

# Interdisciplinary approach in translation didactics

HANNELORE LEE-JAHNKE

Université de Genève

## ABSTRACT

*The question why interdisciplinary research and approach in translation didactics has become essential and of interest to translation studies will be outlined prior to highlighting three to our thinking major disciplines of interest. Those are: 1. cognitive and affective sciences with a specific interest of evaluation methods and the implicit and explicit knowledge; 2. cognitive sciences and neurosciences leading to a more proficient structuring of a course; 3. research in competences, analyzing first and foremost the different competences, such as social competence, methodological competence, personal competence and acting competence. Linked to the research in competences is of course the pathway which trainers pave for their learners and which leads from novices to experts, taking into account the interface with the professional world.*

*A practical example of a course, in which all these reflections are integrated and structured according to Bloom's taxonomy, will mark the last part of this paper.*

## 1. INTRODUCTION

Before going *in medias res*, it seems of importance to better understand two issues: 1) Why do we need new approaches in translations didactics and 2) in which way interdisciplinarity is *the* solution to higher performance and improved quality.

1) In our globalized world not only economy has undergone major changes, also education and even more so higher education in which we face since 1990 a

very strong shift from teaching to learning. What does this mean? It means that teaching has to aim at an individual learning process in which the trainer acts mainly as facilitator. This implies of course that the student is in the center of the process and no more the trainer: the latter helping mainly in the knowledge and skills transfer, showing how to integrate actively new knowledge into existing knowledge, hence to infer as much as possible.

In other words, many trainers have to change their way of teaching and also of structuring their classes.

- 2) Interdisciplinarity implies that there are at least two disciplines which can make inquiries related to common mechanisms or common methods. An approach which is fairly young in as far as translation studies are concerned, the latter being, as we know, a discipline of its own only since some 70 years. This means that we still have to learn a lot and explore the best possible ways in interdisciplinary research by looking at problems and general processes which two or more disciplines could have in common: such as regularities, describing i.e. kinship structures. Interdisciplinarity hence can help us to better results by integrating knowledge from annexed disciplines through new pathways.

## 2. INTERDISCIPLINARITY: A RESULT OF THE NEIGHBORHOOD FACTOR?

In order to exemplify the above question it is interesting to have a look at the genesis of psycholinguistics, which became a discipline of its own through the merger of language and psychology. Aitchison (1992: 73) defined psycholinguistics as *the study of the language and the mind*. It was created through collaboration between psychologists and linguists and goes back to the year 1951.<sup>1</sup> Although the disciplines of psychologists and linguists were already well defined, both had one aim in common: the thorough study of language aiming at making a synthesis between psychology and learning processes and linguistics (Peterfalvi 1974). With the help of psycholinguistics we could also highlight some useful methods of process-oriented translation training (Lee-Jahnke 2011: 113).<sup>2</sup>

The above question can clearly be answered with yes. Yet, it should be added that interdisciplinarity is also the key to new approaches and hence new findings and innovative didactical methods within the framework of translation. Hereafter we show the disciplines which are of major interest for translation studies: for the present study we shall only take into consideration neuro- and cognitive sciences, the study of emotions or affective sciences and the study of competences since they are all closely linked to the process-oriented teaching and learning which strives to bring novices to experts in the given time.

1 In this context it is of interest to read the new edition of the *Didactica magna* by Ahrbeck (1961)

2 For further reading see Lee-Jahnke (1998).

2.1 INTERDISCIPLINARY RESEARCH IN TRANSLATION: PAST, PRESENT, FUTURE  
2.1.1 PAST: DEFINING AND UNDERSTANDING PROCESS-ORIENTED TRANSLATION  
THROUGH SCENES & FRAMES AND THE *Gestalt* CONCEPT

The study and importance of neurocognitive aspects of translation and in particular process-oriented research (Königs 1996) with a solid empirical basis, has to be viewed through a historic looking glass in order to better understand the current endeavor of research within the neurocognitive approach in translation. We are talking here on the one hand about a timeframe of some thirty years in which different studies (Gile 2005; Kalina 2005; Krings 1986, 2005; Mizuno 2005; Rydning 2005; Séguinot 1989, 2005; Tirkkonen-Condit 1989, 2005; Jääskeläinen 1987; Lee-Jahnke 1998, 2005; Lörcher 2005; Zhong 2005) have been conducted, all offering some insight into what goes on in the translator's mind during the translation process. *Qui bono?* The great benefit goes definitely to translation and interpreting training, since this type of research shows the trainer whether his didactical method enhances translation capacity through better inferring abilities and the development of automatisms which can be observed in professionals.

