

What Process-Oriented TS Have to Say to FL Teaching The Role of TAPs

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Abstract Research on translation processes using think-aloud protocols (TAPs) as the research design has recently received increasing attention in Translation Studies (TS). Such bulk of literature has produced many interesting findings about mental activities during the process of translation. In particular, it has helped uncover lexical search processes thanks to strategy identification through behavioral index-reading. The present paper surveys these studies with a particular eye on their potential use in the foreign language (FL) curriculum. Building on this analysis, an observational study is conducted which attempts to address how lexical failures in translation can be detected and re-directed in the ongoing translation process. The experience is to be considered a preliminary step for a systematic approach to the construction of experimental models in the field of process-oriented translation and reading-comprehension teaching.

Keywords Process-oriented translation. Think-aloud protocols (TAPs). Index-reading. Lexical search strategies. Reading and translation skills.

Summary 1 TAPs in Translation Studies: ‘Process’ vs. ‘Product’. – 2 Process Indexes and Lexical Strategies Identification in TAPs. – 2.1 Behavioral Indexes in TAPs Research. – 2.2 Lexical Strategies or Micro-Strategies in TAPs Studies. – 3 Translation Processes: A Protocol Analysis. – 4 Discussion / Conclusion.



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1 TAPs in Translation Studies: ‘Process’ vs. ‘Product’

Since the mid 1980s, after being almost exclusively based on translation as an end product, traductology has devoted a growing attention to translation performance in order to reconstruct translation strategies which operate within the translation process. Therefore, while product-based approaches focus largely on description and comparison of linguistic and/or cultural structures in the source vs. target text, the newly established field of translation process analysis is primarily concerned with the means by which the product is achieved (Gerloff 1987; Krings 1987; Lörscher 1991, 1992).

Since translation strategies are not open to direct inspection, however, the introspective procedure of thinking aloud has been viewed as “the most direct means of access to the translation process” (Krings 1986, 265). In think-aloud protocols (TAPs) translators are asked to verbalise their mental processes while carrying out a translation task (*concurrent verbalisation*, cf. Krings 1986) or immediately after completion of a chunk of the translation task (*immediate retrospection*, cf. Mann 1982). Theoretical justifications for TAP experiments have been imported from psychology, namely from the work of Ericsson and Simon (1984). According to these scholars, who work with a model of human cognition as information processing, concurrent verbalisation of thoughts can be claimed to exhaustively reflect the mental states of a subject carrying out a relatively long task. When applied to translation, this method of data collection has immediately seemed to be very promising although insofar as its use has only recently begun its specific implications are still relatively understudied. As Lörscher (1991) notes, thinking-aloud is a useful tool for collecting data about translation processes, provided that we take into account the conditions under which the data are externalised and their inherent limitations primarily due to the fragmentary nature of verbalisation and to distortions occurring between the mental process and its verbalisation.

Following the cognitive view, translation is mainly thought of as a problem-solving process. When observed through TAPs, the three steps of the translation: the reading and comprehending of the source text segment as a whole, without decomposing it, the translation of it as a whole, and its final being written down as a whole, follow each other immediately with an almost complete lack of concurrent verbalization. When a translation problem is encountered however, this smooth linear sequence of events is broken: pauses in the reading, repetitions, and/or introspective comments and metaprocedural statements all indicate that a decomposition process was necessary and a reconstructive search for meaning has been subsequently initiated (Færch, Kasper 1987; Lörscher 1991). These indicators represent the basis for the formation of hypotheses on the mental trans-

lation process. The analysis and evaluation of TAPs is carried out by means of an interpretative approach and aims at the hypothetical reconstruction of mental operations involved in translation performance. As Lörcher argues, “analysts do not interpret certain signs to be indicators as a result of their knowledge of the respective entity or of the relationship between an indicator and a segment of reality, but rather on the basis of considerations of probability. They can be corroborated or turn out to be false in the course of accumulating further knowledge of the phenomena and of gathering more experience in interpretation” (Lörcher 1996, 27).

Specifically, the construction of models for the strategic analysis of the translation process has long been the major focus of investigations in TAPs research. Each model was developed on the basis of a corpus of translation TAPs. Mental operations involved in the process of translation were decomposed into minimal problem-solving steps which were then formalised to yield translation categories for models to be extended to any kind of TAP analysis thus allowing comparability of results (Dancette, Ménard 1996; Gerloff 1987; Krings 1986; Königs 1987; Lörcher 1991; Hölscher, Möhle 1987). Building on the attainments of analytical models, attention has also been paid to the study of single cognitive aspects of the process, from attention units (Jääskeläinen 1993), to thematic (Dancette 1994) and grammatical knowledge related to translation (Mondahl, Jensen 1992). Besides, the emotional aspects involved in the process have started to be investigated, from the psychological conditions of creativity and success in translation (Kußmaul 1995), to decision-making (Tirkkonen-Condit 1990), and emotional engagement in translation (Tirkkonen-Condit, Laukkanen 1996).

TAPs studies are very different also from a methodological perspective. Research designs have considerably varied, attention been given to whether monologues (one-student work) or dialogues (pair or group-work) should be elicited (Séguinot 1996; Kußmaul 1995); whether translations should be paper-and-pencil or computer-assisted (Koby 2000); with or without a dictionary; written-to-written, or written-to-oral (Lörcher 1991); a one-phase process or two or more; with the experimenter present or not, helping through a dialogue (e.g. brainstorming; dialogue) or not (observing role) (Jääskeläinen 2000; Séguinot 1996). Besides, verbal reports have been collected from different categories of subjects, including foreign language learners (e.g. Königs, Kaufmann 1996; Krings 1986; Lörcher 1987; Mizón, Diéguez 1996; Riedemann Hall 1996; Séguinot 1991), translation trainees (Jääskeläinen 1993; Tirkkonen-Condit 1990), professional translators (Séguinot 1989) or a combination of student and professional translators (Königs 1987; Krings 1986), with the choice to use students sometimes due to the mere availability of these subjects and/or to the idea that the verbalisations produced by profes-

sionals would be less informative due to their more “automatised” processing style rather than reflecting an interest in finding out aspects of the beginnings of translation competence. TAPs studies also differ in relation to the language pairs selected. They include German and French (Krings 1986), English and French (Gerloff 1986; Séguinot 1989), German and English (Lörscher 1991), German and Spanish (Königs 1987), Finnish and English (Jääskeläinen 1993; Laukkanen 1996; Tirkkonen-Condit 1990). Obviously, depending on the languages, each pair selected brings about different translation problems.

