USING SMALL CORPORA TO TAP AND MAP THE PROCESS-PRODUCT INTERFACE IN TRANSLATION

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ABSTRACT: Building on the notion of small corpora (Ghadessy et al., 2001) and on the need to cross-analyze process-driven and product-driven data (Hansen, 2002) to better elucidate issues of problem solving and decision making in translation (Alves & Gonçalves, 2003), this article proposes the integration of small corpora within the methodological structure of CORPRAT (Corpus on Process for the Analysis of Translations). By means of a case study, it applies Jakobsen's (2002) findings to the analyses of translators' cognitive rhythms (Schilperoord, 1996) in order to investigate the cognitive-discursive profile of novice translators in an attempt to map the process-product interface in translation (Alves, 2003).

KEYWORDS: translation process, cognitive rhythm, metacognition, small corpora, process-product interface.

RESUMO: A partir da noção de corpora de dimensões redu-zidas (Ghadessy et al., 2001) e da necessidade de cruza-mento de dados gerados pelo processo com dados gerados pelo produto (Hansen, 2002) com o objetivo de melhor es-clarecer questões relacionadas à solução de problemas e tomada de decisão em tradução (Alves & Gonçalves, 2003), este artigo propõe a integração de corpora de dimensões reduzidas no âmbito da estrutura metodológica do CORPRAT (Corpus Processual para Análises Tradutórias). Para tanto, aplicam-se, através de um estudo de caso, os resultados obtidos por Jakobsen (2002) a análises do ritmo cognitivo (Schilperoord, 1996) de tradutores a fim de investigar o per-

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fil cognitivo-discursivo de tradutores novatos e, assim, bus-car mapear a interface processo-produto em tradução (Alves, 2003).

UNITERMOS: processo de tradução; ritmo cognitivo; metacognição; corpora de dimensões reduzidas; interface processo-produto.

Introduction

Mapping the process-product interface in translation has been a long-time challenge for researchers in the field. Since the mid-1980s research in the sub-area known as translation process analysis has drawn extensively on think-aloud protocols (henceforth, TAPs) to tap into the translator's mind and, as such, has attempted to map the process of translation (see Königs, 1987; Krings, 1986; Séguinot, 1989; Tirkkonnen-Condit, 1991; among others). The scope of these pioneering works ranges from practical aspects concerning translators' training programs to attempts to establish cognitive profiles observed in the perfor-mance patterns of novice and expert translators. They attempt, among other goals, to arrive at a detailed psycholinguistic de-scription of subjects' performance (Lörscher, 1991 and 1992) and to identify adequate practices in professional contexts (Fraser, 1993). In a thorough review of research carried out in this sub-area, Fraser (1996:77) concludes that "[...] translation process studies have, in fact, relatively little in common and present very different pictures of the translation process they all set out to investigate." Indirectly, since TAPs have been the pri-mary methodological tool for these works, Fraser's remarks also lead to a reflection on the role played by TAPs in the course of these endeavors. More recent investigations carried out by Fraser (2000), Jääskeläinen (2000), Séguinot (2000) and Tirkkonen-Condit (2000) have focused respectively on the performance of expert translators, methodological issues concerning the use of TAPs, questions of cognitive management, and uncertainty in decision making processes. In fact, a comprehensive review of

the use of TAPs as the sole data elicitation procedure in translation process analysis reveals that there is no consensus yet as to what extent one should favor the use of concurrent or retrospective TAPs. In an investigation of the awareness levels of novice translators, Hansen (1999) is very much in favor of retrospective verbal protocols. Jakobsen (2002) also argues that concurrent TAPs may impose a cognitive overload on the subjects' performances. Empirical data in Alves (1997), Alves, Magalhães & Pagano (forthcoming), and Alves & Gonçalves (2003) seem to suggest that retrospective TAPs can better capture process data related to contextually relevant factors and, consequently, are able to highlight key aspects of inferential processes which guide problem solving and decision making in translation. These reflections may lead to the conclusion that the use of TAPs alone has failed so far to account completely for the myriad of factors that constitute that intricate cognitive network known as the translation process and should be supplemented by other data elicitation procedures. From a discourse perspective, Olk (2002) combines work with TAPs with work on critical language awareness, using the technique as a way of tapping process in order to reveal translators' construction of discourse. His approach opens new avenues for the integration of process- and discourse-oriented perspectives but leaves untouched the process-product interface in translation and the question of how to relate students' verbalizations with their products, something that can be dealt with, for instance, through corpus linguistics.

Lately, investigations on the translation process have gained a new impetus with the advent of technological tools which have enabled online observation of translators' performance traits (Hansen (ed.), 1999; Jakobsen & Schou, 1999) and the electronic treatment of the product of their translations (Laviosa, 1998; Ghadessy et al. (eds.), 2001). New research avenues have, therefore, been opened up. Building on these recent works, as well as on the metaphor of triangulation used in the Social Sciences, Alves (2001) proposes the joint use of different data elicitation techniques as a way to capture the process-product interface in translation. This approach is also favored by the TRAP group from the Copenhagen Business School (Hansen (ed.), 2002) in

an attempt to tackle the process-product interface in translation, and particularly by Jakobsen (2002), who uses process analysis to map the performance of novice and expert translators, correlating them with the quality assessment of the product of their translations.

This is one of the main objectives of CORPRAT, Corpus on Process for the Analysis of Translations (see Pagano, Magalhães & Alves, this issue), which proposes that research on the performance of translators and consequently on process-product related features be carried out through the triangulation of data elicitation techniques (TAPs, *Translog*, Wordsmith Tools, etc.) applied to small corpora. As such, CORPRAT researchers are able to investigate cognitive and discursive aspects of subjects' performance.

In this article, we apply Schilperoord's (1996) notion of cognitive rhythms, namely rhythmical patterns observed in the production of textual material, as well as Jakobsen's (2003) findings that concurrent TAPs may impose a cognitive overload on the subjects' performance – and, as such, create an imbalance in their cognitive rhythms – to carry out an analysis of translators' cognitive rhythms in order to investigate the cognitive-discursive profile of novice translators in an attempt to map the process-product interface in translation.

Theoretical prerequisites

Contrasting the use of data obtained through TAPs with *Translog*[1] elicited data (Jakobsen, 1999; Jakobsen and Schou, 1999), Jakobsen suggests that

> [...] the influence of think aloud on processing in translation is quite considerable. Though this forces us to review

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[1] Computer software developed at the Copenhagen Business School by Arnt Lykke Jakobsen and Lasse Schou which records all keyboard activity, and saves target texts into a log file after completion of a (translation) task. As such, the process of translation is recorded online and log files can provide relevant process data for later analyses.

assumptions about the think-aloud procedure for trans-
lation research purposes, it in no way invalidates the think-
aloud method. In fact, the most obvious method of trying
to answer many of the questions raised by the experiments
reported here, and left unanswered in the above quantita-
tive analysis of the logged data, would be to attempt to
build hypotheses based both on quantitative computer-
logged data and on qualitative think-aloud data. (Jakobsen,
2003)

Jakobsen's remarks are the starting point for the reflec-
tions raised here, which question the best viable alternatives to
scrutinize the performance of translators. Within the process-
oriented perspective, this approach can be found in Hansen
(2002) in a discussion about the role played by meta-cognitive,
critical awareness levels in the course of translation works. With
a similar methodology, Lorenzo (2002) uses the process-product
interface to follow up the teaching of translation itself and Livbjerg
& Mees (2002) use it to focus on the use of dictionaries in the
process of translation.

Within the product-oriented perspective, Baker (1995) and
Laviosa (1998), among others, point out the methodological ad-
vantages and the empirical validity of treating translated texts
from quantitative and qualitative viewpoints. Their works can be
considered as a product-oriented approach to translation which
shares similar methodological characteristics with those favored
by process-oriented researchers in translation, namely an in-
ductive, descriptive approach to the performance of translators
and the analysis of their target texts.

