UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Università degli Studi di Padova

Dipartimento di Studi Linguistici e Letterari

Corso di Laurea Magistrale in
Lingue Moderne per la Comunicazione e la Cooperazione Internazionale
Classe LM-38

Tesi di Laurea

Audiovisual Translation: Subtitling Netflix documentary "Black Hole Apocalypse"

Relatore
Prof. Maria Teresa Musacchio
Correlatore
Prof. Carla Quinci

Laureando
Giulia Costan Davara
n° matr. 1179835 / LMLCC

Anno Accademico 2019 / 2020

CONTENTS

INTRODUCTION

The growing need for audiovisual translation (AVT), a fundamental branch of Translation Studies (TS), is testified by the increasing number of international viewers of TV shows, films, and documentaries, offered in different languages by media giants like Netflix. Consequently, the advent of the digital era and the new technologies have played a key role in the diversification of contents produced by many TV channels and broadcast platforms.

The general audience's interests have changed as well, and science has become one of the most appreciated topics as a form of entertainment. In recent years especially, making science accessible to a general public by 'popularizing' it has reached greater importance and visibility as a matter of fact. To meet viewers' interests, documentary is the common audiovisual medium which succeed in establishing an effective link between scientific topics and general audiences' expectations.

Audiovisual programmes can be the result of different AVT modes such as dubbing, subtitling, and voice-over. However, subtitling is different from other types of translations in many ways. In terms of translation practice, subtitling not only consists in translating a text from a source text (ST) into a target text (TT), but it also involves a shift from an oral dimension to a written one which involves many constraints.

My interest in subtitling process comes from my experience as amateur subtitler and from my role as a 'binge-watcher' of Netflix documentaries in my free time. In this dissertation, I chose to subtitle a documentary about one of the most relevant and latest discoveries of our century: the concrete existence of black holes and the first picture of one of them. "*Black Hole Apocalypse*" is a scientific documentary hosted by the astrophysicist and author of the programme, Jenna Levin. I decided to translate and subtitle from English into Italian three extracts of this two-hour documentary. The official English subtitles produced by Netflix and my Italian subtitles are both provided in the last chapter of this dissertation.

This dissertation consists of five chapters; Chapter 1 is about popular science, communication issues with the general public, and black holes. Chapter 2 is entirely dedicated to audiovisual translation and its role in the digital era, from its very beginning to its main achievements. Chapter 3 provides an overview on the subtitling practice, its

constraints, the professionals involved and how it is actually working for a media giant like Netflix. Chapter 4 is the core of the whole dissertation and is devoted to the analyses of my subtitles in terms of linguistic and punctuation conventions. Finally, in Chapter 5, both the English and Italian subtitles for the documentary are provided.

1. DOES POPULAR SCIENCE NEED A CHAMPION?

Science has always had a major impact on society and its influence is still growing. By changing human means of communication and transportation, the way people work, even the length and quality of life itself, science has become the engine of prosperity of mankind. Since it impacts everyday life in every imaginable way by making many things easier, science could be considered as a public good and as one of the most important channels of knowledge. It has a key role, as well as a variety of functions for the benefit of society: improving human conditions, taking care of the global changes, and creating new bodies of knowledge. Moreover, it is almost impossible to number how many aspects of modern life are influenced by scientific knowledge. The modern world itself would not be the same without all the understandings and technologies enabled by science.

Defining 'popular science' is not as easy as people may think. According to scholars like Burnham (1987: 170),

> in the nineteenth century, popular science came to stand for the mission of converting people to the scientific way of life. After 1900, many scientists, teachers, and amateurs continued to evangelize for the unity of nature, reductionism, and explanation.

When now speaking about popular science, there is a variety of terms used such as 'popularization of science', 'pop science', 'expository science', 'science communication', 'public science', and 'public understanding of science' (Leane, 2007: 8). The Merriam-Webster's English Dictionary definition of 'popularize' is "to make something that is difficult or complicated simpler and easier to understand for the average person". Thus, as Manfredi (2019: 64-65) underlines, in a general English dictionary, the definition of 'popularizing' regards the intended addressees, namely 'the average person' rather than specialists in a field. From the perspective of science communication studies, Tinker Perrault (2013: xii) shares a similar view about 'science popularization', as he means "science-related communication directed at non-specialist audiences".

In recent years especially, the issue of the public communication of science (or popularization of it) has reached greater importance and visibility. For this reason, a mediation between scientists and the general public is necessary because of the

complexity of the scientific notions. As Bucchi (2004: 108) claims, science communication has developed mainly in relation to two broad processes: the growing importance of the scientists' role and the increasing growth of the mass media:

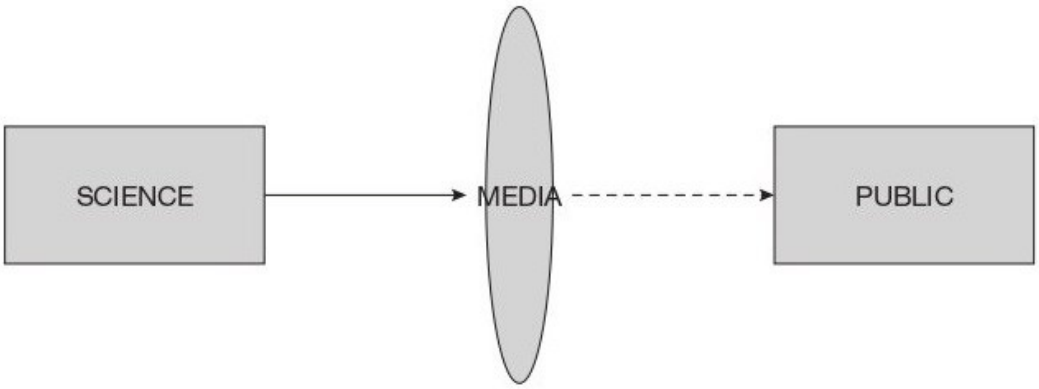

Figure 1: The traditional model of the public communication of science (Bucchi, 2004: 108).

Public understanding through the 'popularization' of science is essential to respond to philosophical or theological implications such as "Where did the universe and the human species come from and what purpose do they serve?". Astrophysics, cosmology, natural history and evolution are the most popularized sciences, reflecting this interest for philosophical and spiritual matters (Russell 2010: 73). Moreover, people are more likely to care about science when they understand what scientists will eventually do. The need of communicating science highlights the growing importance of establishing a link between experts and the rest of society, in order to maintain both the authority of the scientists and the trust of the public (Broks, 2006: 58).

1.1 Problems with the language of science

As the general public tends to assume that scientists only report facts, the language of science is assumed to be a simple, descriptive system much less important than practical experience. This is one of the reasons why science education so often reduces language to the readings and articles of textbooks, the memorization of facts and the instructions

for laboratory experiments. However, without language, there would be no facts to be reported or described.

Language, then, is just as fundamental to science as it is to other disciplines and areas of knowledge. However, the relationship between language used to represent some actual reality (a new discovery, a belief, a theory) and the actual reality itself is slippery. For this reason, the language of science is always imperfect because there is no absolutely accurate way to describe what lies under the microscope or out in the space. It is not as emotional as political or religious language or as persuasive as the language used for marketing, but it is still a system made by scientists and experts who cannot entirely master the outcomes their language choices have on others (Reeves, 2005: 2).

Although the language of science is very different from the language of political campaigns or the language of advertising and poetry, the goals of careful description of nature are still very important; therefore, scientists try to find the most efficient and objective language to characterize the appearance, function or composition of phenomena. However, despite the care scientists take to develop precise, reliable and meaningful terminology, many problems arise due to scientists from different subfields who may define the same terms in different ways. In addition, the usage of vague terms can mean different things to different people (Reeves, 2005: 17-18); therefore, language should be considered more than a tool for describing and reporting observation and experience. It both limits and enables people's ability to think about and understand the world. As stated above, even in science, a discipline with its standards of objectivity, the language used to describe, explain, present phenomena can lead to a way of thinking that may or may not be entirely correct (Reeves, 2005: 34).

1.1.1 Metaphors and rhetoric: a way to communicate science

One of the most important elements of science communication is the use of metaphors, which allows scientists to express the unknown or unseen via the known and seen. Moreover, metaphors help people to understand what they cannot touch, feel or see through what they can touch, feel and see. According to Reeves, all language could be metaphoric if metaphor is considered as the application or "mapping of one world

experience or domain onto another in order to describe or explain that domain" (Reeves, 2005: 21). Speaking of science, metaphors work on different levels:

- they can be used as models of processes of objects that scientists cannot see;
- metaphors can become theories or analysis that explain and predict the behaviour or action of processes and objects;
- the metaphoric use of the language can help scientists to explain and communicate complex ideas and discoveries to non-scientists and science students.

Since they may serve as illustration, it is important to underline that metaphors may hide as much as they reveal. As mentioned above, metaphors can also become theories if they are used to make predictions and plan experiments as well as explain the nature of phenomena. Consequently, scientific theories are often explained with the use of metaphoric language that has been selected by scientists to help them communicating their ideas (Reeves, 2005: 26-27). For example, communicative metaphors may have no theoretical use for scientists, but they can make science accessible for the general public.

Furthermore, metaphors involve the idea of understanding and experiencing one kind of thing in terms of another; therefore, according to Pedersen, "you talk about one thing, but you actually mean another thing and taken at face value, a metaphor is a lie" (Pedersen, 2018). In this context, 'the lie criterion' has been used by scholars like Lindqvist (2005: 117-118) who claimed that "if the literal meaning cannot be true, than the truth must be that we are dealing with a metaphor in which you describe or identify one thing in terms of another thing". In other words, the thing described is often more abstract or complex, the thing used to describe it is often more concrete or simple.

Another fundamental feature of science communication is the rhetorical dimension: discourse strategies, representation techniques, and forms of data presentation. Assuming that science communication is rhetorical and persuasive does not mean that scientists behave like politicians or advertisers. According to Reeves, the rhetorical persuasion that convinces people to buy a certain brand of products or to vote for a particular politician often appeals to deepest needs and desires. Science relies on reasonable rather than emotional rhetoric, on well-constructed arguments that support

theories and conclusions derived from the available evidence. For this reason, since very few scientific claims are self-evident, rhetoric is a necessary element of science communication. Scientists cannot simply provide a final scientific paper with introduction, methods, results, and discussion because only few readers would understand the importance of the data presented or they would come to different conclusions. In Bucchi's opinion (Bucchi, 2004: 65), an understandable scientific paper is a "subtle rhetorical exercise which forgets much of what has happened in the laboratory and reconstructs it selectively". Since most claims have to be supported with arguments that connect and explain data, a good scientist should be not only a good technician, a good experimenter, but also a good communicator (Reeves, 2005: 96).

1.1.2 Translating popular science

While scientists and academics tend to use English as a global *lingua franca* to spread scientific knowledge and new discoveries, the general public interested in science findings commonly rely on translation. Popular science translation has been almost exclusively investigated as a special kind of scientific translation, rather than, for instance, as a journalistic activity.

According to Manfredi (2019: 85-86), due perhaps to its unclear boundaries, or maybe its lack of prestige, popular science translation has been largely neglected in most surveys of Translation Studies (TS). However, there are a few important contributors dealing with issues of popular science translation, for example focusing on special aspects such as the use of metaphoric language. Metaphors are frequently used in popular science texts, in order to accomplish their double communicative function of informing and entertaining the reader. On the one hand, metaphors are often employed to establish a more concrete relationship between a scientific term and everyday language; on the other hand, their purpose is entertaining the reader or the viewer by grabbing his/her attention.

It is clear that popular science translation is now performing a powerful and key role in shaping public opinion and attitude towards science itself. As Manfredi (2019: 278) puts it,

if the translation of popular science discourse is to gain a place within TS, panels in international conferences could be organized and special issues in translation journals could be offered, in order to explore this important sub-branch, as has been the case of news translation over the past 15 years or so.

1.2 How is science really perceived?

Although the scientific establishment has traditionally frowned on popularizing scientific discoveries and theories, popular science should be considered as a starting point to communicate with the general public. This attitude reveals a fundamental dilemma still faced by science; according to Broks (2006: 107), "to maintain its authority [science] needs to be set apart from the general public, but to maintain its legitimacy it needs to appeal to the general public". However, being set apart would enhance its alienation; the domain of popular science would help to carry out this delicate balancing act between maintaining science authority and legitimacy at the same time. In addition, making science accessible means attracting students and political and financial support. It should also improve communication to and from industry, helping to achieve and make use of scientific discoveries. Nonetheless, sometimes scientists have been victims of their own success and skills of communication. The distancing that is required to maintain their authority, as mentioned above, is the very thing that undermines their legitimacy in the eyes of the public (Broks, 2006: 143). This could explain why people believe in science, but at the same time see scientists as distant and perceive communication as a critical issue.

As is shown in the diagram below, part of 3M State of Science Index Survey, science is mostly supported around the world:

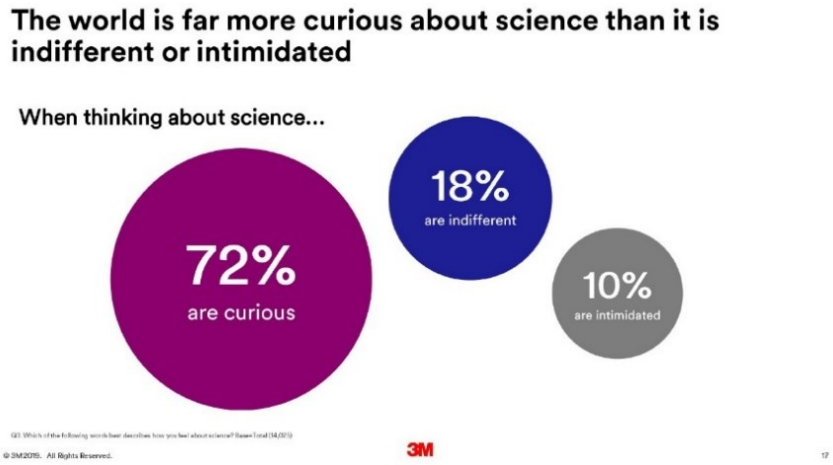

Figure 2: 3M report showing public's attitude towards science in 2019.

72% of the interviewees answer that they are far more curious about science rather than indifferent (18%) or intimidated (10%). Generally speaking, people seem to have faith in science around the world, but they ask scientists a greater involvement in new scientific discoveries.

Besides the global faith in science, the infographic below shows how scientists are considered as the most believable source of scientific information around the world; however, over 8 people in 10 thought that communication is still a critical issue:

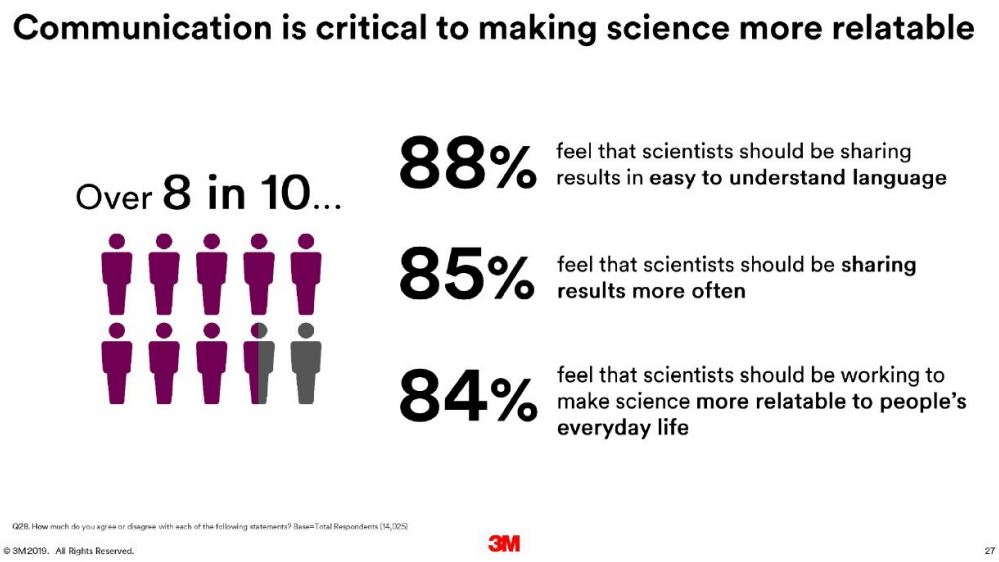

Figure 3: 2019 3M report about how scientists are perceived by the interviewees.

This survey about the public image of scientists highlights how important is trying to overcome the communication gap between experts and the public. People trust science and respect scientists' authority, but improving science communication with an easy to understand language is necessary. Moreover, if there were more general understanding of science, other areas of knowledge would benefit from this improvement in scientific communication as well. For example, according to Gregory (1986: 233), "writers in general would have an easier task, for they would not have to explain basics whenever 'scientific' or 'technical' point comes up for comment or reference". This should allow people to increase the areas of knowledge, communication and enhance the general public awareness

1.2.1 Italians and science

In 2018, PolitcApp Swg Survey pointed out that 85% of Italians had deep faith in science and recognized its importance in their lives. People over 55 years old (87%) strongly believe in science and consider it as a public good to support by making it accessible to everyone:

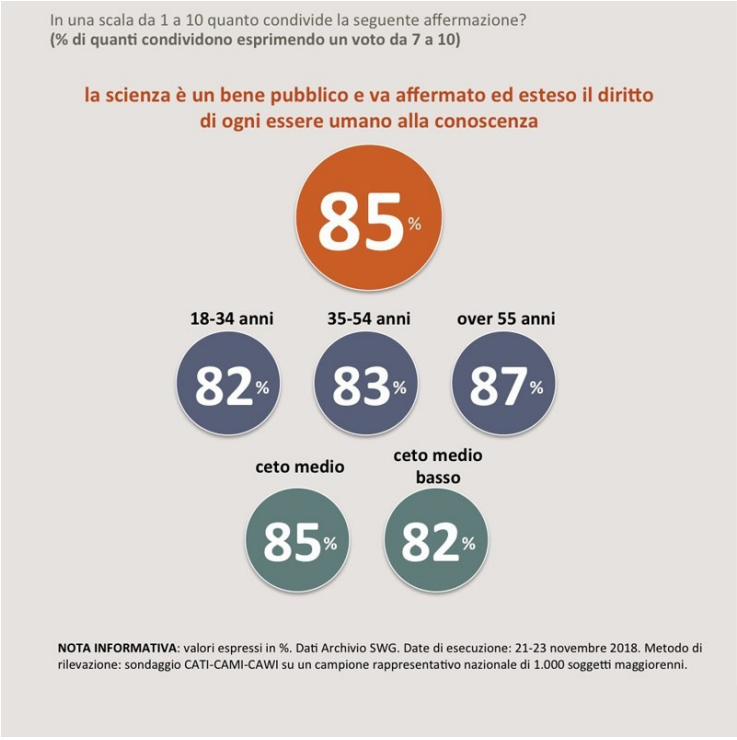

Figure 4: PoliticApp Swg report about Italians' perception of science.

