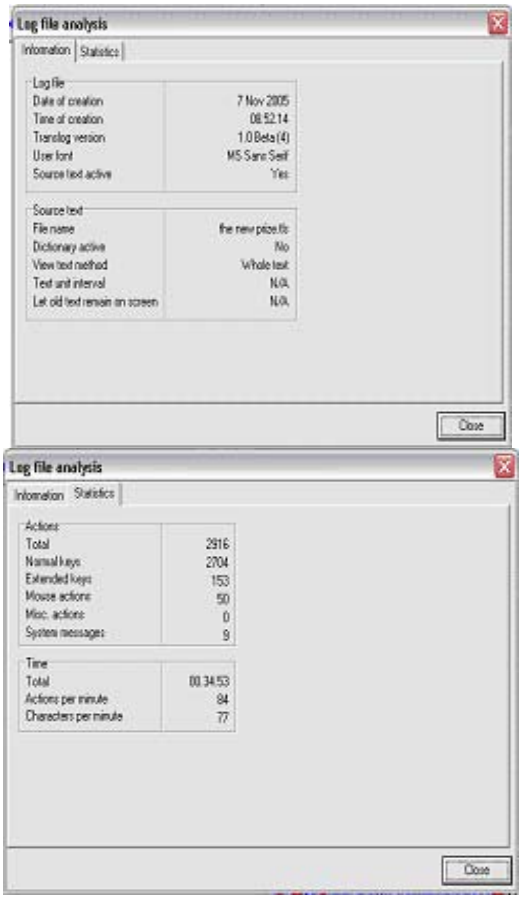
APPENDIX 2

The images below show some statistical data taken from the software TRANSLOG©.

SUBJECT 1


Log file analysis
Information
Statistics
Log file
Date of creation
7 Nov 2005
Time of creation
07.49.09
Translog version
1.0 Beta (4)
User font
MS Sans Serif
Source text active
Yes
Source text
File name
the new prize.tls
Dictionary active
No
View text method
Whole text
Text unit interval
N/A
Let old text remain on screen
N/A
Close
Log file analysis
Information
Statistics
Actions
Total
2716
Normal keys
2591
Extended keys
17
Mouse actions
102
Misc. actions
0
System messages
6
Time
Total
00.51.17
Actions per minute
53
Characters per minute
51
Close

SUBJECT 2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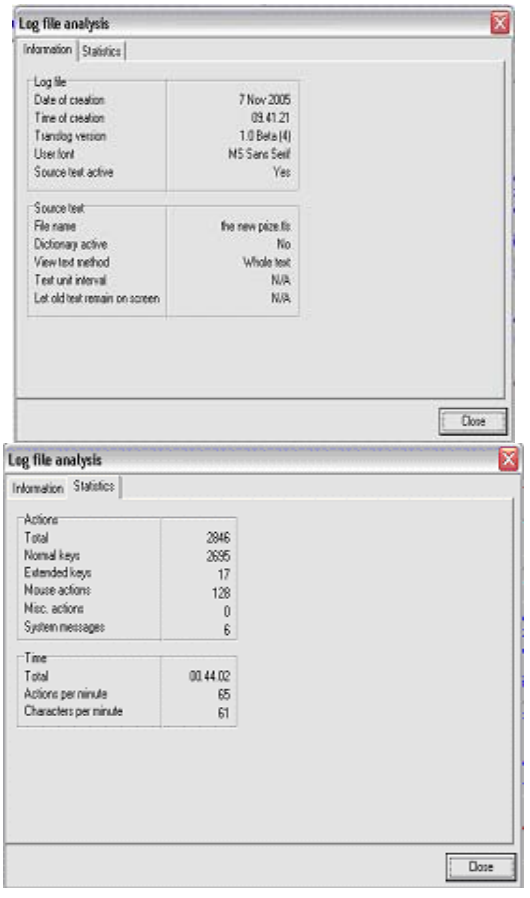
Information
Statistics
Log file
Date of creation
7 Nov 2005
Time of creation
08.52.14
Translog version
1.0 Beta (4)
User font
MS Sans Serif
Source text active
Yes
Source text
File name
the new prize.tlx
Dictionary active
No
View text method
Whole text
Text unit interval
N/A
Let old text remain on screen
N/A
Close
Log file analysis
Information
Statistics
Actions
Total
2916
Normal keys
2704
Extended keys
153
Mouse actions
50
Misc. actions
0
System messages
9
Time
Total
00.34.53
Actions per minute
84
Characters per minute
77
Close

