

وزارة التعليم العالي والبحث العلمي

MINISTRY OF HIGHER EDUCATION & SCIENTIFIC RESEARCH

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**Exploring the TAP/Translog method in the translation of texts  
on architectural art from Arabic into English**

**Excerpts from (الجزء الأول) قصبة مدينة الجزائر as a case study**

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# *Dedication*

*To all our relatives, our friends and everyone  
who in one way or another gave us their  
support either morally or physically,  
thank you.*

# *Acknowledgments*

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# *Introduction*

Translation is an activity of enormous importance in the modern world. The term “translation” derives from the latin word “translato” which means “to carry cross” or “to transfer”. Hence it is the communication of the meaning from a source language text into its “equivalent” in the target language text. It is a mean of exchanging information between different language communities. Translation is a fundamental yet often overlooked element in life and has played a decisive role in the development of languages in different fields of study. Moreover, there are different types of translation like literary translation, political translation, journalistic translation in addition to technical translation. Due to the recent focus on business documentation as a direct result of the industrial revolution and new technologies that began since the mid-18<sup>th</sup> century, some documents of specialized fields have an increasing demand for translation.

As far as architecture is concerned, this art of designing and building, translator has a great role to play in facilitating the work of professionals working in this field and significantly contribute to its development.

Our dissertation will therefore deal with the translation of a corpus on architectural art in Algeria, a specialized field of study which mainly requires a technical translation. This type of specialized translation involving documents produced by specialists, obviously introduce scientific and technical subjects using the most appropriate terminology. This is why we want our work to manage the problems linked with the translation of an architectural text especially at the structural and terminological levels.

The reasons which push us to select this subject are both objective and personal:

We have objectively noticed that this subject has not been dealt with before so far either the kind of the corpus or the nature of the theory we’ll rely on for our study. We are then the first

students who will tackle this topic. As a matter of fact, we made a deep research in our university and many universities of Algeria and we found out that we will be the first to take architectural art as a field of study and apply the Think Aloud Protocol (TAP)/Translog to translate this technical text which has a deep cultural and historical aspect.

In addition to that, personally, we always have this affinity to the architectural domain since we have a family member who is an architect; he introduced us to this interesting field of study which caught our curiosity and we found it very interesting to be explored within translation framework.

The most important objective of this work is to analyse the different difficulties that face the translator of a text on architecture to complete a task, and to investigate the efficacy of this method for the collection of data during translation activity, this will be realized by observing the behaviour of the translator while performing and producing a cognitive effort. Moreover, we want to show to what extent the TAP/Translog method is useful in translation.

In the course of this dissertation we will try to deal with the problematic of: which translation method can be used to overcome the outstanding problems of technical texts with deep cultural and historical aspects? What are the difficulties encountered by the translator of a text on architectural art? Can the TAP/Translog be helpful in the translation task and production?

Therefore, to answer this problem and the questions pointed above, we suggest the following hypothesis:

- The Think Aloud /Translog method can considerably contribute to overcome terminological and structural challenges in the translation of technical texts with cultural and historical aspects.

- The difficulties a translator facing a text on architecture encounters are related to terminology, structures specificity and culture

- The TAP/Translog can help to improve our translating task and produce correct translations.

Our translation work will be based on the Think Aloud Protocols (TAP) and Translog method. In the TAP method, users are asked to say whatever they are, thinking deep down as they complete a task. This enables observers to see first-hand the process of task completion, then to objectively take notes of everything that the performer says, without attempting to interpret his actions and words. On the other hand, the Translog method is the computer program used to logging the different activities on the translator's keyboard while performing a translation activity.

We divided our work into two chapters, the first chapter is the theoretical part of our research, we will start this chapter with a brief overview of the architectural art in Algeria then we'll point out the specificities of an architectural text and what characterizes this kind of text. In this theoretical part, we will shed the light on translation as a cognitive process as well as the methods of translation we have applied which are Think Aloud Protocol and Translog.

The second chapter is almost a practical part, introduced by the presentation of the corpus and the explored method of translation and of course translating excerpts from our corpus and supporting our work with selected examples finishing this practical part with English-Arabic and Arabic-English glossaries of the most essential terms of our translation specifically related to architecture.

We supported our research by different resources mainly websites, electronic books and articles (PDFs) and of course specialized books to successfully fulfill our work. These references are mainly the following: the corpus *قصبة مدينة الجزائر (الجزء الأول)* , *Tapping and mapping*

*processes of translation* by Ritta JÄÄSKELAÏNEN, *Pénétrer la boîte noire de traducteur* by Antin Fougner RYDNING.

As any scientific research, we encountered some obstacles which cost us a precious time. It took us more than two months to only find our corpus but fortunately after multiple researches, we finally found an original text to study. And since it is the first time this subject is dealt with within the translation framework, it is a real challenge for us to discuss this topic without looking at concrete previous studies.

# ***Chapter I: Translation and architectural art***

In the following chapter, we are going to give an insight into architectural art in Algeria, with its remarkable architectural diversity. The historical and cultural richness that makes it possible to travel through space and time throughout Algeria. We then move to study the important specificities that characterize a text of architectural art. The following subtitles will be dealing with translation as a cognitive process and the last part of this theoretical part will focus on presenting the two methods applied to our corpus namely the *Think Aloud Protocol* and *Translog*.

## **I.1 An overview of architectural art in Algeria**

Architecture in Algeria is very interesting and diverse. Our country has always been a crossroads from east to west; it has witnessed many different cultural and architectural influences over the years. Algeria's strategic positions, in ancient times, made that the major target for the military powers of the time and do their best to gain control over it. Consequently, Algeria has seen Phoenician, Roman, Vandal, Byzantine, Arab, Turk and French invasion, each leaving their own distinctive influence on the country. With each conquest, new buildings were constructed; all these ancient cultures have a significant notable bearing on the architecture in Algeria today.

Therefore, to speak about the architectural art in Algeria, we need to go back in history even before J.C to the period of the Roman Empire where we find many cities, which can represent this style of architecture such as *Timgad* or *Tipaza*, which have a cultural aspect of the Romans. Then around the 11th century and with the arrival of the Muslims to North Africa, beautiful Mosques and Madrasas were built. Nowadays, if we want to see this art, we have to go visit the city of Tlemcen which is a very successful urban city of the 11th century. After that was the arrival of the Othomans and the motivation of protection in the 15th century, so they built in the capital of Algeria the intramuros city of Casbah which is hided in the background by the waterfront. We have also the arrival of the French colonialist around the 18th century with its beautiful Osmanian buildings.

We add to this the Valley of M'zab which is considered as an inspiration of the same concept of the city of Casbah and of course the Berber villages with a fantastic integration in the nature.

### **I.1.1 Berber architecture**

We begin our exploration of Algerian architecture with the Berber architecture. Berbers have largely defined the foundation of Algerian architectural heritage. Algerian Berbers traditionally utilize two types of vernacular dwelling: Chawia and Kabyle. Chawia housing consists of flat roofed-mud brick houses with stone foundations. The ground floors of Chawia houses contain a central room used for sleeping with a hearth, weaving station, storage room, and water receptacles. These dwellings are sometimes built directly against other houses or rocks, in order to improve efficiency of construction and reduce the costs of building materials.

On the other hand, the Kabyle houses are mostly built using materials collected from nature. They are constructed of wood and stones tied with clay and pitched tiled roofs. The ground floor of a typical Kabyle dwelling is divided into two sections, the first, darker section, is used to house animals while the other, illuminated end, is used for cooking, weaving and receiving guests. A small attic above the livestock quarters is traditionally used as a bedroom during the winter.

(<https://www.aboutalgeria.com/2017/01/the-kabyle-old-houses-and-architecture.html> Visited on August 3, 2019).