3M and PolicApp surveys underline how important the popularization of science is. Curiosity is a main driver for why people get science news; therefore, improving communication by making science more accessible and understandable to everyone could be the only solution to champion and support the interest in it.

1.3 Science as entertainment

Nowadays popular science could reach people thanks to different media, such as newspapers, magazines and mostly documentaries. The last 10 years have ushered in a quick development of streaming platforms as Netflix, Amazon Prime Video, Hulu, and more with millions of subscribers. In the current television era, the growth and spread of these streaming services is a way of getting people interested in different kinds of topics.

There are many scientific documentaries which succeed in establishing an effective link between scientific topics and viewer's interest, by means of communicating science in an easy and understandable manner. For instance, Netflix has obtained the rights to stream all the PBS' Nova documentary series, which include interviews with scientists doing research in different subject areas and sharing details about particular discoveries.

An effective audiovisual communication of scientific contents involves several practices, such as re-editing, re-voicing and subtitling programmes to suit different markets and types of broadcasters (Campbell, 2016: 9). For example, Netflix usually offers the possibility to watch its contents with the subtitles made by its own team of professionals. According to Campbell, even though these may seem common and cost-effective behind-the-scenes practices, they stress how the final aim is that of reaching global subscribers. Documentaries on subjects like outer space, dinosaurs, history, wildlife and extreme phenomena can be more readily re-cut and re-edited for audiences across international markets than programmes or series about more specific socio-cultural and politico-economic issues.

By looking across a range of space science popular programmes and documentaries, it is possible to see how different approaches are presented and how the outer space is depicted. Some documentaries, like the Nova series, do show scientists and

scientific teams in their actual offices, laboratories and other places of work, such as telescopes sites (Campbell, 2016: 82). Spreading science by turning it into compelling visual narrative "needs to continue to be a major feature of the treatment of science in documentaries" (Campbell, 2016: 213). Popularization is needed to engage global audiences by presenting something far and unknown as, for instance, blackholes in the outer space.

1.4 What about astrophysics?

Until the nineteenth century, 'science' as we now understand it did not exist and it was the same thinking about physics. However, in the late seventeenth century, some topics that are now categorized in the realm of physics, namely Newtonian physics and heliocentric astronomy, were popularized in England. With the increasing specialization and professionalization of science and the consequent development of a mass market for popularization, various branches of science (such as chemistry, geology and biology) grabbed considerable public interest, and physics also continued to have popular appeal, thanks to books and periodicals. Even though the nineteenth century was characterized by discoveries in the field of thermodynamics, popular interest focused on astronomy. Generally speaking, cosmology and astronomy are the branches of popular science which have dominated the publishing market throughout the twentieth century. This century saw two particular booms in popular physics: the first one was in the 1920s and 1930s, both in the United Kingdom and in the United States, with the publication of Einstein's theory of relativity; the second one occurred in the late 1960s and 1970s, when, after a fall in the polarity of physics, the areas of quantum mechanics, cosmology and chaos theory generated a growing interest (Campbell, 2016: 114).

Astrophysics is now considered as a branch of space science that applies the laws of physics and chemistry to explain the birth, life and death of stars, planets, galaxies, nebulae and other objects in the universe. Although the line between them is blur, astrophysics is also related to astronomy and cosmology. According to NASA, the task of this discipline is to study how the universe work, understand how it began and its evolution, and search for any possible form of life on planets around the stars. Over the years, media coverage concerning scientists' work about the outer space increased

public's interest for astrophysics, especially after the first iconic picture of a black hole (NASA, 2014).

1.4.1 Why Black Holes?

Although few people can understand the physical and mathematical nature of the black holes that Einstein's studies revealed, nearly everyone can imagine a black hole as something that swallow everything and let nothing out. However, black holes are more than a simple metaphor for emptiness and loss. They may form dying stars and become objects of pure space and time that have transcended their stellar birthright (Wheeler, 2007: 176).

The term 'black hole' was used for the first time in 1967, but the idea of objects whose gravity is so intense not to even light can escape its tug is far older. In 1783 John Michell, an English natural philosopher and clergyman, showed that Newton's law of gravity suggested that these 'dark stars' could exist. Despite being invisible, such objects might reveal themselves if they had a star in orbit around them. Newton had tried to explain why things fall and planets turn; as a result, he had assumed the existence of a 'force' drawing all material bodies towards one another. How this force was employed between things distant from each other, without any obstacles between them, was unknown. But then, two British physicists, Michael Faraday and James Maxwell, added the key element to Newton's theories: the electromagnetic field (Rovelli, 2014).

During his studies, Einstein soon understood that gravity, like electricity, had to be conveyed by a field as well: a 'gravitational field' similar to the 'electrical field' had to exist. He tried to understand how this 'gravitational field' could possibly work and how it could be described with equations. As a result, he theorized that this 'gravitational field' is not diffused through the space because the 'gravitational field' is the space itself. This idea plays a key role in the theory of general relativity. Newton's 'space', through which things move and the 'gravitational field' are one and the same thing. (Rovelli, 2014).

However, within Einstein's equation there is a whole universe and it suggests how space bends around a star. Because of this curvature, not only planets orbit around stars, but light stops moving straightly and deviates. According to Einstein, it is the sun that causes light to deviate and the famous solar eclipse of 1919 confirms his theory.

Furthermore, Einstein's equation shows that space cannot stand still: it must be expanding. In 1930 the expansion of the universe was actually observed, and the same equation suggests that this expansion has probably been caused by the explosion of "a young, extremely small and extremely hot universe: by what we now know as the 'Big Bang'" (Rovelli, 2014). In short, 'the theory of general relativity' describes a world where universes explode, space collapses into bottomless holes, time slows near a planet, and the unbounded extensions of interstellar space sway like the surface of the sea.

1.4.2 What scientists currently know about black holes

The very notion of a black hole is actually quite simple: it is a region in space where the pulling force of gravity is so strong that light itself is not able to escape. The strong gravity occurs because matter has been pressed into a tiny space. This process can take place at the end of a star's life and that is why some black holes are the result of dying stars (NASA, 2014). A dying star burns up all its combustible substance (hydrogen) and what remains is no longer supported by the heat of the combustion. Consequently, the star collapses under its own weight to a point where it bends space to such an extent that caves in an actual hole. No matter what a star looks like before its collapse, all its distinguishing features disappear and the only characteristics that remain are the former star's mass, its spin, and its electric charge (Bartusiak, 2015: 49).

Since no light can escape, black holes are invisible. However, they are surrounded by an imaginary membrane that marks the point of no-return for infalling light or matter. According to Chown (2017: 131), "just as the sound of a bell ringing is a unique signature of the bell, the sound of this 'event horizon' ringing is the unique signature of a new-born black hole". On 14 September 2015 a black hole was 'heard' by the LIGO (Laser Interferometric Gravitational Wave Observatory) and Virgo for the first time, proving once and for all black holes' existence.

According to their mass and sizes, there are three main types of black holes:

1. the smallest ones are the primordial black holes; scientists think that this kind of black hole is as small as a single atom, but with the mass of a huge mountain;

2. the most common black holes are the medium-sized ones and they are called ‘stellar’. The mass of a stellar black hole can be up to 20 times the mass of the sun and can fit inside a ball with a diameter of about 10 miles. Dozens of them may exist within the Milky Way galaxy;
3. the largest black holes are known as ‘supermassive’. Their masses are greater than 1 million suns combined and would fit inside a ball with a diameter about the size of the solar system. Scientific evidences suggest that every large galaxy has a supermassive black hole at its center. The supermassive black hole at the center of the Milky Way galaxy is called ‘Sagittarius A’ (pronounced ‘ay star’) and its mass is equal to about 4 million suns and would fit inside a ball with a diameter about the size of the sun (NASA, 2014).

Despite their starting size, black holes can grow throughout their lives, absorbing gas and dust from any objects that come close to them. Anything that reaches the event horizon, the point at which escape becomes impossible, is destined for being sucked into the black hole. However, it is not that easy to be dragged into one of them; for example, if the sun was suddenly replaced by a black hole of a similar mass, planets would continue to orbit unperturbed with much less illumination and warm.

1.4.3 Latest discoveries about black holes

On 10 April 2019 scientists shared alluring news by unveiling an image of a supermassive black hole of Messier 87, a massive galaxy in the Virgo cluster. The supermassive black hole with its mass of 6.5 billion suns looked like a circular void surrounded by a ring of light. This landmark image showed a black hole’s silhouette for the first time in human history.

This new image was the achievement of the Event Horizon Telescope project, a global collaboration of more than 200 scientists using an array of observatories all over the world as if it was a giant telescope. After two years of collecting data, scientists were finally able to assemble the shot (Drake, 2019):

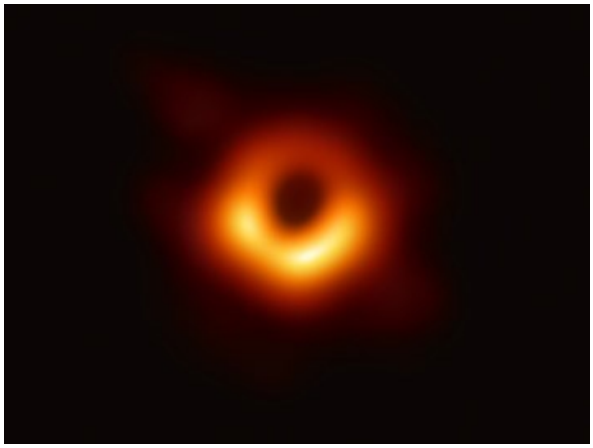

Figure 5: First look at the shape of a black hole, 2019.

Recent news about black holes (May 21, 2019) by a team of international astronomers reports the merger of two black holes of unprecedented masses creating another massive black hole. The discovery, called GW190521, was observed thanks to LIGO in the United Stated and the Virgo interferometer in Italy. The two black holes were caught while merging and their masses were roughly 85 times and 66 times the mass of the sun, respectively. After their merge, producing a gravitational wave detected by LIGO and Virgo, they created a black hole 142 times the mass of the sun. Scientists are still analysing the discovery, trying to understand if the existence of intermediate-mass black holes could be explained as well, as black holes are key to creating much of what exists (Mortillaro, 2020).

2. AUDIOVISUAL TRANSLATION IN THE DIGITAL ERA

Over the last few decades, audiovisual translation (AVT) has been definitely one of the fastest growing areas in the field of Translation Studies (TS), which in itself has been expanding and consolidating its position as an academic discipline. One of the most concrete outcomes of this evolution has been the increasing number of conferences and publications concerning AVT issues. From initial studies centred on the professional stages of the different AVT modes and focused on a controversy of whether dubbing was better than subtitling or vice versa, scholars have progressively moved on to studies and analyses that look at the AVT from different viewpoints (Dìaz Cintas, 2008: 2). Moreover, the growing importance of audiovisual studies is now signalled by collective research projects funded by international stakeholders, the creation of transnational groups of study, and the participation of AVT experts and trainers in successful programs of collaboration with industry partners (Pérez-Gonzáles, 2019: 1).

At its early stages, AVT encapsulated different translation practices used in the audiovisual media (cinema, television, VHS) in which there is a linguistic transfer from a source to a target language. Although dubbing and subtitling are the most popular modes in the profession and the best known by the public, there are other modes such as voice-over, narration, interpreting, translating live performances and surtitling for the opera and the theatre (Dìaz Cintas, 2008: 7). At a later stage, AVT scholars working in this study area came across practices that did not seem to have much visibility elsewhere, namely subtitling for the deaf and the hard of hearing (SDH) and audio description for the blind and partially sighted (AD). The first one, SDH, which is also known as captioning, provides a written text on the screen of the characters' dialogue and other complementary information to help deaf audiences identify speakers and have access to paralinguistic information and sound effects that they cannot hear from the audio. The second one, AD, consists in transforming visual images into words, which are then spoken during the silent breaks of audiovisual programmes or live performances (Dìaz Cintas, 2008: 7). At the beginning, these modes created some terminological confusion because none of them involved the transfer from a source to a target language, one of the main features of any translation practice. After many debates among AVT scholars and practitioners on whether these two modes should be included within translation studies,

the argument has now been settled and SDH and AD are now commonly considered as part of AVT.

Given all the technological advantages of the current digital era, AVT research now needs to move beyond what has traditionally been considered the core of the discipline. Not only AVT is funded to play a socially inclusive role by promoting the integration of sensory impaired people within mainstream society, but, according to Pérez-Gonzáles (2019: 2), it is also "at the heart of various initiatives and projects to optimize revenue generation through technologization processes driven by corporate players". Consequently, the impact of these technological developments, pushed by the complex technology-mediated role between verbal and visual semiotics, is increasingly attracting the attention of scholars like never before.

2.1 Interlingual or intralingual AVT?

The different types of AVT can been classified according to two main groups: translation codes (including oral/written code, picture code) mostly within the same language and translation between languages, which also implies changes in codes. Certain types can be intra- and interlingual and could be part of both groups.

2.1.1 Intralingual AVT: SDH or CC subtitling, live subtitling and AD

Intralingual subtitling, also known as same language subtitles (SLS), is a shift from the spoken mode in a film or TV program to the written mode of the subtitles. Intralingual subtitles can be used for language learning or reinforcing skills such as reading, listening and pronunciation. Besides this language learning function, intralingual subtitles are fundamental in terms of accessibility, allowing certain groups to have access to audiovisual texts, namely the deaf and hard of hearing (Gambier, 2012: 49). It is important to underline how subtitles for the deaf and hard of hearing offer great educational potential to people with limited knowledge of a country's language as well.

As Díaz Cintas and Remael (2014: 15) state, the didactic value of interlingual subtitles used for the teaching and learning of foreign languages has long been recognized. Watching and listening to films and programmes subtitled from other

languages help people (especially the young ones) not only develop and improve their linguistic skills, but also contextualize the language and culture of other countries. People seem to familiarize with the foreign language through the soundtrack (pronunciation, intonation, vocabulary), and the images are useful to create a connection with other cultures in terms of body language, way of dressing and behave, interpersonal relationships, and geographical spaces. Having direct access to the original language and being able to compare it with its translation has been stressed by many scholars as one of the most positive qualities of using subtitling as a form of learning (Díaz Cintas and Remael, 2014: 15).

Gambier points out (2012: 49) that these two types of intralingual subtitling are processed differently: subtitling for language learning does not mention sound effects in general (telephones ringing, doors slamming, angry or shouting voices etc.). Apart from noise, this kind of subtitles tends to translate everything, while interlingual subtitles select, condense and reformulate. The second type of subtitles, known as 'subtitles for the deaf and hard of hearing' (SDH) or '(closed) captioning' (CC), usually turns all verbal and non-verbal audio material into text. When first introduced, SDH and CC were considered as a form of 'transcription' or 'adaptation', rather than a proper translation for hearing-impaired. However, both SDH and CC are currently considered part of the audiovisual studies and they can have the form of burnt in (open) or superimposed (closed) subtitles, display all the verbal and non-verbal acoustic information, be prepared in advance or provided live (Neves, 2019: 83). As a form of interlingual subtitling, SDH and CC subtitles have to follow rules about time, reading speed constraints, subtitle density and respecting a certain degree of synchronization because many hard-of-hearing people use lip-reading to understand what the conversation is about. The hearing-impaired are not in fact a homogeneous group and their extent of deafness can vary among individuals (Gambier, 2012: 49).

Another kind of intralingual AVT is represented by live subtitling, sometimes called respeaking, which can also appear in interlingual form. Generally speaking, this practice may be defined as the production of subtitles by means of speech recognition. Romero-Fresco (2011: 1) presents it as

> a technique in which a respeaker listens to the original sound of a (live) programme or event and respeaks it, including punctuation marks and some specific features for the deaf and hard of hearing audience, to a

speech recognition software, which turns the recognized utterances into subtitles displayed on the screen with the shortest possible delay.

Since it is carried out while people speak (as in TV news or sporting events), it requires technical support which sometimes consists in a special keyboard (with syllables and not letters) to type faster or in the use of a voice recognition software. The respeaker repeats or rephrases what the audio said and then the software turns the short sentences into written lines. However, the fast-paced delivery of speech in media content often makes difficult to repeat the original soundtrack and produce verbatim subtitles. As a result, the stressful working conditions and the very short time to translate affect the quality of the final translation (Gambier, 2012: 50).

Thanks to audio description (AD), known also as 'video description', 'described video', and 'audio captions', blind and visually impaired persons (VIPs) can have access to films, TV series, theatre performances, etc. This type of audiovisual translation can be intra- or interlingual and involves the reading of a text describing what is going on the screen (body language, costumes, etc.). All this information is added to the soundtrack or to the dubbing of the dialogue for a foreign film, without interferences from noise and music effects. The whole process of creating AD is very long because it takes about 16 to 20 hours to write the descriptions for a 1-hour drama episode, and about 2 to 3 hours to record a 1-hour script (Cronin and King, 1990: 503). However, even though the creation process includes many technicalities and need for precision, AD is a highly creative process that demands mastering one's mother tongue. AD allows VIPs to access, understand and appreciate many products that are conceived primarily as visual, such as artworks or films; therefore, it has an important social impact enabling VIPs to be part of the cultural and social life. Despite the variety of uses AD has been put to, this assistive mode is typically associated with the medium of films. As Gambier underlines, this kind of sight interpretation (or double dubbing) works better with certain genres, such as drama, movies, wildlife programmes and documentaries than for news or game shows which have sufficient spoken content to be followed by blind people. Moreover, as for the hearing-impaired, the community of the blind is not homogeneous and AD could be also useful for dyslexic people, elderly people, the partially sighted and anybody who cannot read fast enough.