SUBJECT 3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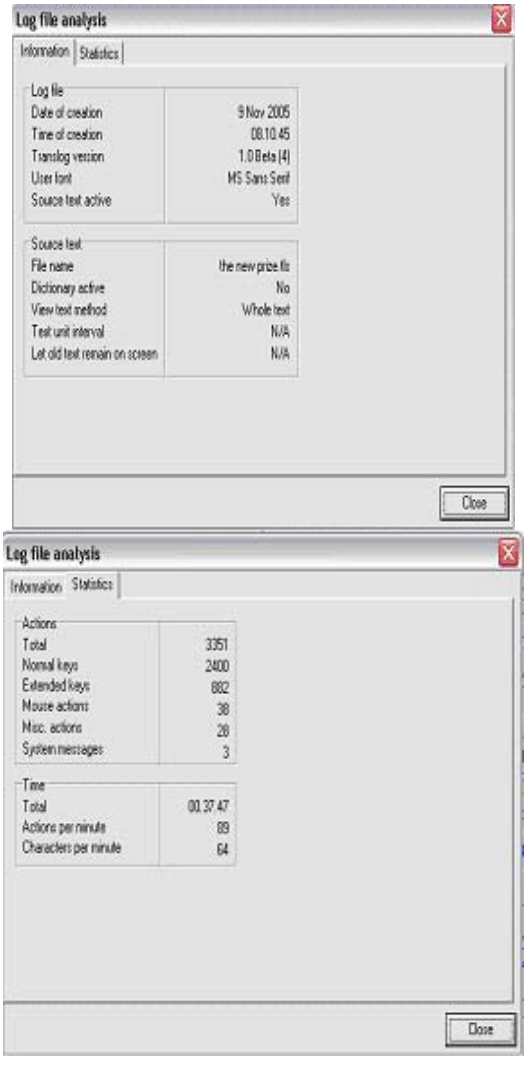
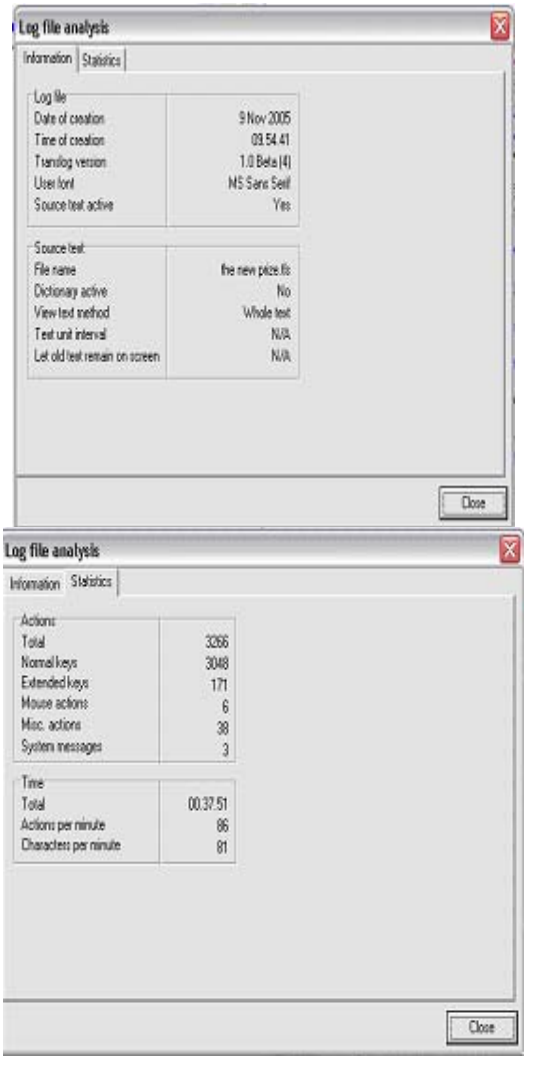
Information
Statistics
Log file
Date of creation
7 Nov 2005
Time of creation
09.41.21
Translog version
1.0 Beta (4)
User font
MS Sans Serif
Source text active
Yes
Source text
File name
the new pize.tls
Dictionary active
No
View text method
Whole text
Text unit interval
N/A
Let old text remain on screen
N/A
Close
Log file analysis
Information
Statistics
Actions
Total
2846
Normal keys
2695
Extended keys
17
Mouse actions
128
Misc. actions
0
System messages
6
Time
Total
00.44.02
Actions per minute
65
Characters per minute
61
Close