2 Process Indexes and Lexical Strategies Identification in TAPs

In addition to the general content and methodological aspects of TAPs research presented above, it is especially important in a pedagogical perspective to analyze how TAPs research protocols capture lexical processes during translation. The paragraph which follows (§ 2.1) is intended to give the reader a comprehensive view of the behavioral indexes commonly used in TAPs studies to identify lexical strategies which concern the rendering in Target Language (hereafter TL) of a given Source Language (hereafter SL) text item. Following that, a review of lexical strategies (also called *micro-strategies*) commonly identified through behavioral index analysis is presented (§ 2.2).

2.1 Behavioral Indexes in TAPs Research

Following Gerloff (1987) and Krings (1987) a preliminary distinction can be made between *verbal* indexes and *non-verbal* ones. Verbal indexes are associated to temporary/final solutions to translation problems, and include:

- a. reading / translating / repeating text portions;
- b. alternating back and forth from SL to TL text (hereafter, ST and TT) as well as in the same text;
- c. swinging between different choices, along with all kind of analysis, comparisons, reasoning and meta-linguistic comments on potentially any portion of the text which constitutes a problem.

While adopting linear behaviors of forward movement with few back-trackings and little editing has been correlated with subjects' experience in solving translation problems, all kind of uncertainty has been generally associated to translation inexperience. This distinction is not always clear, however. For example, resorting to repetitions as well as the frequency of skips forward and backward in

the text, may well give some indication of major incomprehension, but they may also signal indecision, monitoring or editing function, which are well compatible with experts' translation behavior (Dancette 1994). In other words, while affording us a view of which words elicit increases or changes in processing activity, further interpretation of any translation behaviors so far described should be carefully evaluated taking account of the context in which it occurs.

The language used in speaking aloud the portions of the text subjects are reading, repeating, analysing, or reproducing into the SL or TL is another widely used verbal index. Carrying out text portions in SL generally signals basic comprehension problems, as when the unit is completely unknown; by contrast, if the unit is processed in TL, this reflects the subjects' concern not with comprehending ST but with crafting the best possible rendition of it into TL, i.e. a "refining" problem, which most properly distinguishes final stages in the translation process and is typical of experienced translators. Other possible meanings for this index should however be carefully considered depending on context. Verbalising in SL vs. TL in fact may also indicate that the problem has already been overcome (especially if it is the subject's second or third time through the text), or that, for the moment, it has been neutralized (especially if the concurrent verbalisation is fast or unclear) (cf. Dancette 1994). In summary, it is the concomitant presence of different indexes which helps interpret verbal indexes correctly and any attempt to apply standardised predetermined meanings to observed verbal behaviors is bound to fail.

Interpretation of verbal indexes interacts with the correct decoding of non-verbal signals. Unfortunately, the low degree of protocol structuring makes it difficult for researchers to operate efficiently on non-verbal process-indicators so that the whole matter is controversial. TAPs notational systems often include large numbers of behaviors which are either not interpreted at all or which are interpreted in a theoretical void (Bernardini 2001). For example, some authors do note suprasegmental traits like broad intonation profiles (like rising for questions) and emphasis, as well as paralinguistic features (such as laughing, sighing, coughing and the like), unclear verbalisation, interruptions, slow/fast talking etc., but frequently they do not even try to interpret them. To avoid such a risk, in Krings (1987) non-verbal index contribution to the identification of lexical strategies is marginal if compared to subjects' overt verbalisations and translation results. Only the so-called "temporal variables", i.e. the length of unfilled pauses (longer than 2 secs), hesitations and false starts, are systematically indicated in the transcription system, because they are considered indicative of underlying mental processes, while phonetic and intonation patterns are not.

2.2 Lexical Strategies or Micro-Strategies in TAPs Studies

The interpretation of translation behaviors has brought about the isolation of a number of lexical strategies which will be shortly described here with a special eye on their impact on pedagogical intervention. According to Krings (1987), lexical strategies may be further subdivided into: (a) potential equivalent retrieval strategies (or search strategies); (b) evaluation and decision-making strategies; (c) reduction strategies. The first group include: rephrasing or reformulation; intra- and inter-linguistic analysis, intended as intra- and inter-language associations; dictionary search. Evaluation and decision-making strategies consist mainly in comparing competing potential equivalents found in the search process and choosing between two equivalent solutions. Finally, reduction strategies consist in avoidance and simplification (unmarking), e.g. of metaphorical text portions. A similar classification is adopted by Gerloff (1987), with the addition of a final strategy, namely monitoring translation through final re-reading and comparing of ST and TT units. Equally concerned with the control function, Mondhal and Jensen (1996) distinguish from the start between *production* and *evaluation* lexical strategies. Production strategies are further subdivided, on the basis of correct vs. incorrect results, into “achievement” strategies (which are characterised by an attempt to be as close as possible to the ST) and “reduction” strategies (which are characterised by their inherently remedial nature). Among achievement strategies are spontaneous associations and reformulation. Among remedial strategies are avoidance and unmarked rendering of marked items. Finally, evaluation strategies involve “reflecting on the adequacy of translation equivalents”. The complementary nature of the lexical strategies so far presented makes it possible to obtain a summary table by conflating the parameters mentioned in the three models presented above [tab. 1].

Table 1 Lexical strategies (LS) summary table (adapted from Gerloff 1987; Krings 1987; Mondhal, Jensen 1996)

Production:	Achievement:	Intra- and inter-language associations Reformulation Dictionary search
	Reduction:	Avoidance Simplification
Evaluation:	Comparing and choosing	

Although the lexical categories reported in table 1 have been developed step-by-step over the course of experiments rather than established in advance, and refined gradually by searching for such struc-

tures as are inherent in the observed data, they are still too global to allow a detailed description of translation behaviors. As for dictionary consultancy, for example, Krings (1987) notes that dictionary search is not a relevant strategy *per se* but inasmuch it subsumes a number of other more specific lexical strategies which are implemented during the search, last but not least fitting equivalents into the sentence context, which represents the main difficulty students have with dictionary consultation.

Indeed, only micro-strategies which shed light on *how* a word is actually recovered and fitted into the translated text, are really useful. For example, the classification proposed by Haastrup (1987), constructed on Carton's cue types (Carton 1971), is articulated into three fully lexical search levels, namely, *intra-* and *inter-lingual* strategies and *contextual* strategies [tab. 2]. Intralingual strategies are not just spontaneous lexical associations, but involve analysis of the phonology and orthography of the word, its morphology (prefix; suffix; stem), syntax (word class, collocation) and semantics as well as the syntax of the sentence. The same analytical processes apply when interlingual strategies (both L1 and Ln like Latin, German, French, etc.) are chosen. In the latter case general metalinguistic reflections about the origin of the word, its pronunciation, etc. often apply too. Finally, contextual strategies refer either to knowledge of the world or to the word context. While the former aim at contextualising the ST mainly through inferencing based on world knowledge, with the lexicon having a boot-strapping function and the bulk of processing based on underlying cognitive schemas, the latter are fully lexical in that they refer to groupings of words at different levels which affect the meaning of the searched item. Precisely a distinction is made between: a) a single word from the immediate context; b) the immediate context; c) a specific part of the context beyond the sentence of the word; d) global use of the text.

