

## EVALUATION OF TRANSLATION PERFORMANCE: A COGNITIVE VIEW OF TRANSLATION PROCESS RESEARCH (TPR)

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### **ABSTRACT**

*The current paper is a synthetic model of analysis to the cognitive impetuses of the translation process. It tackles the structures of the cognitive systems of translation. The new trends in translation have been delineated in terms of Translation Process Research (TPR). It is a model of studying translation in terms of process - oriented approach. The paper aims to describe the mental representations of translation performance and the importance of cognitive processes of translation. The paper deals with the random sample of texts, as they are translated by 4<sup>th</sup> year student in the Dept. of Translation – College of Arts/University of Mosul. It is concluded that translation is not a purely linguistic phenomenon, but it is rather a cognitive system of bilingual furcation in the mental model of the translator.*

**KEYWORDS:** *oriented approach, linguistic phenomenon, translators and non-translators*

### **INTRODUCTION TO COGNITIVE PROCESS OF TRANSLATION**

Modern trends of researches have looked at translation as a cognitive process dealing with the mental model. The cognitive aspects of translation and in particular the processes in the translator's mind have been investigated increasingly for over 30 years. This increased interest in what goes on (in translators' minds) owes much to the availability of procedures and to continuously improving methods for the empirical investigation of particular aspects of a translator's performance level such as eye-tracking or screen recording, psychological tests, and cognitive tasks analyses (CTA) as well as various neuropsychological techniques (cf. Dow and Massey, 2013: 105; House, 2015: 14; Naoum, 2001: xxvi; Toury, 1995: 112). As O'Brien (2011: 6) rightly pointed out, Translation Process Research (TPR) has heavily quoted from a number of disciplines: linguistics, psychology, cognitive science, neuroscience, reading and writing research and language technology (cf. Dow, 2014: 358; Göpferich, 2007: 27). The influence of these disciplines and their particular research directions and methodologies on translation studies is at the present time something of a one-way affair, but given time, a reciprocal interdisciplinary may well come into being, with the result that translation studies will not be only a borrower, but also a lender (House, 2015: 15). Hence, this paper came to study the translator's performance within a model of (TPR), it is supposed that translation is not a purely linguistic phenomenon, but it is intersected with the cognitive impetuses for mental representations.

The latter would be studied and analyzed via structural patterns of TPR and to deal with the mental representations in translation performance<sup>1</sup>.

## INTROSPECTION IN TRANSLATION PROCESS RESEARCH

Translation Process Research (TPR) is a branch of translation studies (TS) that works within a behavioral-cognitive experimental methodological paradigm. It is actually working with cognitive task analysis (CTA), where essential data about the translation process stem from translators' mental activity. The paradigm is often extended with the data from concurrent or retrospective, think-aloud sessions, interviews, and introspective despondence to questionnaires<sup>2</sup> (Jakobsen, 2017: 21, cf. Fraser, 1996: 65; Kelly, 2005: 4; Ushioda, 2013:78; Dow, 2014: 368; Hurtado Albiret *al*, 2016:6). In translation process research, detailed metadata about participants need to be obtained through questionnaires. They can be used to elicit metadata, which include information about the linguistic structures, semantic construal and pragmatic dimensions of the text, the level of translation performance, impressions about the nature of the text, workplace conditions, text typology, lexical congruency, translation memory use, etc. (cf. Dow, 2014: 374). However, such preliminary questionnaires only provide researchers with the required information about what translators think they do or intend to do and their awareness of it. They do not necessarily tell researchers what translators actually do (Dow, 2014: 369). Sometimes, more advanced technology such as EEG, fMRI, PET is also used, but House (2015: 121) argues that these technologies may provide inaccurate readings due to the unsuitable ecological conditions that may affect the translators' performance. The event-related potential (ERP) associated with such techniques may cause hypertension, confusion, mind – absence, loss of attention control, tension or even claustrophobia to the translator. Regardless of which combination of data collection methods is used<sup>3</sup>, TPR seeks to answer one basic question: by what observable and presumed mental processes do translators arrive at their translations and what is the level of performance they may reach in processing the translation? (Jakobsen, 2017: 21-22; Evans and Green, 2006: 75-76; cf. Kutas, and Schmitt, 2003: 171). The assumption is that mental activity has observable and measurable neurolinguistic correlates, both in our brains and in our bodies (such as movements of our eyes and fingers), which can be recorded as user activity data (specifically translator's activity data) (TAD) (Jakobsen, 2017: 21). TPR methodology is, therefore, closely linked with the methodologies used in these disciplines (Jakobsen, 2017: 21; cf. Javier, 2007: 58). A translation event – as a pertinent of event-related potential - in TPR is generally used to refer to what can be seen to happen when a translator translates something in a public, social environment (a home, an office, a lab or a class) (Jakobsen, 2017: 21, cf. Carrove, 1999: 58). The translator's brain during translation can also be tested in terms of series of events effects to reach to the evaluation of the performance level. In neurolinguistic perspectives, the event-related – potential (ERP) in translation is considered as a locational research of the brain activity and normally referred to by neuroscientists as being not an event