SUBJECT 4


Log file analysis
Information
Statistics
Log file
Date of creation
9 Nov 2005
Time of creation
08.10.45
Translog version
1.0 Beta (4)
User font
MS Sans Serif
Source text active
Yes
Source text
File name
the new price fix
Dictionary active
No
View text method
Whole text
Text unit interval
N/A
Let old text remain on screen
N/A
Close
Log file analysis
Information
Statistics
Actions
Total
3351
Normal keys
2400
Extended keys
882
Mouse actions
38
Misc. actions
28
System messages
3
Time
Total
00.37.47
Actions per minute
89
Characters per minute
64
Close

SUBJECT 5


Log file analysis
Information
Statistics
Log file
Date of creation 9 Nov 2005
Time of creation 09.54.41
Translog version 1.0 Beta (4)
User font MS Sans Serif
Source text active Yes
Source text
File name the new prize.tls
Dictionary active No
View text method Whole text
Text unit interval N/A
Let old text remain on screen N/A
Close
Log file analysis
Information
Statistics
Actions
Total 3266
Normal keys 3048
Extended keys 171
Mouse actions 6
Misc. actions 38
System messages 3
Time
Total 00:37:51
Actions per minute 86
Characters per minute 81
Close

APPENDIX 3

TARGET TEXTS

The analyzed passages are in bold face.

SUBJECT 1

O novo prêmio: combustíveis alternativos

De DANNY HAKIM
Publicado em 10 de Setembro de 2005

DETROIT, 9 de Setembro - A uma semana atrás, Benjamim Kleber **gastava** $3.39 por galão no posto de gasolina em Maryland **quando** ele **percebeu** um estranho decalque na sua minivan.

"É nesse adesivo, aproximadamente do tamanho de um cartão de visita, que está colado ao lado do tanque, que eu nunca tinha realmente prestado atenção," disse o Sr. Kleber, 25 anos, engenheiro elétrico contratado pelo governo. O decalque dizia que ele poderia usar o E85, um coquetel de combustíveis que consiste, em sua maior parte, de álcool em grânulos, or etanol produzido a partir do milho, com um pouco de gasolina.

A produção do combustível etanol, em sua maior parte misturada com pequenas doses com gasolina, dobrou para mais de três bilhões de galões nos últimos 5 anos. Esse ano, impulsionado pelo aumento dos preços da gasolina, o E85 está ganhando espaço como um combustível alternativo.

Pode-se no mínimo dizer que ainda é difícil encontrá-lo, e isso se deve, em parte, às muitas empresas produtoras de combustível que não desejam colocar um produto concorrente nos postos que possuem sua marca. Mas o número de postos disponibilzando o E85 quase dobrou desde Janeiro, para mais de 460, em sua maior parte nos estados produtores de milho como Minnesota. E por causa dos incentivos incluídos na recém aprovada legislação da energia, e do fato que o E85 é, nesse momento, aproximadamente, de 40 a 50 centavos de dólar mais barato que o galão da gasolina comum, os patrocinadores do E85 estam prevendo que essa expansão acelere.

Por ser um engenheiro, Sr. Kleber tinha conhecimento do E85. E depois de gastar $58 para abastecer seu Plymouth Voyager 98 com gasolina comum no último domingo - **"espantado"** ele disse - ele foi para casa e, ao pesquisar, descobriu que um posto próximo vendia o combustível por $2.67 o galão. Pelo preço de mercado, o combustível poderia proporcioná-lo uma economia acima de $14 por abastecimento.

SUBJECT 2

O novo brinde: combustíveis alternativos

Por Danny Hakim
Publicação: 10 de setembro de 2005

Detroit, 9 de Setembro, - Há uma semana, Benajmin Kleber **gastava** 3,39 dólares no galão de gasolina em um posto em Maryland, **quando percebeu** que tinha um adesivo desconhecido em sua mini-van.

"Era um adesivo do tamanho de um cartão de visitas e estava preso ao lado da tampa do tanque de combustível e eu nunca tinha prestado atenção," disse o Senhor Kleber, um engenheiro elétrico de 25 anos que trabalha pra um forneceedor do governo. No adesivo estava escrito que ele poderia usar E85, uma mistura de combustíveis que consistia basicamente de grãos alcóolicos, ou etanol extraído de cecreais, com um pouco de gasolina.
A produção do combustível de etanol, em sua maioria misturado em pequenas doses com gasolina comum, dobrou para mais de 3 bilhões dee galões nos últimos 50 anos. Esse ano, impulsionado pelos crescentes preços da gasolina, E85 vem ganhando vida como um combustível alternativo.
Ainda é difícil de encontrar, para dizer o mínimo, em parte porque muitas companhias pretrolíferas não querem colocar nos postos que carregam suas bandeiras, um produto concorrente. Mas o número de postos que oferecem o E85 praticamente dobrou desde de janeiro, ultrapassando os 460., em sua maioria localizados em estados que produzem grãos, como Minnesota. E porcausa de incentivos incluídos na recém reformulada legislação de energia, e pelo fato ded que o E85 é de 40 a 50 centavos mais barato do que um galão dee gasolina comum, os defensores do E85 esperam que a novidade se alastre.
Sendo um engenheiro, o senhor Kleber tinha ouvido falar do E85. E depois de gastar 58 dólares para encher o tanque de seu Plymouth Voyager de 1998 com gasolina comum até o último domingo - **"inquieto"**, ele disse - ele foi para casa e começou a pesquisar. Ele deescobriu que um posto alide perto vendia o combustível a 2,67 dólares o galão. Pelos preços atuais ele poderia economizar 14 dólares a cada vez que enchesse seu tanque.