### **I.1.2 The M'Zab Valley**

Another beautiful architectural delight in Algeria is the M'Zab Valley, it is situated in Ghardaïa province in the south of Algeria. It is made up of seven Mozabite towns (ksars): Beni-Isguen, El Atteuf, Bounoura, Melika, Berriane, El Guerrara and Ghardaïa, the former is a stunning labyrinthine its architecture resembles to the Casbah's one. Fortunately, I had the chance to visit it on July 2016. The unusual architectural beauty of this strange cluster of dwellings and towns is what makes this UNESCO World Heritage Site so special. Buildings are densely packed, replete

with twisting and turning narrow alleyways, covered walkways and pastel colored paint. The visual impact is truly impressive, situated as they are in a deep and narrow valley.

([https://mozabite.skyrock.com/2933656149-Lecons-d-urbanisme-L-architecture-mozabite.html?fbclid=](https://mozabite.skyrock.com/2933656149-Lecons-d-urbanisme-L-architecture-mozabite.html?fbclid=IwAR082r1FA4hOtL0goHN6HYcCbp82qOqotiYe2GX6OA4sK0X2hFSBJI0MDnk)

[IwAR082r1FA4hOtL0goHN6HYcCbp82qOqotiYe2GX6OA4sK0X2hFSBJI0MDnk](https://mozabite.skyrock.com/2933656149-Lecons-d-urbanisme-L-architecture-mozabite.html?fbclid=IwAR082r1FA4hOtL0goHN6HYcCbp82qOqotiYe2GX6OA4sK0X2hFSBJI0MDnk) Visited on August 1<sup>st</sup>, 2019)

### **I.1.3 Roman ruins**

The well-preserved Roman ruins of Tipaza is one of the most important architectural symbols in Algeria, made up of innumerable amount of ancient Roman buildings, churches, theaters, and other structures. It is an architectural beauty and quite interesting to visit. It dates back to the 1st century; the setting is spectacular – right on the coastal cliffs above the pounding surf. The Roman ruins regroup one of the most extraordinary archaeological complexes of the Maghreb, and perhaps one which is most significant symbols of roman civilization in North Africa. It is together with Djemila and Timgad the three Roman Ruins that are on the UNESCO World Heritage List in Algeria.

(<https://theculturetrip.com/africa/algeria/articles/the-coolest-ancient-ruins-in-algeria/> Visited on August 1<sup>st</sup>, 2019)

### **I.1.4 Maqam Echahid**

This striking architectural design piece is less of a building and more of a monument; however, it is just as impressive. Opened to the public in 1982, the same year the M'Zab Valley was celebrating its recognition as a UNESCO World Heritage Site, and just 20 years after getting independence, this spectacular feat pays tribute to the lives lost in the Algerian War. Commonly known in English as The Martyrs' Monument, it consists of three giant, concrete palm shaped leaves reaching skyward and coming together to create the architectural achievement it is today.

(<https://www.lonelyplanet.com/algeria/algiers/attractions/makam-echahid/a/poi-sig/457593/355067>

Visited on August 2<sup>nd</sup>, 2019).

### **I.1.5 Notre Dame d’Afrique**

Taking a step away from Roman and Muslim architecture, we focus our attention on the remarkable Catholic Basilica of Notre Dame d’Afrique in Algiers. Inaugurated in 1872, it’s significantly newer than some of the entries on this list but no less worthy of a spot. Featuring an unusual floor plan, with the choir on the southeast rather than the east side of the building, it was designed by French Algeria’s chief architect for ecclesiastical buildings, Jean Eugène FROMAGEAU. Despite having undergone several reconstructions throughout the years, its essential essence remains, along with its famous colonial inscription: (*‘Our Lady of Africa, pray for us and for the Muslims.’*) (<https://www.notre-dame-afrique.org/patrimoine-culturel-et-historique>

Visited on August 1<sup>st</sup>, 2019)

### **I.1.6 Ketchaoua Mosque**

Notable for its unique fusion of Byzantine and Moorish architecture, this mosque is situated at the bottom of one of the Casbah of Algiers’ first steep stairways, giving it a symbolic and logistic importance. First built in 1612, it has survived many occupations and changes from mosque to cathedral and back again, without losing its impeccable sense of grandeur and beauty. This transition from mosque to church led to one of Algeria’s worst massacres, and it was only reconverted to a mosque in 1962. In design, it is stunning: ornamental porticoes supported by black veined marble columns, Moorish plaster work and octagonal minarets are just some of the many highlights. (<https://www.algeria.com/attractions/religious-sites-in-algeria/ketchaoua-mosque> Visited on August 3<sup>rd</sup>, 2019).

Another major project is the new **Great Mosque of Algiers**, to be inaugurated in 2020. Competing the Hassan II Mosque in Casablanca, Morocco, the complex on the capital's sea-front has a capacity of 120,000 worshippers and is marked by a 265-metre minaret. After many years of planning, construction began in the spring of 2012 by a Chinese company.

### **I.1.7 Casbah**

The best place to start discovering the country's architecture in Algiers is Casbah. The Casbah, with its crowded lanes and markets, is supported and surrounded by some beautiful old buildings and a beautiful sea view. The reason why we focus our study on this beautiful masterpiece, which survived for centuries. Our corpus and its second volume are full of information about this patrimony.

The word "Casbah", originally designates the citadel which overlooked the city "the Medina", little by little the term included the city itself. The walls that protected the Casbah, as well as the upper and lower parts of the town have disappeared today.

The Casbah of Algiers was inscribed on the World Heritage List of Humanity in December 1992. The area comprising the Casbah and the entire old town of el-Djazair. In 1516, the Turkish privateer Khaïr al-Din installed his capital in Algiers. He made it a fortified city by building imposing ramparts, which were at the origin of the Casbah. Beyond its artistic richness, the old town is one of the most important examples of the history of Algeria.

The Casbah extends over 45 hectares and shows a homogeneous urban form in an original and rugged site (118 meters of change in altitude). The wealth of the city is reflected in the interior decorations of the houses, often set out around a central square courtyard forming an atrium. The winding and steep streets are also one of the features of the old town. It also houses twelve mosques

including the 11th century Djamaa el-Kebir mosque. (<https://whc.unesco.org/en/list/565/> visited on July 10<sup>th</sup>, 2019).

To conclude, the art of architecture in Algeria is a melting pot of influences; from French to Spanish to Berber and Roman what makes it a blend of several styles throughout the centuries reflecting the country's history and culture. The main challenge nowadays is how to reconcile the modernization of the society with its cultural legacy and environment by keeping the identity of our architecture and reducing the environmental impact.

## **I.2 Architectural text**

An architectural text means a text type used specifically in the realms of architecture, it can be a descriptive text of a building, a material or a construction technique. It can also be on the form of a law, a code of ethics, a contract or an annotation on a technical drawing.

(<https://www.questia.com/read/109073168/understanding-architecture-an-introduction-to-architecture?fbclid=IwAR2to-MnDJx1VMrJVsvJTg6ljYMWNSWa43UidfzUKadhQbMiw4O6GQtcZc> Visited on May 18th, 2020)

### **I.2.1 Specificities of texts on architectural art**

Architecture is the art and science of designing buildings and other physical structures. It is also the art of creating and modifying space. Architecture is about the making of places where people spend their lives. Architects are not just concerned with the exterior and interior design of a building, but the environment as a whole. Architecture is mostly about human beings living in a better way than before. Social sciences and psychology are as important as nanotechnology and sustainable materials. From simple housing to large prestigious projects, architecture is daily present in everyone's life.

Many authors throughout history have defined this concept from famous architects to other authors and artists. For example, according to Charles-Édouard JEANNERET-GRIS better known as Le Corbusier (1925), an architect, theorist, urban planner, space designer, painter, sculptor and man of letters *"Architecture is the starting point for anyone who wants to take humanity towards a better future "*. The American architect Paul RUDOLPH also argued: *"Architecture is not a purely theoretical issue if you are interested in building projects, but architecture is the art of the possible."*

The field of Architecture touches the various areas of human endeavor, including Art, History, Material Science, Physics, Engineering... anything and everything that can help improve the living environment of human beings, this field attracts the most creative and romantic minds in the world.