2.1.2 Interlingual AVT: subtitling, dubbing, voice-over, surtitling

Although their practice is changing as well, interlingual types of AVT are more conventional and better known. Interlingual subtitling may be defined as a translation practice that consists in showing a written text, generally in the lower part of the screen, that aims to reproduce the original dialogue of the on-screen characters, as well as the discursive elements that appear in the image (signs in general, letters, inserts, inscriptions), and the information contained on the soundtrack (songs, noises, voices off). All subtitled films and programmes present three main features: the spoken text, the image and the subtitles. The relation between these three components, together with the viewer's ability to read both the images and the written text at a certain speed, and the actual size of the screen, define the basic characteristics of this audiovisual mode. Subtitles must be used in synchrony with the image and the dialogue, present a semantically adequate account of the source language dialogue, and remain on screen long enough so that the audiences can read them (Díaz Cintas and Remael, 2014: 8-9). The process of subtitling is frequently carried out by the same person: translating, spotting (also known as cueing, time-coding) and editing thanks to a specific software. In the past, the work was divided between a translator, who was responsible for the written translation from a post-production script or a dialogue list after watching the film (or not) and a technician, responsible for spotting and timing the subtitles (Gambier, 2012: 50).

When debating about dubbing, many scholars have considered the constrains within this mode of AVT. Particular emphasis has been placed on synchronization, which is defined in its most general sense as a process consisting in "matching the target language translation and the articulatory and mouth movements of the screen actors and actresses, and ensuring that the utterances and pauses in the translation match those of the source text" (Chuame, 2012: 68). There are three types of synchronization (Bosseaux, 2019: 50):

1. the so-called 'lip' or 'phonetic synchrony' which involves the idea of adapting the translation to the articulatory movements of the on-screen characters;
2. the kinesic synchrony which is based on the synchronization of the translation with the characters' body movements;

3. The isochronic synchrony which consists in synchronizing the duration of the translation with the screen characters' utterances.

According to Bosseaux (2019: 51), it is important to underline that synchronization is not only a concern for dubbing, but also an integral part of original audiovisual products, as part of a sound post-synchronization process. Since noises can be heard in the background after the film has been shot, sound is usually not natural. Consequently, in most cases, sound recordists try to recreate realist ambient sounds using creative strategies and then, during the dubbing process, adapters and sound engineers can substitute part of the film's 'prepared soundtrack', which combines a number of tracks where spoken parts, music and sound effects are recorded separately (Bosseaux, 2019: 51). Although subtitling could be currently considered a dominant practice, dubbing can be found in many films, TV programmes and series, cartoons.

'Voice-over' (or 'half dubbing') has been conceptualized as a form of revoicing and the term is used in both translation studies, on the one hand, and in film studies and film industry, on the other. It takes place when a documentary, an interview or a film is translated by a narrator or a journalist who can half dub different characters and broadcasted approximately in synchrony. The target voice is superimposed on top of the source voice, which is almost inaudible or incomprehensible. However, it is common practice to allow the audience to hear the original audio in the foreign language at the beginning of the speech and then reduce the volume of the original so that the translated speech can be inserted (Díaz Cintas and Orero, 2006: 477). This kind of translation usually finishes several seconds before the foreign language spoken parts do and the soundtrack of the original is raised again to a normal volume. For example, voice-over mode is commonly used in documentaries, where the superimposed target voice is that of a commentator, who may occasionally appear on the screen and provides a third-person overview that orientates the audiences to what they are watching.

Surtitling is a type of subtitling that takes place above a theatre or opera stage (or in the back of the seats) and it is displayed non-stop during the whole performance. Since the actors and singers do not perform twice in the same way, the surtitle content is not shown automatically. In this case, the translator, who is part of the audience, inserts the surtitle file during the show. Surtitling is today emerging as a practice that is enjoyed and

demanded by various groups of people, and even included as an integral element in various theatre companies' performances. This is probably due to the ever-changing target audience needs and expectations, as well as the general enthusiasm concerning these types of translations and the services they provide (Secară, 2019: 142).

Generally speaking, the different forms of AVT do not translate and render the text in the same way, using the same codes. Dubbing and voice-over tend to emphasize the oral dimension, while others are a switch from oral to written (interlingual, intralingual, live subtitling and surtitling), or from pictures to oral like AD, or from written to oral as sight translation (Gambier, 2012: 51).

2.1.3 Why do Italians prefer dubbing?

Subtitles are used by millions of people in Europe and of course all over the non-English speaking world during the day. In this context, Italy is representative of the many countries that are showing a growing need of interlingual mediation for both big and small screen. As mentioned below (see 2.3.1), Italy has been commonly defined as a 'dubbing country' and, along with Austria, France, Germany and Spain, has adopted a tradition of dubbing rather than subtitling, which is the preferred AVT method in countries such as Greece, Portugal, Scandinavia, and the United Kingdom. Although many younger people, who are more proficient in English than their parents, may prefer subtitling when watching films or TV series, in Italy dubbing is set to remain the chief form of linguistic mediation for the next years. According to Antonini and Chiaro, it is important to underline that attitudes and preferences are connected to people's habits and thus a person who has been preferred dubbing for the whole life is unlikely to be persuaded to change to a different mode of AVT (Antonini and Chiaro, 2009: 97).

As Antonini and Chiaro (2009: 100) suggest, "interlingual translations are textually unique in that they exist as a version of a pre-existing duplicate in another language". In this context, it can be assumed that the consumers of these translations are mainly those who are not very confident with the source language of the text and that such viewers would rather not perceive translations as the process of translating from a source language into a target language. Most viewers may like to hear a smooth, easily understanding texts in their mother tongue and, in the case of AVT, although they may

not know what is appearing on the screen, what is perceived through the ears in the case of dubbing should be identifiable and free of issues of any sort (Antonini and Chiaro: 100-101); therefore, many translational choices in Italian AVT present a number of compromises that either filter through the audiences unnoticed or are instinctively accepted.

2.2 How was interlingual AVT in the past?

AVT is now considered as a branch of studies that encompasses all the different manifestations within the audiovisual realm. However, in the past, the terminology used was very hesitant and confusing. The adjectives 'constrained' and 'subordinate' were regularly used to define this type of translation in publications between the 1980s and the early 1990s but began soon to receive criticism for their somewhat negative connotations. It was then that the term 'audiovisual translation', abbreviated to AVT, appeared in academic circles. However, some scholars still prefer other terms to define the discipline, such as 'film translation', 'cinema translation', 'screen translation' or 'multimodal translation'. According to Díaz Cintas and Remael (2014: 12-13), this fluctuation in terms is no more than the reflection of the changing times of the digital era. Therefore, it could be interpreted as a clear sign of the desire of many scholars and academics to maintain open and flexible approach to the new realities emerging in the translation world.

Audiovisual translation studies have been experiencing a renewed interest in historical approaches since the early 2010s, which is connected to a more general interest in translation history since the late 1990s. According to O'Sullivan and Cornu, to satisfy this growing interest "the researcher [has] to look simultaneously at translation practices, technical processes and marketing strategies that are all intertwined, especially in the early years of film translation" (O'Sullivan and Cornu, 2019: 15).

Before the sound era, films were silent, but not speechless: actors moved their mouth on the screen and title cards conveyed narration and parts of dialogue. The translation of silent films could be considered as a 'holistic process' involving the translation of title cards, omission or addition of title cards, film editing and paratranslation (O'Sullivan and Cornu, 2019: 15). At the beginning of the twentieth century, before the introduction of title cards, there were people whose job was to explain

and comment on what was happening on the screen. When title cards appeared for the first time, these people would read aloud explaining their content or sometimes translate foreign films for the benefit of illiterate audience. For instance, in the early 1900s in the USA, titles were read from the screen and translated into different languages. These people covered this role in the United States and Europe until mid or late 1910s (O'Sullivan and Cornu, 2019: 17). Not many scholars have considered the role of film explainers as translators. Since their job had to do with 'image-reading' and 'cultural translation', it could have been considered as a form of intralingual, interlingual and intersemiotic film translation film. In a certain way, the current form of film 'explaining' images and dialogues could be interpreting at film festivals.

2.3.1 A brief history of dubbing

Synchronized speech appeared for the first time in US films in order to maintain the worldwide distribution of Hollywood's products. English was the main language used in the early talking period; thus, the situation was quite different in English-speaking and non-English-speaking countries.

The first taking film, *The Jazz Singer*, was internationally released by Warner Brothers. Although it had only a few 'live' talking scenes and a soundtrack, this film was perceived as the starting point of the talking era movies. However, there are not many information about how this film was shown to non-English-speaking audiences in the rest of the world. It is still unclear how or whether it was translated into other languages when it reached continental Europe in 1929. In France, for instance, it seems that the film was shown with written translation in French of the spoken scenes, projected onto another screen (O'Sullivan and Cornu, 2019: 17).

Since many talking films started to be released outside their original linguistic area, one of the early translation strategies consisted in not translating them. In 1929 - 1930, dubbing processes had not yet begun to be used worldwide and subtitling was very rare. In order to solve the situation, Hollywood producers and foreign distributors resorted to 'synchronized' films: silent versions of talkies with music as their only sound and intertitles looking like title cards. This practice was mainly adopted in Italy, for example,

where the government forbade speech on film in languages other than Italian and only songs were shown in the original language.

These practices were short-lived, as they were used as a solution for showing bilingual or multilingual films in order to avoid translating everything. Consequently, simultaneously and in different parts of the world, processes and methods developed that can be divided into two categories: adding written texts in form of titles superimposed onto the film or projected on another closer screen; or changing the original spoken parts with lines in other languages that could be understood by local audiences. Adding written texts that could be read as the characters speak became known as subtitling. Replacing the spoken language of the film was possible thanks to two main strategies: the multilinguals, which short-lived because of many technical problems, and the much more enduring dubbing process. The first method, consisted in shooting the same story in a number of different languages, changing the cast for each language; the second mode, dubbing, required the replacement of the original dialogue and characters' voices with new lines in the languages of the countries where the film was about to be released (O'Sullivan and Cornu, 2019: 18).

With the advent of dubbing, in the early 1930s, some major Hollywood studios chose it as the leading strategy to reconquer all those countries they had temporarily lost with the introduction of talking films. Audiences in Latin America and Europe enjoyed the novelty of speech in films, but soon complained about the fact that the films had their audio in English. Turning the soundtracks into Spanish, French and other major European languages seemed to be the solution for Hollywood to keep film markets, which were fundamental to recover production costs and increase profits.

With the development and improvement of the re-recording technique and multi-track mixing, dubbing became possible as a specific form of post-synchronization: it replaced the original voices after shooting, by recording the spoken parts in other languages in a studio and matching the existing lip movements with the new vocal sound as closely as possible. In this context, there were two major methods of dubbing which proved to be satisfactory; one method needed actors to learn the translated dialogue before recording a scene, while watching the original film without sound. Then dubbing actors were supposed to speak their lines while following the facial and lip movements as best as they could, trying to give the impression that their voices actually belonged to the

characters of the film. This practice was particularly challenging because their task was to sound as natural as possible when performing under such conditions. The other method involved a mechanical system which tear down all the lines of the script into minute sections based on the lip movements. This information was written on a piece of paper or celluloid that ran with the film, but at lower speed in order to guarantee a constant synchronicity. This piece of paper was then used by translators, who tried to write dialogues that would match the lip movements. The translated lines were transcribed in turn on a similar piece of paper or celluloid, known as the *rhythmo-band*, which was displayed in synchronization with the film, but on another separate screen. To make synchronization as accurate as possible, dubbing actors had to say their lines exactly as each syllable went past a vertical bar on the separate screen. The first method was considered as 'empirical' and known as *doublage à l'image* ('image-guided dubbing'). Despite the fact it was born in Germany, the other practice, *the rhythmo-band*, was little used in its home country, but was commercially developed in France and it became known as *doublage à la bande* ('band-guided dubbing') (O'Sullivan and Cornu, 2019: 22).

Nowadays dubbing continues to be the preferred choice in countries, such as Italy, Spain, Germany and France. It is much less used in other European countries where subtitling was adopted at an early stage or where foreign films are less widely released, as in the United Kingdom where English-dubbed films are a rarity as well as in other English-speaking countries. Although it is a costly practice, dubbing remains widely used in national film industries which can afford it. In European countries like Germany, Italy, Spain and France, it is not only used for releasing films, but also TV programmes or series. In Germany, for instance, public's preference for dubbing and the strength of the dubbing industry have led to the virtual disappearance of subtitled films in cinemas (O'Sullivan and Cornu, 2019: 23).

2.3.2 A brief history of subtitling

At the beginning of the talking film era, subtitles were considered a direct legacy of silent intertitles. However, their purpose was different: the title cards in silent films were used to convey details about the narration and dialogues, while the subtitles of talking films

only translated dialogues and written information, such as newspaper headlines, signs in general, etc.

Since the first talking films distributed worldwide were mainly US productions, subtitling initially consisted in turning English into other languages. As the main target for Hollywood productions were the European countries, many subtitling processes were developed mostly in Europe at first. For example, some methods to improve readability were devised in Hungary, Sweden and France. The enduring ones were chemical subtitling (from 1933 to the early 90s) and laser subtitling (from 1988 to the late 2000s); these methods allowed the subtitles to be 'superimposed' into the film strip (O'Sullivan and Cornu, 2019: 20). Electronic subtitles were distributed for the first time in the 1970s and they were shown on television: texts were computer-generated and incorporated within the electronic TV image. The same method was consequently applied to video releases such as VHS tapes, DVDs and then Blu-rays that currently use digital systems. Nowadays this method is still used in film festivals, with subtitles being projected on the screen below or withing the image.

AVT practices developed rather differently on different continents; for example, European countries with major film industries, like Germany, Italy and France, tended to prefer dubbing over subtitling. The dubbing mode was a costly method for countries which had smaller film industries, and this is why not only Scandinavian countries, but also the Netherlands, Belgium, Switzerland, Portugal and Greece opted for subtitling. In Latin America, dubbing became the favourite choice in Spanish-speaking countries after a very short period of acceptance of subtitles, while subtitling was quickly introduced in Portuguese-speaking Brazil (O'Sullivan and Cornu, 2019: 21).

Levels of literacy and national bilingualism played undoubtedly a key role in the choice of dubbing. Despite the fact of being a major film-producing country preferring dubbing, France, for instance, has contributed to the technical and commercial development of subtitling from the transition-to-sound period until today. O'Sullivan and Cornu (2019: 21) think that this partly related to an on-going cinephile tradition among viewers and subtitling never quite lost its position and role in the market.

There are not many accounts of early translation practices applied to subtitling and it is often difficult to know how the first subtitlers worked and who they were. Early subtitled films seemed to have a very limited number of lines which were supposed to

convey a few details of what was said on the screen. This turned out to be true of films subtitled into English in the United Kingdom and the United States, and of Portuguese-subtitled films distributed in Brazil. During these early stages of subtitling, only foreign films subtitled into French seemed to show a larger number of lines on the screen (O'Sullivan and Cornu, 2019: 21). However, over the decades, all films have become more densely subtitled, in the sense of having a greater number of subtitles displayed on the screen.

2.3.3 Dubbing versus subtitling: an everlasting 'competition' with pros and cons

As mentioned above, early in the twentieth century the new film medium went beyond all national and cultural borders, but with the advent of the talkies, the film industry faced a translation problem because only a small percentage of the world's population understood English; therefore, there was a growing need to find appropriate screen translation approaches.

In Europe, as mentioned above, France became a forerunner experimenting with both dubbing and subtitling. After practicing both approaches, it did not take long to find out that they had their disadvantages: people even claimed that translating a film meant ruining it. As time went by, French audiences became increasingly displeased with subtitling and, along with countries like Italy, Spain, and Germany, France decided to gradually develop into a dubbing stronghold, while other smaller countries, on the other hand, opted for subtitling.

Speaking of subtitling, it is important to underline that this AVT mode has its constraints. A relevant aspect of the subtitling process is the filtering of potential loss of information, since the written word cannot possibly compete with speech. Moreover, a number of lexical items is required to render what is conveyed by stress, rhythm and intonation. However, the subtitler usually does not have room for complex sentences and choosing short structures is essential in order to enhance the text's readability; therefore, subtitles need to remain on screen long enough for audiences to read them and it is not easy to decide what to leave out of the source text. For example, even though there are redundant linguistic features in speech, sometimes even slight omission may cause significant changes in meaning (Tveit, 2009: 86). In addition, readability is influenced by

film genre and, for instance, thriller or noir stories may give translators and audiences harder time: if the action needs to be understood, the subtitles should remain on the screen long enough to be read (Minchinton, 1993: 15).

Another constraining factor of subtitling concerns the spoken word containing dialectal and sociolectal features[1] which are extremely difficult to render in writing. While spoken language may contain unfinished sentences, redundant speech and interruptions, writing has a higher lexical condensation. Moreover, written translations of spoke parts often show a tendency towards nominalisation, where verbal elements are turned into nouns. Consequently, it is difficult to maintain the essence of the spoken language in subtitles and when it comes to keeping the register and appropriateness of the SL text dubbing can undoubtedly be at an advantage (Tveit, 2009: 88).

In addition to linguistic constraints, there is also the visual factor. At the beginning of the 1990s, cinema and television films were cut slower than they tend to be now. This is an important reason why the history of subtitling does not present much discussion of editing and camera manipulation techniques. Visual aspects are now considered fundamental and this growing importance involves the rapid developments in camera manipulation, sequence construction and programme editing.

When viewers try to read everything on the screen, they are often unable to concentrate adequately on the important visual information and sometimes on oral information. Since subtitles should synchronize not only with speech, but also with image, Tveit claims (2009: 90) that sometimes this lack of synchronization "is regrettable since audiovisual programmes combine words and images, and the translation should observe the interrelation between the way the plot is told and the manner in which it is shown".

When the audiences experience dubbing, it is not difficult to understand why this method is the favoured AVT approach in so many countries. However, as for subtitling, dubbing presents constraining factors as well. These constraints involve, for instance, the loss of authenticity. A fundamental part of speakers' characterization on the screen is their voice, which is linked to body language, facial expressions, and gestures. Authenticity is undeniably sacrificed when actors are 'deprived' of their voice and viewers hear the voice

[1] In OED, sociolect is defined as "a variety of a language that the members of a particular social class or social group speak".

of somebody else. When the dubbing process takes place, it is not only authenticity that is sacrificed, but also credibility, which may be particularly problematic in news and live events in general when voice-over is used. Moreover, voices show the mood and atmosphere of a certain situation, whether is at a sport event, the scene of a car accident or a convention during a political campaign. For example, the effect of persuasive speech during a presidential or parliamentary election campaign may be significantly reduced when using voice-over (Tveit, 2009: 92).