Although Baker (1998) has championed the use of large
corpora as a means to validate hypotheses of a higher generali-
zation power, more recent approaches have advocated the use of
small corpora for the treatment of specific research questions,
particularly in translation and contrastive linguistics (Ghadessy
& Gao, 2001). Within this framework, corpora do not necessar-
ily have to contain large amounts of text in order to be relevant.
Small corpora can "provide vital information on correspondences
between form and meaning in multilingual contexts" (Lawson

2001: 302). Small corpora also constitute an interesting alternative, since their relatively small size allows for specific encoding, annotation and alignment procedures. Beaugrande (2001) also differentiates two kinds of small corpora: learnable and specialized corpora. The former are established according to the fluency levels of learners and the latter are established according to register, discursive domain and/or topic and are of special interest for translation studies as a way to "explore how meanings arise and evolve in contexts" (Beaugrande 2001: 23).

This article focuses on an exploration of how meanings arise in the emerging context of novice translators' textual production. Within CORPRAT, this approach, which incorporates product-driven and process-driven data, aims particularly at verifying working hypotheses without complying with a strong claim for objectivity. Translation is, *per se*, considered to be an instance of (inter)subjective language use, as noted by Tymoczko (1998:654) when she emphasizes that "the value of corpora in translation and of a CTS approach to translation theory and practice does not rest on the claim to 'objectivity' and the somewhat worn philosophical tradition claims of this type presuppose".

From the process-product perspective highlighted above a crucial question arises: What can data within CORPRAT tell us? In this article, we use the process-product interface to investigate cognitive and discursive features which differentiate the performance of novice and expert translators and, as such, can be used as indicators of patterns of potential significance for the training of novice translators and the improvement of expert translators' performance. Consequently, relatively small amounts of material can yield interesting and relevant evidence on the following topics:

- The identification of orientation, drafting, and revision patterns
- The identification of problem solving and decision making strategies
- The emergence of distinct "cognitive rhythms" in the performance of translators
- The identification of cognitive and discursive features in respect to issues of (critical) language awareness

Bearing these four topics in mind, this article builds on Jakobsen's (2002) identification of orientation, drafting, and revision patterns among novice and expert translators, as well as on Alves & Gonçalves's (2003) identification of problem solving and decision making strategies, and tries to map the emergence of cognitive rhythms in the performance of novice translators and to introduce some ideas about their cognitive and discursive traits.

Research design and methodological considerations

Drawin on Schilperoord's (1996) notion of cognitive rhythm, Jakobsen (2002) expresses his concern about identifying patterns of cognitive rhythm among translators and argues that, in the course of the translation process, changes are made, typing errors are corrected, existing text is deleted and replaced by new text. Quite often the flow of production is momentarily halted while various resources, such as dictionaries, the Internet, etc. are used to search for information. All of these activities together create the cognitive rhythm that is characteristic of text production.

According to Jakobsen (2002), it is possible to segment the process of translation in three main phases, namely, orientation, drafting, and revision. Orientation is measured as the time taken by the subject to type the first production key after the appearance of the source text on the screen. Data from this phase will show how much of the source text was processed (read, looked at, etc.) by the translator and how long it took him/her to do so. Drafting starts with the typing of the first production key and ends when the translator sets the final punctuation mark or equivalent keystroke. This is the actual text production phase and includes online revision and pauses for reflections, consultations, etc. Drafting does not necessarily presuppose the complete translation of the source text material since non-translated extracts can be processed in the revision phase together with later changes and/or corrections made in the text produced in this phase. Revision starts right after the final punctuation mark has been typed and lasts until the log file is saved. It includes all the activities performed by the translator regardless of whether they eventually change the target text or not.

Further on, Jakobsen points out that analyses of quantitative data may only give a very incomplete picture of the superior performance of professional translators in comparison with that of novice translators. However, such analyses help to determine important aspects of professional translators' performance. In that respect, when commenting on the results of his experiments, Jakobsen (2002:203) points out that:

> Overall, a difference could be observed in the general allocation of time and cognitive effort to the three translation phases. Relatively (and absolutely) more time was devoted to the initial orientation and relatively (but not absolutely) more time to end revision. The one phase in which the professional translators most clearly demonstrated their expertise was in the drafting phase. Not only did the professional translators produce target texts faster than student translators, but the text they produced was more durable. (Jakobsen 2002: 203)

This is precisely the point we seek to investigate here: to what extent novice translators produce more or less durable texts, i.e. to what extent the texts produced by novice translators need substantial revision after the drafting phase.[2] For that purpose, seventeen novice translators were chosen to take part in a small experiment aimed at identifying their cognitive rhythms while translating a short passage of a news magazine item. They were selected on the basis of similar profiles, i.e. similar proficiency levels in both L1 and L2, some formal training in translation practice and absolutely no professional experience.

Subjects were asked to translate a short extract taken from *Newsweek* magazine, entitled *The Wear and Tear of Terror*, published in the November 27, 2001 issue. The extract is reproduced below:

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[2]   For further considerations on the notion of "durable text" please refer to Jakobsen (2002).

THE WEAR AND TEAR OF TERROR

Growing up in Saudi Arabia, the young Osama bin Laden (top) was a pampered child of luxury. By 1998, the year of the U.S. Embassy bombings in Africa, he had acquired the lean, wolfish look of a revolutionary. During an interview two weeks ago, he was plumper, grayer and deathly pale, perhaps from hiding in the caves.

Text analysis is, we argue, a crucial strategy in the translation process. That is why we are going to engage into analyzing the text chosen for the experiment before describing the experiment *per se.*

The Wear and Tear af Terror was published as part of the larger news report entitled *Manhunt: Can We Find bin Laden?*, together with three others, in the section *War on Terror* of the 27 November issue of Newsweek. In spite of this, the extract can be taken as a short news report *per se,* thus fitting the context of the experiment. One of the scarce extensive investigations (to the best of our knowledge) of the genre "news report" (Bell, 1991; 1998), based on printed newspapers and aiming at a description of the genre, allows us to define *The Wear and Tear of Terror* as a communicative event pertaining to this genre: it contains at least three of the basic elements of the genre: images, a title that summarizes the news and links the images with the body of the text, and the body of the text itself.

The images are three photographs portraying bin Laden at three different times: as a young man, dressed in Saudi Arabian costumes; still young with a grin on his face and wearing a different costume; and, finally, with a beard, dressed as a fundamentalist. Interestingly, the most striking visual feature in the three photographs, besides their obvious chronological differences, are the three headdresses worn by Osama bin Laden. Not only do they show his geographical location at the moment the pictures were taken (Saudi Arabia in the first, Sudan in the second, and Afghanistan in the third) but they also reveal aspects of seniority with respect to the headdress worn by a mullah in the last photograph.

Concerning the body of the text, one of the three collocations used to describe the last photograph (*deathly pale*, in the

sequence *plumper, grayer and deathly pale*) stems from a report structure in the larger news report entitled *Manhunt: Can We Find bin Laden?*, where Pakistani editor Hamid Mir is reported as having "*noticed that the normally thin bin Laden had gained weight, his beard had gone gray and his skin, once weathered and swarthy, had become pale, almost white – possibly, Mir thought, from all those months hiding in caves*" (Newsweek, 2001, p. 26). One of the striking features of this report structure is the use of the verbs *noticed* and *thought* to report the Pakistani editor's words, which could be interpreted as a strategy of the magazine both to distance itself from the news it is reporting and to replicate a more pervasive media discourse of the time – the war as a target game played by the good (the American government) against the evil (terrorism and bin Laden). After all, the choice of the verbs *notice* and *think*, used to report people's thoughts (Collins Cobuild English Grammar, 1990) and most frequently in genres of the literary discourse, highlights the strategy pointed out above: whereas the magazine does not seem to be committed with the veracity of what the Pakistani editor thinks, it draws on his words to construct fictionally one of the many threads of the war plot. Strategies of news reporting are not our aim here; however, highlighting this feature helps us to foreground aspects in the interpretation of bin Laden's verbal depiction that play an important role in the overall media construction of bin Laden as a mastermind terrorist. The collocation under scrutiny is part of a cohesive chain of collocations in the text – *pampered child of luxury, wolfish look of a revolutionary*, and *plumper, grayer and deathly pale* – which can be taken as a (re)construction – through verbal signs – of the news media based on the three different pictures of bin Laden. This cohesive chain may be interpreted as constructing bin Laden as spoilt and rich at a younger age, then as a cunning revolutionary, and finally as a worn out man, his plumpness and paleness resulting from a much mistaken way of life (a rich spoilt kid who became a cunning revolutionary and thus a plump, pale old man hidden in caves).