Architecture is a complex process that involves, beyond its layout, taking into account multiple physical, psychological, sociological, historical, cultural, economic and ecological factors.

Bordering art and technology, an architectural text embraces both technical and aesthetic aspects.

### **I.2.2 Technical texts of architecture**

Architecture is well known for its technical texts which deal with the details of a building. It's about the technics to follow while drawing an architectural plan of a building. Designing and planning for a building contain architectural drawings, specifications of the design, calculations, time planning of the building process and other documentation that are mostly found in the technical specifications' sheets and also in the description of a construction. As a result, an architectural text includes detailed engineering drawings to construct a building or to describe an architectural work already constructed. They can be geometric figures, dimensions, graphs and charts. This kind of text is characterized by a specific terminology like any other special field, a

jargon used by architects and civil engineers. It's a complex language mastered by the specialists of the field.

### **I.2.3 Theoretical texts of architecture**

Besides the technical part of architecture, there are also theoretical texts since architecture is a work of designing and creating. So, texts describing these works sometimes deal with the aesthetic side of a building and its beauty and every architect is first and foremost an artist.

This kind of texts can describe a beautiful architectural piece as a written material; its purpose is to describe a masterpiece and how the architect has succeeded in his creation task. Like painting and sculpture, architecture can be considered as a visual art to which the philosophy of aesthetics can be applied when architects design buildings. They use a creative process to rationalise these different requirements to create a unified whole. Culture specific words are very used in the theoretical texts of architecture as architecture simultaneously reflects cultures and influences on them. Architecture uses obvious symbols and design language when describing a striking mosque or monument or any other building or patrimony which is inherited from previous generations and represents a cultural or a religious value for the country.

### **I.3 Translation as a cognitive process**

The pervasiveness of translation in modern globalized world is indisputable. In the current multilingual world, translation has become a profitable window to the language and culture of neighboring countries, commercial and economic partners and business relationships. But despite its ubiquity and social relevance, translation remains a mystery for both researchers and practitioners.

Therefore, translation studies have recently moved from an almost exclusive focus on products towards considering cognitive processes and the effects of those processes on the quality of products.

In fact, translation activity is more than just associating words in one language with those of another, “*Translation is a higher-order cognitive task, like reading and writing, but with very significant problem-solving components concerned with mediation between languages*” (ANGELONE, 2010: 17). Many authors who study the mental processes of the translator agree that translation is a special type of cognitive behavior, “*The translator, in order to translate, has to implement a complex mental process to be able to understand the meaning transmitted and then reformulate it via another language, bearing in mind the needs of the end reader and the purpose of the translation*” (ALBIR, 2017: 35).. The difference between a SL and a TL and the variation in their cultures makes the process of translating a real challenge. Many problematic factors are involved in translation such as *form, meaning, style, proverbs, idioms*, etc., scientists and cognitive researchers in the field of translation try to understand and explain the workings of translators’ minds: How do translators involved in translation do to create meaning in the situations and texts they handle? How do they take decisions and choices? How do they develop translation competence? All these questions are the subject matter of many researchers who considered that the best way to answer these will be by accessing the black box of the translator and gaining a better understanding of what goes on during a translation task.

What makes translation research cognitive is the fact that it tries to look “behind” the observable processes and, when doing so, refers to certain cognitive scientific concepts or approaches as a framework, which can thus be confirmed or dis-proved. Consequently, cognitive approaches focus clearly on the people and processes involved in translation and employ a primarily descriptive mode of research, applying various empirical and experimental research

designs. Thus, they can be seen as part of “translator studies,” the recent tendency in translation studies is to focus explicitly on the translator rather than on translations, the most important is no more the translation as a product but the subject itself.

According to JÄÄSKELÄINEN (2002), the importance of the data did not lie only in what elicited data might reveal about mental processes. What was important, she argued, was that TAP data yielded access to information about the translation process, which begins when the researcher gives a source text to the subject and the process ends when the translator hands in his or her translation i.e. the target text.

An understanding of cognition is a prerequisite for explaining many of the practical tasks relevant in translation, since these tasks are based on thinking, learning, and understanding. Cognitive translation research is closely related to the ever-increasing process research in translation studies, which uses different methods to observe the actual chronological activity of translating and observe the cognitive processing involved in producing translations. It is essentially a series of problem solving and decision-making behavior for a successful completion of translation task.

### **I.3.1 Indicators of cognitive efforts/exertion**

Cognitive effort is an innate part for all activities and since translation is a complex task, yet involves different strategies and decision-making processes. The translator shows mental efforts throughout a translation process when he is faced with the various difficulties namely; *comprehension, reformulation, re-expression*. As mentioned in SUN (2015), difficulty, from the cognitive perspective, refers to the amount of cognitive effort required to solve a problem, and translation difficulty can be viewed as the extent to which cognitive resources are consumed by a translation task for a translator to meet objective and subjective performance criteria.

Cognitive effort was also analyzed in FERREIRA's (2012) study, which investigated translation performance among a group of professional translators. *Time spent, pause Patterns,* and *segmentation* were analyzed and tested as indicators of cognitive effort. In translation process and language production research, pauses are seen as indicators of cognitive processing besides others.

The translation process is a complex intellectual activity. In his experimental study "*The effects of time on cognitive processes and strategies in translation*" that is used to decode mental processes related to the unilingual production of texts, JENSEN (2000) tried to identify a number of indicators that might reflect the translator's cognitive efforts.

She presented the following **(07) seven indicators**:

- ❖ *pauses*
- ❖ *decision postponements*
- ❖ *corrections*
- ❖ *revisions*
- ❖ *consulting dictionaries*
- ❖ *remarks on the problems encountered*
- ❖ *remarks on the objectives set*

These indicators were selected by JENSEN in the perspective of a quantitative analysis. Regarding the corrections, they are divided into two categories:

*Corrections in the writing phase and corrections in the revision phase.*

To sum up we can say that cognitive sciences applied to translation occupy an important place in translation studies. The interdisciplinary perspective helps to describe the translation process, the "translation competence" and the processes involved to acquire such competence. By

studying the translation process and the stages involved in it, it is important to highlight the role of the translator.

The objective of the cognitive approach is to better understand the process of translation, the most important phases of this activity and to use this information to improve the translation practice.

#### **I.4 TAP /Translog Method in Translation Practice**

Among the many experimental methods on the translation process, two are distinguished; the two combined methods of collecting data in vivo; the Think Aloud Protocol and the Translog methods.

The term '*think-aloud protocol*' refers to a type of research data used in empirical translation process research for collecting data in real time. On the other side, *Translog* is a computer program whose role is to record the translator's activity while performing a translation task. Thinking aloud method has been imported from the cognitive sciences and applied to translation research. Think-aloud protocol research and psycholinguistic research findings make it possible to describe some of the translator's mental processes. A part of the translator's mind is still hidden that part of the mental space where intuitive processes occur. The lack of verbalization is sometimes very well counter-balanced by the subject's non-verbal behavior (gestures and facial expressions), which can be also considered as indicators of a cognitive effort just as verbal comments.

When comparing the target text with the source text or when looking at errors, one could at best speculate in retrospect about what had happened in the mind of the translator during the translation process. What was needed was a means to find out what goes on in the translator's mind, a means to get a glimpse into the mysterious "black box".

#### **I.4.1 The Think aloud protocol in translation practice**

From the point of view of ERICSSON and SIMON (1993), Thinking aloud is the concurrent verbalization of thoughts while performing a task. When this method is applied, participants are asked to spontaneously report everything that goes through their minds while doing a task, and they are instructed not to interpret or analyze their thinking. The objective of this method is to elicit a spontaneous, unedited, undirected, stream-of-consciousness type of account from the subject. Verbal protocol is another term often used as a synonym for thinking aloud. Verbal protocols can be concurrent (Thinking Aloud) or retrospective, referring to short reports after the completion of a task. Thinking Aloud as a scientific method has been used in many other disciplines, showing the relevance and applicability of this method. Such a method adds a new perspective to experiments in human behavior because the subject becomes a co-observer.