Table 2 Taxonomy of LS (adapted from Haastrup 1987)

Intra-lingual (L2):	Analysis of the word phonology/orthography; morphology (prefix, suffix, stem); syntax (word class, collocation); lexis; semantics; the syntax of the sentence
Inter-lingual ((L1 (or Ln)) → L2):	See intra-lingual categories above and apply to ((L1 or Ln (Latin, German, French, etc.)) → L2; world knowledge
Contextual:	Word context (one or more words from the immediate context or beyond the sentence; the whole text)

The importance of assessing the nature of the linguistic context goes along with the need to examine the size of the linguistic units which people work with when they translate. For example, the Unit of Analysis coding developed by Gerloff (1987) identifies seven levels of syntactic analysis, going from morpheme or syllabic units (which pertain to the word) to discourse [tab. 3].

Table 3 Unit of analysis coding (adapted from Gerloff 1987)

Level 1 – morphemic or syllabic analysis (M)
Level 2 – word unit analysis (W)
Level 3 – phrase unit analysis (P)
Level 4 – clause unit analysis (C)
Level 5 – sentence unit analysis (S)
Level 6 – discourse level analysis (D)
Level 7 – group level analysis (G)

The units are to be interpreted not only as a quantitative measure of the capacity of subjects' attentional buffer, but also as a qualitative indication of how participants manage syntactic information to interpret unknown words. For example, working at *group* level means no syntactic information is actually processed (although, depending on context, a very fast reading could signal syntactic information is no more necessary for processing at hand). The length of translation units is generally considered as a direct indication of proficiency, with professional translators as well as more competent speakers and learners working with larger units and moving more comfortably between different unit levels.

3 Translation Processes: A Protocol Analysis

Building on the results of the experiments on translation mental processes, it is possible to envisage new forms of pedagogical intervention which are not centred on the finished product, the translated text, but which are aimed at redirecting autonomous lexical search undertaken by learners in the translation process. In particular, the identification of lexical processes through specific and reliable indexes makes it possible to give the students linguistic tips which, while taking count of the results obtained so far in translating a text, focus their attention to context portions which were discarded at first but which are essential to recover unknown lexical equivalents. In this sense, pedagogical action may be directed to boost a larger and clearer sense of context in learners through which the linguistic resources in each of the languages involved are expanded and consciously correlated in terms of more and more appropriate semantic and pragmatic equivalences.

In the present section, in order to preliminarily evaluate the hypothesis, I will concentrate on the problems encountered by a student engaged in the translation of a short passage from English into Italian (her mother tongue) and on the possible advantages in giving her targeted context-focused help. The corresponding thinking-aloud protocol produced by the student will be examined in order: (a) to infer translational strategies from a number of selected behaviors; (b) to shape possible forms of pedagogical intervention which take count of the student's translation steps in solving problems, and (c) to evaluate their effect.

The text to be translated is a short excerpt taken from the novel *Hornet Flight* by Ken Follett (2002) (see Appendix A). The text is quite brief (slightly longer than 110 words), unabridged, and deals with an autobiographical episode told in 1st person by Bart, an American commander, whose plane was shot down by German aviation during World War II. In a number of literary texts there is a wide semantic gap between literal and pragmatic meanings. In such cases, the variability of interpretations is generally very strong. The present text was chosen because, although being a literary text, and as such "semantically rich", it does not leave much room for deviant interpretations. Besides, it builds a definite context which does not require external contextualisation. The vocabulary is of average difficulty for adult native readers but requires a good level of proficiency of L2 speakers.

The subject is a 24-year-old female mother tongue Italian speaker, doctoral student in Psychology. She is a competent English speaker and uses English professionally, even if she is not acquainted with reading literary works. For these reasons she is expected to encounter difficulties on single items rather than on larger units. The observational session took place in a quiet room. Because of the requirement to verbalise, which is likely to variably affect the performance,

no time limit was set for the task. The use of dictionaries and/or reference books was not allowed in order to boost autonomous lexical search strategies. At the beginning, the student was given an oral explanation of the aim of the study and was asked to translate the text orally and to verbalise everything that went through her mind: reflections, hypotheses, questions. The request for a written translation was not considered crucial for the kind of analysis envisaged. The study focus in fact was on mechanisms of lexical comprehension in SL and search for equivalents in TL, not on subsequent TL editing up to a final and definite version. The observer never left the room during the session. However, interventions were limited to giving reminders to verbalise if the subject stopped talking for longer than one minute and answering general questions (both events did not actually happen).

The recording was transcribed verbatim (see Appendix C), with suprasegmental coding reduced to a minimum (see Appendix B). At this stage of the study, pauses longer than 4 seconds, which unequivocally signal silent processing or “thinking”, were the only suprasegmental trait coded. This choice was made in order to avoid having too many suprasegmental indexes which are difficult both to identify and to interpret. Besides, this choice seemed the most appropriate given the prospective need to use easy-to-manage tools for pedagogical assessment and intervention.

The problems encountered by the subject were detected on the basis of the verbal protocol. For each identified problem, the translation was valued as: acceptable; partially acceptable (when the word “core” meaning was comprehended but not adapted to the context at hand); unacceptable/missing. The corresponding verbal protocol was classified according to the non-verbal index indicated above and to the following four verbal indexes: (a) locus-focus of attention (the units considered are: word; phrase; clause; sentence; group; with “word” category further identified on syntactic grounds as: Adj.; N; Pro-N; NP; V; VP; Conj.); (b) language used in verbalising (English: Primary elaboration; Italian: Secondary elaboration, with exceptions to be valued in context); (c) activity engaged (reading / translating / repeating (only if occurring in one verbal occurrence, otherwise the behavior is classified as “reading”) / thinking / thinking aloud; etc.); (d) backtracking origin of present verbalisation (when the problematic text portion was again in the subject’s attentional focus after being neutralised for a while); (e) meta/extra-linguistic comments (as back-up evidence). These indexes were chosen because they are highly indicative of comprehension processes involved (cf. §4). By contextually interpreting these behaviors, the mental path followed by the subject was reconstructed. Due to the low number of behaviors coded, no major difficulties or discrepancies in categorisation were encountered.