As a matter of fact we do believe that this approach has to take into consideration the early studies made by Fillmore (1977: 55) which have clearly shown the need of “an integrated view of language structure, language behavior, language comprehension, language change and language acquisition”, as he puts it. These studies, which have marked the cognitive turn in translation (Lee-Jahnke 2007: 367), identified three major issues:

- 1) Is it possible to formulate the description of “meaning” in a checklist?
- 2) How to interpret the increasing interest in *scene and frame* not only in linguistics but also in cognitive sciences and cognitive psychology?
- 3) How to describe in a satisfactory way the process(es) of the understanding of a text?

Fillmore's model of *Scenes-and-frames semantics* attempted at responding to the need of a relevant theory which so far did not exist. In his own words, his research was:

a tentative first step in seeking a solution to certain problems in semantic theory within the framework of concepts that seem to be emerging in a number of disciplines touching on human thought and behavior. (Fillmore 1977: 79)

Fillmore was not the only one to identify the importance of a Gestalt<sup>3</sup> principle in language matters: Lakoff (1977) also published an article in the same year on “Linguistic Gestalts” and Attila (1977) on “Dynamic fields and linguistic structure: A proposal for a Gestalt linguistics”. In our training situations we greatly benefited from this knowledge in combining it with the enhancing of “mental representations” prior to the translation process (see also Lee-Jahnke 2011).

- 3 The concept of Gestalt describes something which is more active than “perception” and more passive than “consciousness”; in German another expression is often used: *Gewahrsein*, which indicates that a perception is accompanied by a certain kind of self-conscious knowledge of perception (Blankertz & Doubrawa 2005).

### 2.1.2 PRESENT: COMPREHENDING AND DEVELOPING COMPETENCES AND SKILLS IN BILINGUALS

We also have to take into account the ongoing interdisciplinary research within the fields of neurocognition, bilingualism,<sup>4</sup> research in expertise and intelligence, just to name a few, in order to have a more solid basis for a yet newer approach, that of ToM<sup>5</sup> and translation (see Annoni *et al.* 2012).

In the field of bilingualism experimental approaches resulted in many interesting data, showing particularly that different languages have fundamentally a common representation in the brain. This representation can be modulated by different variables, such as the age of acquisition, immersion and proficiency (van Heuven & Dijkstra 2010: 104-122). Thus, particularly the semantic processing seems rather to be function of the level of proficiency of L2 and syntactic processing seems to depend especially on the age of the second language acquisition (Abutalebi *et al.* 2008).

Within this framework, the study of competences for translators is of paramount importance, since learning outcomes are nowadays calculated by social competence, methodological competences, personal and acting competences.<sup>6</sup> These competences are being stimulated through planning, monitoring and evaluation, as high ranking control processes which Sternberg (1985) describes as key issues in the *triarchic theory* of intelligence.<sup>7</sup>

### 2.1.3 FUTURE: EXPLORING YET NEW RESEARCH COMBINATIONS FOR HIGHER PROFICIENCY

With the upcoming of the interdisciplinary research in translation processes, further studies have shown that consciousness has a general tendency to give more importance to personal concepts, interpretations, memories, etc., than to an objective perception (Schneiders 2007: 106). This aspect is of major concern in translation didactics since it indicates clearly the importance of certain aspects of expertise and, very specifically, that we have to handle very carefully the training of inferences in teaching/learning situations.

While interdisciplinary research in cognitive sciences is of such a great importance for translation, is certainly the fact that this type of research touches upon memory, the capacity of making an abstract reasoning and to differentiate between an analytical and an holistic outlook on a text.

On the other hand, research in cognitive sciences allows us also to better understand and hence guide the cognitive learning strategies and more

4 See Sturm (2010). Some scientific findings have shown that, for instance, dyslexia varies with language, a fact which also should interest translation studies. For further reading see O'Connor (2004), Marwinski (1998).

5 In Neuroscience, being able to imagine another person's mental state is known as having a Theory of Mind (ToM). This skill seems dissociated from the group of executive functions – though very dependent on them – and seems to rely on a large but individualized brain network. For further reading see Annoni *et al.* (2012).

