(Killing) two birds with one stone: Tools for translation process research and the translation classroom

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ABSTRACT

Many translation process researchers emphasize the possible didactic applications of their empirical findings. At the other side of the fence, translator trainers make theoretical claims based on classroom activity, events and (personal) experience or empeiria. In this article, we focus on technology-based methodologies, such as keystroke-logging, screen-recording and eye-tracking and we single out certain widely used corresponding tools. We provide an example based on a research project with a pedagogical focus where the performance of undergraduate students of translation is analyzed. The purpose of this article is not to advocate any single perfect solution, but to provide food for thought and motivate researchers, trainers (and program developers) to engage in fruitful dialogue and bridge gaps within the framework of ecological validity.

1. The setting

The purpose of the research project was to investigate effects of time on translation product quality within a pedagogical framework and attempt to relate such translation and time management phenomena to the learning styles of a group of undergraduate translation students in the School of English, Aristotle University. From a methodological point of view, 54 students during...
their third year of studies (the equivalent of approximately two class units) participated. Students formed a relatively homogeneous sample in terms of background knowledge and expertise. They were asked to translate four comparable texts of diverse topics under gradually stricter deadlines, while free to use online resources. While additional profiling and product-related data was rather non-problematic to collect mostly by means of interviews and questionnaires, the process-related aspect deserved some more thought. On the purely research side, triangulation, the combination of different methodologies in a single research study, as underlined by many researchers (Jakobsen 2006, O’Brien 2009, Alves 2003, Hansen 2003, etc.), was a *sine qua non*, if one were to draw any valid conclusions. On the pedagogical side, there was the intention to strive for events that would also leave something for the university classroom *per se*, either in the form of easy replication by other trainers or even direct benefits for the students. In other words, there was a conscious turn toward ecological validity, whereby “an empirical investigation should be linked in an adequate way to the real-world phenomena it wishes to make claims about” (Halverson 2009: 85 in note). As a result, the search for a tool that would help converge these two lines of action started.

2. **Tools**

According to available translation literature, the main methodologies used to capture translation process were (and still are) keystroke-logging, screen-recording and eye-tracking, with many researchers opting for a combination of at least the first two.² As far as keystroke logging is concerned, Translog seems to be the most commonly featured software program and, at a lesser extent, Inputlog. Camtasia (now Camtasia Studio) dominates experimentation based on screen recording, although Pym (2009) also mentions BB FlashBack. Finally, software programs compatible with Tobii eye trackers, like Clearview and lately Tobii Studio, appear in most of the studies that include eye tracking. With the exception of Tobii Studio, all these tools were considered for the above mentioned study.

2.1 **Eye tracking**

2.1.1 **Clearview**

Clearview is commercial software provided by Tobii Technologies. It registers eye movements over various forms of stimuli including Web pages and Windows desktop and it is Windows-based (Duchowski 2003: 104). It generates a large amount of data, among others a data file where eye position is logged per millisecond. The number, sequence and frequency of eye fixations is also recorded and presented in the form of gaze plots and hotspots.

² For a detailed analysis, see Göpferich (2008).
2.2 Screen recording

2.2.1 Camtasia

Camtasia (Studio) is a commercial software suite for recording, editing and sharing screen videos. It runs in the background and records every type of screen activity, such as internet searches.

2.2.2 BB FlashBack

BB FlashBack Screen Recorder is also commercial software. It comes, however, in various versions. The simplest one, BB FlashBack Express, comes as freeware. This freeware version is fully functional as far as recording is concerned but offers no annotation/editing options and limited file sharing features (Blueberry software website, 2011). It generates one video file, where keystrokes are also displayed, if the function “capture keystrokes” was selected before the recording process.

2.3 Keystroke logging

2.3.1 Translog

Translog is a computer program, offered as freeware for academic research purposes. It was originally conceived for research purposes and developed by Arnt Lykke Jakobsen and Lasse Schou from the Copenhagen Business School with the ambitious aim to “increase the power and accuracy of direct observation” (Jakobsen 1999: 9-10). Translog keeps a log of all keyboard activity, including mouse actions, while typing a translation. Thanks to Translog, we can study the typing process itself in real-time as well as all the editing that goes into writing a translation, how much time is spent on what translation tasks, and the connection between time delay and information processing (Jakobsen 1999: 9).