According to ERICSSON and SIMON (1987:24), after a long period of studying human performance and abilities, research in psychology is now seeking to understand the underlying cognitive processes. Researchers are looking for observations on thinking that would allow tracing the intermediate steps of the thought processes. Subjects' reports on their thoughts or subvocal is one of the types of observations that provide data on cognitive processes.

Translation process research in 1980s concerned observational studies in transferring procedures, using Think Aloud Protocol (TAP) to gain a better understanding on a mental process of the translator (KOUROUNI, 2012; KRINGS, 1987). The introduction of TAP in the analysis of the translating process dates back to the mid-eighties. Their goal was to study the cognitive processes that a person must mobilize during action, guided by protocols (transcription, recording). Over the last decade, Think-Aloud Protocols (TAPs) have been used extensively in process-oriented Translation Studies (TS). They were as well a mean of teaching future translators. This

research method refers to the verbalized account of a subject's mental process; in particular, the sequence of cognitive events, or thought processes, between the introduction of a task or problem to the final product. TAP is also known as concurrent verbal protocol and thought-listing. *“As far as the psycholinguistic investigation of translation is concerned, it can be expected that only on the basis of empirical studies of translation performance using a process-analytical approach can hypotheses on what goes on in the translator's head be formed. Thus, light could be shed on translation as a psychological process which is still largely unknown and uninvestigated”* (LÖRSCHER, 1991:426). Since it's not possible to observe thought processes directly, researchers use TAPs as indications of what might be going on in the black box of the translator.

*“Think-aloud protocol (TAP) studies into translating have borrowed their data elicitation method (i.e. thinking aloud) from cognitive psychology where it has been used to study various problem-solving and decision-making processes.”* (JÄÄSKELÄINEN, 2000:71). TAP is a means to extract information about the underlying mental processes required to complete a translation task, considering translation mainly as a problem-solving process, researchers on the field of translation studies have put forward the suggestion that it should be possible to study and understand the functioning of the translators' mind by means of TAPs.

#### **I.4.2 Translog method in translation practice**

Translog is a software presented by JAKOBSEN & SCHOU (1999), which has the ability to record in real time, accelerated or reduced all the writing activities of the subject, corresponding to the keys of the keyboard of the computer on which the translator works, the movements of the mouse connected to his computer and the breaks between writing activities.

The Translog program has been designed in order to study and acquire objective data about human translation processes hence the name Translog. But it can be equally used for other kinds

of computer-based reading or writing. Since its first conception in 1995, Translog has gone through several reimplementations. Right from its beginnings, Translog had two main components, originally called Write log and Translog, (SCHOU et al.2010) the former component was designed for recording writing processes in time, while the latter component served for playback.

According to JAKOBSEN (1999), "father" of the Translog software, Translog data can provide the raw material for translational process studies. The way the translator moves in his text reflects a behavior that is particularly well suited to observation, from which one can draw certain regularities. The behavior of the translator is observed based on:

- letters and words that he types on the keyboard as well as movements of the mouse.
- corrections he makes to the provisional solutions retained as he advances in his text.
- revisions during replay after completing the task.
- pauses during the translating operation, namely the length of the initial and final pauses, as well as any other pause that occur between words or even within a word.

*“In cognitive psychology, pauses analysis is an important factor in real-time research on language production as pauses are believed to reflect cognitive processes”* (JENSEN, 2000: 101).


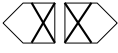
The software is available in **two different types of interface: the user and supervisor** interfaces. The user interface is considered by the translator, and its screen is divided in two: the top screen allows the display of a source text, while the bottom screen is used to translate the text. The software records all keyboard and mouse actions, and many times the duration of the translation activity (between pressing the "go" and "stop" button) and the pauses between all actions and movements.

The computerized data is stored in a file that can be displayed on the screen in two versions: **kinematic and graphical playback.**

- In the kinematic playback version, all recorded data can be displayed on the screen as a movie.
- In the graphic version, not only the letters corresponding to the keys on which the translator presses are supported, but also the symbols corresponding to the keys of the keyboard other than those which refer to the letters of the alphabet as well as to the movements of the mouse.

#### I.4.2.1 Translog symbols

According to JAKOBSEN (1999), the following 8 symbols can represent the different actions of the translator on his keyboard:

Symbol	Signification
*	Pause
[* : n.n]	Long pause
	Line spacing key
◆	Space bar (key)
	Deleting key (left or right)
[Ctrl]	Control key
←↓↑→	Arrow keys
[Shft]	Shift key

On the basis of his eye-tracking and keystroke data, JAKOBSEN summarizes the translation “micro-cycle” as a series of six steps, which he presents as a “small algorithm” (JAKOBSEN, 2011: 48).

1. Moving the gaze to read the next chunk of new source text (and constructing a translation of it);
2. Shifting the gaze to the target text to locate the input area and read the current target-text anchor word(s);
3. Typing the translation of the source-text chunk;
4. Monitoring the typing process and the screen outcome;

5. Shifting the gaze to the source text to locate the relevant reading area;
6. Reading the current source-text anchor word(s).

These results have provided new insights into the investigation of the processing units that require cognitive effort during translation task execution. The replication of these findings has shown that empirical research techniques are a good fit for investigating the cognitive processes involved in translation.

***Chapter II: The  
TAP/Translog method to  
translate the corpus  
قصة مدينة الجزائر (الجزء الأول)***

## II.1 Automne overview of the corpus

Our corpus consists of excerpts from the book entitled Casbah - قصبة مدينة الجزائر - الجزء الأول - written by Ali KHALLASSI and first edited in 2007. It is divided into two parts and each part into two chapters. We could find this book thanks to our brother who is an architect; he recommended it to us since we are fond of this artistic field of study and obviously, we found it very interesting and worth exploring. We selected four pages from this book namely: page **62 (Bab Saqifa)**, page **68 (El Dehliz)**, and pages **70, 71 (El Bataria al ola and Attabiq Al Ardhi)**. These pages contain technical and architectural terms that make them very adequate for our study purpose as well as they allow us to collect technical terms and make a bilingual glossary at the end of this research.

This book describes one of the most beautiful urban sites of the Mediterranean, the Casbah of Algiers is a medina, which has crossed the ages to tell us the history, and the memory of the Algerians of yesteryear, the Casbah of Algiers was inscribed on the World Heritage List in December 1992.

The excerpts we have selected describe the distinctive architecture of this building. They also give us an interesting idea of the famous Casbah d'Alger. It's not just the way it looks, or its construction and materials, but the processes whereby it came into being and how it is used in addition to its social, cultural and political context.

The page 62 entitled باب السقيفة we translated it into " The Door of the Shed" in English, which means the principle entrance of a building (here The Casbah). We opted for “ Corridor ” concerning the title of the page 68 الدهليز which means a narrow passage with rooms leading off it in building. For the title البطارية we translated it into "Booth" in English which means an enclosure

just big enough to accommodate one standing person. In page 70, we suggested to translate الطابق الأرضي by "The Ground Floor" which means the first floor or flat in building, relying on the some English-Arabic dictionaries like Almaany.

Our objective in choosing these excerpts is exploring the technical description of the structure of The Casbah using the cultural aspect that characterizes and distinguishes this historical building.

Besides, translating such a text has exposed us to the different difficulties that we can encounter throughout the translating process. Therefore, we think applying TAP/Translog method can help us classify these translation problems and make it easy to the translator to overcome these obstacles and produce a correct and satisfying translation.

## **II.2 Presentation of the explored method of translation**

Translation has been studied from different perspectives; as a textual operation, as an act of communication and also as a cognitive activity carried out by the translator. Aspects such as the translation process, the learning styles are part of the translator's professional life and reflect strategic behavior.