6 See the EMT list of competences for translators.

7 For further reading see Lee-Jahnke (2008).

specifically the so called organization strategies, which enable the learner to group information in a form which is easier for him or her to understand and re-use.<sup>8</sup>

Within the research of neurocognitive aspects in translation, the results obtained by Kolodner (1991) – who in his expertise studies examined the so-called episodic definitions, i.e. the experience of how to best use and reorganize knowledge in specific structures and, especially, in the research of the knowledge of specific domains –, are certainly of utmost interest to translation studies. He based his reflections on *episodic memory organization packets (E-MOPs)*<sup>9</sup> of experts, who are able to build up their experience-based knowledge in form of so-called E-MOPs. The episodic memory, also called autobiographic memory, is located in the prefrontal cortex, the hippocampus and the thalamus.

According to these findings, applicable knowledge is being recorded in form of E-MOPs within the so-called episodic memory. But thanks to flexible mental representations also declarative knowledge,<sup>10</sup> procedural knowledge and conditional knowledge can be likewise registered. Procedural knowledge has certainly become one of the major domains of research in translation studies in the past decades. It is characterized by its dynamic feature and concentrates on how, with a certain procedure or a certain process, a clearly defined and desired result can be achieved.

Concerning neurocognitive aspects of translation, the importance of intelligence cannot be neglected, especially since, according to Mack (1996: 92-114) a theory of intelligence can only be formulated in relation with a global theory of cognition (Richardson 1993); cognition being defined here as the processes which handle information and which are basic to perception, thinking and acting. Sternberg (1984, 1985) was of course in the forefront trying to define a theory of intelligence with his *triarchic theory of intelligence* (1985). In this theory he describes three types of components which process information and which should be taken into consideration in any didactical approach in translation:

- 1) metacomponents, which are controlling processes such as planning, monitoring, evaluation;
- 2) performance components, which are considered as lower processes with the following functions: stimulus encoding, inferring relations, selective attention, elaboration;
- 3) components of knowledge acquisition, which involve processes which are linked to learning and memorizing of new information such as selective encoding, selective comparison, restructuring.

Within this context an interdisciplinary research led by Lehr (2010) has clearly shown that experts do not only have an easier access to more knowledge because of their highly developed automated processes, but that they are also able to restructure the relevant knowledge much faster, according to the need of the

8 A detailed listing is mentioned under §5.

9 Schank (1982) defines an E-MOP as a generalized episode which contains the general information of individual episodes, which are differentiated from the general episode.

10 In didactics this indicates factual knowledge.

moment (see also: Englund-Dimitrova 2005; Lee-Jahnke 2005). Since experts are able to apply more effectively – and efficiently – their knowledge, they are able to diminish the cognitive effort necessary to access to this knowledge.

Theories concerning the accumulation of knowledge, such as the one defined by Staszewski (1990) the *skilled memory theory*, explain the excellent capacity of memorizing by experts according to the encoding of information, taking into account the existing knowledge, the development of cognitive structures from which the experts takes his information and which is closely linked to the long-term memory; Staszewski (1990) also describes the existence of domain specific slots which enable a quick encoding of information and stresses that repetition and exercise help to diminish the time necessary to access information and to operate the encoding.<sup>11</sup>

This short overview should not omit to mention the research within the field of mirror neurons let by Rizzolatti (2003, 2005), where he stresses the importance of interpersonal communication as a neuronal imitation process, and were speech recognition and empathy develop the so-called hypothesis of *shared manifold inter-subjectivity* and *direct matching mechanism* explained through motor representations in the brain.

### 3. THE PERTINENT DISCIPLINES

#### 3.1 COGNITIVE AND AFFECTIVE SCIENCES WITH A SPECIFIC INTEREST OF EVALUATION METHODS AND IMPLICIT AND EXPLICIT KNOWLEDGE

##### 3.1.1 DECISION MAKING AND EVALUATION

The fact that emotions and language are closely related has been largely demonstrated – amongst others – in the studies by Damasio (2003), Cyrulnik (2010) and of course, by one of the leading specialists in affective sciences, Klaus Scherer (2001). For translation studies it is of interest, especially in the framework of didactical issues, to better understand the reason for a given “decision making” of the translator, and, hence, also for the erroneous decisions leading to mistakes.<sup>12</sup> This leads us to the importance of evaluation, stressing the fact that one has to clearly differentiate between formative and summative evaluation.<sup>13</sup> At the present stage, more attention is given to formative evaluation, since any trainer knows how important a tool this is for the motivation of the learners and hence the improvement of their skills. As far as summative evaluation is concerned, assessment is to a certain extent still dealt with in a poorly systematic manner, despite the numerous studies conducted in this field.