Translog offers audio recording and play-back functions. It may also be used in conjunction with eye-tracking software.

2.3.2 Inputlog

Inputlog is another freeware program that enables researchers to log and analyze writing processes in Windows. It was created by Mariëlle Lejiten and Luuk Van Waes with the support of the University of Antwerp. It records keyboard and mouse activity in several Windows-based programs and plays back the recorded session at different speeds. It may integrate speech recognition data (Dragon Naturally Speaking, Nuance). Added benefits of Inputlog include: a) identification and logging of all the windows that the writer opens in different programs: for example, it logs the URL of websites during internet searches; b) XML-based output files. Thus, files may be exported to SPSS for statistical analyses (Van Waes et al. 2009: 41-44).
3. Selection considerations

3.1 Clearview

The School of English had a Tobii 1750 eye tracker and Clearview software available for research purposes. There were limitations to its use as it was often booked by staff and doctoral students of the School; we would have to spend a considerable amount of time in order to collect data.\(^3\) After dealing with the practical issue of room availability, however, there was the complexity and the load of eye tracking data generated by the program, what O’Brien (2009: 260) refers to as “data explosion”, acknowledging the challenge. What would be feasible for a group of researchers seemed too daunting a task for a single person to assume. Another consideration was that, according to the hypotheses of the study, we would have to use an eye tracking software concurrently with a keystroke logging program, that is another large set of data, difficult to handle. Adding to this the distance from the above-mentioned aims of the study, namely to strike a balance between the theoretical/research component and direct class applications and benefits, we decided to exclude eye tracking altogether from the study and try to combine a keystroke logging program with a screen recording program.

3.2 Translog/BB FlashBack-Inputlog/Camtasia- BB FlashBack

Ten students experimented with Translog along with a trial version of BB FlashBack. From that same group, five also experimented with Inputlog along with a 30-day trial version of Camtasia. Later on, the same ten students experimented with BB FlashBack. The difference this time laid in that the “capture keystroke” option was enabled. As a result, the program functioned as both a screen recorder and a keystroke logging tool.

Students were later asked to evaluate the three alternatives to, essentially, the same methodological approach. All of them ranked BB FlashBack as more user-friendly, more pleasant and less invasive, many commenting that a) they were translating like they would at home/in the School’s computer lab, b) that the timer on the BB FlashBack bar (Fig. 1, the only evidence of the software because it runs in the background) actually helped them keep track of time during the exercise.

\(\text{Figure 1. BB FlashBack taskbar}\)

\(^3\) This is especially valid when taking into account that conclusions from these trials would inform decisions concerning an experiment including 54 participants who would have to translate four texts each.
Translog/BB FlashBack scored higher than Inputlog/Camtasia. However, according to some students, and although they enjoyed watching the play-back of their sessions, they felt less than comfortable “jumping in and out of the program” during the translation process. This came as a surprise because Translog does seem to cater for ecological validity. Many subjects from Jakobsen’s experiments had indicated that a) “they forgot they were part of an experiment”, b) they “felt that writing a translation in Translog was very similar to writing an ordinary translation” (Jakobsen 1999: 15). In addition, Translog also turned out to be popular as an educational aid and was utilised as a new means of teaching translation in a process-oriented manner. Colleagues both at CBS and abroad (e.g. Don Kiraly and Hannelore Lee-Jahnke) eagerly grasped this opportunity for introducing a new approach to translator training (Mees 2009: 23).

This reaction from the students could be attributed to the fact that the group consisted of undergraduate students whose computing skills were much below ECDL level. Another reason could be that, although they did not spend much time getting acquainted with Translog, the time spent until they started using BB FlashBack again, this time on its own, was significantly less.