A number of attempts have been made at accessing the translator's mind, with varying degrees of success. It's by the end of 19th and the beginning of the new millenium (2000) that scholars like Krings, Königs and Lörscher in Germany, Dechert and Sandrock in Britain, Jääskeläinen and Tirkkonen-Condit in Finland, to name but a few began to shed light on what actually happens when translators are facing a text. There has always been a kind of empirical research: translation criticism and error analysis, but this was by nature product- and not process-oriented. They have provided an insight into the mental translation process which takes place in the translator's brain.

In this subtitle we present the explored method during our translation task. It consists of the combined TAP/Translog method. We start with The Think Aloud method where we ask the translator (my research partner) to say aloud what she is thinking while translating so that I can notice her verbal comments as well as her non-verbal behavior.

Then, we try to demonstrate the functioning of the Translog method and apply it to our corpus. Translog program records all the writing activities and pauses of my research partner while performing the translation on the computer. The advantage of Translog is that it allows to follow objectively the natural mode of work of my research partner: the solutions she opts for, her corrections, the pauses preceding a writing activity as well as her way of moving in the text.

We tried to combine the processing methods data collection in vivo because this allows us to follow the writing activities in parallel with the verbal comments, which facilitate the qualitative interpretation of the text.

In the think-aloud experiment, my partner and I have applied the TAP on the translation of the corpus (excerpts from the book *قصبة مدينة الجزائر*). During the translation process, we worked in pairs, when my partner is doing the task of translation, I take the role of the observer and take notes of her verbalizations; where she stables, when she makes pauses and takes time to solve a problem and how she manages to solve the different types of difficulties. Sometimes, she talks to herself while translating and sometimes she just takes time in thinking and fixing a word or a sentence. Then, when it's my turn to accomplish the task of translation, my partner becomes the observer, she writes down all my verbalizations and comments.

In addition to the Think Aloud Protocol method, we have also applied Translog method on our corpus, even though we don't have the genuine program on our computer, as far as it is not available we tried to show how this method is applied in translation through the most used program

by the translators in general : The Microsoft Word. It's a form of coding language where every non verbal action is expressed by a Translog symbol during the translation.

We consider that these two methods combined together can really allow us to increase our potential for describing and explaining the processes of translation, and thus our theoretical understanding. The strategies observed in the TAP and Translog may serve as models for successful translating. TAP and Translog can help us to simply overcome cognitive problems of translation.

### **II.3 Corpus Translation**

#### **- The Door of the Shed** (Page 62)

At the end of Casbah street. At the very left side, there is the principle entrance of the Casbah. The hardened shed moves forward the city with the mass of construction blocking the left side of the street and occupies 51,45 meters square.

This is the largest door of Casbah's entrance, it is decorated with a limestone frame and hierarchical ornaments.

The door's width is 2,12 meters and 3,80meters high, there is a chain, known as a safety chain hang on the pillar of the frame. Everyone who feels persecuted or followed by trackers or hinters from the guard or the army and whoever gets there considered as a survivor (Ask God for help). Above the principle entrance there is a canopy that protects the door frame and threshold from rain. The canopy is supported by yew wood stack and based on the walls.

Under this canopy, we find a marble tablet with Ottoman inscription commemorating at least the construction's date of the door and the entrance or the reconstruction, written in the third letter, the

height of the letters is 0,6 meters, and planted on six verses of poetry and the hemistich is within the frame decorated inside with Ottoman writing, the width of the tablet is 0,61m and 0,64 height.

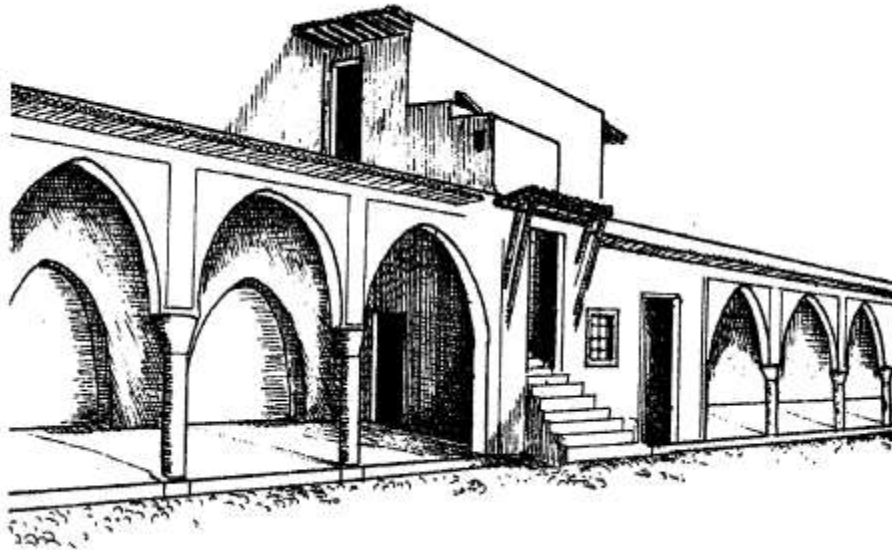
#### **- The Corridor** (Page 68)

In the south of the domed hall, we find second door similar to the door of the main entrance. But it is empty of iron plates and this door connects the shed with the corridor which has a one door leading to the east hall and another door leading to the northwestern hall. While opening its southern part which attached the archway where we find three halls; two of them in the north side and the other one in the south side, behind the south wall we find the storage of water, was feeding the tap which surround the Dey palace. We notice that this archway is a set of horses.

#### **♦ The Booths** (Page 68)

Booths are the towers that culminate on the walls of the Casbah, called Tabakhana or Tabana by the rulers of the regular army, influenced by the Ottoman military traditions and the construction styles of Turkey fortifications. They're also called barricades in isolated places such towers or castles.

The Casbah in its previous stages consisted of a defensive belt consisting of seven booths (support towers) the south eastern part of the Bayat palace and the ground floor of Aga palace the second floor of the Harem. But after the transfer of the headquarters of the government to it and take the last parts as a shelter for a myriad of workers and soldiers the defensive architectural side was limited to booths, and we can give a detailed of this hereinafter:



**The front side of the stores as we imagine them**

**a) First Booth** (Page 70)

The first booth is situated in the northern of Casbah bordered from the west by Dai Palace, from the south by the ostrich garden and gun power factory, and from the east by the second booth.

The Casbah shares with the city to this rib that is overseen by it and quay.

**- The Ground Floor** (Page 70 and 71)

The first level is characterized by front halls. It's divided into three parts besides to the inner basement and the southern rooms. The first tier is situated in the west side rising part to the second line, this line consists of four columns of limestone with broken arches, the area occupied by this portico which is null, zigzag and covered with juniper wood pieces and upper part of the arches at the top of the arches. In the outside, we find a canopy covered with green painted bricks.

On the west side of the hallway, we find a square shaped room with an area of 11.46 m<sup>2</sup> high and 3.62 m<sup>2</sup> large with two windows, one in the south side wall and the second in the west side

wall. Behind the hallway, in the northern wall side, we find three basements which consist in interacting arches based on eight supported pillars with square shaped base. The second part counts nine columns bearing the arches of the eastern portico. The first and the second portico are separated by a hall, its northern part covered by the shadow of the porticos supported by juniper wood bearing the front porch of the second floor.

The half of western is exposed and used to lighten the entrance of the eastern part of the basement. In the south wall of this hall, we notice the continuity of bricks eaves and we notice here that the actual door is not the original, the first door used to be in the place of the actual window.

The third part, which is associated to the second booth is characterized with the existence of an original entrance in the south East part and we find behind it the cliff which was used to lift the cannons of the first, second and seventh booth. This cliff ends on the east pole of the aforementioned hallway and after the French colonization, this cliff was expanded to reach the fifth pole. Thus, the gradient weakened at the expenses of the north hallway, there is a lack of light in it and a lot of humidity which lead to the recovering of this place.