<sup>1</sup> Translation examples were performed by 4<sup>th</sup> year student at the Department of Translation, College of Arts- University of Mosul.

<sup>2</sup> Trying to acquire as much information as possible about translators' practices and cognitive processes through questionnaires can actually be detrimental to a workplace monitoring studies. If translators tell researchers about their practices in questionnaires and shortly afterwards are observed while translating, there is a risk of becoming self-conscious about what they are doing, no longer behaving naturally, losing face, or questioning the point of other data collection methods. These risks are managed and controlled by observing the introspective renderings of the respondents in the questionnaires and compare them with the answers to verify sincerity, validity conditions and trusted data given by respondents to the questionnaires (cf. Dow, 2014: 368).

<sup>3</sup> These techniques were criticized by House (2015: 121).

in its literal meaning. Over and above a concern with new technological and experimental means of tapping the cognitive process of translation, a new combination of a theory of translation and of a neuro-functional theory of bilingualism has also recently been suggested by House (2015: 5). See the following example:

**Source Text:** Unlike earlier campaigns, the 1960 presidential campaign featured a politically innovative and highly influential series of the televised debate in the contest between the Republicans and Democrats. Debates that could be viewed by such a wide audience had never before been part of showed how effective it could be in influencing the outcome of an election (Phillips,2001:409)<sup>4</sup>.

The translation in general is to recreate congruency between  $S^T$  and  $T^T$  in terms of cognitive activity that takes place in the human brain. There are some other factors constitute the ecological system of cognitive effort, they are an event -related potential involving events effects and aspects of dynamic time and space (**televised debate in the contest**). These are ergometers in the models of translation competence that refer to the dynamic time and space as routine expertise, social norms, and psychophysiological competence. The performance of the subject deals with linguistic formal (LF) – cognits due to the reduced adaptive expertise and sensory memory (**politically innovative**) to process the input information in  $S^T$ . Construal reduction in processing linguistic meaning (LM) – cognits in  $T^T$  in terms of dynamic time and space as in (... **before has been part of showed how...**), mistakes in  $S^T$  are still unrecognized by the subject.

The modern linguistic-cognitive orientation in translation studies emerges from a critical assessment of the validity and reliability of introspective and retrospective studies (cf. Carrove, 1999: 60, Naoum, 2006: xxvi; Hild, 2004: 102; Bara, 2010: 81; see also Ferreira, *et al.*, 2015: 10), and of various behavioral experiments and the usefulness and relevance of recent bilingual cognitive studies. Taken together, translation needs to be looked at from two perspectives: a social perspective, which takes account of the macro - and micro-contextual constraints that impinge on translation and the translator, and a cognitive perspective, which focuses on the internal way a translator goes about his/her task of translating. Both are complementary, and both can be split up into different domains and fields of inquiry (House, 2015:5). Introspective and retrospective studies frequently involving monologic, sometimes also dialogic tasks, as well as rating and other decision-related tasks have been a productive research paradigm since their inception over 30 years ago. For the response-based views of translation quality assessment and performance level<sup>5</sup> evaluation, taking account of translators' and receptors' reactions and the underlying cognitive processes is very important (House, 2015: 117; cf. Ferreira, *et al.*, 2015: 12, see also Kunzli, 2004: 115).