After the operations of data-coding and strategy identification were completed, specific linguistic tips were shaped on identified processes which had brought to unacceptable or missing results. The tips were transcribed on a piece of paper. The following day the subject was invited to take the text again. She was explained which lexical choices were unacceptable and invited to read the text again along with the pertinent tips. Like the first time, she was asked to verbalise everything that passed through her mind.

As expected, due to the translator's L2 competence, the problems identified in the protocol and unsatisfactorily solved ("unacceptable" or "missing" outputs) were limited in number, corresponding to the following lexical items: *cumbersome*; *peeled off*; *jettison*; *hatch* and *throttles*. For each of these items the subject activates a context-based linguistic strategy. In particular, the translator prefers to work at syntactic level (word; phrase; clause or sentence) rather than at group level (where no syntactic information is present) or discourse level (where linguistic information merges with non-linguistic representations). This choice demonstrates that she tries to use both the meaning and function of the words she knows to infer the meaning and function of the unknown words, with errors typically occurring when the unknown word is contextualised into a small portion of text, which gave useful hints as to where and how to intervene to enlarge the student's attention buffer and the interactions between words. Therefore, the tips aimed at re-directing the subject's attention to the portions of context which could be of help in the search for equivalents, but which had been under-exploited or not exploited at all to this end by the subject.

For each translation problem, a grid sums up behavioral indexes through the translation task. This notation form is built on Dan-cette (1994) and adapted here to take count of the parameters indicated above (language; locus-focus; activity; possible backtracking origin; extra-linguistic comments). The choice not to adopt the same analytical apparatus for the tip protocol (which sums up translation results after the translator has received her tips) was due to the assessment-only finality of the test, for which the plain transcription of the protocol allows the correct evaluation of the effect the tips had on translation.

Table 4 Translation steps for “cumbersome”

Cumbersome: Translation output: Missing

	LANGUAGE	LOCUS-FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA- LINGUISTIC COMMENTS
1. was a cumbersome long-tailed bomber	English	VP	Reads		
2. era un bombardiere dalla lunga coda dalla lunga coda	Italian	VP	Translates + Repeats (Adj.)		
3. cumbersome cumbersome	English	Unknown Adj.	Reads + Repeats	VP (1)	
4. ...			Thinks		
5. that flew in an odd nose-down attitude that flew in an odd nose-down attitude	English	Relative clause	Reads + Repeats		
6. che volava in una in un modo ehm in una attitudine in una modalità col naso all'ingiù in una modalità strana col naso rivolto all'ingiù	Italian	Relative clause	Translates		
7. cumbersome oh cumbersome cumbersome long-tailed bomber	English	Unknown Adj. + NP	Reads + Repeats	Relative clause (5)	
8. ...			Thinks		
9. cumbersome long-tailed bomber	English	NP	Reads	NP (7)	
10. ...			Thinks		
11. odd nose- down attitude	English	NP	Reads	NP (9)	

	LANGUAGE	LOCUS-FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA-LINGUISTIC COMMENTS	
12.	quindi ehh questo bombardiere va be' aveva la coda lunga no aveva una lunga coda e il naso all'ingiu' ehm era strano	Italian	Both NPs referring to "bomber"	Attributes known adjectives in the two NPs to "bomber"		
13.	cumbersome	English	Adj.	Reads	Attribution of known adj.s to "bomber" (12)	
14.	cumbersome non lo so eh	Italian	Adj.	Thinks aloud		non lo so

Careful examination of the protocol evidences that in occurrence 7 the subject reconsiders "cumbersome" for the first time after successfully translating the relative clause: "that flew in an odd nose-down attitude" (occurrences 5-6). The backtracking origin of this lexical search gives the impression that the translator is conscious that the adjectives "odd" and "nose-down" in the relative clause pertain to the aircraft just as the characteristics "cumbersome" and "long-tailed" described in the main clause. This impression is reinforced by the mental operations reported in occurrences 12-14. In 12 the subject seems to have extrapolated from both clauses the two qualities referring to the aircraft shape: "una lunga coda" (long-tailed) and "naso all'ingiu'" (nose-down, referring to the flying aircraft), keeping aside "strano" (odd), which is translated last, as if a possible correspondence between it and the unknown word "cumbersome" were perceived. "Cumbersome", in fact, is the word the translator immediately reconsiders after that (occurrences 13-14). Therefore, by taking account of the modalities of the subject's attempts to grasp the meaning of the unknown word "cumbersome", we tried to re-start the search by making explicit the parallel between the unknown word "cumbersome" and the adjective "odd", which the subject has partially grasped. Therefore, the tip reinforces the links between the two adjectives related to the aircraft shape and flight modality (respectively, "long-tailed" and "nose-down attitude") and the other two ("cumbersome" and "odd" which refer to its overall appearance). The tip was written in Italian with the only word-to-be-guessed in English followed by "cioè..." (that is...) as an encouragement to search for the unexpressed meaning. The tip sounds as follows:

“Il bombardiere aveva la coda lunga ed aveva il naso all’ingiù. Inoltre era strano ed era cumbersome, cioè...”

(The bomber had a long tail and a nose-down attitude. Besides it was odd and cumbersome, that is...)

The tip gave the following protocol:

1. Allora dunque	(so, then)
2. era strano	(it was odd)
3. ...	
4. strano anche questo	(odd this too)
5. particolare	(peculiar)
6. dall’aspetto sinistro	(sinister)

The protocol analysis reveals that the subject produced three equivalents for the unknown word “cumbersome”: “strano”; “particolare”; “dall’aspetto sinistro” (odd; peculiar; sinister), which all belong to the semantic field of “odd”. At this point, even if the exact equivalent is not guessed, a conceptual scaffolding (Adj.+negative) is ready for the exact equivalent to be given by the teacher and retained by the student.