A further important element to be considered is cost; as already mentioned, dubbing is 5 to 10 times more expensive than subtitling. In countries like Norway, this problem is mainly linked to the lack of trained actors and this short supply involves that the cost of using their professional competences is really high. The obvious outcome of this situation is choosing subtitling because it is a much cheaper alternative.

In addition to high costs, the dubbing process takes considerable time. In the case of news and live events, it is obviously not possible to ask actors to play the parts of the characters involved. Consequently, the big American and European networks decide to use voice-over because it is a reasonably solution, but it tends to distract audiences who try to focus on the initial voice to the extent that they miss parts of the voice-over (Tveit, 2009: 94).

In some countries, the subtitling of news reports can be done quickly and often takes place a few minutes before the news bulletin is shown. Subtitling films and TV series can also be done a few hours before the released. However, in dubbing countries such as Italy, Germany, and Spain, the linguistic adaptation process would probably take weeks rather than hours, requiring a large number of people to work on it. Then the chosen actors need to have the time to study and rehearse their parts before the dubbing process starts. In Tveit's opinion, it would seem evident that as far as meeting strict deadlines is concerned, the advantages and usefulness of dubbing as an AVT mode are rather limited (Tveit, 2009: 95).

Both AVT methods still presents their pros and cons: dubbing is clearly the favoured solution for those countries that can afford it, while smaller countries consider subtitling as a better approach to screen translation. Both modes have their constraining factors that require to sacrifice something; it could the original meaning of the SL, on the other hand, or it could mean losing the authenticity of the SL, on the other hand. However,

there are cases where the voice does not form an integral part of a character, it simply belongs to the off-screen commentator. For example, revoicing a documentary is a better choice than subtitling it, since, in this case, subtitles may lead to extensive loss of information. Moreover, programmes that are cut extremely fast and have rapid speech rates condensed should not necessarily be subtitled. As readability is an important feature, huge levels of condensation would result in a loss of information. Films and programmes for small children have to be dubbed for the simple reason that the target audiences have not yet learned to read. Dubbing may involve more disadvantages than subtitling in terms of costs and time, but in such cases, it may be the lesser of two evils (Tveit, 2009: 96).

2.4 Training as an audiovisual translator

Twenty years ago, audiovisual translation training was not part of higher-education translator training curricula. Professionals were trained directly in the workplace, outside educational institutions. Then the market changed and required translators to learn new skills as fast as they could, but universities were still lacking the capacity to offer suitable training to cope with those emerging needs.

There is not an official date on when and where the first courses were taught, but it was probably around the late 1980s and 1990s. According to Gottlieb, the University of Lille was the only academic institution providing courses in dubbing and subtitling in the late 1980s. It was soon followed by the University of Copenhagen with its subtitling course in the academic year 1990-1991 (Gottlieb, 1992: 161). Since then, a growing number of countries have felt the need to train future audiovisual translators. As part of this advent of AVT academic training, the original courses, which focused almost exclusively on inter-lingual subtitling, have become gradually complemented by others related to the different AVT methods, like dubbing, voice-over, subtitling for the deaf and hard-of-hearing (SDH), audio description (AD) for visually impaired people, videogames translation, and only recently respeaking (Merchán, 2019: 468-469).

Although a body of literature concerning the different aspects of AVT exists, the training and assessment of the different modes of audiovisual translation has received less attention. The growing importance of translation and interpreting as a professional and academic discipline, the constant changes in the profession, and the new educational

models that many countries are experiencing, have brought to light concerns over the appropriateness of current translation training methods (Merchán, 2019: 468-469).

Audiovisual translators deal with a wide range of tasks every day, such as translating, solving technical issues linked to spotting/synchronization, proofreading translations, digitizing and encoding audiovisual material, cooperating with other professionals, etc. In this context, courses on any audiovisual mode should try to expose trainees to this wide range of tasks to different degrees, depending on the level of specialization and the duration of their course of study or the availability of specialized instruments.

When training as an audiovisual translator, a general starting point is:

- showing awareness of different AVT modes and some specific knowledge about translation studies;
- comparing AVT modes, studying all the differences between interlingual and intralingual methods of translation;
- learning the distinctive features, requirements and historical aspects of different AVT practices;
- focusing on the semiotics of audiovisual texts, the priorities and constraints needed to be applied in audiovisual translation (Merchán, 2019: 474).

Since methodological, strategic and extralinguistic competences are crucial, typical tasks to practise these skills involve reading support texts, organizing debates, analysing parallel source and target audiovisual texts, and doing surveys.

The second stage of training usually include completing pre-translation and translation tasks using contrastive, instrumental, methodological and strategic skills activated through preparatory activities for the translation texts and translations. For example, preparatory tasks may involve the analysis of source texts consisting in one or several semiotic codes, carrying out extended translations, conducting terminological researches or revising translations. These tasks are structured to be a continuum of growing difficulty and are supposed to recreate professional working conditions (Merchán, 2019: 475).

During the third and the last stage of training, translation problem-solving competences are developed by working on projects that involve translation of texts belonging to different audiovisual genres. This phase is immediately followed by the last stage of training, namely professional considerations about occupational competences. This part includes understanding how the working environment is and learning something about copyright restrictions, payment rates, and how to cooperate with other professionals. Speaking about dubbing, Chaume suggests that is possible to develop these occupational competences by identifying dubbing companies and prospective clients, learning how to prepare a covering letter for the dubbing industry and providing an estimate for a possible commission (Chaume, 2012: 44-45).

2.4.1 The audiovisual translator's competences

Becoming an audiovisual translator requires learning and improving a wide array of practical skills, such as technical, linguistic, general, project management and interpersonal skills. Technical skills, for instance, involve sensitivity to image and sound as well as the ability to deal with the strict rules about time and space in subtitles, and spotting or cueing. Linguistic skills include condensation, adaptation and reformulation skills, as well as the ability to divide the text and proofread it. Text analysis, visual and computer literacy, knowledge of film production and language policy are part of general skills. Project management and interpersonal skills are fundamental in illustrating a real awareness of the context when audiovisual texts translations are carried out (Kruger, 2008: 81).

Since AVT include several methods, as discussed above, the differences between the skills required for subtitling and those needed for translation, editing or interpreting, lie in the very technical aspects of subtitling. As Kruger (2008: 81) points out, subtitling requires all the skills that the other modes need in terms of text analysis, subject expertise, language, awareness of context, etc., but it also requires the ability of the subtitlers to use these skills within very strict limits of time and space, while paying attention to specific rules of quantity and form. Consequently, learning, mastering and applying these skills take a long time (Kruger, 2008: 82). Although it is possible to provide audiovisual translators with some of the required skills such as text reduction, problem-solving and

text analysis in a short period of time, mastering all the required skills can only be done by attending specialized and professional courses. Without a solid awareness of the general skills, the specialized one would be meaningless.

2.5 Professional audiovisual translators

There are three different professionals involved in the subtitling process:

- the spotter, usually known as subtitler, who is responsible for the technical task of deciding the subtitles' timing and for creating templates and mastering titles with relevant comments for the translators. Subtitlers usally share the language of the original programme, although it is not always the case. Sometimes they might know any other foreign languages, but are anyways expected to be technologically literate, with excellent working competences of subtitling programs. They should be able to understand film language and narrative techniques and to deal with issues like unpredictable last-minute changes;
- the translator deals with the language transfer and should have excellent knowledge of the source and the target languages and cultures, and be capable of moving from spoken to written texts;
- adaptors are experts about subtitling's constraints and are familiar with condensation and reduction strategies in the target language. Their job is to adapt the rough translation to the subtitle lines, searching for shorter synonyms and changing syntactical structure without sacrificing the meaning of the original text, even though in some cases they might not know very well the source language (Díaz Cintas and Remael, 2014: 34).

The fact that traditionally neither subtitlers nor adaptors have been required to be conversant with the language of the audiovisual programme has always been criticized as a major weakness of the whole translation process, particularly since they are involved at the final stage of it when the source text can be easily distorted or betrayed. As Dìaz Cintas and Remael (2014: 35) underline, although still rather prominent in dubbing as a

professional responsible for lip synchronization, the role of the adaptor is gradually disappearing from the subtitling profession and is being substituted by the figure of the translator. Consequently, many professional subtitlers now carry out both tasks, namely translation and adaption, and they have to come up with the final subtitle, rather than a rough text that need further work to fit within the subtitle constraints. In addition, only a few years ago, the general tendency of professionals seemed that of embodying all the three tasks mentioned above: a kind of subtitler with technical competences, dealing with the timing of the original, the dialogues, and the cultural and linguistic background, carrying out the language transfer, and condensing the subtitles' meaning when necessary. Given that most audiovisual translators work freelance and since it can be difficult to have a steady source of income, being a versatile professional can enhance the chances of securing different jobs (Dìaz Cintas and Remael: 35-36).

However, the advent of the DVD and Blu-ray industry has deeply changed the profession and the way the process is carried out. On the one hand, DVDs and Blu-rays are supposed to include up to eight versions of the same programme dubbed into different languages and up to 32 subtitle tracks in other languages. On the other hand, from the client perspective, it is much easier to send a film or a programme to a single company that is capable of subtitling the whole product into several languages rather than to send it to several smaller companies that would only be able to translate it into one or just a few languages.

2.5.1 The working conditions: client, rates and deadlines

Audiovisual translators can work freelance or for the following agents:

- subtitling companies;
- production and distribution companies dealing with films, trailer, and other audiovisual material that is usually shown on cinema screens, etc.

Freelancing is usually the most common choice as form of employment for subtitlers and in-house subtitlers are only hired in countries where the amount of subtitling work is very high. When working as freelance, subtitlers can be paid for the whole programme, per

minute of programme, per number of words, or per number of subtitled produced. Rates vary according to the country and the company, and translators need to inform about the going rates in order to avoid unfair competition and destroying the market with unnecessarily low rates. There are several factors that affect the subtitlers' remuneration. For example, when asked to translate from screen without a dialogues' script, they should ask more for their work, since the task will take considerably longer. Some translators' associations recommend an extra charge of some 30 to 50%, even though this is not always possible (Dìaz Cintas and Remael: 36-37).

Audiovisual translators need to have enough time to do proper research on terminology and cultural references as well as to proofread and revise their own work. The less time given for doing the translation, the higher the rates should be. Deadlines vary according to the distribution channel. When subtitling or dubbing films to be screened in the cinema or broadcast for the DVD and Blu-ray industry, where the rhythm of production has accelerated considerably in recent years because of the distribution companies' push to release the DVD and the Blu-ray very soon after the cinema launch. However, it is rather difficult to tell exactly how long it takes to subtitle a normal-length film of 90 minutes. The time required for the task depends on factors such as the density of the dialogue, if the topic is known by the audiovisual translator or not, and the date it has to be shown. In normal conditions, the spotting of a film can take about two days and the translator is given between four and seven days to produce the final subtitles. All considered, the whole process of subtitling a full-length film can last some 12 to 15 days from the moment it has been placed with the AVT company (Dìaz Cintas and Remael: 39).

The medium is another factor affecting rates; for instance, subtitling or dubbing films for cinema release normally commands higher rates than do it for television, film festivals or the DVD and Blu-ray industry. According to Díaz Cintas and Remael (2014: 36-37) some of the biggest changes in AVT depends on the globalization and technological developments. Nowadays it is not necessary to live in the same city, or even country, of the client or AVT company. Computer and broadband Internet have started out new ways to get in touch unknown until relatively recently, allowing audiovisual translators to provide their services to companies anywhere in the world. There are pros and cons related to this situation. On the one hand, the great advantage for translator is

the growing number of potential clients that can be contacted without having to leave their home or country. The downside is that competition is increasingly growing as well and, sometimes, companies prefer to recruit their workers in countries where labour costs are lower.

2.6 The advent of globalization

Globalization, as a process involving people all over the world, seems to have undeniable impact and influence on many fields and professions, including translation. The OED defines globalization as "the fact that different cultures and economic systems around the world are becoming connected and similar to each other because of the influence of large multinational companies and of improved communication".

It is mainly considered as an economic process, but it may influence other disciplines; therefore, just like any other area of studies, linguistics, applied linguistics, and TS are influenced by globalization.

Since the advent of globalization has created new situations in which translators are required, translation market needs have changed to benefit the global *lingua franca*, namely English. Consequently, this phenomenon is now reshaping the translation as an activity and as a profession. In terms of translation, Ho (2011: 56-57) defines globalization as

> changes in many aspects of our lives, including the translation environment and the way how translation professionals, agents, scholars and educators regard translation as a career, a business and subject for academic research and teaching.

In the global era, translation plays a key role in making cultures more aware of each other. According to Ersoy and Öztürk (2015: 558), globalization and translation operate reciprocally because AVT methods become a good tool for making the 'foreign' attractive by bringing it closer and making it familiar for the target audiences. Moreover, globalization helps new fields be integrated and create new interdisciplinary environments. The diagram below shows how general translation activities have ranked first within 5 years (from 2010 to 2014) and how other fields such as localization (software localization, multimedia localization, mobile app localization, desktop

publishing, post-editing, transcreation), media interpreting and AVT (subtitling, dubbing, voice-over etc.) are mixed together. It possible to see how the growing variability within the translation industry ranging from the macro-fields to the micro-fields evolved over the years:

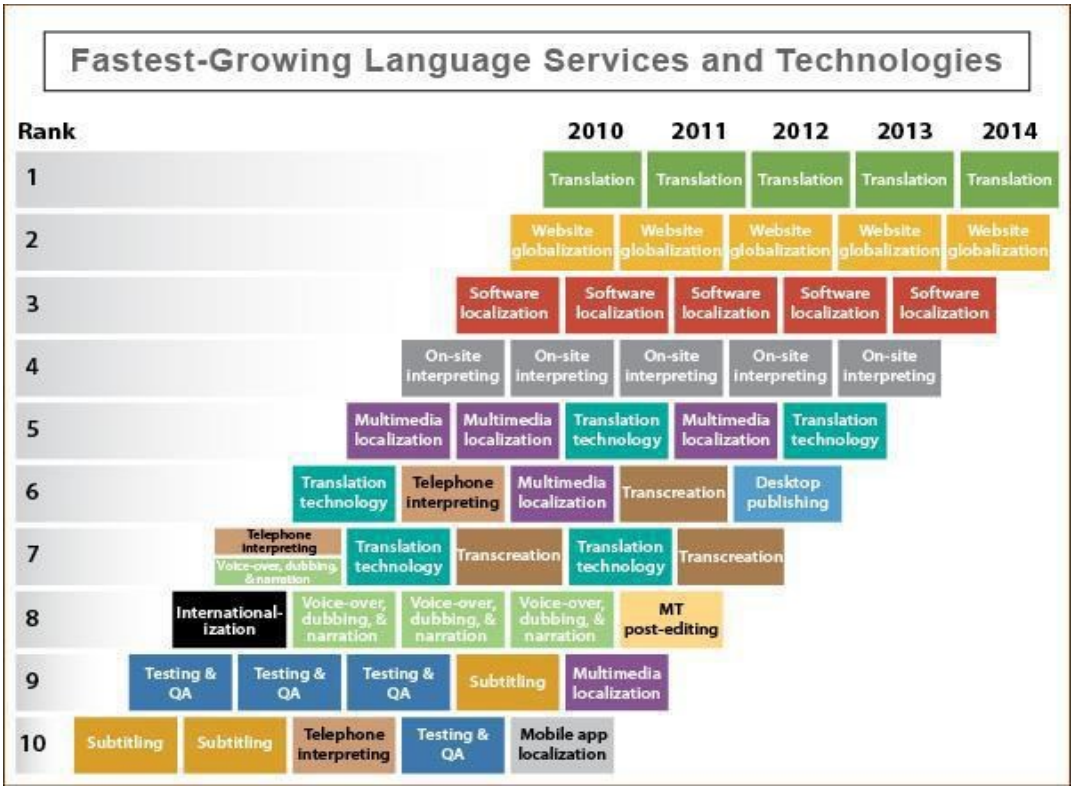

Figure 6: Fastest-growing services and technologies from 2010 to 2014 (Depalma et al., 2014: 44).

According to the graph above, the influence of globalization on the ranslation market and industry is clear from two aspects: the growth of the volume of required translations and the birth of new fields such as localization, community interpreting, and media interpreting gaining visibility within the discipline.

Furthermore, the globalization of markets and the number of multinational products in the twenty-first century require, among other things, many language specialists to help companies not only to sell their products abroad, but also to promote their brands beyond their national border. This is the reason why more people than ever are now training to become professional translators. However, the array of AVT services offered on demand has enhanced and some of these options are significantly different

from those of ten or twenty years ago. This fast increase has pushed many translators to learn new skills about the job because it was too early for training academic programmes and courses (see 2.4) (Bernal-Merino, 2008: 141).

In the global era, many of the big international subtitling companies have their main offices in cities like London and Los Angeles, the core centres of the audiovisual world. According to Díaz Cintas and Remael (2014: 37), the idea that decisions on the translation into a given language are taken in the main country where this language is spoken is becoming old-fashioned. For clients with audiovisual programmes that need subtitles in different languages the easiest and cheapest way to get the job done is to approach a big subtitling company that have translators in all the languages, rather than sending the programmes to different countries where the languages are spoken. For example, they can leave the programme in the office in London and collect it when the job is done. Then the subtitling company is supposed to find professionals with necessary competences in the languages required.

Globalization has also led to the application of new parameters that are decided outside the country where the final product is finally watched. A considerable degree of standardization can be seen in the conventions applied when subtitling the same programme into different languages for DVD and Blu-ray distribution. Since many subtitling tracks are commercialized together on the same DVD or Blu-ray and are accessible with a proper device by anyone anywhere, the tendency is to use the same conventions in all languages.

In order to save money, another practice used by some companies is that of 'converting' languages that are spoken in different regions of the world such as Castilian Spanish into Latin American Spanish, French into Canadian French, Portuguese into Brazilian Portuguese, Roman Serbian into Cyrillic Serbian and vice versa. At the beginning of this practice, subtitles are produced from the SL into one of these languages, like Roman Serbian, and then 'converted' into Cyrillic Serbian. In addition to this method, the increasing use of a 'neutral' variety of the language could satisfy the needs of different countries where the same language is spoken. For example, many films are now released with a subtitling track in Castilian Spanish and another one in Latin American Spanish which is meant to reach all countries in America (Dìaz Cintas and Remael: 38).