SUBJECT 3

O novo prêmio: combustíveis alternativos

DANNY HAKIM
do New York Times, 10/09/2005

Detroit, 9 de setembro. Há uma semana atrás, Benjamim Kleber **estava gastando** US$ 3,39 por galão de gasolina (cerca de R$ 2,154 por litro) em um posto em Maryland, Estados Unidos, **quando** ele **percebeu** um decalque estranho em sua minivan.

"É um adesivo de mais ou menos o tamanho de um cartão, que fica grudado no lado da tampa da gasolina e que nunca me chamou muita atenção", diz Kleber, 25, engenheiro elétrico de uma empreiteira. O adesivo diz que ele poderia usar E85, um combustível misto composto principalmente de etanol de milho e gasolina.
A produção do combustível de etanol, na maioria pequenas doses misturadas à gasolina normal, duplicou para mais de 10 bilhões de litros nos últimos cinco anos. Esse ano, por causa do aumento de preço da gasolina, o E85 ganha nova vida como combustível alternativo.
Ainda é no mínimo difícil encontrá-lo, em parte porque muitas das companhias petrolíferas não têm interesse em colocar um produto competitivo nos postos de suas bandeiras. No entanto, o número de postos que oferecem o E85 praticamente dobrou desde janeiro para mais de 460, principalmente em estados produtores de milho, como Minnesota. Por causa de incentivos incluídos numa lei sobre energia recentemente aprovada, e por causa do galão do E85 sair agora cerca de 40 ou 50 centavos de dólar mais barato que a gasolina normal, defensores do E85 esperam que a onda cresça ainda mais.
Como engenheiro, Kleber já tinha ouvido falar do E85. E depois de gastar US$ 58 para encher o tanque de sua Plymouth Voyager ano 1998 domingo passado com gasolina normal - **"tremendo"**, ele disse - ele voltou para casa e começou a pesquisar. Descobriu que uma estação perto de sua casa vendia o combustível por US$2.67 o galão (cerca de R$ 1,695 por litro). Com os preços atuais, ele pouparia mais de US$ 14 (cerca de R$ 34) por tanque.

SUBJECT 4

O Novo Prêmio: Combustíveis Alternativos
Danny Harkim
10 de setembro de 2005
Detroit, Estados Unidos, 9 de setembro.

Há uma semana em um posto de gasolina em Maryland, Benjamin Kleber **pagava** U$ 3,39 por galão de gasolina. **Foi quando percebeu** um adesivinho colado em sua

"Era um adesivo mais ou menos do tamanho de um cartão comercial, pregado do lado da boca do tanque, ao qual eu nunca tinha prestado atenção, disse Kleber, 25 anos, engenheiro elétrico, que trabalha para uma empreiteira do governo. O adesivo dizia que ele poderia usar o E85, uma mistura de combustíveis cuja maior parte é composta por álcool de cereais, ou etanol de milho, com uma pequena parte de gasolina.

A produção de combustíveis à base de etanol, na maioria das vezes misturados à pequenas porções de gasolina, dobrou para mais de três bilhões de galões nos últimos cinco anos. Este ano, impulsionado pelo aumento no preço da gasolina, o E85 ganhou vida nova como combustível alternativo.

O E85 ainda é difícil de ser encontrado, no mínimo porque as companhias de petróleo não pretendem colocar nas bombas de gasolina um produto concorrente que, também carregue suas marcas. No entanto, o número de postos de gasolina que comercializam o E85 quase dobrou desde janeiro para mais de 460, em sua maioria nos estados produtores de milho, como Minnesota.

Por causa de incentivos incluidos recentemente na legislação sobre energia e, o fato de que o E85 está atualmente cerca de 40% a 50% mais barato do que um galão de gasolina comum, quem aposta no E85 espera um crescimento ainda mais acelerado.