### 3.3 BB FlashBack: Pros and cons from the point of view of the researcher

Although students had shown a preference toward BB FlashBack as a stand-alone tool, we still had to examine whether BB FlashBack video/Translog files or BB FlashBack video files (with activated keystroke logging function) would serve better our research needs. The widespread use of Translog within the translation research community meant that at least a part of experimental results and findings deriving from our study would be easily juxtaposed/interrelated or even extrapolated. On the other hand, it also meant that we would need an additional program (a screen recorder) to make up for activity taking place outside Translog, such as consultation processes. We would have to work on two logs per student per text in order to cross-reference data. This implied a total of 216 video files and another 216 Translog files for our experiment. At this point, the size and complexity of Translog files should also be mentioned.

The BB FlashBack keystroke logging function is much simpler and it would certainly not suit the researcher who investigates, for example, students’ pauses in-between typing and wishes to interpret their duration and location. For the purposes of the study described above, however, it would, first of all, cover the need for triangulation: data from either students’ products or retrospective questionnaires can be cross-referenced against either screen activity or text production activity. An added bonus is that this happens on the basis of a single file. As a result, data management is greatly simplified and triangulation is not hampered.

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4 For a list of publications based on Translog data, see Schou et al. (2009: 43-48).
Users may actually open the Key Logging Window and view a display of keys pressed while the movie was recorded (Fig. 2). Every item comes with its own timestamp, always in relation to the start of the movie. Users may toggle with two views: a) Raw, where all key presses are shown in a sequence, b) Sentence, grouping together keystrokes into words for enhanced readability. A time-saving element in terms of the study described in the beginning is the search function: users may even search for a specific word in the Key Logging Window and jump to the frame in which it was typed (BB FlashBack help file, 2011). Finally, keystroke logging data may be exported, in either raw or sentence format, to XML.

![Figure 2. BB FlashBack Sentence key log](image)

Carefully weighing our options, we decided to sacrifice direct comparability of findings and fine(r)-grained keystroke analysis in favor of ecological validity, increasing effects in the actual classroom. By bringing the experiment closer to the natural student (working) environment, the aim was to strengthen “the relationship between scientific enquiries and the world of everyday life” (Halverson 2009: 85).
After the experiment and outside class time, an optional meeting with the first group of students took place in order for me to receive informal feedback about the task as a whole. 19 out of 25 students showed up. There was a variety of reactions, concerning their own performance: from skepticism to expressions of surprise to reflections toward self-improvement. It seems that BB FlashBack had already functioned as a process-awareness-raising software, an immediate by-product of experimentation.

4. Some final thoughts

We cannot expect all experimental research to have a direct practical application in the translation classroom nor all classroom events to provide extrapolating results. To the extent we can achieve this, though, it is worth trying. The ideal would be to have a “one-fits-all” tool and we hope to have voiced a clear plea for software flexibility and inter-operability.

Unfortunately, the observation software currently available on the market is not tailor-made for cross-usage and there are hardly any systems to be found that can provide combinable data. Combinable and trianguable data “at a click” would be desirable in both classroom settings and research proper – since very often one method used and evaluated alone cannot give insightful results. Today, however, triangulation is still a hands-on rather than an automatized job (Dam-Jensen & Heine 2009: 8).

We selected an approach/tool in harmony with our objectives, arguing that we may enjoy a valid experiment along with immediate didactic benefits with one single tool. We do not ignore other constraining variables that may come into play (age, background, expertise of students) and we do realize the limitations of the proposed course of action in regard to other settings. We still hope, however, to encourage researchers to test similar approaches in cases of research with a pedagogical focus and to spark a dialogue between researchers, classroom practitioners and even program developers in view of “synergetic refinement” (Jakobsen 1999: 11). At the same time, we would like to move away from the pessimism expressed by Pym (2009: 135): “The direct use of research in the classroom should thus be considered of qualitative interest to the individual student rather than quantitatively valid as a way of producing knowledge of the general”.

Given that advances in technology provide trainers and researchers with flexible, non-invasive and user-friendly programs, at the same time more fine-tuned to our purposes and more comprehensive in scope, we have reasons and hope to believe that direct use of process research in the classroom will be one day considered of qualitative interest to the individual student and of relatively high quantitative value to the international researcher, contributing to the body of knowledge of the general.

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References


BB FlashBack help file (last accessed on 31-01-2011).


Inputlog website: www.inputlog.net (last accessed on 30-01-2011).