Among the others, Ivarsson complains about the fact that "film directors and TV producers seldom show any interest in what happens to their works once they are exported to other countries" (Ivarsson, 1992: 11). Despite this tendency, in an increasingly globalized market with the great profits for boosting box offices abroad, it is undeniable that translation is now more than ever a fundamental part of the international success of a film. Many directors still do not understand that the translation process should be considered as an artistic feature on which more control needs to be exerted and in which it is worthy investing the necessary amount of money, generally very little in comparison with the overall profits. Subtitling, as well as dubbing, should be considered as an integral and fundamental part of the process of the artistic creation of a film and not as a tool subjected to market forces and requests (Díaz Cintas and Remael, 2014: 38).

2.6.1 The influence of technology and AVT at present

Discussing about the history of AVT is a very new field that connects translation studies and film studies. It is possible to understand how AVT evolved and the impact it has on distribution and reception by the audiences. In the last decades, for example, a number of issues concerning the technological and commercial development of dubbing and subtitling, and debates on the pros and cons of both methods, have been analysed by translation studies scholars and film historians. Consequently, the history of dubbing is becoming clearer in the European countries (as France, Italy, Spain) where the dubbing is used more than other continents like India (O'Sullivan and Cornu, 2019: 24).

The historiography of AVT could be defined as 'work in progress'. Some historical periods and specific methods of film translation are now more clearly defined. Dubbing and subtitling, for instance, developed quickly and expanded in very distinctive ways according to the period of film history and the linguistic and film-industrial areas. Moreover, according to O'Sullivan and Cornu, these practices must be studied in relation to commercial strategies and ideological contexts (O'Sullivan and Cornu: 26). Future audiovisual studies may include a focus on more recent modes such as voice-over translation, redubbing and resubtitling (remaking dubbed and subtitles versions of older films).

Scholars and film experts are now widely debating about the huge impact technologies have been showing on AVT. With the introduction of VHS in the late 1970s and the expansion of home video, new technologies pushed the entertainment industry forward in the 1980s. At the same time, the advent of the desktop computer changed the translation process and in particular AVT. New tools, like dedicated subtitling software, allowed translators to carry out the entire process from the beginning to end, including the spotting, timing, translation of the spoken parts and their right adaptation to the length and time constraints of subtitles. The outcome of this boom of technology was the definition of the job of an audiovisual translator as a distinct profession in the market (Georgakopoulou, 2019: 517).

In the 1990s language technologies were introduced commercially on a large scale to increase translators' productivity and consequently reduce project times and costs. The first examples were the use of tools like dictation software, as well as technologies that offered the ability to reuse the same pieces of texts, such as Translation Memories (TMs) and Machine Translation (MT). In addition, Computer Assisted Translation (CAT) tools became standardized and widespread. As a result, shared glossaries evolved to terminology management systems, translation memories reduced the amount of work of translators by offering the translation of previously translated parts of text that matched to a certain extent to the new source text, and quality proof-reader tools were integrated with text editors. Until the following century, the AVT industry remained largely detached from these technological developments because there was the shared idea that they were inappropriate for improving the entertainment domain, which already provided subtitled material. However, the recent and significant developments, both in terms of content types that require AVT, as well as in the whole volume of content to be translated, have opened the way for experimentation with such technologies that are giving promising results and profits (Georgakopoulou, 2019: 518-519).

The advent of broadband Internet also had a direct influence on the amount of video content that could be made available to consumers, releasing unprecedented amounts of material. As Georgakopoulou suggests (2019: 521), "broadcast TV and Internet access was integrated through a single set-top box at the turn of the century through IP delivery over ADSL, and Video on Demand (VOD) was launched as a commercial service, with Netflix being the prime example". As a result, the quick growth

of on-demand audiovisual services has caused a huge increase in video consumption and changed the way the public consumes such content. Experts speak of 'binge watching' and 'cord-cutting' to define this kind of attitude, while others refer to the next generation of viewers as the 'cord-nevers', namely viewers that have never subscribed traditional TV services but only watch the content available online. Moreover, the use of different devices, like tablets and smartphones, to watch contents has resulted in an increase of cloud-based TV services and the broadcast industry is doing as much as possible to enhance the viewing experience by making it more interactive.

According to Georgakopoulou (2019: 530), the definition of 'audiovisual content' has taken on a whole new meaning, as communication itself in the twenty-first century is becoming increasingly audiovisual. The AVT industry plays now a key role, as both television and audiovisual content are being redefined, content volumes are increasingly growing, while the worldwide audiences are asking for an immediate access at all levels. The best technologies available are required to transcribe, translate and index the vast amount of video content at the highest quality and speed that consumers demand.

Cloud-based platforms are increasingly adopted by AVT enterprises and AVT methods as subtitling are now applied extensively to non-entertainment contents, often with maximum flexibility. In the meantime, experimentation with mature language technologies and new developments have the potential to reshape subtitling workflows, affect viewers' behaviour and challenge established rules, creating a paradigm shift in the industry (Georgakopoulou, 2019: 530). The final question is: in the future of AVT, could it be possible to replace a 'real' audiovisual translator by using a combination of MT tools? Hopefully, according to Georgakopoulou, the answer is still no.

3. SUBTITLING

Subtitling is one of the most fast-growing areas within the wider discipline of Translation Studies. From the initial approaches centred on the professional stages of the different AVT modes and focused on a controversy whether dubbing was better than subtitling or vice versa, scholars have moved on to studies and analyses that look at the object of study from different viewpoints. Although ignored by most scholars and teachers for many years, this practice has since the 1990s gained well-deserved room and visibility thanks to the proliferation and distribution of audiovisual materials in the society. As a result, since the mid-1990s subtitling as an academic discipline has been busy identifying the domains of concern, improving methodologies of study, devoting greater attention to research, and finding interdisciplinary cooperation to understand its multimodal nature. During this process, there was the inception of the fansubbing mode and the explosion of amateur practices in general, namely subtitling by non-professionals for the audiences.

Along with the remarkable technological developments and discoveries ongoing since then on a global scale, the boom of subtitling practices has changed the discipline itself (Guillot, 2019: 31). One of the most important outcomes of the digital era may be that technology has put subtitling and other AVT modes literally in the hand of the general public, with the possibility to change consumers' role from passive to active as 'prosumers', i.e. producers and distributors of their own edited material (Díaz Cintas, 2013: 273). In this perspective, technological development is a main driver in the review of aspects and issues of subtitling, including the importance currently placed on the value of the image. Images now play a key role in people's daily lives, as everyone is constantly surrounded by screens of all shapes and sizes, e.g., television sets, cinemas, computer, and smartphones, which are a common element of the social environment where everything is based on the power of the screen. People spend a fair number of hours watching screens and consuming audiovisual materials to carry out their work, to develop and improve new skills, to entertain themselves, and to look for information. Moreover, according to Díaz Cintas and Remael (2014: 8), "a common companion of the image since 1930s has been the word, and with the word comes the need for translation".

The development and improvement of subtitling methods for new media has undoubtedly also been a determining factor in the emergence of formal guidelines. The

fact that most of the prominent broadcast platforms, i.e. Netflix, Amazon Prime Video and Disney+, usually offer several subtitling tracks in different languages has actually led to more rather than less uniformity, as opposed to what happened to television subtitling.

Newer forms such as subtitling for Internet, fansubbing, and computer games, usually have their guidelines based on the existing styles, just as surtitling for the theatre and the opera initially turned to open subtitling for guidance. Moreover, it is not the subtitler who makes the final decision about these matters; future professionals, however, should above all try to become flexible in their approach and methods, and be consistent when applying the rules proposed by a certain subtitling company (Díaz Cintas and Remael, 2014: 81).

3.1 Definition of subtitling

Subtitling as a translation practice consists in presenting a written text, generally on the lower part of the screen, that attempts to convey the original dialogue, as well as the discursive elements that appear on the screen (letters, newspaper headlines, signs, graffiti, etc.), and other information that is included in the original audio, such as songs or other voices coming from the radio, telephone, television, etc. In some languages, like Chinese or Arabic, cinema subtitles are directly hard-subbed on the screen, which means they cannot be removed from the film once is it is released and shown.

Generally speaking, it could be assumed that subtitlers try to choose a mindful translation rather than a 'textcentric' focus. This means providing not only a new set of signs for the target viewers, but also an account for what is implicit or tacit for the original audience, for instance extralinguistic cultural references (ECRs). In Katan's opinion, subtitlers have to intervene when the cultural distance between the SL and TL risks distorting or losing the source text references and meaning (Katan, 2018). One way to face this problem it the so-called 'thick translation', which consists in adding explications, glosses, and commentaries in footnotes in the final translation, when possible. However, generally speaking, official guidelines and norms for professional subtitlers underline that "one of the golden rules has always been that the best subtitles are those that pass unnoticed to the viewer" (Díaz Cintas and Sánchez, 2006: 47). For this reason, a subtitled text is successful when it appears as a "sequence of speech acts in such a way as to relay

the dynamics of communication" (Mason, 1989: 15). To this end, subtitlers should consider the following recommendations:

- the visual dimension is crucial for the comprehension of a particular scene and only the most basic linguistic information is required, leaving the eyes of the viewers free to follow the images and the action;
- when crucial information is not in the images but in the soundtrack, it is necessary to produce the fullest subtitles possible, to ensure that audiences are not left behind;
- the presentation of subtitles, the way in which they are appear on the screen, and a limited number of characters per line can increase readability (Georgakopoulou, 2009: 21).

3.2 Technical issues in the digital era

With reference to the technological boom, the computer has been one of the most important advances that have greatly changed the world of translation in general. It could be argued that in the field of subtitling the impact has been even greater, with the launch of many software products designed exclusively for subtitling work. These designed programs allow subtitlers to complete a film-subtitling project and synthesize the processes involved in subtitling that were done separately before the digitization, normally by many professionals with less flexibility or reliability (Guillot, 2018: 32). However, while the technical processes of transferring subtitles to films have evolved considerably since the early stages of the practice, from mechanical to thermal subtitling to laser engraving and superimposition, electronic techniques have not to a greater extent. According to Guillot (2019: 32), what has changed is that these steps can be integrated, and subtitles produced online by almost anyone with basic IT knowledge, thanks to different (free) specialized subtitling software applications available to professionals and amateurs.

Besides the cutting-edge subtitling software, Internet is the translator's other best friend. The amount of information available on the net seems to be endless: dictionaries, thesauri, glossaries, encyclopaedias, specialized thematic forums, distribution groups,

automatic translation tools, translators' websites, job offers, dialogue scripts, archives of subtitles are all accessible with a simple click. In a global world, as Munday points out, "the Internet is also changing the status and visibility of translators and translation. Not only can professional translators now easily work transnationally via email, but the need for translation itself is also increasing" (Munday, 2001: 191).

In recent years, the growing shift from analogue to digital technology, with the possibility of digitizing images, has also had a deep impact on the subtitler's profession. The old VHS tape has virtually disappeared leaving the stage to the DVDs and Blu-rays with a higher definition of the image. Work environments that only a few years ago required a computer, as well as an external video player and a television screen to carry out all the necessary stages of work, are now obsolete and have been replaced by the computer alone equipped with software designed for subtitling (Díaz Cintas and Remael, 2014: 70). With digitization, the subtitling process has become faster and cheaper, which is added value of subtitling as compared to dubbing. Consequently, there are now added pressures: expectations of almost instant availability of subtitles via different distribution channels and broadcast platforms, on mobile devices and on-demand television, with growing flexibility in viewing options; for example, different languages but also text fonts, size and colours may be offered.

As Guillot suggests, "technically speaking, innovation is pushing the boundaries of the possible at a rate unimaginable just a few years ago, simplifying, automatizing, speeding up and diversifying processes and options, and has become one of the most extensively reported-on topics in syntheses of AVT and subtitling developments" (Guillot, 2019: 34). For this reason, unless they are working with documents known as templates, subtitlers usually require a computer, a subtitling program, and a digitized copy of the audiovisual programme to be subtitled. All this equipment allows them to open simultaneously a word processor and a window to watch the programme, which helps them to spot the dialogue of the SL, do the translation, use a spell checker, synchronize the subtitles they worked on with the image on the screen, and simulate the final copy (Díaz Cintas and Remael, 2014: 71).

Even though the new technologies offer many advantages, one of the most serious obstacles for the subtitler has traditionally been the exaggerate cost of subtitling programs. Moreover, high prices risk having an adverse effect on the teaching of this

discipline, as many universities cannot invest large sums of money in computer equipment. For this reason, a recent practice is to offer the freelance subtitler a limited version of the subtitling software, which is enough for the subtitler to carry out most tasks required in subtitling, although it does not include all the options and functionalities of the full version. Since they do not offer a full functionality, these freelancer versions are more user friendly. Not only are they easier to use and require less technical preparation, but the risk of losing time or getting lost in handling a complicated program is minimized. On the top of that, the functionality of these programs is often revised in order to enhance subtitlers' productivity and, consequently, reduce labour costs. For example, some of these programs include a function that shows changes of volume in the original audio, making spotting and cueing of the spoken parts a lot easier, less time-consuming, and more accurate. Spell checkers, error checking for subtitle length and timing are also part of the text editing functions. Furthermore, unlike the past, shot changes can be automatically detected and voice recognition is fast developing and have already produced a kind of live subtitles for the deaf and hard of hearing (Díaz Cintas and Remael, 2014: 71).

Lately, machine translation (MT) also seems to attract a lot of interest within the field. Given the current economic importance of AVT in the audiovisual industry, it is not surprising that many researchers and AVT companies have recently become interested in the subject and have started to investigate and invest in this area. However, though research in MT in general has been going on for quite some time and has attracted significant investment, it seems that the linguistic quality of machine translations is still not acceptable.

Another issue is that of the growing development of Computer Assisted Translation (CAT) tools, which store previously translated sentences and allow the user to reuse them as the basis for a new translation. Developed on computational linguistic analysis at an advanced level, these tools have had a very striking impact on translation practice, even though Díaz Cintas and Remael (2014: 72) claim that their value in AVT is questionable and still to be researched. At present, CAT tools seem to be more useful for working with documents characterized by a high level of lexical repetition.

New technologies and the computer have undoubtedly had a direct impact on the subtitling practice and have made life easier for all those professionals working within

the field. However, it is also true that they have deeply changed the professional skills and the final translation required. Subtitlers are now expected to be fully capable of finding information and using communication technologies and to have the ability to familiarize with new specialized programs.

3.3 How can the aural in speech be expressed in writing?

Not only is subtitling an unusual form of translation because it is added to the ST, but it also represents a unique translational genre because it renders speech in writing, which also contribute to define the shape subtitles eventually take. There are two basic types of speech in films:

1. scripted speech, which can be further distinguished into mimetic dialogue, which imitates conversation, stylized dialogue, such as the one that can be used in theatre, and speeches read from the page, like political speeches for a campaign or television news;
2. spontaneous speech, which occurs without promptings or during interviews that have not been previously prepared.

The transition from oral to written mode means that some of the typical features of spoken language disappear, no matter what genre a dialogue belongs to. The oral feature of spoken language in cinema, on TV or any other medium, are relative because orality is defined by film's other semiotic systems and the functions the spoken exchange has to fulfil (Díaz Cintas and Remael, 2014: 61).

Whether written down in a script or spontaneous, a dialogue evolves sequentially. This means that as two characters speak, they build the exchange together with their interventions. In other words, each of these interventions can move the conversation to a different level. Speakers usually confirm they have understood what has been said before moving on the interaction, giving comments and adding new information. Each 'turn at talk', as such interventions are defined in conversation studies, is thus context confirming and context renewing (Díaz Cintas and Remael, 2014: 62).

Subtitling varies according to the genre, and clients have their own opinion and say about that, but some basic subtitling recommendations are almost universal. Grammar

and lexical elements tend to be simplified and cleaned up, while interactional features and intonations are only maintained to a certain extent, namely through word order, rhetorical questions, occasional interjections, and unfished sentences. Consequently, not all the peculiarities of spoken language are lost; quite a few can still appear in writing, but rendering them all would result in illegible and excessively long subtitles. Since subtitles are supposed to convey those items that are relevant, often context-renewing sentences are kept, while context-confirming ones are dropped (Díaz Cintas and Remael, 2014: 62).

In the case of documentaries, scripted speech can be challenging because of the amount of information, but unscripted speech, with all the pauses and unfinished sentences typical of oral discourse, can require quite a bit of interpretation and rewriting. Moreover, there is the important matter of whom the speaker is addressing. For example, interviews tend to be always introduced by journalists, who then also guide the interaction with the interviewee or mediate in the case of two or more interviewees. Since the questions they ask determine the path of the whole interview, the interaction between journalists and respondents is different from an everyday-life conversation. In such interviews, the professional may have to be an intermediary between the interviewee(s) and the viewers. During the interview, the respondent addresses the interviewer and often replies by counting on his/her knowledge. Consequently, the subtitler may have to keep in mind the knowledge of the broader target audience of the subtitles and adapt both form and content of the interviewees' statements. The respondents may speak poor English, leave their sentences incomplete, or even rely on background knowledge that cannot be assumed the target viewers have. In this case, subtitlers can make great use of the background images, explanation and interpretation to explicate the whole context (Díaz Cintas and Remael, 2014: 63-64).

3.4 The subtitling process: a 'constrained' mode of AVT

Conventions and rules are not always systematically applied, and variations can be observed at a technical level, as well in the final layout of subtitles. Over time, different styles have developed which have affected, for instance, the length and duration of lines, readability, the use of typographical signs, and line breaks. In this context, authors like Ivarsson and Carroll proposed a Code of Good Subtitling Practice (Ivarsson and Carroll,

1998: 157-159) trying to offer general guidelines in order to preserve quality in subtitling. The cooperation of a group of professionals and academics from the European Association for Studies in Screen Translation (ESIST) led to the development of some guidelines that are still widely regarded as standard in the profession. This document is addressed not only to translators but to all professionals involved in the process of subtitling and they can decide if they wish to adhere to these guidelines or not. These recommendations have been very useful but changes due to the digitization and new working routines now require their review (Díaz Cintas and Remael, 2014: 80).