Finally, the chain in the text is cohesively linked to a collocation in the title – *the wear and tear of terror* – a rhymed and alliterative wordplay, again adding to the construction of a narrative to be connected to the images. The word *terror* in the title

also begins another important cohesive chain – *terror, luxury, revolutionary, the caves* – reinforcing the idea of "the wear and tear of terror." Our point in analyzing the news report used in the experiment is trying to show that tracing the intricate "web of relationships" (Snell-Hornby, 1988:69) amongst words in a text is a fundamental task to be carried out by a critical reader/translator. Critical text analysis also plays a crucial role in deconstructing the belief in the impartiality of the news media, a fact that could be reflected upon through the examination of patterns of reporting verbs (cf. Caldas-Coulthard, 1994 and 1999).

For experimental purposes, subjects were asked to translate the above-mentioned 63-word text into Portuguese using *Translog*. For the sake of creating similar experimental conditions, the seventeen subjects were asked to translate the passage in the same room and at the same time. The three photographs of Osama bin Laden, scanned in gif format, accompanied the source text. The three moments in time they represent are closely matched in the text with the cohesive links established by the three clusters/collocations and will constitute the locus and focus of our analyses. We also assumed that the photographs were context builders contributing to enhance the subjects' previous knowledge; they will be considered as such in our analysis.

After completing and saving their respective target texts, subjects were interviewed on an individual basis. They used the *Translog* replay function to watch and comment on their own performance by means of retrospective TAPs.[3] Their utterances were recorded on audiocassette and transcripts were later made of their audio recordings. Using retrospective TAPs and online *Translog* protocols, we have scrutinized the data to determine whether and to what extent the seventeen subjects showed evidence of a systematic approach to translation in their orientation, drafting, and revision phases (Jakobsen, 2002), or whether this occurred randomly on the basis of rather subjective patterns.

Considering the specificities of these three phases, we propose to observe how the general allocation of time varies among the subjects and relate it to the cognitive effort made by the

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[3] For comments on the different modalities of TAP, see Hansen 1999.

translators in each of these phases. We also aim at looking at the inferentially guided solutions in the renditions produced and examine the levels of (critical) language awareness and metacognition observed in the three phases. Ultimately, we will examine the production of more or less durable texts by novice translators and the impact an imbalance between orientation, drafting, and revision may have in the corpus under scrutiny. The hypotheses listed in the next section will guide our analyses.

Hypotheses

Drawing on the distinction between the three main phases – orientation, drafting, and revision – proposed by Jakobsen (2002), we have formulated two hypotheses to be investigated by means of the triangulation of process- and product-driven data.

> **Hypothesis 1** postulates that, on the basis of the lack of experience observed among novice translators, the three phases will vary randomly among novice translators. Cognitive rhythm will be erratic and there will be no consistent pattern throughout the corpus.
>
> **Hypothesis 2** states that, building on the confirmation of hypothesis 1, lack of consistency in orientation, drafting and revision will reveal a low level of (critical) language awareness. The subjects' erratic cognitive rhythms will, therefore, give rise to less durable target texts.

Discussion

Due to space constraints, we will restrict our analysis to the orientation, drafting and revision phases of the three clusters/collocations which as pointed out above, taken together, constitute a cohesive link that gives rise to a representation of Osama bin Laden in the source text. The three clusters/collocations to be investigated are:

(1a) [he was] a pampered child of luxury
(1b) [he had] the lean, wolfish look of a revolutionary

(1c) [he was] plumper, grayer, and deathly pale

To test the meanings the collocations chosen to represent bin Laden could most likely entail, we searched the web-based versions of the British National Corpus (henceforth BNC) and the Bank of English (the latter with samples of different varieties of the English language, including American English) with the nodes "pampered", "luxury", "wolfish", and "plumper", obtaining the following results to our queries:

1. For the entry "pampered+child" the BNC offered one solution and the Bank of English none. Of the fifty random solutions for "luxury" offered by the BNC only two brought the association of the word with "lust"; the forty solutions offered by the Bank of English for "pampered" in different collocations brought the negative association with "something or someone who is spoiled" whilst all the solutions offered for "luxury" had to do with "something quite expensive."

2. For the entry "wolfish" the BNC offered thirty-two solutions of which nine co-occurred with "grin" and could be said to bear a negative semantic prosody (Stubbs, 1996) implying a "cunning person, usually with a grin in a voluptuous mouth." The Bank of English, with a more restricted span of line, offered four solutions, the combinations of which, in a larger context of the lines (*carnivorous, babbling, murderous, savage, indignation*), could be accounted for as collocates contributing to the construction of a negative prosody of the word.

3. For the entry "plumper" both the BNC and the Bank of English offered thirteen occurrences in concordance lines without any combinations imparting a negative meaning to the word.

In the light of our hypotheses and considering the degree of expertise of our subjects, we have assumed that there would be problems in the recognition of the representations generated through the combined association of (1a), (1b), and (1c). We also expected that the time allotted to the phases of orientation, drafting and revision would bear little or no correlation with the

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translations rendered by the subjects. The subjects' performance times were measured and divided in percentage terms. As shown in Table 1, although their total times differ, they show significant correlations that can be analyzed as a means of mapping the distinct cognitive rhythms among the seventeen subjects.

Subject	ORIENTATION	DRAFTING	REVISION	%
1	2.8%	81.0%	16.2%	100%
2	7.1%	62.9%	30.0%	100%
3	2.6%	25.9%	71.5%	100%
4	2.4%	69.9%	27.7%	100%
5	0.5%	84.6%	14.9%	100%
6	2.3%	85.0%	12.7%	100%
7	0.4%	37.5%	62.1%	100%
8	5.6%	54.5%	39.9%	100%
9	3.0%	73.8%	23.2%	100%
10	2.9%	93.1%	4.0%	100%
11	1.0%	87.5%	11.5%	100%
12	10.9%	65.8%	23.2%	100%
13	0.8%	73.5%	25.7%	100%
14	1.0%	67.1%	31.9%	100%
15	5.6%	83.0%	11.4%	100%
16	1.2%	54.7%	44.1%	100%
17	7.3%	53.9%	38.8%	100%

Table 1: Orientation, drafting and revision times (in percentage)

Apparently, Table 1 confirms our first hypothesis, namely that there would be little or no congruency and systematicity in the cognitive rhythm of the seventeen subjects. If we examine Jakobsen's (2002:194) mean distribution for the phases of orientation, drafting, and revision among expert translators (see Table 2), perhaps only the performance of subject 9 – with 3.0% for orientation, 73.8% for drafting, and 23.2% for revision – would come close to figures compatible with a higher level of expertise.

Expert	ORIENTATION	DRAFTING	REVISION	%
Transl.	2.5%	73.5%	24.0%	100%

Table 2: Mean distribution for expert translators according to Jakobsen (2002:194)

Interestingly, very few of the subjects would also come closer to what Jakobsen assumes to be the cognitive rhythm of novice translators (see Table 3).

Novice	ORIENTATION	DRAFTING	REVISION	%
Transl.	1.7%	79.3%	19.0%	100%

Table 3: Mean distribution for novice translators according to Jakobsen (2002:193)

Nearly a third of the subjects (S2, S8, S12, S15, S17) devoted much longer times to their orientation phases and also nearly half of them (S2, S3, S4, S7, S8, S14, S16, S17) had much longer revision phases than Jakobsen would expect. Despite such discrepancies and in agreement with the results found by Jakobsen, drafting took most of the subjects' time. Hence, it could be said that there is a strong imbalance in the cognitive rhythms of the seventeen novice translators and that a congruent pattern cannot be found. However, a quantitative analysis alone, although insightful at this stage, is not relevant enough to allow us to draw more consistent conclusions. A qualitative analysis of the subjects' performance is therefore necessary in order to consubstantiate our first hypothesis.