From the eastern basement that can be reached through the aforementioned door, the intersecting basements come up with until the eastern part from the first side on the total surface which occupies  $2,36 \text{ m}^2$ , whereas the surface of the eastern hallway occupies 127,28 meters square. Behind the hall, we find in the northern part a hall with a surface of 24,48 square meter and  $4,23 \text{ m}^2$ . Its entrance is situated in the eastern side and is separated from the intersecting basements by a wall which thickness is 0,45 m. This hall is special for guards who are responsible of artillery pieces which protect the entrance of the Casbah and are put inside two halls in the left side from the

principle way. This way leads to the city and it is the way to the two cliffed entrances used to allow to enter into Casbah. They've been closed after the occupation forces.

### II.3.1 The TAP application for the translation

Let's read the text first, to see what is the text about. Well I read the text four times, there is no difficulties in understanding since it's my culture and reading the word قصبة makes me remember about the movie of « La Bataille d'Alger ». But there are some difficulties in translating some words (nodding head) which we call Linguistics units of attention.

Ok. Let's start the translation of the first paragraph: In the name of Allah (reading the title many times) "باب السقيفة" (consulting the electronic monolingual dictionary «المعاني») it's ok I got it (checking in the electronic bilingual dictionary « Reverso Context » I choose the « The door of the Shed » I find it suitable , for the first paragraph I solved all the difficulties and break all the barriers , So I suggest this translation and I let it as it is .Now I move to the second paragraph .I read the text, Hummmm, it's quiet difficult comparing to the first one , (stop on the sentence) "زَيْن" (consulting the electronic bilingual dictionary « Reverso Context » , « Limestone for الحجر الكلسي » and « Hierarchical Ornaments for زخارف هرمية" I continue reading, Oops what's this "شرع الله بسلطان" , (consulting the electronic « Reverso Context » dictionary) no result (taking deep breath and looking disappointed), because it's a cultural unit of attention , I prefer to omit it. Just explain the meaning with « ask God for help ».

I keep translating and here again other words that seem little bit difficult. this paragraph is full of difficult words (open eyes widely) , I wonder for the rest. So the words are "العتبة و أوتاد من خشب" (check the electronic monolingual dictionary "المعاني" ) got the meaning (return to the electronic bilingual dictionary « Reverso Context » dictionary) ,So I choose the word « Canopy for العتبة » and « Yew wood for أوتاد من خشب الطقوس » . let's read the translation and, I think It's

quite good and I'm satisfied and thanks God I have done with this paragraph. I'm going to stop here to take a rest I'll carry on later.

(After a whole day come back to the translation read it again). I move to the third paragraph. I read It (once, twice then start translating), It's quite easy, there are two words difficult to translate "الصدر" and "العجز", not really difficult just don't remember them because I have already studied them in literature. (leave space). Maybe I will ask my teacher to remind me.

I move directly to the next page; I don't read my translation since there are missing words. I read the first paragraph, the subtitle seems strange to me, I have never heard about it "الدھليز". (consulting the electronic monolingual dictionary "المعاني") got the meaning ,it's easy to translate « The Corridor ». I continue translating, (repeating the word "السباط" many times) at the first beginning I thought it's "اليساط" but it's not. Let check on electronic monolingual dictionary "المعاني", Humm here it is. Now I should look in « Reverso context » to get the equivalence « Archway » it's nearly the same pronunciation in French (biting lips). I continue my translation, (suddenly sopped) this expression « كان يغذي العين » I do not know what really means the word "العين" is it eyes, I don't think so, (looking in different kind of dictionaries. So, I will ask my aunt for help, she is good in Arabic (leave space) it's what we call in another word in Arabic "الحنفية" oh really so it's « Tap » in English, oh my God how such an easy word took me hours to find it. For the word "الداي" I keep it, just change the transcription to « Dey » this is familiar in English movies. Done with the first paragraph in the second page, let's read my translation it's seems good to me. Right now, I move to the second paragraph, let's read it. I see some complicated words especially the subtitle "البطاريات", the first word which came to my mind is the word battery: I'm sure that everyone will think for this word not just me. But according to the meaning it's not « Battery », (talking to a sister),(checking on electronic monolingual dictionary ("المعاني") no result, let's check "المنهل" (paper version) the same

thing no equivalent. I will try google translation, but I'm sure the translation will be battery, let's see..... oh yes! I knew it, it's battery thanks Mr. Google. This word makes me give up (feel sleepy and yawning) so I'll stop here may be tomorrow I will continue. (Inchallah)

Go back to work after a week; in the name of Allah. (Go up and down reading the whole translation several times). So let's start, for the title I will ask my brother first. I'm sure he will give me the right word. Yes, got it : *ground floor* for الطابق الأرضي I carry on the translation at the moment, there are difficulties. Oups here it is one word that I know the meaning in Arabic but not in English (consulting the bilingual dictionary) I got it *juniper* العرعر. I continue the translation, this last page is quite easier than the others because the most of its words I have already translated it but there are some difficult words, I start the first paragraph ,and here we are I have never heard this word before(الطنف)let me check first in monolingual dictionary to have the meaning then in (electronic bilingual dictionary « Reverso Context » dictionary),I got Eaves, I continue translating the next paragraph, I stopped at the word (المنحدر) I know what does it mean but I ignore the equivalent in English, (consult in Nobel bilingual dictionary) I got "Cliff», I follow my translation and another word (سمكه),I got the meaning but I forget how to translate it. Oh my God I think I'm losing my english language (sarcastic smile),he is right the one who said "language use it or lose it".So let's return to the matter at hand,(check the Nobel bilingual dictionary) I choose thickness. One small paragraph left ,it's the easiest one just for the word (المدفيعيتين)I check in (electronic bilingual dictionary « Reverso Context » dictionary) I choose the word "Artillery",I continue translating the rest .I read my translation to see if there are blanks to fulfill (reading with concentration, omitting some items and punctuating).Finally I have done with my translation , I think my translation is quite good and I'm satisfied. I hope my teacher will be so.

### II.3.2 The Translog application for the translation

In the following passage we used the eight symbols suggested by **Jakobsen** namely :  
pause(\*),long pause ([\* :n.n]),line spacing key(↵),space bar(⬠),Deleting key(⊠),Control  
key(Ctrl) ,arrows key (←↕→) and shift key([Shft]).

[Start]\*\*\*\*\*[Shft]The⬠door⬠of⬠the[Shft]Shed⬠ ↵

[Shft]At⬠the⊠end⬠of⬠[Shft]K[Shft]asba⬠street.\*\*\*[Shft]A[Shft]t  
⬠the⬠very⬠left⬠side,[\* :n.n]there⬠is⬠the⬠principle⬠entrance⬠of⬠the⬠[Shft]Kasba. [Shft]T[Shft]he  
⬠hardned⬠shed⬠moves⬠forward⬠the⬠city⬠with⬠mass\*\*of⬠construction⬠blocking⬠the⬠left⬠side⬠  
of⬠street⬠and⬠occupies⬠[Shft]51 ,[Shift]45⬠[Shft]meters⬠square. (Ctrl)↵

[Shft]Th⊠ is⬠is⬠the⬠largest⬠door⬠of⬠[Shft]K[Shft]asba's⬠entrance⬠is⬠decorated⬠with⬠a⬠  
limestone⬠frame⬠\*\*\*a⊠ and⬠hierar⊠chical←⬠orna⊠ments ↵

\*\*\*\*\*[Shft]T[Shft]he⬠door's⬠width⬠is⬠[Shft]2 [Shft],[Shft]12[Shft]⬠meters⬠and⬠\*\*\*\*\*[Shft]3[S  
hft],[Shft]80[Shft]⬠meters⬠high,there⬠is⬠\*\*\*\*\*a⬠ch⊠  
ain⬠,known⬠as⬠a⬠safty⬠chain⬠hang⬠on⬠the⬠pilla⊠  
r⬠of⬠the⬠frame⬠[Shft]E[Shft]everyone⬠who⬠feels⬠perscuted⬠or⬠followed⬠by\*\*\*\*\*thiefs⬠or⬠hin  
ters⬠from⬠gurd⬠or⬠the⬠army\*and⬠who⬠ever⬠gets⬠there⬠con⊠sidered⬠as⬠a⬠surviver. ↵