Although many scholars see this setting of guidelines as a worthy effort, for others it is nothing but a catalogue of rules and norms promoting unnecessary uniformity and erasing national peculiarities. The subtitling conventions applied in many countries are the outcome of a long period of studies within the discipline. In addition, they are the result of a long tradition and viewers are now familiar with them. From this point of view, it is understandable that some companies or broadcasting stations may be sceptical about these general recommendations, as proposed and promoted by professionals and academics who might not have sufficient awareness of specific local realities *(*Díaz Cintas and Remael: 80). Furthermore, some of these guidelines are easier to follow than others, and the parameters governing the technical dimension are less criticized than the recommendations about the subtitles' layout, which is closely related to the linguistic dimension of the target language and is more linked to the cultural context.

In Díaz Cintas and Remael's opinion (2014: 81), these guidelines should not be understood as an 'invasion' on any country's or company's subtitling tradition, but rather a statement of good intentions trying to set some minimum standards in the profession and to safeguard the subtitler's rights. Moreover, "these recommendations are not set in stone and they are, of course, all open to debate, changes and modifications. The most important issue here, however, is to use them as a trigger to stimulate debate and reflection.

3.5 Spatial aspects

Subtitles usually spread over no more two lines and their standard position is horizontal at the bottom of the screen because this reduces the obstruction of the image, and this part

of the screen is lesser important to the action. Nonetheless, some languages, like Japanese, have a long tradition of placing subtitles vertically on the right-hand side of the screen, especially when it comes to theatrical release. With the advent of video and DVDs, horizontal subtitles have become more common than ever before, though both approaches are still used.

The positioning of a two-line subtitle at the bottom of the screen does not offer any options because both lines are in use. Conversely, for one-line subtitles some companies prefer to use the top line and some others choose the bottom line. According to Díaz Cintas and Remael (2014: 82), this traditional variation in the placement of one-line subtitles is leading to a more uniform approach these days, with most one-liners habitually displayed on the bottom line, trying to keep the image clear as best as they can. Also, interlingual subtitles are generally limited to two lines, which are usually positioned at the bottom of the screen. In this respect, subtitling for a hearing public differs from subtitling for the deaf and hard of hearing people, which often makes use of three or even four lines, as for bilingual subtitles.

Technical advances have made it possible to place either the two lines or just the bottom one immediately below the image. Consequently, pollution of the original picture is obviously reduced, but more research and analysis need to be carried out to establish whether this aesthetic choice has any negative impact on the appreciation of the programme in general, since eyes have to move across a wider screen area to scan and understand all the information available. Subtitles, however, can be moved from the bottom of the screen to another position, if necessary. This usually happens when:

- the background at the bottom of the screen is so light that is not possible to read the subtitles;
- some important action concerning the programme is taking place at the bottom of the screen;
- some essential data are displayed at the bottom of the screen while a dialogue between the characters goes on and must therefore be subtitled; this is the case of inserts with dates or information about a speaker or the broadcaster's logo (Díaz Cintas and Remael, 2014: 83).

Subtitles can also be moved to the top of the screen or in the middle of it, though this option is extremely rare. For example, in the case of TV documentaries or interviews, the inserts with details about the speaker or interviewees are often placed on the top of the screen, while the subtitles remain in their usual position. However, if the original inserts cannot be edited and changed, subtitles are usually moved to the middle of the screen, just above the text displayed. If the final decision taken goes against re-positioning the subtitles, one of the strategies commonly used consists in showing them in a grey or black box that covers up some parts of the original data (Díaz Cintas and Remael, 2014: 83).

Since audiences expect subtitles to be displayed at the bottom of the screen, it is better not to move them around when not necessary. Moreover, there are a limited number of alternative solutions to avoid interfering with other textual parts that convey information as well. For example, a single-line subtitle placed on the top or bottom of the screen may not obstruct anything at all. Another possible solution is to shift the position of the subtitles horizontally (to the right or to the left), so that they do not cover up the inserts or the broadcaster's logo. However, this considerable amount of original and translated information may be confusing for the viewers, considering the limited exposure time available. In fact, the same problem occurs when data appear at both the top and the bottom of the screen. In all these cases, the exposure time of subtitles has to be reconsidered and the translation possibly displayed a bit longer on the screen. In order to do that, the subtitle could appear slightly earlier or later, if this does not jeopardise synchrony. Then, each particular instance will need a proper solution and subtitlers must remember that all these suggestions should be taken as emergency measures (Díaz Cintas and Remael, 2014: 84).

3.6 Readability and reading speed

As far as subtitling practice is concerned, readability has always been one of the most important issues. Most subtitles are now white, though occasionally yellow is used in black and white films in order to enhance the contrast between the image and the text. The text itself needs a proper font, which is usually a font type without serif, like Arial, Helvetica, Times New Roman; the size may vary. The characters are usually shadowed or black contoured, which solves readability problems, even if the letters appear against

a very light background. When subtitles appear against a very light background, one of the possible solutions is to put them in a grey or black box. This kind of boxes are standard in subtitling programs and can be made to appear during the film or simply whenever needed. Moreover, their shade of grey can be adapted (made lighter or darker) depending on whether the background needs to remain visible to some extent or not. If the box is to improve readability, grey boxes are the best choice because they stand out less on the screen than black ones, which are more obtrusive (Díaz Cintas and Remael, 2014: 84).

As for the number of characters, for the languages using the Roman alphabet the maximum allowed on a one-line TV subtitle is usually 37, including blank spaces and punctuation. This number varies according to alphabets; it is normal to allow 35 characters for Cyrillic languages like Serbian, Macedonian and Russian, 34 for Greek and Arabic, 12 to 14 for Japanese and between 14 and 16 for Chinese. As far as the Roman alphabet is concerned, the number of characters allowed can range in some cases from 36 up to 40, including spaces and typographical signs (Guillot, 2019: 35). Furthermore, there may be clients asking for a maximum of 33 or 35 characters per line or allowing up to 39-41 characters depending on their guidelines and the software used. There are other exceptions; in some festivals, for instance, 43 characters per line are allowed. For cinema, DVDs and Blu-rays, a maximum of 40 characters seems to be the rule, while for VHS this used to be between 33 and 35. The evolution suggests that the number of characters allowed is growing, probably due to higher quality projections and the engraving of the subtitles on the one hand, and increased viewing experience on the other. In any case, according to Díaz Cintas and Remael (2014: 84-85), the issue concerning the maximum number of characters per line is "somewhat being blurred when working with digital technology, as pixels are fast becoming the way of measuring text on the screen" and seem to allow a greater rationalization of the space available on screen for subtitles.

However, a higher number of characters per line often appears to cover the image and choosing a smaller font would affect readability. Consequently, viewers, who have to read more text on the screen, have less time to understand and catch other information. In the professional setting, instructions are given to subtitlers about how many characters they can use, either from their clients or from the subtitling company they are working for. Once the number allowed is clear, the software is set accordingly, and the program takes care of the counting. The cursor normally moves down to the bottom line when the

top one is completed and these programs usually have a function or a final checker, which inform the professional when the maximum number of characters has been exceeded. Each software has its own warning system, which can use a symbol that changes colour (Díaz Cintas and Remael, 2014: 85).

Rules about the minimum number of characters per line are flexible, but subtitles counting less than 4 to 5 characters are rare. Subtitles should ideally remain on screen for at least one second in order to allow the viewer's eyes to register their presence, even though it is not uncommon to find subtitles that stay on screen for as little as 21 or 22 frames, especially when actors are talking really fast. For this reason, subtitles kept on the screen for a shorter period of time risk to appear and disappear, affecting audiences' legibility. Conversely, if a short subtitle occupies the screen too long, the viewers may have time to read it repeatedly, which is irritating as well. Since extremely short subtitles can be incorporated into the preceding or following ones, they must be used only if necessary and timed carefully (Díaz Cintas and Remael, 2014: 85). There is no need to make eyes rapidly move from one line to the next when all the information can be presented in a single line that viewers can read at a normal speed. In theory, this is a rule that can be normally applied in the case of left-aligned subtitles. However, long one-line subtitles also force the eye to travel as well (from left to right or vice versa depending on the language), particularly on cinema's screens. Sometimes this situation is unavoidable, but in other cases sentences made up of multiple clauses lend themselves more easily to two-line subtitles than others. Moreover, a sentence break can help render better a character's intonation or underscore syntax.

With two-line subtitles, it is also important to remember a recommendation based on aesthetics, namely keeping the top line shorter whenever possible in order to improve readability and avoid polluting the image. In subtitling positioning, legibility has to be considered as one of the most important aspects, as shown in the following example.

According to the experts, the global population will grow up to 9.8 billion.
According to the experts, the global population will grow up to 9.8 billion.
According the experts,

the global population will grow up to 9.8 billion.
According to the experts, the global population will grow up to 9.8 billion.

Example 1

Considering subtitles' layout and the aspects mentioned above, the third and the fourth examples are the best solutions, in that they both follow the general rule of keeping the top line shorter to improve legibility. Not only are they aesthetically more pleasing, but, in the case of left-aligned subtitles, they also help viewers' eyes to put less effort in reading the bottom line. Furthermore, line-breaks must be always appropriate syntactically, i.e. they need to respect and reflect the logic of sentences. This is why the segmentations in the second and the third examples above need to be avoided when subtitling. Readability and completeness of meaning should always be considered as priorities because a subtitle that is easy to read and understand obstructs the image less.

Studies on the reading speed of viewers seem to indicate that the grater the number of words in one subtitle, the less the time spent reading each word. This means that viewers need proportionally more time to read short subtitles than longer ones (Ivarsson and Carroll, 1998: 64). Consequently, the overall reading time of two-liners seems to make audiences more comfortable with subtitles in general. According to these studies, it would be more appropriate to choose two-line subtitles whenever possible, with obvious exceptions, e.g. when the original sentences are very short themselves or when a cut has to be observed. Nevertheless, some authors, including Lomheim (1999: 192), prefer one-liners as claiming that they are easier to understand and read than two-line subtitles. However, Lomheim (1999: 192) seems to be cautious in this respect, stating that "if one-liners contain greatly condensed information, coupled with a high degree of implied information, it is quite conceivable that they may be more difficult to interpret than two-liners". Arguments that support two-liners rather than one-liners can be found, but in Díaz Cintas and Remael's opinion (2014: 93), "the subtitler has to be aware of this controversy and consider the appropriateness of resorting to both types of subtitles throughout the programme to be translated".

Scholars have not reached a consensus on the comfortable reading speed for 'all' viewers because the audience is potentially very heterogeneous in terms of age and

educational background. Consequently, when deciding the audience's average reading speed, it has to be considered that not only does the written text of the subtitles have to be read, but also that viewers need to have time to be able to scan the images and 'read' the context. Using subtitles is not a reading exercise, since the message has to be fully understood and assimilated in a very short time. As stated by Derasse (1987: 12), "the reading time cannot be assessed on an absolute basis. It is conditioned by such factors as vocabulary and the presence or absence of action". Therefore, the use of complex syntax or unclear vocabulary may affect audiences' reading speed by making them lose concentration or slow down. The degree of familiarity and proficiency that viewers can be assumed to have with the SL and with subtitling are also elements that have an impact on the final product of the subtitling process (Díaz Cintas and Remael, 2014: 96).

3.7 Textuality issues and changes in mode

As mentioned above, because of the limited space generally available for subtitles, certain elements of the soundtrack have to be omitted, and the obvious solution is to avoid reproducing the redundant elements of speech. Redundancy helps participants involved in a conversation grasp its content and meaning more easily and its omission may affect cohesion in the subtitled text. The question, then, is to what extent the predictability of discourse is influenced by the deletion of redundant features and the impact this choice may have on the viewers' understanding of the narrative. However, as Georgakopoulou points out (2019: 25), there is a strong link between the spoken parts of a film and the context in which they take place. During the subtitling process, the visual information supports the viewers' understanding and, sometimes, can compensate for the limited verbal information conveyed by the subtitles. For instance, some aspects of interpersonal communication may be detected in intonation, rhythm, facial movements and body language accompanying the dialogue, which are, to a certain extent, universal.

Besides the textuality issues, another challenge is represented by the shift of mode from speech to written text. Some features of spontaneous speech, such as slips of the tongue, pauses, interrupted sentences, false starts and ungrammatical constructions, are unpredictable and difficult to reproduce in writing. The same situation applies to dialectal, idiolectal and pronunciation features that contribute to the representation of the screen

characters. Using a pseudo-phonetic transcription to reproduce a regional or social dialect in the subtitles would not be possible because this would affect the legibility of the text and the comprehension of the final meaning by obscuring the style (Georgakopoulou, 2019: 26).

When subtitling the features of spontaneous speech, there are not imposed standards. For this reason, creative representations of subtitles have been developed, such as variations in the use of colour and typography, the use of punctuation used to convey aurally-expressed shifts in tone and loudness, representing emotions through the use of different fonts (e.g. larger fonts for people shouting), as well as the use of animated writing, pop-ups, and notes (Guillot, 2019: 35).

It is undeniable that certain spoken features may need to be rendered in the subtitles if their function is strictly related to the plot. However, rather than reproducing mistakes of uneducated characters' speech, a subtitler can choose an appropriate, usually simpler and easier, vocabulary in order to indicate education, regional dialect or social class of these characters. Subtitliters may also decide not to reproduce the muttering in a character's speech, if the viewers can infer this information from the feedback effect of the original audio. The chosen solution depends on the subtitler, who decides which priority needs to be given to certain elements of the spoken parts in a film (Guillot, 2019: 26).

3.8 Temporal dimension: spotting and duration of subtitles

Spotting is also known as timing or cueing and consists in determining the in and out times of subtitles, namely the exact moment when a subtitle should appear or disappear on the screen, according to a series of spatial and temporal guidelines.

The spotting of the spoken parts has to reflect the rhythm of the film and the performance of the characters, and consider pauses, interruptions, and other elements that characterize the original speech. Long sentences might be challenging and need to be split into two-liners, while short sentences are to be combined to avoid the so-called telegraphic style (Díaz Cintas and Remael, 2014: 88).

The golden rule for ideal spotting is that subtitles should keep the rhythm and pace of the spoken parts performed. When possible, a subtitle should appear at the precise

moment the character starts speaking and should disappear when the character stops speaking. Thanks to an eight-digit timecode included in subtitling programs, the exact timing is accurately defined in hours, minutes, seconds and frames. Depending on the subtitling company, the task of setting the in and out of subtitles can be carried out either by specific technicians or by the subtitlers themselves (Massidda, 2015: 46).

As mentioned above, many studies show that when a subtitle remains on screen longer than the time the viewer actually requires to read it, there is a tendency to read it again. To avoid this unnecessary second reading, the subtitler should follow the "six-second-rule", i.e. a recommended maximum exposure time for two-line subtitles. Thus, since the length of what is written on screen is limited by the physical length of line, showing 74 to 78 characters' worth of information beyond six seconds is never recommended because this can lead viewers to re-read subtitles. For this reason, when spotting a dialogue, timings longer than six seconds should be modified by splitting them into smaller units. For example, if the same character is talking for more than six seconds, subtitlers should think about dividing the spoken parts when a natural pause occurs or when the logic of the sentence allows it. As underlined by Ivarsson and Carroll, the spotting task is facilitated in connected speech, where speakers tend to make pauses either to breathe or to signal grammatical or logical units at intervals lasting between five and eight seconds (Ivarsson and Carroll, 1998: 82). On the other hand, to avoid flashing subtitles and allow the viewers enough time to read the content, the ideal minimum exposure time for subtitles is commonly at one second, even though some companies may set it lower. If the timing of a particular brief utterance lasts less than one second, there two possible solutions:

1. if another character is speaking immediately before or after, consideration should be given to the strategy of using a dialogue subtitle presenting both characters in the same projection;
2. if the utterance is preceded and followed by pauses, subtitlers should consider allowing a certain inaudible margin of asynchrony at the beginning or at the end of the subtitle (Díaz Cintas and Remael, 2014: 90).

3.8.1 Synchronization

Temporal synchronization between subtitles and the original audio is probably the main factor affecting viewers' appreciation of the quality of a translated programme. Poor spotting, with subtitles that come in too early or too late or leave the screen without following the original soundtrack, is confusing and irritating, detracts from enjoying a programme, and risks to ruin what may otherwise be a good linguistic transfer. Accurate timing is fundamental for an optimal subtitling practice because it consolidates the internal cohesion of the translated programme and plays the key role of helping the viewer understand who is saying what throughout the programme (Díaz Cintas and Remael, 2014: 90-91).

To ease the synchronization task, many subtitling software products have now a sound recognition application that signals the point where the speech begins and how long it lasts, giving a graphical representation of the actual spoken parts. While it can be challenging to catch the precise moment of speech onset via headphones, this function is very valuable in timing subtitles and matching them with the spoken word (Díaz Cintas and Remael, 2014: 90-91).

Nonetheless, a perfect synchronization may not always be possible, and flexibility can be observed to a certain extent in the professional practice. For example, when the original dialogue is semantically dense and information is not easy to condense or delete without this affecting the meaning, a certain margin of asynchrony is allowed in the presentation of the subtitles. In these cases, they can appear a few frames before the actual dialogue is spoken and leave the screen a fraction of second after the character has actually finished talking. Subtitlers use this strategy in SDH frequently, where the spotting needs to follow the image more precisely than the soundtrack. Its sporadic application may be very useful to the professionals, but if used too often it may be easily interpreted as poor timing (Díaz Cintas and Remae, 2014: 91).

3.8.2 Shot changes

When applicable, another golden rule in spotting recommends that a subtitle should not be maintained over a cut (a scene changing). The subtitle should leave the screen just before the cut occurs and a new subtitle spotted after the cut, which functions as a dividing

tool between subtitles. This recommendation is suggested by some studies on eye movement showing that if a subtitle is kept on the screen when the scene changes, the viewer is led to believe that a change of subtitle has also occurred and starts re-reading the same text on the screen (Díaz Cintas and Remael, 2014: 91-92).

There are ongoing debates about when subtitles need to be timed before the shot change. On the one hand, some professionals maintain as common practice to avoid showing a subtitle precisely as a shot change occurs, arguing that this can distract the viewer from the visual content of the video and is somewhat irritating to the eye; on the other hand, others prefer to use the exact moment when the cut happens to cue the subtitle out (Díaz Cintas and Remael, 2014: 91-92).