S3 and S7 had the longest revision times, respectively [29.08.00], i.e. 71,5% of the total time, and [25.59.00], i.e. 62,1% of the total time. Their cognitive rhythms also show very different orientation and drafting phases. However, their performances can both be classified as "quick and dirty" (Rothe-Neves, 2002) and reveal instances of the translation process in which decisions are made online and blanks are left for unknown lexical entries (see representations for S3 and S7 below).[4]

Crescis ⊠do ⊠ ⊠ ⊠ ⊠ ⊠iado•na•Arábia•Saudita,•o•✶✶pequeno•Osama•bin•Laden•(•✶foto•acima)•✶foi•uma•criança✶xxxxxxxxxxxxxxx.•✶Em•✶✶1998,•✶✶✶✶✶o•nao⊠⊠⊠ano•que•a•embaixada•✶americana•na•Africa•✶✶✶sofreu•atentados•a•bombo⊠a,•ele•✶✶✶tinha•✶✶✶xxxxxxxseu•visual•r⊠de•revolucionário.•durante•←←←←←←←←D⊠→→→→→→→→uma•entrevista•duas•semanas•atr´s⊠⊠ás,•ele•estavaxxxxxx,•xxxxxxxx•e•✶✶pálido•como•um•cadaver,•talvez•por•estar•se•escondendo•em•cavernas. (S3)

Criado•na•Arábia•Saudita,•o•jovem•Osama•bin•Laden•foi•✶✶✶✶✶uma•crianá•criada•com•todo•o•luxo.•Por•volta•de•1998,•ano•em•que•os•Estados•un⊠⊠Unidos✶←←←←←←←←←←←←←←↓⊠⊠a•embaixada•dos⇨[✶:01.12.46]•foi•bombardeada•na•África,•Osama[✶:01.54.88]..........✶,•[✶:03.23.52][⤷]teve•uma⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠←←←←←←←←←←←←→→→→,→→→→→→→→→→→⊠⊠⊠⊠•→→→⊠⊠ção→→→→→→→↓↓↑↑↑↓↓↓↑↓⇨.•Durante•uma•n⊠enreveistra•⊠⊠⊠⊠⊠⊠⊠⊠trevista•duas•s3e⊠⊠emanas•atrás,•✶ele•parecia•✶✶✶✶✶q⊠acoado,•e•✶profundamente•pálido,•talvez•poe⊠r•estar•a•⊠⊠por•longo•tempo•escondido•em•canv⊠⊠⊠⊠⊠⊠em•v⊠\·⊠cavernas. (S7)

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[4] For a detailed explanation of the symbols used in the Translog representations, please refer to Jakobsen & Schou, 1999. For the sake of reading this article, symbols should be interpreted as follows:✶5 second pause for each Kleene star; [✶:01.54.88] automatic calculation for

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S3 shows a drafting pattern in which the clusters/collocations in (1a), (1b), and (1c) are simply marked [xxxxxxxx] and left for later processing. The symbols of the *Translog* representations allow us to see that the same recurrent pattern can be observed in S7's performance throughout the drafting phase. This subject, very much like S3, processed the source text linearly and left blank spaces postponing the translation of (1a), (1b), and (1c) to the revision phase. Linearity and online processing are the main performance traits here.

When revision starts, we can observe that, although it takes a considerably long time, very little is actually done in this phase. For S3, revision is carried out throughout [29.08.00]. During this time, gaps are filled in so that (1a) becomes "uma criança rica e mimada" [a rich and spoilt child], (1b) is rendered as "o visual magro e agressivo de um revolucionário" [the lean and aggressive look of a revolutionary], and (1c) is translated as "gorducho, grisalho e pálido como um cadáver" [chubby, gray, and as pale as a corpse] as shown in the *Translog* protocol below.

[∗:01.16.92][⌃]∗∗∗∗▧▧[⌃]▧▧▧▧▧▧▧▧▧▧▧[⌃]♦⊠→♦magro♦∗∗∗∗∗∗∗∗∗[⌃]♦[∗:50.82]direto▧▧▧ ▧▧▧∗∗∗[⌃]foi▧▧▧▧▧▧[∗:01.46.97][⌃]mimada▧▧▧▧▧▧▧▧▧▧∗▧▧▧▧▧∗[⌃]∗∗∗ric a♦e♦[∗:01.19.84][⌃]um∗∗∗[⌃]estava♦▧▧▧▧▧▧[∗:02.33.75][⌃]♦e♦feroz∗∗[⌃]o▧▧∗[⌃]♦um♦[∗:02.39 .41][⌃]grisalho▧▧▧▧▧▧▧∗∗∗∗∗∗∗[⌃]♦jovem▧▧▧▧▧▧▧▧[⌃]agressivo▧▧▧▧▧▧∗▧[∗:0 1.14.54][⌃]♂♂[∗:01.20.95][⌃]Des∗gaste♦do♦terror[⌃]♦o♦⊠⊠O♦[∗:03.35.80][⌃]♦∗∗∗∗[⌃]já▧[⌃]♦∗∗∗∗∗m ais♦gorducho▧∗∗∗[⌃]▧▧▧▧[⌃]▧∗∗∗∗[⌃]vivendo♦▧▧▧→→→→→→→→⊠lido▧▧▧∗∗∗∗∗[⌃] ∗∗∗∗∗∗∗∗[⌃]à▧∗∗∗∗∗∗∗∗[⌃]Á▧∗∗∗∗[⌃]▧▧▧▧[∗:02.59.43][⌃][⌃]▧▧O▧▧▧♦[⌃]♦cria ♦⊠da♦na♦Arábia♦Saudita∗∗[⌃]quand▧▧▧▧▧▧▧▧▧o∗∗∗∗∗∗∗∗[End] (S3)

Retrospective verbalizations, such as (S3a) and (S3b) below, point out that some effort was made towards creating a representation of Osama bin Laden. However, they also reveal a level of awareness which is far behind what is needed to process the source text on an adequate cognitive as well as discursive basis. In fact, in (S3a) the subject refers only to a paraphrasing strategy she deems useful, and in (S3b) to a wait-and-see procedure she applies to help solve her lexical problems. However,

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longer pauses; ♦ backspace; ⊠ ▧ deletion (backward and forward) of existing text; ←→↓↑ cursor movement in existing text; [⌃] mouse action.

there is no indication of a metalinguistic analysis that takes into account the discursive construction of the target text and the extent to which it might have affected the representation of Osama bin Laden created in her rendering.

(S3a) *Paraphrasing was a strategy I used to explain "deathly pale" as "pálido como um cadáver".*[5]

(S3b) *I had to "wait-and-see" for the words pampered/ lean/ wolfish/ plumper.*

In general, the TAPs and *Translog* protocols show that for S3 gaps are simply filled in with lexical entries without any aware-ness of or reference to a metalinguistic analysis and/or to the role played by discursive features. In the revision phase attempts are made to translate wolfish as "feroz" [ferocious] or "agressivo" [aggressive], or to retrieve the comparative structure in plumper and grayer. However, Osama bin Laden appears in Portuguese as a rich and spoilt child; later with the lean and aggressive look of a revolutionary; and chubby, and as pale as a corpse at the end of the target text. Although references are made to para-phrasing and to the use of contextually available information as an avenue to retrieve the representations of Osama bin Laden, it is questionable whether, for instance, chubby [gorducho] is in fact an adequate rendition of *plumper* in the reconstruction of the collocation *plumper, grayer and deathly pale* in Brazilian Por-tuguese. In the TAPs and *Translog* protocols, it seems that S3 is guided mostly by his/her own individual assumptions.