[Shft]A[Shft]bove⬠the⬠principle⬠entrance⬠there⬠a⬠canopy⬠that⬠protects⬠the⬠door⬠frame⬠\*\*\*\*\*  
\*and⬠the⬠shold⬠from⬠rain⬠[Shft]T[Shft]he⬠canopy⬠is⬠supported⬠by⬠yewood⬠stack⬠and⬠bas  
ed⬠on⬠the⬠walls)↵

↓↓[Shft]U[Shft]nder⬠this\*\*\*\*\*⬠c⊠ anopy⬠we⊠⊠  
find⬠a⬠marble⬠tablet⬠with⬠[Shft]O[Shft]ttoman⬠inscription⬠camemorating⬠at⬠least⬠the⬠constr⊠  
uction's⬠date⬠of⬠the⬠lettres⬠is⬠[Shft]0 [Shft],[Shft]6[Shft]⬠and⬠planted⬠on⬠six⬠verses⬠of⬠poet  
ry⬠and⬠both\*\*\*\*\*↑↑↑↓↓↓⬠ verses⬠are⬠within⬠the  
⬠frame⬠decoreted⬠inside⬠with⬠[Shft]O[Shft]ttoman⬠writing⬠the⬠width⬠of⬠the⬠tablet⬠is⬠[Shft]  
0 [Shft],[Shft]61[Shft]⬠m⬠and⬠⬠[Shft]0 [Shft],[Shft]6[Shft]⬠height

[Shft]T[Shft]he⬠[Shft]C[Shft]orridor ↵

[Shft]I[Shft]n the south of the domed \*\*\*\*\* hall we find  
 a second door similar to the door of the main entrance [Shft]B[Shft]ut it is empty  
 of iron plates and this door \*\*\*\*\* connec  
 (Ctrl)ts the shed with the corridor which opened door leading ↓↓ to the east hall a  
 nd another door leading to the northwestern hall \*\*\*\*\* [Shft]W[Shft]hile opening its south  
 ern part which attached the archway \*\*\*\*\* where we find three halls two of them in the  
 northern side ↑↑ ↓↓ and the other one in the southern side \*\*\*\*\* behind the south wall we fi  
 nd the storage of water was \*\*\*\*\* feeding the tap ↓ which surround the [Shft] ↷  
 D[Shft]ai palace [Shft]W[Shft]e notice that ↓ \*\*\*\*\* this archway is a se ↷ ↷ of horses ↷

[Shft]T[Shft]he [Shft]B[Shft]ooths ↷

[Shft]B[Shft]ooths are \*\*\*\*\* zodiac that culminate the walls of  
 [Shft]K[Shft]asbah called [Shft]T[Shft]abkana or [Shft]T[Shft]abana by rul  
 ers of the regular \*\*\*\*\* army influenced by [Shft]O[Shft]ttoman military traditio  
 n and construction styles of fortifications turkey they also called barricades in isolated plac  
 es such as towers or castles. ↷







[Shft]T[Shft]he [Shft]K[Shft]asbah in its previous stages consisted of a defensive belt consis  
 ting of seven booths \*\*\*\*\* (support towers) the ↑↑↑↑ ↓↓ ↓↓ the south eastern part of the  
 [Shft]B[Shft]ayat place and the ground floor of [Shft]A[Shft]ga place the second floor  
 of the [Shft]H[Shft]arem [Shft]B[Shft]ut after the transfer of the headquar  
 ters of the government to it and take \*\*\*\*\* the last parts as a shelter for a myriad of wor  
 kers and soldiers \*\*\*\*\* defensive architectural side was limited to  
 booths and we can \*\*\*\*\* give a detailed of this hereinafter. ↷ ↷





[Shft]F[Shft]irst [Shft]B[Shft] ↷

[Shft]T[Shft]he first booth is situated in \*\*\*\*\* northern of  
 [Shft]K[Shft]asbah bordered from the west by  
 [Shft]D[Shft]palace from the south by ostrich garden and gun power factory and from the  
 eastern by \*\*\*\*\* the second booth ↷

[Shft]T[Shft]he♦[Shft]K[Shft]asbah♦shares♦with♦the♦city♦to♦\*\*\*\*\*this\*rib   
♦that♦overseen♦by♦it♦\*\*and♦quay 

[Shft]G[Shft]roun♦[Shft]Floor[Shft] 

[Shft]T[Shft]he♦first♦tier♦is♦characterized♦by♦front♦halls♦which♦devided♦to♦three♦parts♦\*\*\*\*  
\*\*besides ♦to♦the♦inner♦basement♦and♦the♦southern♦rooms♦    
the♦first♦tier♦situated♦in♦westren♦rising♦part♦to♦the\*\*♦second♦line♦this♦line♦consists   
♦of♦four♦columns♦of♦limestone♦with♦broken♦arches♦the♦area♦occupied♦\*\*\*\*by♦this♦portico♦  
which♦ ↓↓is♦null♦zigzag♦and♦covered♦wi   
th♦juniper♦\*\*\*\*\*↑↑↑↑↓↓↓↓wood♦pieces♦and♦upper♦part♦of♦the♦arches♦at   
the♦top♦of♦the♦arches♦in♦the♦outside♦\*\*we♦find♦a♦canopy♦covered♦with♦green♦painted♦bric  
ks♦ 

[Shft]O[Shft]n♦the♦western♦of♦hallway♦we♦find♦\*\*\*\*\*a♦square♦shaped♦room♦wir♦an♦area  
♦of♦[Shft]11[Shft],[Shft]46[Shft]m[Shft]<sup>2</sup>[Shft]♦height♦[Shft]3[Shft],[Shft]62[Shft]m[Shft]<sup>2</sup>[Shft]  
♦with♦two♦windows♦one♦in♦southern♦wall♦\*\*\*\*\*and♦the♦second♦one♦in♦western♦wall♦whe  
reas♦in♦the♦eastern♦side♦    
we♦find♦a♦corridor♦under♦the♦ladder♦and♦behind♦the♦hallway♦in♦the♦northern♦wall♦side♦we  
♦find♦three♦basements♦consist♦interecting♦arches♦based♦on♦eight♦supported♦p   
illars♦with♦square♦shaped♦base♦the♦second♦part♦of♦nine♦columns♦\*\*\*\*\*bearing♦the♦arches  
♦of♦the♦eastern♦portico♦separating♦↓↓the♦arches♦of♦the♦first♦and♦the♦sec nd♦portico.

## II.4 The translation argumentation through typical examples

Here are some examples that we picked up from our translation. Most of these examples are cultural unit of attention, we have chosen them to break the cultural barriers and make the source text more understandable. They were also the most difficult ones to translate.

**Example 1 :**

The expression "الشرع الله يا السلطان" : We omitted it since it has no exact equivalent in the target language "English". However, we suggested this translation "**Ask God for help**".

**Example 2 :**

The words الطبخانة أو الطبانة : We kept them as they are, we've opted for a phonetic transcription and kept the same pronunciation in Arabic. This is first because they have the same meaning with the word Booth; secondly, the Rulers used to call them **Tabakhana** or **Tabana** because of their shape. Their shape looks like drums طبول

**Example 3 :**

The names like: البايات، الأغا، الحريم، الداى are also translated by phonetic transcription **Dai**, **Harem**, **Aga** and **Bayat**. We kept them as they are, because even in English dictionaries we found the same names referring to these titles of Muslim rulers in the past.

**Example 4 :**

For the title which is the key word of our corpus, we kept it as it is but write it phonetically in English since it is a well-known landscape of Algeria and it is a given name.