## COGNITIVE EFFORT IN TRANSLATION PROCESS

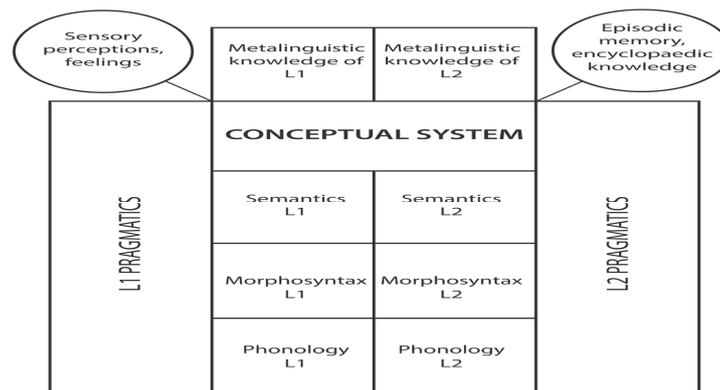
Another recent trend in translation studies relative to cognitive sciences is bilingual neurolinguistic research. The results of such studies have crucially depended on the nature of task used in the evaluation (Munday, 2012a: 21; cf. Ahmed, 2015: 15). This task-based approach is bilingual neurolinguistic analysis, it has a property of being ecological efficacy, they are described by House (2015: 115) (cf. Al-qinai, 2000: 448; Paradis, 2009:157). Paradis (2009: 160) sees that the use of any task other than the natural use of language or cross-lingual performance has the same consequence as using single words and sentences (cf. Göpferich, 2004: 28-29). The following text confirms the idea:

<sup>4</sup> The researcher intended to include errors in the  $S^T$ , as supposedly recognized by the subjects included in the study.

<sup>5</sup> See Lörcher (1991: 3).

**Source Text:** Blood Plasma is a clear, almost colorless liquid. It consists of blood from which the red and white blood cells have been removed. It is often used in the transfusions because a patient generally needs the plasma portion of the blood more than the other components. Plasma differs in several important ways from whole blood. First of all, plasma can be mixed for all donors and does not have to be from the right blood group, as whole blood does. In addition, plasma can be dried and stored, while whole blood cannot. (Phillips, 2001: 387).

This text is highly associated with the conduction areas of memory. The normal comprehension and performance refer to what has been understood in the text (**a patient generally needs plasma portion of blood**). The mental spaces have been potentiated in terms of perception – action controller of the default representation of the concepts of  $S^T$  and  $T^T$  as in (**plasma differs in several important ways from whole blood**). Translation procedures in this text refer to the efficiency of the translation techniques decision - making encountered. The selection of the most appropriate method and evaluate the process may reduce the shortcomings in linguistic outputs in  $T^T$  as in (**Blood plasma is a clear, almost colorless liquid**), but the identification of the incongruence in  $S^T$  linguistic inputs may be inaccurate. These cases per se may refer to the bilateral furcation of temporal lobe to operate the PD in dynamic time and space in  $T^T$ . This might also refer to the dominance of the semantic dimension rather than the pragmatic ones when rendering some portions of the  $S^T$  such as (**first of all**), (**... as a whole blood does**). This  $T^T$  portion indicates the cognitive load paid by the subject to overcome the obstacles in terms of routine expertise rather than the adaptive one. Single word input is explicitly linguistic formal cognits(LF- cognits)<sup>6</sup>correlations served by types of declarative memory<sup>7</sup>, while procedural memory underlies normal, natural language use. Each memory system relies on distinct neuro-functional structures. Natural language uses also critically involve trans-cortical areas of the brain's right - hemisphere to process the pragmatic implicit knowledge aspects of utterances - but this is irrelevant in processing single words that are decontextualized (House, 2015: 121). Paradis (2009: 119) formulated an original neurolinguistic theory of bilingual mind, the mind that deals with the processing systems of inputs and outputs in terms of a neural network of relations. Figure (1) shows a model of depicting the neuro-functional and linguistic cognitive system of the bilingual mind:



**Figure 1: View of Communication Components (House, 2015: 119)**

Figure 1 shows a different level of explicit met linguistic data of a bilinguals;  $L_1$  and  $L_2$ , the conceptual system of language, specific levels of morpho-syntax, phonology, semantics and pragmatics.  $L_1$  and  $L_2$  semantics and pragmatics

<sup>6</sup> LF- cognits refer to the concept of linguistic formal relations between the entities of the sentence. They are the formal relations without referring to the event effects in the sentence.

encompass and feed into both the perception – action controller and cognitive systems of linguistic levels. Paradis (2009:xii) hypothesizes that bilinguals (including translators) have two subsets of neuro-functional correlations, one for each language  $L_1$  on the one hand and  $L_2$  on the other  $S^L \leftrightarrow T^L$ , and these are de/activated or adapted (for instance in the process of translation) independently. All linguistic choices are automatic, (i.e. unconsciously driven by activation levels in terms of perception -action control). According to translation, Paradis (2009:180) proposed the operation of two distinct translation strategies: a strategy of translating via the conceptual system involving processes of linguistic decoding (comprehension) of  $S^T$  material plus re-encoding (production) of  $T^T$  material, and direct transcoding by automatic application of rules which involves moving directly from linguistic items in the  $S^L$  to equivalent items in the  $T^L$ . In other words,  $S^L$  LF - cognits immediately trigger  $T^L$  LF - cognits and  $S^L$  LM - cognits trigger  $T^L$  LM cognits<sup>8</sup>, thus bypassing conceptual-semantic/pragmatic processing (cf. House, 2015: 120).

## TRANSLATION AND COGNITIVE COMPETENCE

Competence's defined as a set of different capacities and skills necessary for completing a translation or interpreting tasks (cf. Göpferich, 2017: 28, 33; cf. Göpferich, 2015: 28; Brau, 2005: 3; Albir, 2011:56). Expertise - as a basis for competence- is the mastery of outstanding skills, a mastery that is only achieved after many years of goal-focused work and deliberate practice. Expertise can be further broken down into adaptive expertise and routine expertise<sup>9</sup> (Tiselius and Hild, 2017: 425). Competence and expertise are intertwined concepts in translation process research (TPR) (Malmkjær, 2006: 92; HurtadoAlbir, 2011: 56). Competence is an older area of interest (Wilss, 1982: 33), and is also driving discussions on the capabilities of translation and interpreting (Alves and HurtadoAlbir, 2017: 537, cf. Kelly, 2005: 158). As far as translation competence is concerned, we understand it as the underlying system of knowledge and skills that distinguish the translator from other bilingual and multilingual language users (cf. Ahmed, 2016: 123). These initial proposals are isolated contributions that deal only tangentially with the topic. It is a characteristic of these early stages of translation competence to postulate a so-called transfer competence TC. Take the following example:

**Source Text:** Genetic engineering is techniques<sup>10</sup> whereby genes, or groups of genes, are taken from one cell and inserted into another, so that they may link up with genes already there. The new combination of genes modifies the biological processes of the host. Donor and host may be similar or different species – orange to lemon, the rabbit to mouse, a pig to the bacterium. Biologists know that in nature, genes often transfer between diverse species.