For S7, revision is carried out throughout [25.59.00] and S7 follows S3's footsteps. The subject spends nearly twenty-six minutes revising the target text and, similarly to S3, very little is actually done. For S7, (1a) becomes "foi criado com todo o luxo" [(he) was raised with all luxuries], (1b) is rendered as "o estereótipo de um revolucionário insano" [the stereotype of an insane revo-lutionary], and (1c) is translated as "mais comedido, envelhecido

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[5] Retrospections were carried out in English by native speakers of Brazil-ian Portuguese and were transcribed *verbatim*.

e profundamente abatido" [more contained, aged and, deeply shaken]. There is nothing in the source text or in the accompanying photographs that could suggest that Osama bin Laden was insane. However, in the verbalization below S7 clearly indicates that this was a very strong assumption on his/her part.

(S7) *I think bin Laden is a crazy dog.*

The verbalization above and the *Translog* protocol immediately below reveal how much the subject's personal representation of Osama bin Laden may have influenced his/her translation process.

```
[✴:01.50.10]↑→→→→→→→→[✴:01.25.23]↑↑↑♂♂↑↑↓↑[✴:51.34][✷]foi✦criado⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠
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,✴✴✦parecendo✦✴⊠⊠⊠⊠⊠⊠⊠⊠⊠como✦um✦✦revolucionário✦[✴:01.15.66]←⊠⊠⊠⊠⊠⊠⊠⊠⊠
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67]O✦Desgater✦⊠⊠✦do✦Terror✴✴⊠⊠⊠⊠⊠⊠⊠⊠⊠⊠♂[✴:01.20.89][✷][✷]✴[✷][
✷][✷]⊠escondido↑↑↑♂↑[✴:01.08.84]O✦Desgate✦provocado✴✴✴✴✴⊠⊠⊠⊠⊠⊠⊠⊠⊠
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O[✴:02.59.33][✷]⊠[✴:01.21.91][✷]COMEDIDO⊠⊠⊠⊠⊠⊠⊠comedido✦[✴:50.22][✷],✴✴✴mais←←←✦→
→→→→✦envelhecio⊠do✦→→→→→→→→→→→→→→→⊠⊠⊠⊠⊠abatido[✴:58.58][✷]⊠✴⊠⊠⊠⊠
⊠⊠⊠estava⊠⊠⊠⊠⊠mostrava✦estar✦mais↓⇦⇨⇨⇨⇨[✷]⊠✴✴✴✴✴✴[✷]⊠há[✴:01.49.28][✷]⊠[✴:51
.37]insa⊠⊠⊠⊠[✴:01.53.65]insano✴✴[End] (S7)
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Observing the long revision times taken by S3 and S7, there is no indication that their longer revision times contributed decisively to the linguistic elaboration of more adequate representations of Osama bin Laden than those achieved by subjects with much shorter revision times. In fact, linearity and online processing, which guided the translation process in the drafting phase, seem to be a common trait among the seventeen subjects. Altogether, a cross-analysis of the data under scrutiny provides us with reasonably consistent evidence that the subjects' cognitive rhythms in the three phases varied quite randomly, both at quantitative and qualitative levels, but their rather uncritical reading strategy remained quite stable. As no consistent pattern could be found throughout the corpus, there is a strong tendency to confirm our first hypothesis.

Let's not consider this a final conclusion though. S2, S8, and S17 have far more balanced cognitive rhythms and may offer us insights into a different kind of performance. They have similar total times of [25.00.00], and similar times for (i) orienta-

tion (average [01.40.00], i.e. 6% of the total time); (ii) drafting (average [15.00.00], i.e. 56% of the total time); and (iii) revision (average [07.00.00] i.e. 35% of the total time). Although their figures do not fall within the values found by Jakobsen (2002:204), it is possible to suppose that the three subjects were more successful in their time management than S3 and S7 and, consequently, were able to achieve more adequate renditions. However, a balanced distribution of time is, in itself, no guarantee of successful problem solving. The crucial question that arises is: Do these subjects have more durable texts than those with less balanced cognitive rhythms? (see Jakobsen, 2002)

S2 devoted 7.1% of the total time to the orientation phase. This seems to be more than enough time to read the short text and make a mental note of possible translation problems. However, the protocol below shows the same linear processing and online decision making patterns registered for S3 and S7 (above). S2 starts the drafting phase – 62.5% of the total time – with the translation of the title The Wear and Tear of Terror as "O Desgaste do Terror" [The Wear and Tear of Terror] and makes no further attempt to revise and improve it in an effort to reconstruct the effect of assonance, alliteration and rhyme, common features in news reports titles. As to the clusters/collocations under scrutiny, online processing generated in the drafting phase: "uma criança mimada na luxúria" [a child spoilt in lust] for (1a), "um visual magro e sexy de um revolucionário "[a lean and sexy look of a revolutionary] for (1b), and "mais gordo, mais grisalho e muito pálido" [fatter, grayer and very pale] for (1c).

[Start][ResizeST][✱:01.40.72][⏎] ✱ O ◆DESGASTE◆DO ◆TERROR✱ ✱ ♂ ♂ ✱ ✱ ✱ ✱ nASCIDO ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ Nascido ◆ e ◆ cri ado ◆ na ◆ Arábia ◆ Saudita, ◆ o ◆ jovem ◆ Osama ◆ Bin ◆ Laden ✱ ✱ ◆ foi ◆ uma ◆ crianda ◆ mimada ◆ da ◆ luxúria. ◆ Em ◆ 1998, ◆ an o ◆ que ◆ bombardearam ◆ a ◆ embaixada ✱ ◆ Americana ◆ na ◆ Africa, ◆ [✱ :03.34.53] ele ◆ tinha ◆ adquirido ◆ um ◆ visual ◆ m agro ◆ e ◆ sexy ◆ de ◆ um ◆ revolucionário. ◆ Durante ◆ uma ◆ entrevista ◆ á ◆ duas ◆ semanas ◆ atrás, ✱ ◆ ele ◆ estava ◆ mais ◆ gor do, ◆ mais ◆ grisalho ✱ ◆ e ◆ be ⌧ ⌧ ⌧ ◆ muito ◆ páç ⌧ iklido ✱, ◆ talves ⌧ z ◆ por ◆ estar ◆ se ◆ escondendo ◆ em ◆ cavernas.[✱ : 01.17.68] ↑ ↑ → ⌧ ç → → → → → → → → → ✱ → → → → → → → → → → → → → ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ◆ muito ◆ mimada ✱ [⏎] ✱ ◆ em ✱ [⏎] ⌧ IE[✱ :01.23.99][⏎] ⌧ lhá ✱ ✱ [⏎] ⌧ [✱ :01.33.06][⏎] ⌧ ⌧ ✱ ✱ [⏎][✱ :01.06.09][⏎] ⌧ ⌧ ⌧ ⌧ malicioso[✱ :01.28.49][⏎] ✱ ⌧ ✱ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ ⌧ olhar ◆ saudável ◆ e ◆ malicioso ◆ de[✱ :03.14.94][End] (S2)

The revision phase, which took 30% of the subject's total time, did in fact result in more changes than those observed for S3 and S7, who had the longest revision phases. For S2, (1a) becomes "uma criança muito mimada" [a very spoilt child]; (1b) is rendered as "um olhar saudável e malicioso de um revolu-

cionário" [a healthy and mischievous look of a revolutionary], and (1c) is translated as "mais rechonchudo, mais pálido" [chubbier, paler]. However, a similar pattern to those of S3 and S7 arises in the production of the target text. Very strong individual assumptions, as well as inadequate logical deductions (such as the one in the rendition "healthy" as contrasted with the image of ageing and illness in the last photo), seem to be responsible for a representation of Osama bin Laden where he has the "healthy and mischievous look of a revolutionary."

S8 devoted 5.0% of the total time to the orientation phase and started the drafting phase – 62.5% of the total time – with the translation of the title The Wear and Tear of Terror as "O Topete e a Decadência do Terror" [The Guts and the Decadence of Terror] and, like S2, made no further attempt to revise and improve it. For the clusters/collocations under scrutiny, online processing revealed in the drafting phase a "quick and dirty" style of translation, which left (1a) and (1b) blank, and translated only part of (1c).