Em seu trabalho como engenheiro, Kleber já tinha ouvido falar no E85. E, depois de gastar U$ 58,00 para encher o tanque de seu Plymouth Voyager 1998 com gasolina comum no último sábado, disse**"isso é um roubo!"**. Então foi para casa e começou a pesquisar. Descobriu que um posto de gasolina da região vendia o combustível a U$ 2,67 o galão. Com base nos preços atuais, ele pode economizar mais de U$ 14,00 ao encher o tanque.

SUBJECT 5

Uma nova escolha: Combustíveis alternativos
(Danny Hakim)

DETROIT, 9 de setembro - Há cerca de uma semana, Benjamin Kleber **pagava** US$ 3,39 por um galão de gasolina num posto em Maryland **quando** ele **percebeu** um estranho adesivo colado em sua minivan.

" Eu nunca havia prestado atenção nesse pequeno adesivo colado ao lado da abertura do tanque" disse o engenheiro elétrico de 25 anos. O adesivo

dizia que ele poderia usar o E85, uma mistura de combustíveis composta em sua maioria por "grain alcohol", ou o "etanol do milho" , e uma pequena parte de gasolina.
A produção do etanol misturado a pequenas porções de gasolina dobrou para mais de 3 bilhões de galões na metade da última década. Impulsionado pelos altos preços da gasolina, o E85 tem ganhado um espaço cada vez maior como uma nova alternativa em combustíveis.
É no mínimo difícil de entender porque o número de postos que oferecem o E85 como alternativa para abastecimento quase dobrou desde janeiro (para mais de 460 postos), em sua maioria em estados como Minnesota, que cultivam milho, especialmente porque a maior parte das companhias petrolíferas não se dispuseram a colocar um produto competitivo em postos que levam a sua marca.
Por causa dos incentivos incluídos na recém aprovada legislação de abastecimento e também pelo fato do E85 ser mais barato que a gasolina (de 40 a 50 centavos), os simpatizantes do E85 esperam uma rápida ascenção do mesmo.

Por ser engenheiro, Benjamin Kleber já tinha ouvido falar dessa nova alternativa e, no mesmo dia em que gastou cerca de 58 dólares para encher o tanque do seu "Plymouth Voyager" modelo 98 com gasolina comum (**"impressionante"**, disse ele resignando-se) no último domingo, ele voltou para casa e começou a pesquisar sobre o E85. Para sua surpresa, ele descobriu que um posto em seu próprio bairro comercializa o combustivel a menos de 3 dólares o galão (que corresponde a cerca de 3 litros). Com preços assim, Benjamim descobriu também que poderá economizar cerca de 14 dólares a cada vez que ele completar o tanque.

ENDNOTES

[1] Nossa tradução de “Os tradutores novatos têm cerca de um ano de experiência em tradução e pouca prática profissional”.

[2] Nossa tradução de “Tarefa: Esta tarefa consiste na tradução de um texto, originalmente publicado no dia 10 de setembro de 2005 em um site internacional de notícias. Faça uma tradução do mesmo para o português para publicação on-line em um site de notícias em português”.

[3] Pesquisador: E você teve alguma dificuldade em traduzir o texto?
S4: Ah, tive por causa disso, porque eu não conheço o assunto, fica difícil escolher a palavra mais usada e tudo, e como fazer tudo... Por exemplo, a coesão do texto, né? O que eu fiz foi, muitas palavras tentando substituir pela mesma, pra dar uma lógica no texto, porque tem muita coisa que eu não entendo nele.
Pesquisador: Mas tirando vocabulário, em termos de estrutura?
S4: É... a estrutura mesmo... a estrutura mesmo... Outra coisa que foi um problema foi saber o que é que é isso aqui, né? Se é um artigo de jornal escrito, jornal da internet, não sei.
Pesquisador: Mas o *brief* ta falando, olha. Publicado no dia dez de setembro num site internacional de notícias.
S4: Então, isso também foi um problema. Qual a linguagem mais utilizada, qual a estrutura do texto. Em inglês, às vezes ele inverte a ordem das orações, né? E ai eu não sei se em português isso ia ficar estranho pra esse tipo de texto. Isso também foi difícil, a estrutura. Quanto à complexidade e a estrutura do texto também, assim, como contar essa estória na ordem certa, né?

[4] The two TYPING MISTAKES “im” and “na” in the second passage were present in the source text and are maintained here in order to provide the exact text used in the experiment. As additional information, only translator 3 noticed these misspellings and mentioned this in their TAPs.