Respecting cuts has now become more important because some of fast-moving films deal with editing techniques where cuts are frequently used as a way to contribute to the dynamism of the action. Moreover, characters may still be speaking during the shot changes, providing what is known as a sound bridge. According to Díaz Cintas and Remael, "it is difficult, not to say impossible, not to break this rule, and the number of occasions when a subtitle has to cross a cut will vary from production to production" (Díaz Cintas and Remael, 2014: 92). The distribution format has also its impact and films released for the cinema tend to adhere to this rule in a much stricter way than programmes to be broadcasted on television and on-demand platforms or commercialized DVDs and Blu-rays.

One possibility to avoid crossing an excessive number of cuts is to make the spotting faster, which results in a larger number of short subtitles, sometimes lasting less than one second. Although spotting can be perceived as a complex and difficult task for novice professionals, it is just a job that anybody can do with some training (Díaz Cintas and Remael, 2014: 92).

3.8.3 Timecodes

The advent of timecodes in the subtitling process involved changes that have altered virtually all stages in the profession, from the spotting of the subtitles to their engraving or projection on screen, including how they can be archived, revised, and edited. The first timecodes appeared in the 1970s, though they only became indispensable in the mid-

1980s. Before their introduction, stopwatches were used to carry out the timing (Díaz Cintas and Remael, 2014: 93).

A timecode generator assigns an 8-digit figure to every single frame of the film or programme. It is a kind of identity sign unique for each frame, which makes it very easy for any professional to identify a particular frame within the whole programme. The code is engraved at the top or the bottom of the working copy, where a TCR (Time Code Reader) specifies the hours, minutes, seconds, and frames.

Timecodes are a fundamental device not only for subtitling, but also for other AVT modes such as dubbing, voice-over and audio description. They ensure quick and easy location of scene and frames, and perfect synchronization between the original audio and written subtitles. An example is provided in the following dialogue exchange.

213
00:16:10,293 --> 00:16:12,751
-You're not afraid of tough guys, are ya?
-No.

214
00:16:12,835 --> 00:16:15,126
I didn't think so. I'll see you around.

Example 2, from 'The Irishman' (2019)

In the first example, the numeric information means the following:

- 213 is the subtitle number;
- 00:16:10,293 is the in-time;
- 00:16:12,751 is the out-time.

From this information the duration of the first exchange can be inferred by working out the time elapsed between in and out times, i.e. 2 seconds and 11 frames. In the second example, the sentence lasts slightly less: 2 seconds and 8 frames. Between the two exchanges, there are 2 frames.

Once subtitlers know for how long the characters have spoken and the reading speed that can be applied to the subtitles, they can assign these exchanges the maximum number of characters that cannot be exceeded when translating. In most cases, this is automatically calculated by the subtitling software, and timecode checkers signals any inconsistencies in the allocation of times. Although the outcome is basically the same, two main approaches can be followed, according to the parameters applied: words per minute or characters per second. Calculations done in words per minute are based on the English language and assume that the average length for an English word is usually five letters (Díaz Cintas and Remael, 2014: 94-95).

3.9 The semiotics of subtitling

The OED defines semiotics as "the study of signs and symbols and of their meaning and use". Therefore, the semiotics of film refers to the sign systems a film combines to communicate its meaning or plot. Films could be considered as texts of great semiotic complexity, in which different sign systems work together to create a coherent message. Throughout the film, light and sound create two important systems of space, time, and casual interaction: one on the screen before the viewers' eyes, and another within a story world that viewers are supposed to conceptualize in their minds (Branigan, 1992: 34). In other words, audiences should be capable of making sense of visual and acoustic sign systems that are complemented by an acoustic channel and shown on a screen. They actually see and hear these signs as a story world in which characters appear goes on. According to Díaz Cintas and Remael (2014: 45), "they are an addiction to the finished film, and if they are to function effectively, they must interact with and rely on all the film's different channels".

Although the myth of the universality of images persists in TS, it is important to underline that images are far from being universal. Indeed, they are strictly connected to cultural references in themselves and always subject to ideological framing. This means that even if the spoken parts of an audiovisual programme are the main source material that requires to be subtitled, it is crucial for subtitlers to be aware of the film text's other semiotic systems and of how they contribute to the development of the story or the whole programme. Visually rendered information must be considered because it is a key part of

the message, but also because all cultures have different visual as well as oral and linguistic traditions, especially those that are geographically wide apart. Therefore, from a professional viewpoint, the most complex situation occurs when a linguistic sign, a phrase, refers metaphorically to an iconographic sign or image that the source and target culture do not have in common (Díaz Cintas and Remael, 2014: 46).

The optimism in TS about the universality of visual images may also depend on the Eurocentric perspective that has long been one of its dominant features. However, the extent to which translation, and subtitling in particular, can or needs to overcome the visual culture gap is another issue. In many cases, scholars argue that traditions have developed closer to each other due to the globalization of filmic traditions. It is a complex matter that all audiovisual translators must consider when working within the field.

In his studies about the elements that constitute the film sign in AVT, Delabastita (1989: 199) distinguishes four categories or communication channels:

1. visual presentation – verbal signs;
2. visual presentation – non-verbal signs;
3. acoustic presentation – verbal signs;
4. acoustic presentation – non-verbal signs.

Visually transmitted verbal signs (1) are, for instance, credit titles, letters, street names, newspapers headlines and other written documents that appear on the screen. Visually transmitted non-verbal signs (2) are related to the film's photography. Acoustically transmitted verbal signs (3) consist in songs and the dialogue exchanges, while acoustically transmitted non-verbal sounds (4) are instrumental music and background noise (the phone ringing, the doorbell, etc.). All these sign systems co-operate in the creation of a coherent film story, whether fictional or non-fictional. The extent to which the subtitles need to relate to each of these systems will vary and will have to be determined by the professional (Díaz Cintas and Remael, 2014: 47).

3.9.1 Semiotic cohesion

As Marleu (1982: 274) points out, the relation between the image and the word can take two concrete forms corresponding to two functions, which the author also refers to

subtitles. There are cases in which the verbal mode further defines information that is also conveyed visually, which he defines as '*fonction d'ancrage'* or anchoring. In other situations, for which he uses the term '*fonction de redondance'* or redundancy, words and images communicate more or less the same meaning.

In order to deal with such filmic features, Chaume (2004: 232-237) extends the linguistic concept of textual cohesion to include the interaction between the linguistic and the visual channels of a certain film. As Baker (1998: 2018) suggests, linguistic textual cohesion is crucial because it is the "network of surface relations which link words and expressions to other words and expressions in a text, and coherence is the network of conceptual relations which underline the surface text". This means that cohesion refers to those linguistic techniques that are used to ease the readers' task of discovering coherence in a certain text. These cohesive strategies are (Díaz Cintas and Remael, 2014: 50):

- reference, i.e. the use of pronouns and different types of anaphoric or cataphoric reference;
- lexical choice, which involves the idea of repetition versus variation;
- tense choice;
- the use of connectives.

Extending the concept of cohesion for film, and thus also for AVT, Chaume (2004: 232-237) introduces the idea of 'semiotic cohesion'. An ellipsis or gap in the subtitled spoken parts may be overcome with the information the viewer obtains from images on the screen rather than another passage from the verbal text. For example, in writing a noun may be replaced by a pronoun, while in audiovisual texts pronouns in the dialogue can refer to characters or objects on the screen. To deal with this kind of semiotic cohesion when subtitling, there must be a form of synchrony between the written target text and the image shown. For this reason, subtitles should never appear too early or be ahead of visual narration on screen. In this context, it is obvious that synchrony between image and subtitles is less of a concern in other audiovisual genres, such as documentaries and especially in interviews, in which there is a presenter or reporter on television who addresses the camera and is viewed close up (Díaz Cintas and Remael, 2014: 51).

3.9.2 Multimodality

Another form of semiotic cohesion is represented by multimodality, which consists in the interaction between speech and gestures. This is a feature of the so-called multimodality of language, of which film texts make great use. Dialogue studies in both linguistics and anthropology focus on video recordings that help scholars complement their research into how dialogue functions from a linguistic point of view, with particular attention to the interaction between word and movement. For instance, in a film which aims to tell a story with its narration, the interaction between words and gestures is always very important, as is the position of the characters within a certain scene. Moreover, like any form of iconography, body language and facial expressions communicate information non-verbally and are often culture related. They belong to what scholars call the kinesic heritage (Díaz Cintas and Remael, 2014: 52) of different communities. Some stereotypical differences in gestural meanings are well-known and, though some studies have been published on the subject, Díaz Cintas and Remael (2014: 52) point out that much research is still required in this area, particularly in the field of AVT. Due to its culture-bound problems and complex dimension of body language and facial expressions, multimodality is still very challenging for subtitlers.

Other terms used to define the movement and positioning of characters are proxemics and kinesics. Proxemics is the branch of knowledge that concerns the amount of space that people feel is necessary between themselves and others, while kinesics focuses on which body movements and gestures convey meaning non-verbally. It is important to underline that western cultures share a common idea of physical closeness that is acceptable between people in a certain situation. In this case, the challenging aspect for the subtitler consists in the detection of coherence between movement or closeness and intonation, word choice, as well as other linguistic elements that will be conveyed by the narrative situation on the scene as a whole (Díaz Cintas and Remael, 2014: 53). According to Guillot, in the case of multimodality, technology has made things even more complex to understand the tension between creativity and accessibility, “by multiplying the signifying codes that can be harnessed to produce meaning in films of relied on their interpretation, and by diversifying their uses” (Guillot, 2019: 36).

3.10 Text on the screen

Text displayed on screen, known as inserts, or the visual presentation of verbal sign in Delabastita's categorization can also be challenging for the subtitler. Subtitles always give priority to dialogue over written text or songs, even though they must also try to convey any relevant information rendered visually. As Díaz Cintas and Remael (2014: 60) point out, "given the casual, well-structured narration and *mise-en-scène* of most mainstream productions, there will probably be little or no interference from other semiotic channels whenever words do appear on screen".

However, if there is a conflict between the visual and verbal channels and the information given aurally as well as visually is essential, several solutions are possible. A concise summary can be presented at the top of the screen, even if this means that not all viewers may have time to read it. This practice is commonly used in cartoons and documentaries, when the subtitles risk obscuring biographical information about the speaker or the interviewees. These data are then usually moved to the top of the screen, or just above the biographical information of the speaker or, alternatively, the in-time of the subtitle rendering the source text may be slightly delayed. If inserts follow each other very quickly on screen, as in a scene showing newspaper headlines to convey information about a given event or period, the only solution is to abbreviate and cut, trying to preserve the essence of the original meaning as much as possible. In the case the words on screen are recognizable, because the source and the target language make use of words with the same roots, translating them is not necessary; for example, a written text like 'Berlin, 1945' might not be translated into Italian or French (Díaz Cintas and Remael, 2014: 60).

3.11 The fansubbing phenomenon

The term 'fansubbing', which literally defines the activity of 'fans producing subtitles for other fans', is one of the most widespread forms of amateur translation on the Internet. With the growing creativeness of fansubbers and amateur subtitlers in their reaction to the linguistic and cultural standardization on AVT industry products, subtitling "has been given public licence to shake off the shackle of some of its most constraining practices, and the opportunity to review their implications" (Guillot, 2019: 37).

Fansubbing appeared for the first time in the 1980s as a reaction against the neutralization in US productions of Japanese animated films (the so-called 'anime') of anything linguistically and culturally Japanese. Nowadays, as confirmed by Dwyer, "current research on fansubbing is broadened by examining this phenomenon beyond the strictures of anime subculture alone and exploring the gaps in mainstream subtitling that fansubbing both exposes and fills" (Dwyer, 2012: 1).

With their ample use of colours, typefaces, different fonts, variable length of subtitles, siting on screen, and uses of notes and glosses superimposed on visuals to offer explanatory comments about what viewers are watching and hearing (a 'thick translation'), fansubbers are bypassing accepted guidelines and conventions with deeply held foundations at their core. Standard recommendations that subtitles should attract as little attention as possible and avoid interfering with the processing of other semiotic resource are not taken in consideration (Guillot, 2019: 37).

One of the most distinctive features of fansubbing is that a greater number of characters per line is allowed, whereas professionals have a maximum amount of characters they can use per line. Although it may be argued that fansubs are aesthetically confusing, there are some positive aspects. Fansubbers can use more space on screen in order to express the necessary nuances in the SL dialogue (e.g. the reproduction of an adequate style and register) that professional subtitlers are systematically forced to cut out. Moreover, what some scholars simply define as 'literal translation' or 'mirror translation'is not a naïve trait. Fansubbers sometimes work on a type of file called "ts", which is obtained by converting the closed captions on TV created for viewers with aural impairment; SDH often uses 'verbatim captions' rendered as a literal and faithful transcription of the dialogue exchange, and not as a form of edited captions, condensed and simplified (Massidda, 2015: 55). Each fansubbing community usually has its own guidelines and rules, which also include recommendations about editing and revising translations, spell checking and proofreading, and synchronization. There are also lists about false friends or common mistakes; for example, the use of capital letters after an ellipsis, the different uses of punctuation in English and Italian, and above all, the correct use of diacritical marks and apostrophes.

Besides these basic characteristics, the main feature of fansubbing is the 'source-oriented' approach to translation (Massidda, 2015: 55), a practice defined by

professionals and scholars as ‘abusive subtitling’. The first scholar who mentioned the concept of ‘abusive translation’ was Lewis in 1985. From his post-structuralist viewpoint, he highlighted the fact that translation should represent an accurate interpretation of the source text, even if the adoption of a source-oriented approach may lead to alterations of the syntactic and structural boundaries imposed by the target language (Lewis, 1985: 31). In other words, the abusive subtitler “imagines a range of experimental procedures that include different styles of the translating language to match the stylistic peculiarities of the screenplay, as well as changes in the font, colour, and positioning of the subtitles to complement the visual and aural qualities of the film” (Venuti, 2004: 332).

The advent of Web 2.0 has undoubtedly had a major impact on the development of fansubbing communities, allowing untrained and amateur subtitlers to translate and share ‘abusive subtitles’ that are free from professional guidelines about graphics and linguistics in order to produce a more literal and transparent translation. In this context, there are scholars and academics who perceive amateur practices as a form of resistance to the media industry and mainstream subtitling, which, in their opinion, aim to hide the original otherness by conforming it to a strictly target-oriented structure (Massidda, 2015: 60). Nornes (2007: 178-179) denounces this ‘domestication’ of mainstream subtitling as ‘corrupt’ and supports instead a subtitling practice that avoids reconciling the differences and attempts “to intensify the interaction between the reader and the foreign”. Whether supported or not, his radical statement is an incentive to pose questions of linguistic and cultural representation, which have been until now comparatively neglected. Although they have produced some debates in practice and in theory, “the impact on audiences of AVT-mediated cross-cultural representations, and of the cultural mismatch noted in shaping them, has been barely looked into” (Guillot, 2019: 38) despite the unprecedented exposure to AVT-mediate cultural products all over the world.

As mentioned above, the golden rule for perfect subtitles involves the idea that they should pass unnoticed and guide the audience through the viewing experience by reducing any graphical interference; therefore, after being suitably adapted to the receiving culture, they should flow naturally as if written in the original language. However, with the advent of Web 2.0 and the broadband Internet, what professional subtitlers discard *a priori* as a textual and graphic violation may end up constituting a

new experimental field in translation. In Massidda's opinion, this is probably fansubbing's major contribution to TS (Massidda, 2015: 59).

Due to the amateur nature of fansubbing practice, amateur subtitlers would ultimately have a lot to learn from professional translators. However, despite their apparent naivety, fansubbers have challenged long-established rules and their amateur work might be a source of inspiration for both academics and professionals, as well as a contribution to the investigation of future subtitling guidelines (Massidda, 2015: 116). Moreover, it would be interesting investing in future research about the impact of fansubbing on the second language learning (e.g. English for the Italian audience). Such a study might show whether and how a massive exposure to a cognitive learning method known as the 'latent learning process' represented by the fansubbing practice occurring in a semi-leaning environment has contributed to the linguistic learning process among foreign language learners and younger generations (Massidda, 2015: 117).

3.11.1 Piracy or promotion?

Thanks to the advent of new social media and the widespread use of fast broadband Internet, amateur subtitlers may rely on secret groups on networks like Facebook, where they can communicate without interferences and retrieve the copyright material needed by downloading torrent files, i.e. computer files that contain metadata about files and folders to be distributed. Torrent files may be downloaded by using illegal programs such as Utorrent, Wuze, Emule and others. In fact, after the shutdown of Kim Dotcom's Megaupload, the most popular file hosting and sharing service ever created, fans have stopped using the direct link system for their purposes.

In order to distance themselves from legal issues, fansubbers decided to produce the so-called 'soft subs' rather than working on 'hard subs'. Unlike hard subs, which are simple text files encoded in the video stream of a TV program, soft subs are .srt files that are separate from the original video and loaded by users onto video players, such as VLC, and that can be turned on or off according to one's preferences. The choice of soft subs over hard subs for fansubbing is largely due to the problems concerning copyright infringement (Massidda, 2015: 38). In the disclaimer section of a former Italian fansubber community, it was stated that all downloadable content found on the website was

absolutely free. The translations available were realised according to specific regulations and were defined as "a free interpretation by translators and therefore protected by law". The content available did not actually include any copyrighted video or link to proprietary materials. This means that Italian fansubbers released translations conceived as personal interpretations of TV shows in order to be able to share their work with their followers. Consequently, the way fans retrieved the copyrighted video associated with the fansubs were irrelevant to the community of the amateur subtitlers (Massidda, 2015: 21-22).

According to Rembert-Lang, "laws governing international copyright law include: The Berne Convention, the Uruguay Round Agreements Act (URAA), and the Universal Copyright Convention (UCC) (Rembert-Lang, 2010: 6-7). As mentioned in the 'Berne Convention for the Protection of Literary and Artistic Works':

> Copyright is a legal term used to describe the rights that creators have over their literary and artistic works. Works covered by copyright range from books, music, paintings, sculpture and films, to computer programs, databases, advertisements, maps and technical drawings.

As far as translation is concerned, according to Massidda (2015: 22), two articles of the 'Berne Convention for the Protection of Literary and Artistic Works' are worth attention, i.e. article 2 and 8. Article 8, entitled 'Right of Translation', provides that "artists of literary and artistic work shall enjoy the exclusive right of making and of authorizing the translation of their works throughout the term of protection of their rights in original works". However, article 2, entitled 'Protected Works', specifies that "translations, adaptations, arrangements of music and other alterations of a literary or artistic work shall be protected as original works without prejudice to the copyright in the original work". Therefore, there is an evident grey area, particularly as far as amateur translation in general and fansubbing are concerned.