It should be noted that only a few authors associated translation competence with studies of expertise and expert performance. The study of translation competence expands to embrace different and yet complementary perspectives including a relevance-theoretic approach, an expertise studies approach, a knowledge management approach, as well as didactic, and a professional and a behavioral perspective (Alves and HurtadoAlbir, 2017: 539). However, most translation competence models have not been validated empirically, while expertise, by contrast, is a more recent area of research, but have attracted much interest in translation and interpreting studies (see Hatim 2013: 166; Baker and Sladanha, 2009: 283). The cognitive-psychological studies have gradually come to see translation competence and expertise as the largely

<sup>8</sup> LM – cognits refer to the linguistic meaning of the sentence in relation to the event effects.

<sup>9</sup> **Adaptive expertise** is a term that is used to refer to the system by which the translator is able to adapt with the translation in a professional way. **Routine expertise** is a term deals with the classical ways by which the translator can obtain through courses, classes and lessons to develop the skills in translation (Tiselius and Hild, 2017: 425).

<sup>10</sup> Errors are intended in the source text.

synonymous trend in the analysis of performance (Tiselius and Hildo, 2017: 425; cf. Hatim, 2013: 202; Tiselius and Hild, 2017: 425). HurtadoAlbir (2017: 32) defines translation competence mainly as a type of procedural knowledge works with memory, that is, knowing how, rather than a type of declarative knowledge, that is, knowing what (or knowing that).

House (2015: 86) described translation competence as a fifth basic foreign language skill, along with reading, writing, oral comprehension, and speaking. The terms like translation competence and communicative competence are intertwined in cognitive translation processes. Wilss (1982:34) pointed out that translation competence is a uniform qualification for the professional activities. Translation competence is partially an inter-lingual competence; it is clearly marked off from the four traditional monolingual skills: listening, speaking, reading, and writing. Translation competence is a super-competence. Göpferich (2007: 27) suggests that the sub-competences and other components of translation competence are necessarily embedded in working memory, cognitive functions, knowledge factors, and external resources (i.e. contexts) (cf. Alves and Goncalves, 2004: 46). However, most of the studies about translation competence have investigated differences between groups (e.g., students and professionals or translators and non-translators) in controlled settings such as university classrooms or labs or are based on surveys and statistical analysis of practicing translators and/or their employers (Alves and HurtadoAlbir, 2017: 538). The model of PACTE (2011: 319), translation competence comprises five sub-competences as well as psychophysiological components<sup>11</sup>:

- **Bilingual Sub-Competence:** It comprises pragmatic implicit knowledge, socio-linguistic, textual, grammatical and lexical knowledge.
- **Extra-Linguistic Sub-Competence:** It comprises general world knowledge, external resources of information inputs, domain-specific knowledge, bicultural and encyclopedic knowledge (figure 2:12).
- **Knowledge about Translation:** It comprises knowledge about how translation functions and knowledge about professional translation practice.
- **Instrumental Sub-Competence:** Predominantly procedural knowledge related to the use of documentation resources and information and communication technologies applied to translation (dictionaries of all kinds, encyclopedias, grammars, style books, parallel texts, electronic corpora, search engines, etc.) (PACTE, 2014: 95).
- **Strategic Sub-Competence:** Its function is to plan the process and carry out the translation project (selecting the most appropriate method); evaluate the process and the partial results obtained in relation to the final purpose; activate the different sub-competences; identify translation problems and apply procedures to solve them.
- **Psycho-Physiological Components:** Different types of cognitive and attitudinal components and psycho-motor mechanisms, including cognitive components (procedural, motor movements, mental representation) such as memory, perception, and attention.