Table 5 Translation steps for “he peeled off”

Peeled off: Translation output: Unacceptable: “ci ha passato raso” (it almost grazed us)

	LANGUAGE	LOCUS-FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA-LINGUISTIC COMMENTS
1. but he must have been running out of fuel because he peeled off without finishing us	English	Sentence	Reads		
2. ma egli ehm	Italian	Pro-N	Translates		
3. must have been running out	English	V	Reads	Sentence (1)	
4. deve aver finito il carburante doveva aver finito il carburante	Italian	VP	Translates + Repeats		

	LANGUAGE	LOCUS-FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA-LINGUISTIC COMMENTS
5. because he peeled off without finishing us	English	Causal clause	Reads	Sentence (1)	
6. perché ehm	Italian	Conj.	Translates		
7. peeled off he peeled off without finishing us	English	V + (VP+ImplicitVP)	Reads (V + VP)	Causal clause (5)	
8. quindi	Italian		Thinks		Quindi
9. without finishing us	English	Implicit VP	Reads	V (7)	
10. senza finirci forse ci ha mancato di poco ehm ci ha	Italian	Implicit VP + VP	Translates + Infers the meaning of “peeled off” starting from “without finishing us”		Forse
11 peeled	English	V	Reads	V (7)	
12. passati raso... ci ha passato raso no sì	Italian	VP	Translates + Repeats		No sì
13. peeled off without finishing us	English	VP	Reads	V (7)	
14 ci ha passati di raso quindi non ci ha finiti ma quasi	Italian	VP + Implicit VP	Translates + Infers the meaning of “without finishing us” starting from “peeled off”		quindi

The critical step for the translation of “peeled off” is in occurrence 10. Here, after successfully translating the VP “without finishing us”, the subject produces the following reasoning: “without finishing us” → “he was about to finish us”, which in turn brings about the translation of “he peeled off” as “he grazed us” in occurrences 12-14. Thus, the translation of the unknown V “peeled off” has been obtained by establishing an erroneous causal link with the VP “without finishing us”. In particular, the adding of the pronoun “ci” (us) to the presumed meaning of the V “peeled off” is to interpret as a trace effect of the translation of the implicit VP. By contrast, the clause: “but he must have been

running out of fuel”, which too has been translated successfully (occurrence 4) and which actually represents the correct causal antecedent of the V “peel off”, has not been used to infer the meaning of the unknown verb, although the conceptual connection between the two clauses is explicitly marked by the causal link “because”. Therefore, it seemed advisable to shadow the erroneous link established between the word and the implicit VP “without finishing us” which follows, and reinforce the causal link between the effect (expressed by the unknown verb) and its cause, expressed by the clause: “but he must have been running out of fuel”. This operation should encourage the inferential reasoning: “he ran out of fuel so he must go away” needed to guess at least an approximate meaning of the word. It is clear that the word technical meaning “break away from the group” is almost impossible for the reader to grasp and should be given by the teacher once the adequate mental scaffolding has been built.

In order to emphasise a direct link between the two clauses, the tip eliminates the inferential form of the sentence which actually states that we *know* that there was a fuel shortage *because* the pilot peeled off. Therefore, the verb form “must” was suppressed and the information about the fuel shortage was given as a fact: “The plane was running out of fuel”, while the causal connective “because” was substituted by a second sentence introduced by “so”. The tip is written in Italian except for the word-to-be-guessed, which is requested by the closing implicit question: “Peeled off?”. The tip was the following:

“L’aereo stava finendo il carburante. Perciò it “peeled off” senza finirci. “Peeled off?””

(The plane was running out of fuel. Therefore it peeled off without finishing us. Peeled off?)

It produced the following protocol:

1. Allora l’aereo stava finendo il carburante perciò...	(So the plane was running out of fuel so...)
2. se ne è andato...	(it went away...)
3. sì se ne è andato prima di colpirci	(ya it went away before hitting us)
4. non ha avuto il tempo di finirci	(it did not have the time to finish us)

This time the subject translates the word “peeled off” correctly from the beginning (occurrence 2) and thinks about the clause “senza finirci” (“without finishing us”; occurrences 3-4) after translating “peeled off”. In contrast with the test result, the subject is trying to make sense of “senza finirci” (“without finishing us”) as a consequence of “peeled off”, not as its cause (occurrences 3-4). As expected, the technical meaning of the word was not recovered.

Table 6 Translation steps for “jettison” and “rear hatch”

Jettison; Rear hatch: Translation outputs: Unacceptable: respectively, “raggiungere” (reach); “apertura posteriore” (back opening)

	LANGUAGE	LOCUS- FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA- LINGUISTIC COMMENTS
1. I told the crew to jettison the rear hatch then get into ditching position (braced against the bulkhead) ¹	English	Sentence	Reads		
2. allora dissi all’equipaggio	Italian	VP	Translates		
3. to jettison the rear hatch	English	1 st Object- clause	Reads		
4. ... diii	Italian		Thinks		
5. then get into ditching position	English	2 nd Object- clause	Reads		
6. allora to jettison di di di raggiungere di andare sarà rapidamente	Italian	1 st Object- clause	Infers “jettison” meaning		
7. the rear hatch	English	Object-NP	Reads		
8. quindi la parte posteriore	Italian	Object-NP	Infers “hatch” meaning		
9. then get into ditching	English	2 nd Object- clause	Reads		
10. poi di mettersi in posizione di to ditch di scendere di di discesa di uscita quindi the rear hatch potrebbe anche essere la parte posteriore l’apertura posteriore ecco	Italian	2 nd Object- clause	Translates + Infers “hatch” meaning starting from the presumptive “ditch” translation		

1 The protocol lines corresponding to “braced against the bulkhead” are not reported here as their exit is approximately correct.

The subject translates the V “jettison” as “raggiungere”, “andare rapidamente” (reach, go quickly) (occurrence 6) after briefly considering the 2nd object-clause “get into ditching position” (occurrence 5). The translation of the N “hatch” as “parte” (part) comes immediately after (occurrence 8) and is further refined in occurrence 10 as “apertura” (opening), after the subject has translated “ditching position” (occurrence 9). In this sense, both the V and the N meanings seem to be suggested by the V “ditch”, which the subject previously translated as “buttarsi”, “scendere”, and “andare giù” (go down) and which is here recovered as a modifier of “position”: “posizione di discesa, di uscita” (exit position).¹ This interpretation brings about the feeling that the Object-clause is to be interpreted as a condition to pursue that end. This feeling, however, is erroneously realised as the place to go to in order to be ready to ditch, due to the presence of the locative Adj. “rear”, phonologically resemblant to Italian “retro (N) → retrostante (Adj.)” (posterior), which the subject translates immediately. Therefore, it seemed advisable to shadow the influence of “rear” and reinforce the link between “ditch” and the unknown VP.

In particular, the tip contains a double purpose finality: “to exit the plane *and* to get into water” which makes clear what the crew is expected to do step-by-step, while not mentioning the Adj. “rear”. This should induce the subject to look for a possible meaning for the VP among the conditions necessary to get into water, leaving aside the generic movement to the aircraft tail. The tip sounds as follows:

“Per potere uscire dall’aereo e quindi per potersi buttare in acqua dissi all’equipaggio di “jettison” “the hatch”. Jettison? Hatch?”

(In order to get out of the plane and get into water I told the crew to jettison the rear hatch. Jettison? Hatch?)