```
[Start][ResizeST][*:01.17.20]O•topete•e•a•decadência•do•terror♂♂Criado•na•Arábia•Saudita,•o•jovem•Osa
ma•Bin•Laden•(no•alto)•era•*•*().•Em•1998,•ano•dos•*•*atentados•a•bomba•n⊠em•embaixadas•na•Áfr
ica,•ele•havia•adquirido•()•de•um•revolucionário,•⊠⊠.•Numa•entrevista,•duas•semanas•atrás•⊠,•ele•est
ava•grisalho•e[Ctrl←][Ctrl←]()•[Ctrl→][Ctrl→]→•extremamente•pálido,•prova⊠velmente•por•viver•escondido
•em•cavernas.*•*•*•*•↑↑↑→→→→→→→→→→→→→→→→→→→[*:50.75]uma•criança•criada•no•luxo⊠⊠•*[C
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orte-americanas•*[Ctrl←][Ctrl←]←⊠⊠contra*↓↓↑[Ctrl←][Ctrl←][Ctrl←][Ctrl←][*:03.00.19]a•ap
arêc⊠ncia•⊠⊠⊠*esquelética•*↓[Ctrl←][Ctrl←][Ctrl←]*•*•*→→→mas⊠is•*←←←*←←←←←[*:0
3.18.92]↑[Ctrl→][Ctrl→]*⊠⊠⊠⊠⊠⊠⊠⊠⊠mística⊠*•*↓[Ctrl←][Ctrl←][Ctrl←]⊠⊠mais•gordo,[*
:01.43.77][⏚]⊠⊠⊠⊠⊠⊠exótica[*:02.01.63][End] (S8)
```

Like S3 and S7, the performance of S8 in the revision phase is centered on the retrieval of unknown lexical entries without showing concern about the cohesive links in (1a), (1b), and (1c), which together form the representation of Osama bin Laden. In a similar fashion to what S2, S3, and S7 have done, S8 renders (1a) as "uma criança mimada no luxo" [a child spoilt in luxury], (1b) as "a aparência exótica de um revolucionário" [the exotic appearance of a revolutionary], and (1c) as "mais gordo, mais grisalho e extremamtente pálido" [fatter, grayer and extremely pale].

Finally, the pattern that emerges from the performance of S17 correlates with those patterns observed for S2, S3, S7, and S8. S17 also processes the source text in a linear fashion with immediate online decisions and very few changes in the revision

phase. Like S2, the drafting phase begins with the translation of the title, a clear indication of linear processing as reproduced in the *Translog* protocol below.

[Start][ResizeST][✱:01.41.00]O◆desgasr⊠te◆do◆terror♂✱✱✱✱Criado◆na◆Araábia⊠⊠⊠⊠ábia◆Saudita,◆o◆j ovem◆Osama◆Bin◆Laden◆[✱:01.00.14]foi◆uma◆crianda⊠⊠ça◆de✱✱⊠paparicada◆✱✱✱✱com◆luxo.◆Em◆ 1998,◆✱o◆ano◆em◆que◆a◆✱embaixada◆americana◆foi◆bombardeada◆na◆África◆,◆[✱:02.49.79]ele◆j◆[⌐🖰]Já◆t inha◆✱✱✱✱adquirido◆✱✱a◆aparência◆magra◆e◆um◆olhar◆de◆um◆revolucionário.◆Durante◆uma◆entrevista◆ a◆duas◆semanas◆atrás,◆✱ele✱✱✱✱✱✱✱✱✱estava◆menos◆magro✱⊠⊠⊠⊠⊠⊠⊠⊠⊠não◆tão◆mag ro,◆✱mais◆gri✱salho◆e◆✱✱✱profundamente◆pálido,◆✱✱talvez◆por◆estar◆se◆escondendo◆nas◆cavernas.✱✱ ✱✱✱✱✱✱[⌐🖰]⊠o◆[⌐🖰]⊠[⌐🖰]◆típico✱[⌐🖰]◆e✱✱✱✱✱[⌐🖰]h⊠[⌐🖰][⌐🖰]⊠◆há[⌐🖰][✱:01.37.22][⌐🖰]⊠[⌐🖰]◆não[⌐🖰]✱✱ [⌐🖰]◆parecia[✱:01.01.71][⌐🖰]✱⊠✱✱✱✱[⌐🖰]⊠[✱:52.62]◆já◆não◆tão◆magro,◆⊠⊠estava◆⊠⊠⊠⊠⊠⊠◆es tava✱✱[⌐🖰],[✱:01.12.83][⌐🖰]⊠◆DESGASTE◆DO◆TERROR✱✱✱✱✱✱✱[⌐🖰],✱✱[End]

As far as the clusters/collocations under scrutiny are concerned, S17 arrives at the following translations: (1a): becomes "uma criança paparicada com luxo" [a child spoilt with luxury]; (1b) is rendered as "a aparência magra e um olhar de um revolucionário" [the thin appearance and a look of a revolutionary]; and (1c) is translated as "não tão magro, mais grisalho e profundamente pálido" [not so thin, grayer and deeply pale]. In the revision phase, which takes 38,8% of the total allotted time, there are only two changes in the three clusters/collocations, namely the replacement of the definite article "o" [the] and the introduction of "típico" [typical] in the rendering of (1b), resulting in "a aparência magra e o típico olhar de um revolucionário" [the thin appearance and the typical look of a revolutionary].

Again, corroborating our observations regarding the performance of the four previous subjects, the overall performance of S17 reveals an erratic cognitive rhythm erroneously appearing to be more balanced. By correlating the patterns observed above with Jakobsen's findings, it becomes obvious that the seventeen subjects lack that level of awareness in translational matters that would enable them to process their source texts taking into consideration discursive features evidenced by a more critical analysis of texts. Instead, what we observe throughout the corpus is a high incidence of translation decisions made on the sole basis of individual assumptions. The retrospective verbalizations below, representative of all subjects, emphasize this point again. Interestingly, even though the subjects reveal some level of metalinguistic awareness, the metalanguage they use refers to non-discursive and therefore non-productive categories, such as over-reliance on the concepts of literal and free:

(S6) *I had no problem to translate the text because I had watched a report on TV about it.*

(S14) *To translate "wolfish" I had to use adaptation and natural-ization since the closest I could get to the idea of wolfish was wild. Therefore, I chose "selvagem"* [wild].

(S16) *In most parts of the translation I tried to make a free trans-lation. For instance, the word "wolfish" which means "feroz"* [ferocious]. *I made a kind of reconstruction, because I thought "feroz"* [ferocious] *would be too literal.*

Regarding our second hypothesis, namely that target texts written by novice translators should be less durable, we have very consistent process-driven evidence that this is a general characteristic of our corpus. However, since our intention is to correlate process-driven data with product-driven data in order to arrive at more reliable conclusions, an analysis of the prod-ucts rendered by the seventeen subjects will also be carried out. Tables 4, 5 and 6 show the occurrences of (1a), (1b) and (1c) in percentage terms. They are accompanied by retrospective ver-balizations made by S1, S4, S6, and S10 and consubstantiated by analyses carried out with Wordsmith Tools to account for related discursive features.

ORIGINAL	TRANSLATION	Occurences (in %)
	Uma criança rica e mimada	17,64
	Uma criança mimada no luxo	11,76
	Uma criança muito mimada	5,88
	Uma criança mimada, produto da riqueza	5,88
	Uma criança mimada pelo luxo	5,88
	Uma criança criada no luxo	5,88
A pampered child of luxury	Uma criança mimada pela luxúria	5,88
	Um menino mimado pela luxúria	5,88
	Uma criança paparicada com luxo	5,88
	Um garoto mimado de muita luxúria	5,88
	Foi criado no luxo	5,88
	Foi criado com todo o luxo	5,88
	Sempre teve uma vida de luxo	5,88
	Uma criança que viveu no luxo	5,88

Table 4: Translations of the cluster [a pampered child of luxury] - (occurrence in percentage)

(S1)   *I had to do some choices when I decided to change the word*
       "luxúria" [lust] *for "luxo"* [luxury]*.*

(S4)   *I stopped to see how I was going to write the word "mimado"*
       [spoilt]*; I looked it up in the dictionary.*

(S6)   *I did use the dictionary for twice, for checking pampered*
       and I translated it as "induzido" [induced]*, but I thought*
       that he was a child and I changed my sentence for "sempre
       teve uma vida de luxo" [always had a life of luxury]*.*

(S10) *I had to look up pampered in the dictionary, and also lean,*
       wolfish and plumper.

ORIGINAL	TRANSLATION	Occurences (in %)
The lean, wolfish look of a revolutionary	Uma aparência de um revolucionário lunático	5,88
	A aparência exótica de um revolucionário	5,88
	A aparência esbelta e selvagem de um revolucionário	5,88
	A aparência magra e o olhar típico de um revolucionário	5,88
	A aparência pobre e agressiva de um revolucionário	5,88
	Aparência sóbria de um lobo revolucionário	5,88
	O aspecto e crueldade de um revolucionário	5,88