## TRANSLATION AND COGNITIVE PERFORMANCE

In studies of TPR in terms of cognition, there are several items included, they are: the dynamic time and spaces the course of perception -action in parietal lobe, the examination of trans-cortical areas engaged in the translation action

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<sup>11</sup> See figure (2: 12)

(i.e. translation event - potential), and the analysis properties of the engaged information-processing system such as lexical memory storage, time elapse, cognitive efforts and load, competence, mental and capacity and the effect of these on measuring performance level. Neural processing such as information-processing, and neural network associations, cognitive effort, executive neural functions, and verbal fluency can almost certainly also act as limiting factors - cognitive constraints - during the performance of cross-language-processing tasks (Diamond and Shreve, 2017: 478). Translation performance refers "cross-language/or inter-lingual" tasks, where reading, writing, lexical retrieval, lexical selection, and semantic construal and deconstruction occur in the context of a bilingual working memory, consisting of a common conceptual mapping systems and dual mental lexical systems. Both lexical systems ( $S^L$  and  $T^L$ ) are activated cognitively during cross-language tasks and processing task focuses on parsing the equivalence between  $S^L$  and  $T^L$ , as in:

### **Crooked by Nature is Never Made Straight by Education.**

The dual activation of both languages during the task necessitates the invocation of integrative and executive cognitive mechanism/s and conceptual integration in order to select and switch between the appropriate "active" languages (Diamond and Shreve, 2017: 478). A translation product is the end result of the mental activation of a particular kind of cognitive information-processing systems, and, as a result, engages all the underlying subsystems of the brain's cognitive architecture. The more smoothly they do so, the more effective the process- at least as measured in terms of speed of processing, working memory capacity, and other quantitative measures of the efficacy of the cognitive bases of the skill (Diamond and Shreve, 2017: 478). Mismatches or imbalances in the strength (proficiency) of  $S^L$  and  $T^L$  representations could be remediated by directed – deliberate - practice. Translation performance and the ability to develop translation performance is clearly mediated and modulated by multiple cognitive functions and domains (Diamond and Shreve, 2017: 478).

### **TRANSLATION AND WORKING MEMORY**

Working memory (WM) is an important component of translation, it is also called memory effort, it has been explained during simultaneous interpreting and translation as an event –related potential viz. cross-lingual online operations (Schweitzer and Ferreira, 2017: 149). Working memory is responsible for managing the storage and retrieval of information related to the S and T languages in short-term memory. WM refers to a cerebral cortex that transcends temporary storage and required data for such complex cognitive tasks as language comprehension, lexical congruency, the construal of utterances, reasoning and matching  $S^L$  and  $T^L$  in terms of cultural differences (Diamond and Shreve, 2017: 490; Schweitzer and Ferreira, 2017: 149). WM is an important cognitive ability and neural network for syntactic, semantic and pragmatic processing mechanisms, it is a specialized memory in which information is simultaneously stored and processed for a short period of dynamic time. Researchers<sup>12</sup> have demonstrated that WM is strongly related to  $L_1$  and  $L_2$  learning, which would indicate that WM could be regarded as language-learning input system (Schweitzer and Ferreira, 2017: 149).

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<sup>12</sup>Importantly, event-related potential indicates the dorsolateral prefrontal cortex is involved in this process of comparing the two events (Murray & Ranganath, 2007: 5515; cf. James and Frith, 2002: 1094).

## CONCLUSIONS

- The cognitive capabilities of translators may differ in regard to the knowledge, competence and expertise. Therefore, the types of competence and performance are associated with the routine and adaptive expertise in the translation process.
- Translation is not merely a linguistic process, but it is rather a cognitive task and neural processing procedure by the translator. This idea does not mean that the linguistic perspective should be dropped out on an evidence that mistakes in T<sup>T</sup>s are still unsuspected by the subjects included in the study.
- There are conceptual overlaps on lexical, syntactic and semantic levels between subjects in the study due to the lack of direct connection between perceived form and the form stored in the mental lexicon when lexico-semantic and phonological processing takes place.
- Translators have an adequate knowledge of theoretical background about translation methods, yet they have a reduced type of practical implications of translation routine rather than adaptive expertise.

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