The tip produced the following protocol:

1. Allora per uscire dall’aereo e potersi buttare in acqua dissi all’equipaggio di...	(So, to exit the plane and get into water I told the crew)
2. jettison the hatch...	
3. allora qualcosa per potere uscire	(so, something to get out)
4. per raggiungere l’acqua	(to get into water)
5. cosa si deve fare prima	(what one should do before)
6. mettersi il salvagente, il corpetto	(to put on the life-belt, the life-jacket)

¹ Although potentially ambiguous between the correct meaning “go down into the water *in* the plane” and the approximate one “go *down* into the water after leaving the plane”, the translation of the V “ditch” was considered acceptable and no further intervention was devised to ameliorate it. It is now clear from occurrence 10 that the subject has definitely chosen the latter interpretation for “ditch”.

As expected, the subject is actively searching for the VP meaning among the possible actions which precede ditching (occurrences 3-5). Because of the deletion of the familiar Adj. “rear”, the V meaning is not assimilated a movement verb and consequently the N is not a place to go to. Their meanings are recovered by relying on world-knowledge, which, unfortunately, is too large to permit the correct VP interpretation. After the completion of the tip protocol, the subject was told that the solution was incorrect and invited to reconsider what she had just said in occurrence 3 about the necessity of doing something in order to get out of the plane. The following observations were produced:

-
- | | |
|---|--|
| 1. Non so, potrebbe essere aprire la
porta | (I don't know, maybe to open the door) |
| <hr/> | |
| 2. però aprire è open forse spalancare,
aprire velocemente | (but “aprire” is open, perhaps open
wide, open quickly) |
-

At this point the meaning of the N is approximately correct, while the meaning of the V is still incorrect although the sense of the overall action is correctly guessed. The solution given however, is not stable and will be soon forgotten, as we are going to see in Protocol 10.

Table 7 Translation steps for “throttles”

Throttles: Translation output: Unacceptable: “portelloni” (hatches)

	LANGUAGE	LOCUS- FOCUS	ACTIVITY	BACKTRACKING ORIGIN	EXTRA- LINGUISTIC COMMENTS
1. when we reached zero altitude I heaved back on the stick and opened the throttles but the aircraft refused to level out and we hit the water with a terrific smash and I was knocked out	English	Sentence	Reads		
2. quando raggiungemmo un’altitudine zero io mi appesi al al no bastone come si chiama alla leva del cambio alla leva... mi attaccai alla leva ed aprii i portelloni ed aprii i portelloni ma... l’aereo si rifiutò di livellarsi e andammo a colpire l’acqua con uno schianto tremendo fui sbalzato fuori knocked out	Italian	Sentence	Translates + Repeats (1 st NP and 2 nd NP)		come si chiama

In occurrence 2 the word “throttles” is immediately translated as “portelloni” (hatches) because the well-known verb “open” forcefully elicits this meaning for its NP in object-function. Moreover, this meaning is in line with the previously given interpretation of “hatch” as “rear opening” and the background scene of the crew ready to ditch into the North Sea (see Protocol 9). Evidently, the subject has forgotten that the meaning “hatch” had just been associated to the word “hatch” in Protocol 9, as this choice was made after long efforts and only with the help of the experimenter. As a consequence,

the present choice appears stable and is repeated again in the same verbal occurrence. No extra-linguistic comments accompanies the translation process. Besides, no backtrackings came from the clause which explains the consequence of the aviator's behavior: "but the aircraft refused to level out...", although it was translated successfully. If the subject had perceived the cause-effect link between the two clauses, she could have used the second clause as counter-evidence to her interpretation: What on earth does the action of opening the hatches have to do with the difficulty of the plane to level out? Therefore, in order to re-start the lexical search for "throttles", the crash scenario was presented before the description of what had been done to avoid it. In so doing, the translator's attention was expected to focus on the actions taken to prevent the crash, and, contingently, discard the translation "aprire i portelloni" as implausible. At this point, even if the exact meaning of the word is not guessed, the appropriate conceptual scaffolding exists for the teacher to give it. Therefore, the corresponding tip inverts the original order "attempts-to-avoid-the-disaster - disaster" and presents the two clauses as two separate sentences, the second emphatically introduced by "eppure" (yet). As usual, the tip is written in Italian:

"L'aereo si rifiutò di mettersi orizzontale ed andò a colpire l'acqua con un terribile schianto. Eppure io avevo tenuto le leve ed avevo "opened the throttles"..."

(The plane refused to level out and hit the water with a terrible smash. Yet, I had heaved on the stick and opened the throttles...)

The protocol was the following:

1. Allora l'aereo si rifiutò di mettersi orizzontale ed andò a colpire l'acqua con un terribile schianto eppure io avevo tirato la cloche ed avevo "opened the throttles"	(So the plane refused to level out and hit the water with a terrible smash yet I had heaved on the stick and "opened the throttles")
2. tirato la cloche e	(heaved on the stick and)
3. cosa si può fare	(what can you do)
4. aprire	(open)
5. per livellare l'aereo che non cada	(to level the plane so that it won't crash)
6. deve essere qualcosa di tecnico della guida	(it must be something technical or relative to piloting)
7. aprire i serbatoi forse così pesa meno e si livella	(open the fuel tanks perhaps it weights less and it can level out)
8. boh	(boh)

This time the subject definitely avoids the meaning “aprire i portelloni”. Moreover, her search appears more circumstantiated. The solution is not immediately given but long thought of (occurrences 2-7). In particular, it is looked for in the technical context of aircraft piloting (occurrences 2-6). This hypothesis is indirectly confirmed by the translation of “stick” with the presumed more technical French equivalent “cloche” (control stick) instead of “leva del cambio” (gear level) of the test protocol. When the meaning “aprire i serbatoi” is eventually chosen in occurrence 7, it is justified by recalling the finality of the actions previously taken: reduce the aircraft weight. The reasoning goes as follows: “if it weighs less → it can level out”. The given solution however, objectively mistaken, is not stable for the translator either (see the extra-linguistic comment “boh” in occurrence 8). It is evident that the intervention has been only partially successful. After the test, the subject was told her choice was incorrect and she was invited to pay attention to her words in occurrence 6: “it must be something pertinent to piloting”. The following reasoning was produced:

1. Non so... cosa si fa... si frena si accelera, si gira, si va su, giù	(I don't know... what one can do... to decelerate, accelerate, go round, go up, go down)
2. forse se si corre di più meno cade	(perhaps the faster it flies the less likely it is to crash)
3. se decelera cade	(if it goes slower it falls)

This time, by trying to construct a contingent relation between “piloting” and “avoiding a crash”, the reader was able to think of the correct action to take, although the words which technically describe it remain unclear.