	Um perfil de pessoa revolucionária	5,88
	Perfil e olhar de um revolucionário	5,88
	Sua silhueta esguia, com olhar fundo de um revolucionário	5,88
	O esteriótipo de um revolucionário insano	5,88
	O estilo frio e cruel de um revolucionário	5,88
	Um olhar saudável e malicioso de um revolucionário	5,88
	O olhar frio e penetrante de um revolucionário	5,88
	O visual magro e agressivo de um revolucionário	5,88
	O gosto, a face selvagem de um revolucionário	5,88
	Um revolucionário mais magro e mais exótico	5,88

Table 5: Translations of the cluster [the lean, wolfish look of a revolutionary] - (occurrence in percentage)

(S1)   *I had some doubts about vocabulary for example: wolfish, I*
       didn't find it in a dictionary. So I used a kind of reconstruc-
       tion using context.

(S4)   *It took me a while looking at the structure wolfish…. How it would*
       be constructed and looked the words up in the dictionary.

(S6)   *I first omitted lean, because I found no meaning for it, it was*
       giving no coherence to my translation. Then, I substituted
       lean for "sóbrio" [sober] *– bin Laden always seemed to me*
       to be a calm person for his calm face.

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(S10) *When I was trying to translate the word "wolfish" I couldn't find a word to put in my target text, so I decided to omit it and at the same time adapted another one to make sense again and to sound better in it.*

ORIGINAL	TRANSLATIONS	Occurences (in %)
Plumper, grayer and deathly pale	Um animal acuado, fraco	5,88
	Mais rechonchudo, mais pálido	5,88
	Tão magro, fatigado e extremamente pálido	5,88
	Gorducho, grisalho e pálido como um cadáver	5,88
	Gorducho, tinha cabelos grisalhos, estava pálido	5,88
	Mais gordo, mais grisalho e extremamente pálido	5,88
	Mais gordo, mais grisalho e mais pálido	5,88
	Mais gordo, envelhecido e tremendamente pálido	5,88
	Mais gordo, com os cabelos grisalhos e com uma expressão cadavérica	5,88
	Mais gordo, mais grisalho e muito pálido	5,88
	Mais comedido, envelhecido e profundamente abatido	5,88
	Decaído, mais grisalho e muito pálido	5,88
	Mais inchado, com os cabelos mais grisalhos e com uma palidez mórbida	5,88
	Tão magro, estava mais grisalho e profundamente pálido	5,88
	Terrivelmente pálido	5,88
	Um homem pesado, mais velho e mortalmente pálido	5,88
	Revigorado, apesar de mais grisalho e com uma expressão cadavérica	5,88

Table 6: Translations of the collocation [plumper, grayer and deathly pale] - (occurrence in percentage)

(S1) *I had to write the sentence using the adaptation because "deathly pale" in Portuguese could only be "pálido"* [pale]. *Another one was the word "plumper" and I decided to put "rechonchudo"* [chubby].

(S14) *I stopped again when I had to look up in the dictionary for the word "plumper." I figured out that it meant fatter, but not exactly fatter. It was fatter in the sense of healthier. Then I started thinking of a way of expressing the idea without mentioning the term "mais gordo"* [fatter]. *I then opted for "não tão magro"* [not so thin], *which I considered to be a paraphrasing strategy.*

(S1) *Another problem occurred in the word "grayer." I omitted it because at that time I couldn't find a word in Portuguese.*

(S14) *It then took me nearly a couple of minutes to decide whether I should use the term "fatigado"* [exhausted] *or "com fatiga"* (sic) [with fatigue] *for the English term grayer.*

The choices made by the individuals in the experiment can be better visualized in some of the concordance lines with the search words "criança" [child], "revolucionário" [revolutionary], and "grisalho" [grayer] obtained with WordSmith Tools:

N	Concordance	Set	Tag	Word No.
1	[...] foi uma **criança** rica e mimada. Por volta de 1998, [...]	15	c:\meusdo~1\célia\corpora\binlad~1\ohsr-b~1.txt	21
2	[...] foi uma **criança** criada no luxo. Em 1998, [...]	19	c:\meusdo~1\célia\corpora\binlad~1\act-bi~1.txt	28
3	[...] foi uma **criança** mimada no luxo. Por volta de 1998, [...]	19	c:\meusdo~1\célia\corpora\binlad~1\rls-bi~1.txt	27
4	[...] foi uma **criança** rica e mimada criada na Arábia Saudita. [...]	13	c:\meusdo~1\célia\corpora\binlad~1\anf-bi~1.txt	18
5	[...] foi uma **criança** mimada pelo luxo. Em 1998, [...]	17	c:\meusdo~1\célia\corpora\binlad~1\cs-bin~1.txt	23
6	[...] foi uma **criança** mimada, produto da riqueza. Na época [...]	20	c:\meusdo~1\célia\corpora\binlad~1\mms-bi~1.txt	24
7	[...] era uma **criança** mimada no luxo. Em 1998, [...]	20	c:\meusdo~1\célia\corpora\binlad~1\ef-bin~1.txt	25
8	[...] foi uma **criança** mimada pela luxúria. Em 1998, [...]	15	c:\meusdo~1\célia\corpora\binlad~1\vbr-bi~1.txt	22
9	[...] foi uma **criança** que viveu no luxo. Em 1998, [...]	15	c:\meusdo~1\célia\corpora\binlad~1\immc-b~1.txt	23
10	[...] foi uma **criança** rica e mimada. Em 1998, [...]	16	c:\meusdo~1\célia\corpora\binlad~1\lcm-bi~1.txt	23
11	[...] foi uma **criança** muito mimada. Em 1998, [...]	17	c:\meusdo~1\célia\corpora\binlad~1\am-bin~1.txt	24
12	[...] foi uma **criança** paparicada com luxo. Em 1998, [...]	15	c:\meusdo~1\célia\corpora\binlad~1\wao-bi~1.txt	20

Table 7: Concordance lines for the cluster [a pampered child of luxury] - (WordSmith Tools)

N	Concordance	Set	Tag	Word No.
1	[...] adquirindo *o esteriótipo de um* **revolucionário** *insano*.	45	c:\meusdo~1\célia\corpora\binlad~1\mcjf-b~1.txt	57
2	[...] apresentava *uma aparência de um* **revolucionário** *lunático*.	36	c:\meusdo~1\célia\corpora\binlad~1\acp-bi~1.txt	60
3	[...] ele se tornou um **revolucionário** *mais magro e mais exótico*.	38	c:\meusdo~1\célia\corpora\binlad~1\act-bi~1.txt	56
4	[...] adquiriu o gosto, *a face selvagem de um* **revolucionário**.	41	c:\meusdo~1\célia\corpora\binlad~1\cs-bin~1.txt	56
5	[...] ele tinha adquirido *um olhar saudável e malicioso de um* **revolucionário**.	41	c:\meusdo~1\célia\corpora\binlad~1\am-bin~1.txt	60
6	[...] ele já tinha adquirido *a aparência magra e o olhar típico de um* **revolucionário**.	45	c:\meusdo~1\célia\corpora\binlad~1\wao-bi~1.txt	58
7	[...] ele já tinha *a aparência esbelta e selvagem de um* **revolucionário**.	44	c:\meusdo~1\célia\corpora\binlad~1\ohsr-b~1.txt	58
8	[...] ele adquiriu *a aparência pobre e agressiva de um* **revolucionário**.	39	c:\meusdo~1\célia\corpora\binlad~1\vbr-bi~1.txt	57
9	[...] ele adquiriu *a sua silhueta esguia, com olhar fundo de um* **revolucionário**.	46	c:\meusdo~1\célia\corpora\binlad~1\magv-b~1.txt	58
10	[...] ele tinha *o visual magro e agressivo de um* **revolucionário**.	42	c:\meusdo~1\célia\corpora\binlad~1\anf-bi~1.txt	59

11	[...] adquiriu *perfil e olhar de um* **revolucionário**.	37	c:\meusdo~1\célia\corpora\binlad~1\lcm-bi~1.txt	53
12	[...] ele já havia assumido *o estilo frio e cruel de um* **revolucionário**.	51	c:\meusdo~1\célia\corpora\binlad~1\mms-bi~1.txt	62
13	[...] ele já tinha *o aspecto e crueldade de um* **revolucionário**.	38	c:\meusdo~1\célia\corpora\binlad~1\immc-b~1.txt	56
14	[...] ele já tinha *aquela aparência sóbria de um lobo* **revolucionário**.	49	c:\meusdo~1\célia\corpora\binlad~1\scma-b~1.txt	61
15	[...] ele havia adquirido *a aparência exótica de um* **revolucionário**.	45	c:\meusdo~1\célia\corpora\binlad~1\ef-bin~1.txt	61
16	[...] já tinha assimilado *o olhar frio e penetrante de um* **revolucionário**.	48	c:\meusdo~1\célia\corpora\binlad~1\rls-bi~1.txt	66