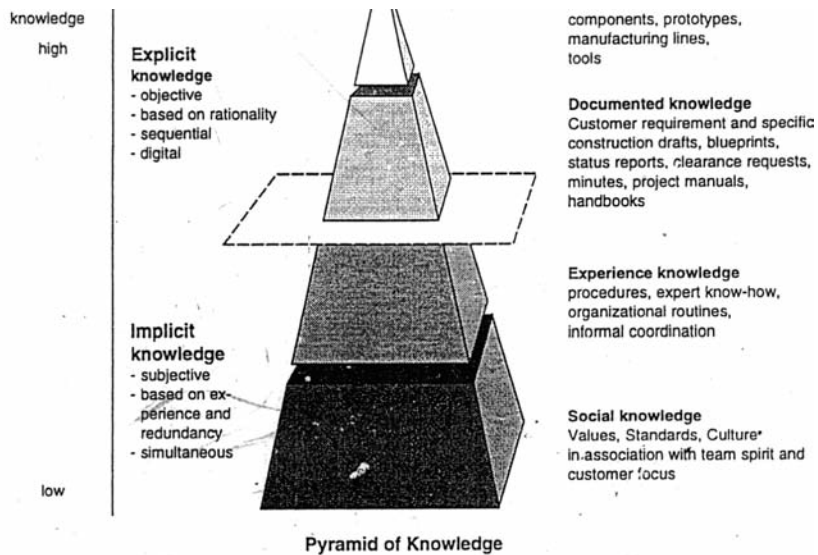
Didactical evaluation aims mainly at the improvement of the translation skills during the translation process with a threefold target:

- 11 For further reading see also Pavlenko (2005: 192-224, especially chapter 7: Social cognition); Lee-Jahnke (2007).
- 12 Many studies have been conducted within the framework of evaluation in translation such as Hansen (2006), House (2001), Lee-Jahnke (2001), Risku (1998).
- 13 Evaluation, used as a tool for training, can clearly be an incentive for motivation (Lee-Jahnke 2011: 127).

- a) student centeredness
- b) learning outcome
- c) competence orientation.

### 3.1.2 IMPLICIT AND EXPLICIT KNOWLEDGE

The pyramid below developed by Gassmann (1997) shows the great importance of implicit knowledge since this “hidden part of the iceberg” is clearly the more important one. This is particularly the case when we deal with translation, since cultural and social issues play a paramount role, but also expert knowledge and experience. Hence didactical procedures can never be schematized and should be closely linked to the emotional component of a class in a face-to-face teaching.<sup>14</sup>



Source: Gassmann (1997a: 152).

Fig. 1 Implicit and explicit knowledge.

## 4. COGNITIVE SCIENCES AS A TOOL FOR MORE PROFICIENT STRUCTURING OF A COURSE

Memory, the capacity of making an abstract reasoning and to differentiate between an analytical and a holistic outlook on a text are deeply linked to cognitive sciences. Research in cognitive sciences also allows us to understand better and hence to guide the cognitive *learning strategies* and especially the so-

<sup>14</sup> This explains also why pure virtual learning or mere ppt presentation have proven to be useful only for the short term memory and are less apt to the necessary cognitive flexibility which aims at helping students to learn skills for multiple use.

called *organization strategies*, which enable learners to group information in a way that they can understand it easier, such as to highlight passages, to summarize articles, to take notes while reading or listening. In other words, this is a very individual approach and “preparation” of knowledge information and treatment, a processing of the material in order to better adapt it to the individually preexisting knowledge. This is probably also the reason why mere power point presentations which do not incite the learner to process the learning material in an individual way, are rarely stocked in the long term memory. In other words, they cannot be reused in other circumstances because the *elaboration strategy* which helps individuals to integrate new knowledge into the existing one does not get stimulated. This elaboration strategy is also responsible for the capacities of critical examining and the so-called *repetition strategies*.<sup>15</sup>

Research in neurosciences on bilinguals has shown that L1 and L2 share a common network which is modulated according to the age of acquisition of the language as well as according to the exposure to the language. These findings (Perani & Abutalebi 2005) have also indicated that for L2 the language network tends to be less broad as far as comprehension is concerned but larger for the language production. The picture below illustrates these results:

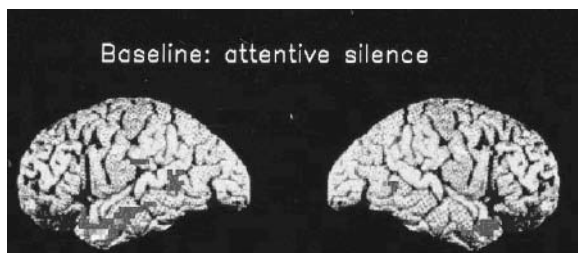


Fig. 2 Common network of modulator factors – acquisition age of L2:  
 Comprehension of late L2 acquisition: L2 weak: L2 < L1;  
 L2 strong: L2 = L1 (Perani & Abutalebi 2005).