4 Discussion / Conclusion

Although the lexical problems encountered by the observed subject concern single items and are very limited in number, related TAP analyses have offered the opportunity to make clear how these forms of pedagogical intervention may be shaped, which take account of mental processes rather than process results alone. Since the strategy adopted by the subject to reconstruct the meanings of unknown words was context-based, for each identified failure the effort was to help the subject focus on contextual links which had not been exploited enough. Sometimes it was necessary to shadow those which were mistaken and suggest new ones which could help more. Therefore, in all cases the logic of intervention was to force the subject

to extensively make use of the linguistic context to reconstruct the meanings of unknown words. In so doing ready-to-apply solutions by fitting words into empty positions and/or by substituting inexact words were avoided. Rather, the very processes the student had autonomously followed were reinforced. Although only two out of five interventions can be considered fully successful, overall results seem encouraging. In particular, in all the interventions the wrong solution was not given again. In the two which produced the correct results, the lexical search was re-started on linguistic basis as expected. In the other three, however, the lexical search was unexpectedly re-initialised through the encyclopedia, which prevented to gain the correct solution. Only through further re-formulations the student's lexical search was successfully restarted although results were not satisfying yet. It is clear that the only aim of the present study has been to arouse sensibility about these problems. Experimentally testing the validity of this approach is postponed until more translation process observations are conducted which include: a) more text samples; b) more subjects; c) more rigorous observational grids capable of capturing the most ample spectre of translation / intervention behaviors. The new perspectives TAPs research opens to foreign language teaching, with a special reference to translation and lexical acquisition, are, however, appreciable right away.

Indeed, opinions about the role of translation in the foreign language curriculum have dramatically changed over the years. Traditionally, the low value attached to translation as a formative device was determined by the prevalence of situational and functional approaches to L2 teaching which considered the mother tongue to be an obstacle to L2 learning. Alternative views have now emerged which stress: a) the psychological role of L1 transfer; b) the relevance of form-meaning interplay in foreign language learning. Both these considerations constitute the conditions for translation to become an important element of the foreign language curriculum. Due to translation work, the students' linguistic resources in each of the languages involved are expanded often turning into effective L2 vocabulary learning. (Mizón, Diéguez 1996).

When translation skills become an object of the foreign language curriculum, the advantages TAPs research offers over other translation theories clearly emerge. Traditional translation theories almost exclusively deal with the linguistic features of the finished product. They do not describe nor explain the actual psychological process of translation but only what ideally the translation process should be (Königs, Kaufmann 1996). Therefore, pedagogical interventions based on traditional views on translation offer a number of recommendations/prescriptions as to how subjects should translate. This information is not easy to handle because it is perceived distant from the task at hand. Throughout the actual translation process students

are often left alone, sometimes with one or more dictionaries to consult. This operation, however, is not easy for students to apply either. For example, Krings (1987) argues that in search for equivalents students use a playing-it-safe strategy. They either avoid items suggested by the bilingual dictionary which they are unfamiliar with or choose the item with the greatest range of application. Königs and Kauffman (1996) too observed that students looking at bilingual dictionaries stop their search when they come through a word of which they knew the meaning in advance but which did not come to their mind before. By contrast, when the word is totally unknown, their choice falls on the first equivalent proposed by the dictionary because it is considered of a more general class or simply because it sounds good. Students' lack of monitoring when choosing an item from the dictionary is highlighted in Dancette (1994). Equivalents seem to be picked up at linguistic level, sometimes they are further elaborated at a notional level, but never checked to see if they fit into the context at hand. Eventually, at the end of the translation task, the evaluation process is mainly intended to substitute "wrong" results with "right" ones, without asking *why* choices were wrong, thus giving the student very low chances of learning from his mistakes (Lörscher 1992).

The modifications that process-oriented translation studies suggest are radical since they support new forms of pedagogical intervention centred on the learners' ongoing mental processes rather than on learning results. Thanks to the use of specific indexes to identify lexical processes, the trainees are given appropriate linguistic tips aimed at re-directing their attention to context portions which have been discarded but which are essential for the students to recover lexical equivalents they do not know by activating new lexical searches by themselves. The presence of the teacher in the pedagogical setting makes dictionary consultation more manageable, thus avoiding probably one of the most complex operations for a trainee to do especially when he is a novice and/or does not know the current topic. It is in fact the teacher who helps the student adapt the meaning of the potential equivalent to the context at hand after he has autonomously tried to guess it. Interventions at the task-stage make suggestions at the pre-task stage less important if not useless, thus limiting the danger of giving too much information which the student is not able to apply to the task at hand. Similarly, step-by-step process-oriented evaluation of the student's work makes final product-oriented evaluation less important especially at the initial stages.

Since the translation work makes it possible to discover the meaning of a number of new words, the repercussions of TAPs research are relevant for the specific problem of lexical acquisition too. In the arena of lexical processing, it is now acknowledged that the L2 learner can achieve rapid initial progress by transferring the L1 conceptual world *en masse* to L2. Positive transfer is later analysed in order

to achieve stable cognitive representations, while incorrect negative transfer is suppressed through conscious comparison between first language form-meaning associations and L2 ones (Ellis 2003; Skehan 1998). In this sense, initial parasitism of L2 on L1 conceptual and formal structure turns out to be an advantage and the cross-linguistic interplay between the two languages is considered an essential condition for learning to be successful (Kroll, Tokowicz 2005). In the pedagogical arena, these considerations about spontaneous lexical acquisition processes are particularly affected by the new research perspective. Building on the results of TAPs experiments, it is clear that in a pedagogical setting what really matters in order to guarantee the acquisition of new words is that students receive the right help while they work on spontaneous bottom-up lexical processes. After being exposed to repeated interventions at this processing level, the students become gradually able to recognise that they should proceed top-down as well, through anticipations as well as conscious revisions and re-elaborations of the initially assigned meanings in order to achieve a larger and clearer sense of word meanings and fix the new meanings and lexical frames. In this sense, the facilitation offered by having clear and reliable indicators such as those used in TAPs protocols to identify ongoing strategies and redirect autonomous bottom-up lexical search allows the teacher to set up targeted interventions whose possibilities of adaptation to the different school contexts must be further explored.

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Appendix

A (Text)

“I was flying a Whitley”, Bart said. The Armstrong Whitworth Whitley was a cumbersome long-tailed bomber that flew in an odd nose-down attitude. In the spring of 1941, Bomber Command had a hundred of them, out of a total strength of about seven hundred aircraft. “A Messerschmitt fired on us and we took several hits”, Bart continued. “But he must have been running out of fuel, because he peeled off without finishing us. I thought it was my lucky day. Then we started to lose altitude. The Messerschmitt must have damaged both engines. We chucked out everything that wasn’t bolted down, to reduce our weight, but it was no good, and I realised we’d have to ditch in the North Sea”.