**Example 5 :**

The equivalent of the word البطاريات was quiet difficult to find. We looked up it in all dictionaries but we find only the equivalent 'Battery' which is not the right meaning in this context. So we guess it from the pictures in the page 72 of the corpus. They were of a good help to better understand the term and find an appropriate equivalent; **Booths**.

**Example 6 :**

The word **العين** was really confusing in our translation. We did not find it till we asked our aunt for help. She masters both Arabic language and its dialect, so we could understand that it is actually a **Tap**.

**Example 7 :**

The word **الطنف** : was awkward to us , we have never heard this word before. Therefore, we had to consult monolingual and bilingual dictionaries in both: to figure out the meaning which is the **Eaves** in English, used to stick out the roof over the wall.

# *Conclusion*

Translation has always been one of the most complex activities due to the characteristics and the multiple complications it carries at the application level.

In our study, we dealt with the translation of an architectural text carrying in its layers cultural and historical aspects. We highlighted throughout this dissertation and mainly in the practical part the importance and the role of Think Aloud/Translog method in accessing and understanding the functioning of the translator's mind. Thanks to these two methods combined, we can have an insight on the translator's brain in overcoming difficulties while translating.

In our case since we are sisters, it was really interesting to share such an experience: working together, and exchanging roles and also knowledge was really beneficial for both of us.

Our research could answer to our problematic and confirm the hypothesis we have suggested in the general introduction. We also highlighted a number of positive points and results in using and applying The Think Aloud Protocol /Translog method while translating a technical text.

This study allowed us to obtain some important results concerning:

- Dealing with a technical text with a culture specific items is a real challenge for the translator;
- Pauses are the main indicators of difficulties and translating problems;
- Terminology is the key element of a technical text especially in such a corpus full of ancient and artistic terms of architecture;
- The TAP/ Translog method proved to be a reliable method to use in translating a technical text with historical and cultural aspects;
- Thanks to the TAP/Translog method we can understand the process of translation from its beginning dealing with the source text until finishing and producing a final correct target text.

Nevertheless, the results of this modest work constitute the bases of a work to continue and improve for a much deeper study that may be the subject of a Phd thesis.

This study also suggests new perspectives for the students who are interested in the field of architecture in Algeria in particular or in the world in general, and consider the use of this practical method Think Aloud Protocol/Translog in future studies.

We will conclude with several recommendations about future research that might be an extending of our work and enrich our department. It would therefore be interesting to tackle the architecture of Ghardaia which is a unique masterpiece with its historical, cultural and even religious aspects. Future students can also take the modern architecture as a subject of study namely Architecture in Wood with its ecological effect on the environment or Glass Architecture and translate from English to Arabic.

At the end, with the chapters of this study, we hope to have provided a shedding light on an aspect of the translation of texts in a technical field and an impetus for further work. Thus, paving the way for further studies in this domain.

# *Appendix*

## مسرد مصطلحات الفن المعماري عربي/إنجليزي

	<b>أ</b>
Ruins	أثار
Ornamental porticoe	رواق مزخرف
Pillar	عمود
Marble column	عمود رخامي
Pastel paint	لون زاهي
	<b>ب</b>
Basilica	بازيليكا
Tower	برج
Booth	بطارية
	<b>ت</b>
Culminate	تتوج
Fortification	تحصين
	<b>ح</b>
Limestone	حجر كلسي
	<b>خ</b>
Storage	خزان
Yew wood	خشب الطقوس
	<b>د</b>
Corridor	دهليز
	<b>ز</b>
Ornaments	زخرفة
	<b>س</b>
Archway	سباط
Stairway	سلم
	<b>ص</b>
Plate	صفيحة
	<b>ض</b>
Narrow	ضيق
	<b>ط</b>
Floor	طابق
Walkway	طريق
	<b>ظ</b>
Canopy	ظلة
	<b>ع</b>
Threshold	عتبة
Juniper	عرعر
Cannon	عقد

	<b>ف</b>
Choir	فرقة
	<b>ق</b>
Hall	قاعة
Brick	قرميد
Casbah	قصبية
	<b>م</b>
Octagonal minaret	مئذنة
Buildings	مبنى
Stunning labyrinthine	متاهة مذهلة
Town	مدينة
Headquarter	مقر
Twisting	ملتوي
Alley	ممر
Dwelling	منزل
Coastal cliff	منحدر ساحلي
Quay	ميناء
	<b>هـ</b>
Hierarchical	هرمي
	<b>و</b>
Valley	وادي

## English/Arabic Glossary of Architectural Terms

<b>-A-</b>	
Alley	ممر
Archway	سباط
<b>-B-</b>	
Basilica	بازيليكا
Booth	بطارية
<b>-C-</b>	
Canopy	ظلة
Casbah	قصبية
Cannons	عقد
Choir	فرقة
Coastal cliff	منحدر ساحلي
Column	أعمدة
Corridor	دهليز
Culminate	تنوج
<b>-D-</b>	
Dwellings	منزل
<b>-F-</b>	
Floor	طابق
Fortification	تحصين
<b>-H-</b>	
Hall	قاعة
Headquarter	مقر
Hierachical	هرمية
<b>-J-</b>	
Juniper	عرعر
<b>-L-</b>	
Limestone	حجر كلسي
<b>-M-</b>	
Marble column	عمود رخامي
Monument	برج
<b>-N-</b>	
Narrow	ضيق
<b>-O-</b>	
Octagonal minarets	مئذنة
Ornamental porticoe	رواق مزخرف
Ornament	زخرفة
<b>-P-</b>	
Pastel paint	لون زاهي

Pillar	اعمدة
Plate	صفحة
<b>-Q-</b>	
Quay	ميناء
<b>-R-</b>	
Ruins	اثار
<b>-S-</b>	
stairways	سلم
Storage	خزان
Stunning labyrinthine	متاهة مذهلة
<b>-T-</b>	
Threshold	عتبة
Tower	برج
Town	مدينة
Twisting	ملتوي
<b>-V-</b>	
Valley	وادي
<b>-W-</b>	
Walkway	طريق
<b>-Y-</b>	
Yew wood	خشب الطقوس

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## Abstract

The aim of our research paper is to present the most important difficulties that confront a translator when facing a technical text with historical and cultural aspects, and study the behaviour of the translator in order to overcome these problems. Our corpus consists in excerpts from a book describing the famous Casbah d'Alger, its cultural and historical architecture in Arabic language that we translated into English with a special focus on terms and special structures.

To fulfil our objective of study we applied the Think Aloud Protocol/Translog method that has revealed successful results in having access to the black box of the translator and understanding the whole process of translation activity, thus producing a correct translation document.

## ملخص

تطرقنا في بحثنا هذا إلى أهم المشاكل والصعوبات التي يواجهها المترجم أثناء قيامه بترجمة نص تقني ذي أبعاد تاريخية وثقافية. وارتأينا اختيار مقتطفات من كتاب **قصبة مدينة الجزائر (الجزء الأول)** كمدونة لإنجاز هذه المذكرة باعتبار القصبة تحفة معمارية بارزة ومعلما تراثيا هاما للجزائر لما يحمله من تاريخ وثقافة وبالنظر إلى أهميته في المجتمع الجزائري، بحيث كانت مصدر إلهام لعدد من الفنانين والكتاب. وركزنا في دراستنا على الجانب المعماري لطابعه التقني وما يحتويه من مصطلحات وتراكيب لغوية تشكل صعوبة ترجمة حقيقية.

وقد لجأنا إلى منهجية Think Aloud Protocol/Translog لترجمة مدونتنا والتوقف عند كل مراحل سير عملية الترجمة والصعوبات التي تعترض المترجم عند أدائه مهمة الترجمة. فبفضل TAP/Translog يمكننا أن نكتشف ما يحدث في ذهن المترجم وكل ما يجول بخاطره أثناء عملية الترجمة وكذا أهم الإستراتيجيات التي يلجأ إليها لتجاوز هذه العقبات بنجاعة وفاعلية.