## 5. THE SHIFT FROM PRODUCT TO PROCESS ORIENTED TRAINING AND NEUROSCIENCES

This shift resulted from a natural approach to improve quality in translation and hence to closely examine which process was more prone to lead to a high quality product. One of the means to have a closer look at the translation process was of course to examine which strategies lead to the best translation. As mentioned by us in an earlier paper (Lee-Jahnke 2011: 114) at the present stage it would be of interest to collect data from learners in order to follow more closely the optimal pathways which the students used to reach their aim. Such a procedure may also help to find out which patterns lead to the best translation. Ideally, this approach is advantageously linked to the use of Translog.<sup>16</sup>

<sup>15</sup> For further reading see Lee-Jahnke (2008).

<sup>16</sup> Software developed by Arnt Lykke Jakobsen.



In order to develop new process-oriented methods in translation teaching, the existing empirical research (Annoni *et al.* 2002) still needs to be further developed, because during the past twenty years scientific psychology has evolved rapidly and the debate between behaviorism and mentalism<sup>17</sup> has led to a new problem: where is information treated and how? Today, thanks to neighboring disciplines, we know of five different memory systems which play a major role for translation processes:

- a) the procedural memory, which functions through repetition of an action and is situated in the cerebellum and grey nucleus;
- b) the semantic memory, which allows us to memorize concepts, the meaning of words independent of their context, and is situated in the neocortex;
- c) the representational memory, which helps to memorize an image or face and allows us to recognize a piece of information more easily, if we have seen it before. It is located in the neocortex;
- d) the working memory or short-term memory is used to keep a piece of information for the time of the realization of a task. It is located in the neocortex and the prefrontal cortex;
- e) the episodic memory, also called autobiographic memory, is located in the prefrontal cortex, the hippocampus and the thalamus.

The knowledge of these five different “types of memories” is crucial for structuring courses in translation with specific exercises at the different levels of the learning process<sup>18</sup> as the model class at the end of this article attempts to illustrate.

## 6. A COURSE MODEL TO SUMMARIZE THE IMPLEMENTATION OF INTERDISCIPLINARY KNOWLEDGE ACCORDING TO BLOOM’S TAXONOMY

The example given below wants to show how a course in economic translation could be structured with all the relevant text types and tasks for the students at the given level of taxonomy. These two slides can be adapted to any type of translation course and want to exemplify the implementation of the outcome of interdisciplinary research in translation training.

17 See Borillo & Goulette (2002) for further reading.

18 Taking into account the taxonomy of Bloom (1972).

## Course model (1/2)

Learning/teaching activities and methods based on Bloom's taxonomy

Activities	Level of Taxonomy	Teaching Methods	Teaching Material
Team work : Character of the translation and assessment	Level 5 Evaluation	Debate	Script PPT Photocopied/Transparencies
Small groups formulate a constructive criticism of an analytical translation of one student ; Presentation and comment of the result using Ideology	Level 5 Evaluation	Debate Team work problem-solving strategies (APP)	Script PPT Photocopied/Transparencies
Evaluation of translation ?	Level 5 Evaluation	Debate Timework (polling, discussion)	0
Real project concerning the Federal Reserve (FR) translation of a speech by the president of the Federal Reserve. Correction is done during class	Level 3 to 5 Application Study the Syntax Evaluation	Individual work under professional conditions	Script Transparencies
Evaluation and presentation of a "model" translation by two students (each time after correcting a text in class)	Level 5 Synthesis	Learning team (partners change with each text)	Written material Photocopied
Evaluation of grammar as homework	Level 5 Synthesis	Individual work	0

## Course model (2/2)

Learning/teaching activities and methods based on Bloom's taxonomy

Activities	Level of Taxonomy	Teaching Methods	Teaching Material
French summary of English texts	Level 4 and 5 Analysis Synthesis	Individual work Debate	Script PPT Photocopied Transparencies
Translation of one text each week (homework)	Level 3 Application	Individual work	0
Reformulation of concepts (linked to economy) which have been dealt with in class	Level 2 Comprehension	Debate Teaching by pairs	0
Explanation of the major economic concepts (recession / growth, international commerce, WTO, etc.)	Level 1 Knowledge acquisition	Formal papers Informal papers Lectures	Script Tables Photocopied PowerPoint
Reading some chapters	Level 1	Individual work	Script

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