[...]

“I told the crew to jettison the rear hatch then get into ditching position, braced against the bulkhead. [...] When we reached zero altitude I heaved back on the stick and opened the throttles, but the aircraft refused to level out, and we hit the water with a terrific smash. I was knocked out”. (K. Follett, *Hornet Flight*, 2002, 4-5)

B (Transcription codes)

Reading (ST): <i> </i>
Fast reading (unclear): <read=secs>
Pause: <pause=value; secs=>
values: think
 think-type
Fast talking: <fast> </fast>
Paralinguistic features: <para=value> </para>
value:laugh
Intonation: <int=value></int>
value: rise (questions)
Unclear verbalisation: <unclear=secs>

C (Translation Verbal Protocol)

allora allora io stavo volando su un Whitley <i>Bartley said</i> the <read=7.20> <i>that flew in an odd nose-down attitude</i> ehm allora il Whitney <pause=think; 3.10> l’Armstrong Armstrong è un nome proprio l’Armstrong Whitley <pause=think-type; 3.10> <fast>quindi come l’aereo si chiamava Whitley</fast> allora quindi <fast>stavo

volando su un Whitley disse Bart</fast> il Whitley di Armstrong <i>was a cumbersome long-tailed bomber</i> era un bombardiere dalla lunga coda dalla lunga coda <i>cumbersome cumbersome</i> <pause=think; 4.30> <i>that flew in an odd nose-down attitude that flew in an odd nose-down attitude</i> <pause=think-type; 2.10> che volava in una in un modo ehm in una <para=laugh>attitudine</para/> in una <int=rise>modalità</int/> col naso all'ingù in una modalità <int=rise>strana</int/> col naso rivolto all'ingù <pause=think; 3.20> <i>cumbersome oh cumbersome cumbersome long-tailed bomber</i> <pause=think; 7.10> <i>cumbersome long-tailed bomber</i> <pause=think; 4.10> <i>odd nose-down attitude</i> <pause=think; 3.10> quindi eh questo bombardiere va be' aveva la coda lunga no aveva una lunga coda e il naso all'ingù ehm <unclear=2.10> era strano <int=rise>cumbersome</int/> cumbersome <pause=think-type> non lo so eh <i>in the spring of 1941 Bomber Command had a hundred of them</i> <read=4.20> allora <i>in the spring of 1941</i> allora nella primavera del 1941 ehm il comando dei bombardieri aveva aveva un centinaio di essi ne aveva un centinaio su una forza totale di circa 700 aerei quindi ecco <unclear=2.10> <i>a Messerschmitt fired on us and</i> <read=3> <i>several hits</i> <read=2.30> <i>a Messerschmitt fired on us</i> allora a Messerschmitt Whitworth Whitley quindi sono diversi tipi di aerei no quindi un Messerschmitt un Messerschmitt <pause=think; 2.40> ehm ah quindi sì sì sì quindi Whitworth è un nome inglese Whitley Messerschmitt è un nome tedesco quindi eh va be' <i>a Messerschmitt fired on us and we took several hits</i> quindi un Messerschmitt che è un altro tipo di aereo ci sparò contro e prendemmo tanti tanti <pause=think-type; 2.10> colpi ehm ma <i>but he must have been running out of fuel because he peeled off without finishing us</i> ma egli ehm <i>must have been running out</i> deve aver finito il carburante doveva aver finito il carburante <i>because he peeled off without finishing us</i> perché ehm <i>peeled off he peeled off without finishing us</i> quindi <i>without finishing us</i> senza finirci forse ci ha mancato di poco ehm ci ha <i>peeled</i> passati raso <pause=think; 3.10> ci ha passato raso <int=rise>no</int/> sì <i>peeled off without finishing us</i> ci ha passati di raso quindi non ci ha finiti ma quasi <i>I thought it was my lucky day</i> pensavo che fosse il mio giorno fortunato poi <read=3.40> poi cominciammo a perdere altitudine il ehh Messerschmitt <i>must have damaged both engines</i> deve aver danneggiato entrambe le ehm i motori <i>we chucked out everything that wasn't bolted down</i> noi eh allora <i>we chucked out everything that wasn't bolted down</i> <pause=think-type; 4.20> <i>to reduce our weight</i> <pause=think-type; 4.50> <i>but it was no good and I realized we'd have to ditch in the North Sea</i> <pause=think; 2.20> allora <i>we chucked out everything that wasn't bolted down to reduce our weight</i> allora per ridurre per ridurre il nostro peso

*<i>we chucked out everything</i> noi ehm per ridurre buttammo via ogni cosa *<i>that wasn't bolted down</i> che era quindi tutto quello che era possibile quindi quello che *<i>chucked out everything that wasn't bolted down</i> che non era giù assicurato legato che non era fissato *<i>but it was no good</i> ma non era abbastanza *<i>and I realized</i> e mi accorsi che dovevamo *<i>to ditch in the North Sea</i> quindi dovevamo scendere dovevamo buttarci ehmm adesso ehmm quindi non era sufficiente *<i>to reduce our weight we chucked out everything but</i> ehmm buttarci ehmm scendere ehm andar giù nel Mare del Nord.*******

*<i>I told the crew to jettison the rear hatch then get into ditching position braced against the bulkhead</i> allora dissi all'equipaggio *<i>to jettison the rear hatch</i> *<pause=think; 3.10> diii *<i>then get into ditching position</i> allora to jettison di di di raggiungere di andare sarà rapidamente *<i>the rear hatch</i> quindi la parte posteriore *<i>then get into ditching</i> poi di mettersi in posizione di to ditch di scendere di di discesa di uscita *<pause=think-type; 2.00> quindi the rear hatch potrebbe anche essere la parte posteriore l'apertura posteriore ecco *<i>braced against the bulkhead</i> braced abbracciati contro quindi tenendo stretto tenendo stretto the bulkhead eh la testa boh non so di che cosa quindi aggrappandosi tenendosi a dei sostegni a delle maniglie qualcosa per non cadere giù ecco *<i>when we reached zero altitude I heaved back on the stick and opened the throttles but the aircraft refused to level out and we hit the water with a terrific smash I was knocked out</i> quando raggiungemmo un'altitudine zero io mi appesi al al no bastone come si chiama alla leva al cambio alla leva *<unclear=2.20> mi attaccai alla leva ed aprii i portelloni ed aprii i portelloni ma *<pause=think-type; 2.30> l'aereo si rifiutò di livellarsi e andammo a colpire l'acqua con uno schianto tremendo fui sbalzato fuori knocked out.***********