Table 8: Concordance lines for the cluster [the lean, wolfish look of a revolutionary] - (WordSmith Tools)

N	Concordance	Set	Tag	Word No.
1	[...] ele estava mais gordo, mais **grisalho** e extremamente pálido, provavelmente por viver es	56	c:\meusdo~1\célia\corpora\binlad~1\ef-bin~1.txt	81
2	[...] ele estava mais gordo, mais **grisalho** e muito pálido, talvez por estar se escondendo em cavernas.	53	c:\meusdo~1\célia\corpora\binlad~1\am-bin~1.txt	82
3	[...] ele mostrou-se decaído, mais **grisalho** e muito pálido, talvez por viver escondendo-se em cavernas.	63	c:\meusdo~1\célia\corpora\binlad~1\scma-b~1.txt	83
4	[...] ele parecia mais gordo, mais **grisalho** e mais pálido, talvez por ter estado se escondendo em caverna	50	c:\meusdo~1\célia\corpora\binlad~1\immc-b~1.txt	79
5	[...] ele era gorducho, tinha cabelos **grisalho**s, estava pálido, talvez por ficar escondido em cavernas.	53	c:\meusdo~1\célia\corpora\binlad~1\jfbp-b~1.txt	83
6	[...] ele estava revigorado, apesar de mais **grisalho** e com uma expressão cadavérica, talvez por ficar escondido	51	c:\meusdo~1\célia\corpora\binlad~1\lcm-bi~1.txt	78
7	[...] ele estava mais inchado, com os cabelos mais **grisalho**s e com uma palidez mórbida, talvez por estar escondido nas	57	c:\meusdo~1\célia\corpora\binlad~1\cs-bin~1.txt	81
8	[...] ele já estava mais gordo, com os cabelos **grisalho**s e com uma expressão cadavérica, talvez por se esconder e	61	c:\meusdo~1\célia\corpora\binlad~1\magv-b~1.txt	81
9	[...] ele, já não tão magro, estava mais **grisalho** e profundamente pálido, talvez por estar se escon	60	c:\meusdo~1\célia\corpora\binlad~1\wao-bi~1.txt	81
10	[...] ele estava gorducho, **grisalho** e pálido como um cadáver, talvez por estar vivendo escondido	52	c:\meusdo~1\célia\corpora\binlad~1\anf-bi~1.txt	79

Table 9: Concordance lines for the collocation [plumper, grayer and deathly pale] - (WordSmith Tools)

These lines show that novice translators produce renditions for these collocations based not so much on textual clues as on their individual assumptions. We believe that they do that because they are unaware of the fact that words are combined with other words to construct meanings. Novice translators are, for that matter, unable to read critically and to use the adequate combinations while reconstructing their texts. They are also unable to analyze the problems they face on the basis of dis-

course categories that could make them feel in control of the text. This can be seen in the scarcity or lack of use of metalanguage in their protocols. Their translated versions generate random and incompatible descriptions of bin Laden, especially for the collocations "a lean, wolfish look of a revolutionary" and "plumper, grayer and deathly pale". Some of the renditions obtained for these collocations are reproduced below:

> [O esteriótipo (sic) de um revolucionário insano, Um olhar saudável e malicioso de um revolucionário, O olhar frio e penetrante de um revolucionário, Uma aparência de um revolucionário lunático, A aparência esbelta e selvagem de um revolucionário, Aparência sóbria de um lobo revolucionário]

> [um animal acuado, fraco, gorducho, grisalho e pálido como um cadáver, mais rechonchudo, mais pálido, mais inchado, com os cabelos mais grisalhos e com uma palidez mórbida, revigorado, apesar de mais grisalho e com uma expressão cadavérica]

After cross-analyzing process-driven and product-driven data gathered from the seventeen subjects, it becomes evident that the drafting phase produced less durable texts that are consequently in dire need of further revision. Unfortunately, that did not happen in the subsequent phase. These results seem to be robust enough to confirm our second hypothesis, namely that lack of consistency in orientation, drafting, and revision should reveal a low level of (critical) language awareness, so that the subjects' erratic cognitive rhythms should result in less durable target texts.

When comparing the performance of the seventeen subjects with respect to hypotheses one and two, it is also possible to observe how they correlate in terms of cognitive and discursive features. The cognitive rhythm of all subjects is erratic, imbalanced, and unevenly distributed among the group. They also reveal a linearly evolving pattern, with little or no recursiveness along the drafting phase. In other words, the subjects lack the cognitive management skills needed to handle the transla-

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tion task as it unfolds. At the same time, the subjects' low levels of critical language awareness yield discursive constructions with little or no awareness of metalinguistic considerations, which gives rise to processually inadequate target texts. If the subjects' cognitive management were more effective, would that lead to a higher level of critical language awareness and consequently to the production of discursive constructions revealing awareness of discursive features and capability of dealing with them through metalinguistic categories of analysis? This is an issue which is certainly worth being further investigated by means of a cross-analysis of the performance of novice and expert translators.

Conclusion

On the basis of our analysis of a small corpus, three tentative conclusions can be drawn:

As far as hypothesis 1 is concerned, the emergence of distinct cognitive rhythms is, in itself, no evidence of qualitatively distinct translation products. In other words, there is no correlation between balanced or imbalanced cognitive rhythms and the textual quality of target texts.

As far as hypothesis 2 is concerned, strict linear processing, the lack of adequate cognitive management, and of (critical) language awareness seem to hinder novice translators from making effective improvements to their target texts and arriving at more stable, more durable target texts.

By way of conclusion, it could be said that less durable texts seem to be the norm among novice translators. Such processual inadequacy seems to point to their need for guidance to improve their cognitive management levels on the basis of a metacognitive monitoring of their own processes. Being able to allocate cognitive effort and resources in a more effective way and being prepared to deal with discursive aspects of texts using a consistent apparatus for text and discourse analysis, novice translators would be in a better position to be aware of source text discursive features and to make choices in their target texts based on text and discourse analysis. This, in turn, would enable them to produce more durable texts, and eventually bring

their performance levels closer to those found by Jakobsen (2002) among expert translators.

Together, these conclusions seem to point out interesting avenues to be applied to didactic reflections concerning the education of translators (see Alves, Magalhães & Pagano, forthcoming). By means of a combined approach which integrates cognitive and discursive features into translator training, novice translators could gain some insight about how to improve their performance and arrive at more balanced cognitive rhythms which, in turn, could give rise to a higher level of critical language awareness and, therefore, to more durable texts. Whether this is viable can only be decided by means of further investigation.

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