3.12 Criticisms against subtitling

It is interesting to see that a relatively high number of viewers have a rather negative opinion of the quality of subtitles, which is undoubtedly because the translated text is displayed to the audience at the same time as the original. The contemporary presence of the source and the target text helps the viewers compare immediately both messages,

which is something consumers of other modes of translation, such as dubbing or literary translation, cannot normally do. Even if both languages co-exist in interpreting and bilingual publications with side-by-side texts, the reception of the two messages is not as immediate as in the case of subtitles (Díaz Cintas and Remael, 2014: 55).

While a translated novel or poem or a dubbed programme often cover the original linguistic material, subtitles are in the difficult position of being constantly accompanied by the original soundtrack, which causes what is known as the 'gossiping effect' or 'feedback effect' (Törnqvist, 1995: 49). This is an issue that is worth considering, especially now that Blu-rays and broadcast platforms are offering viewers dubbing and subtitling services side by side, as well as the possibility to stop the film and return to any previous scene, and freeze a subtitle on the screen – to be seen and judged (Díaz Cintas and Remael, 2014: 55-56).

The presence of two languages has also its consequences on the translated programme. A common strategy is to transfer all those terms from the SL that have strong phonetic or morphological similarities in both languages and that the audience may detect in the original dialogue. The non-appearance in the subtitles of recognizable lexical items audible in the original soundtrack is directly responsible for the criticisms that many viewers move against subtitling. Many strongly believe that the translator has 'forgotten' to translate certain words, which they have clearly heard on the original audio. According to Karamitroglou (1998: 6), this reaction depends on

> [a] constant presence of an inherently operating checking mechanism in the brain of the viewers which raises the suspicions that the translation of the original text is not 'properly' or 'correctly' rendered in the subtitles.

Moreover, trying to maintain a close semantic and syntactic correlation between the dialogue of the film and the content of subtitles is also crucial. Perfect synchrony should be achieved whenever possible because to hearing any information that one has already read at the beginning of a subtitle and listening to one text while reading another is very frustrating and risks to affect the final comprehension of the meaning (Ivarsson and Carroll 1998: 73).

For all the reasons mentioned above, Díaz Cintas and Remael (2014: 57) define subtitling as an instance of 'vulnerable translation'. Not only are subtitles subjected to time and space constraints, but they also have to face the judgement and scrutiny of an

audience that may have some knowledge of the original language. This viewers' tendency is even aggravated when the SL is English or when the two languages have similar linguistic roots. For example, viewers may feel cheated when the aggressive or rude performance of a character leads them to expect a certain type of speech that is not relayed in the translation, when a laconic dialogue becomes a longer subtitle, or when an actor who speaks fast is give very short space in subtitles. Then they may start wondering what was 'lost' during the translation process (Díaz Cintas and Remael, 2014: 57).

On the other hand, there is a limit to how far a subtitler can go in remaining faithful to the ST, not only because of technical constraints, but also because the target language cannot be always flexible. In this context, Kriek uses the concept of '*halve vertalingen*', or 'half-way translations', for subtitles that render expressions or sentences from the source language almost literally. This is not a strategy to be emulated, though Blu-rays and broadcast platforms subtitles tend to stay closer to the ST language as compared to subtitles released for the cinema. According to many professionals, this happens because some people from the film industry or working for some broadcast platforms are not subtitling specialists and have little experience with translation in general. They think that literal translation is the best choice they can do, claiming that this is also what the viewers prefer (Díaz Cintas and Remael, 2014: 57). However, common sense usually suggests that in most cases a compromise would be an acceptable solution.

Hence, the translator may well have understood a particular pun or recognized an unclear reference, but be unable to convey the information in the subtitles because of the target language's limitation. Whatever the case may be, the use of notes during the translation process, such as glosses, footnotes or a prologue, has always been rejected by professionals within the field. However, it is worth noting that recent developments in the subtitling of some programmes for the distribution on Blu-rays do include the possibility of having translator's note on the screen.

3.13 What about subtitling for Netflix?

In 2004, Netflix published a 124-slide document explaining its corporate culture, as conceived by C.E.O Reed Hasting and H.R. chief Patty McCord. The slideshow, which pointed out radical 'freedom and responsibility' at Netflix, has reached cult status since

its publication. An updated version of the Netflix Culture document was then published online and stating that "succeeding on a dream team is about being effective, not about working hard. Sustained 'B' performance, despite an 'A' for effort, gets a respectful severance package". This means that the company suggests finding another work environment for those who do not want to cooperate in a 'dream team' and those who value "job security very highly and would prefer to work at companies whose orientation is more about stability". However, those expectations backfired on McCord, who was fired in 2012 when Hasting reviewed her performance (Kosoff, 2018). However, according to a report published by the Society for Human Resource Management in 2017, Netflix firings do not seem to be unfair. Indeed, the report shows that the percentage of Netflix workers who leave their jobs voluntarily each year (8%) is only slightly higher than the national average (6%).

With its annual $14.9 billion revenue, it is undeniable that Netflix is now one of the most prominent broadcast platforms all over the world. When Netflix went global in 2016, Reed Hastings knew that his platform was going to need a huge number of translators. Although Netflix began as an online rental site, it was ready to launch its service into 130 countries simultaneously at the end of the 1990s. According to Forbes, more than half of Netflix's profits are supposed to come from its international market base by 2023. With the company's valuation significantly dependent on the success and feedback of its international segment, the media giant ensured that consumers were going to be able to enjoy its premium content regardless of what language they speak. To this end, Netflix launched HERMES, an online subtitling and translation test to find translators across the globe (Trefis Team, 2017).

3.13.1 The HERMES case

In March 2017, Netflix launched an impressive online portal called HERMES which was developed to find translators in order to produce content in 20 different languages (including languages like Korean, Chinese, Arabic, and Polish). The mission of HERMES was to attract these professionals to make Netflix's audiovisual contents accessible and enjoyable to viewers from China to Spain and from Mexico to India.On the HERMES dedicated webpage, which is still accessible, Chris Fetner and Denny Sheehan (the

portal's developers) state that their "desire [is] to delight members in 'their' language, while staying true to creative intent and mindful of cultural nuances is important to ensure quality". Many people defined this launch as the most aggressive localization effort concerning audiovisual contents up to now (ILC, 2018).

HERMES was the first online subtitling and translation test and indexing system established by a media giant like Netflix. The test was designed to be a sequence of sections consisting in thousands of randomized combinations of questions, so that each test was different. The sections provided multiple-choice questions given at a specifically timed pace in order to evaluate the candidate's ability to:

- understand English;
- translate idiomatic expressions into their target language (e.g. "a different kettle of fish", "my neck of the woods");
- identify linguistic and technical mistakes;
- subtitle (Fetner and Sheehan, 2017).

It is important to underline that each language pair had a different pass threshold according to the ratio between demand and supply. For example, Italian and Brazilian Portuguese applicants needed a high score of correct answers, namely around 90% (Bassanese, 2017). The following example shows how the beginning of the test for translating from English into Italian was like:

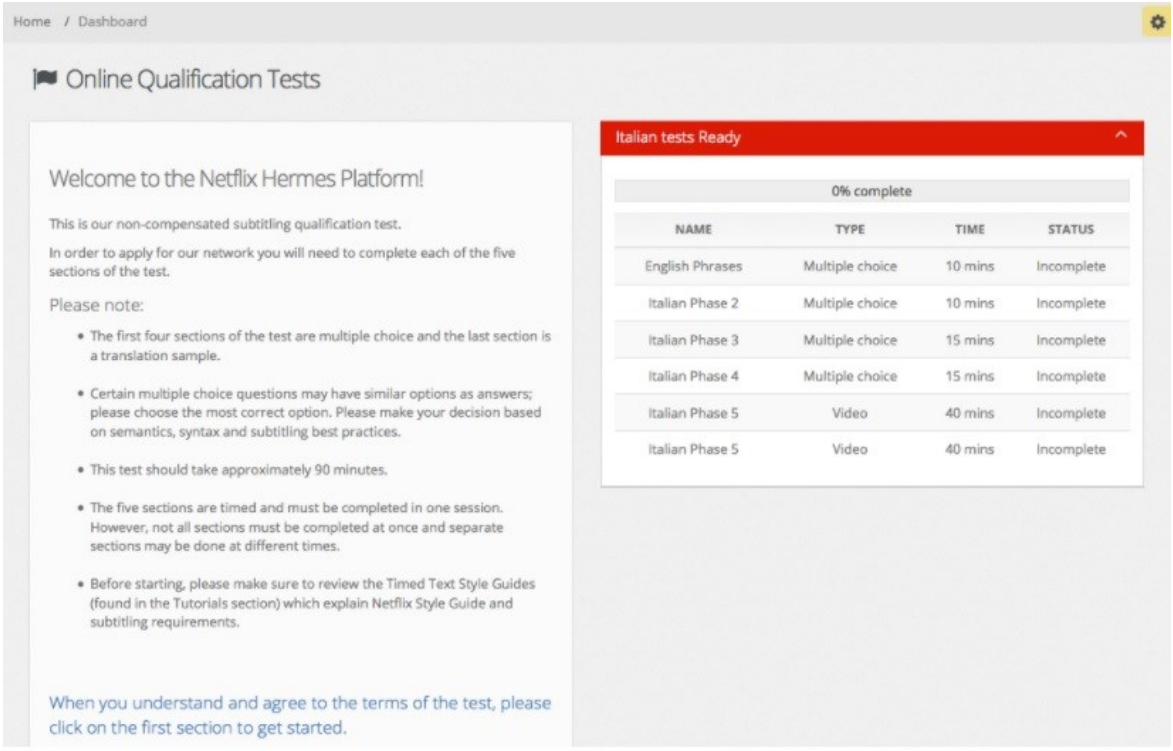

Figure 7: A sample of the test designed for Italian translators (Bassanese, 2017).

Netflix especially looked for professionals with subtitling background. The company was undoubtedly interested in creating shows that attracted new viewers from specific regions and cultures; however, producing this amount of content from the ground up costed more than translating readily available content. Since millions of hours of script for movies and shows already existed, Netflix was attempting to find translators with skills in subtitling in order to release new translated contents as fast as possible.

Once a candidate passed the test, the company had an idea of the translator's skills level; then, each candidate received a HERMES number (H-Number). This unique identifier was issued to each applicant before taking the test and was supposed to stick with translators as a reminder of their career contributing to supply translation services to Netflix. By looking at the quantity of H-Numbers in a given language, Netflix could precisely estimate the amount of potential resources needed for a given language and also the time needed to localize, for instance, libraries (Fetner and Sheehan, 2017). This concept was based on the idea that the more work the professional did, the more metrics the H-Number would show. The final purpose of this method was to allow Netflix to better correlate the metrics associated with a given translation to the professional who did

the work. However, there was a persistent problem represented by managing and maintaining HERMES portal functional (ILC, 2017).

Within two weeks of the HERMES launch, thousands of linguists responded, and all language pairs required by Netflix were found. By mid-2017, Netflix was able to support and offer contents in 23 languages. Fetner and Sheehan stated that the company was quickly "approaching an inflection point where English won't be the primary viewing experience on Netflix" and HERMES allowed the media giant to meet its viewers' wishes "so [they] can enjoy their favourite TV shows and movies in their language" (Fetner and Sheehan, 2017). However, only one year later, in March 2018, the media giant abruptly closed its HERMES portal, publishing a concise official notification on its website stating that they had "[…] reached [the] capacity for each one of the language tests due to the rapid popularity and response from applicants all over the world". Therefore, the platform was shutting down to future testing at that time.

Netflix finally admitted that the HERMES project was ambitious in its task. On the one hand, the company decided that it was better to stay focused on its core strengths, such as content workflow, readily available programmes, engineering, and development. On the other hand, Netflix left the translation project management, including subtitling and dubbing, to the language services providers it had loyally worked with before the launch of HERMES. In other words, Netflix showed the world an example on a grand scale: focus on what the company was good at and allow others to do the same (Fetner and Sheehan, 2017).

Netflix's international subscriber base exceeded its US subscriber base by one million at the end of 2017, as reported by Slator (Estopace, 2017). Only 850,000 new subscribers were from the U.S., while the number of international subscribers was around 3.4 million. This means that the need for qualified linguists and translators to create content and subtitles for international audiences was still considerable.

3.13.2 Netflix's new strategies to simplify subtitling

With high levels of localization demand due to a growing international subscriber base, Netflix is now an increasingly active participant in the machine translation (MT) research space. The company confirmed back in April 2019 that its team had not yet started to use

MT for Netflix' subtitle productions, but some investigations about the use of technology were still in progress.

As a result, in May 2020 a paper entitled 'Simplify-then-Translate: Automatic Preprocessing for Black-Box Translation' was published by a group of scientists at Netflix. It was based on the idea of exploring how to improve MT quality for low-resource languages, with the possibility of using it in subtitles and meta-descriptions. The main point of this study is that it brings together two natural language processing (NLP) disciplines, i.e. sentence simplification and machine translation. As the paper points out, sentence simplification was originally intended as a way to improve machine translation in the 1990s. It was based on the idea that simpler source sentences lead to more fluent and acceptable translations and reduce the post-editing effort. Netflix's method relied on this assumption and also leveraged the notion that translated content is simpler than original source content. To a certain extent, they argued, back-translations are simpler than the original source constructions and can be used to create a simplification model. This is what is new in the company's approach towards translating audiovisual materials (Bond, 2020).

In the attempt to simplify translations, Netflix took materials previously translated by humans and back-translated them into their source language using MT, which was, in most cases, English. From there, the researchers used the simpler, back-translated sentences to build a simplification model for English sentences. This model, defined as an automatic pre-processing model or APP, would then be adapted to any English source content to the machine translation step to improve the resulting translation. Netflix's APP for English was designed specifically to deal with tricky content like idioms, by replacing such expressions with simpler alternatives (Bond, 2020).

However, when polled on how they feel about the use of MT in subtitling, on a scale of one to four stars, with four being the most positive, 61% of the respondents (viewers and professionals as well) gave one or two stars. 19% gave three stars, while 20% gave the maximum. Therefore, their response was pretty conservative and negative about the MT issue (Bond, 2018).

The timeline below shows the most important stages in Netflix development and how it has become a major audiovisual content producer and successful broadcast service over the years:

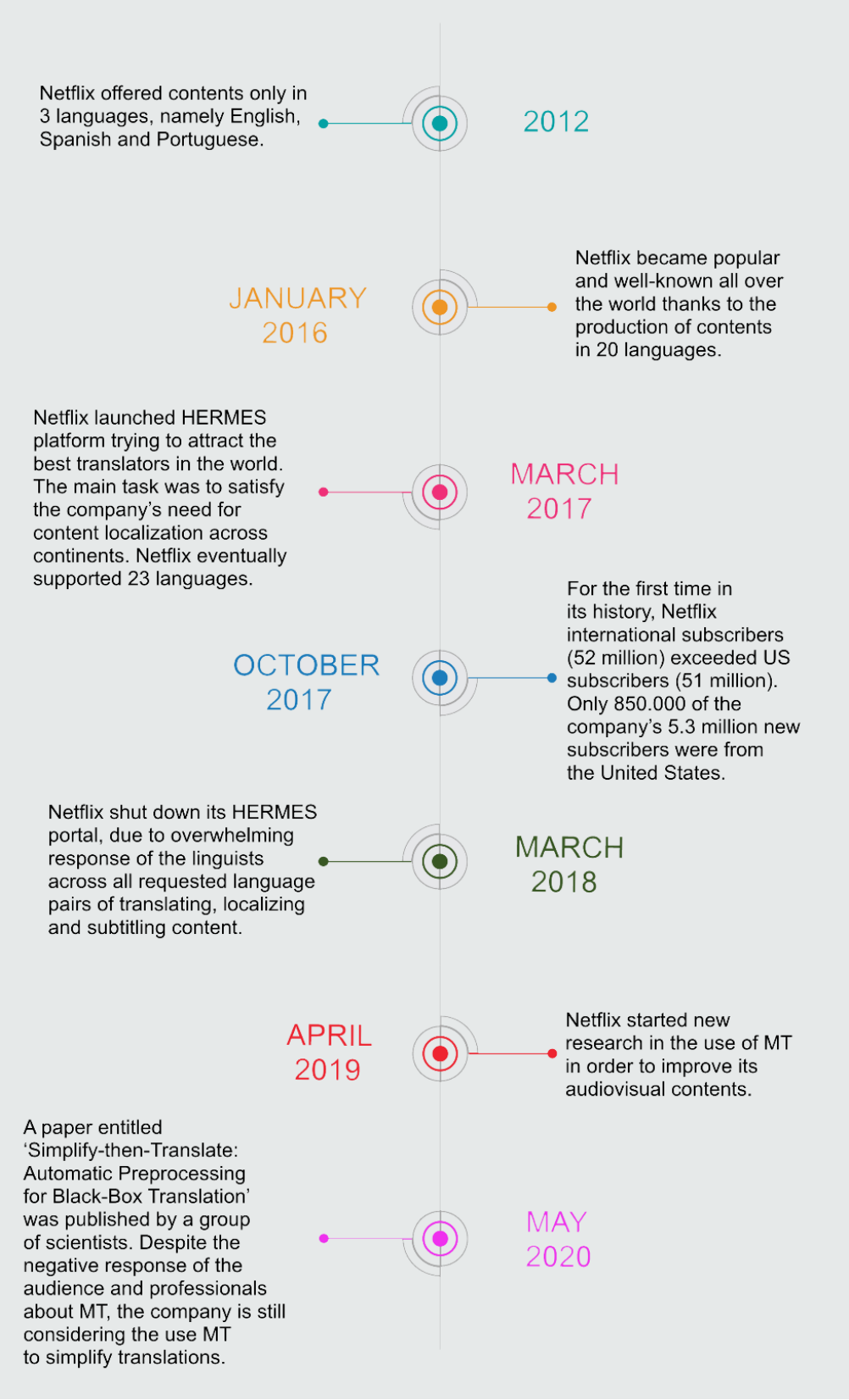

Figure 8: Netflix content localization timeline. (ILC, 2018; Slator, 2020).

4. SUBTITLING NETFLIX DOCUMENTARY "BLACK HOLE APOCALYPSE"

Subtitling can be seen as a specific type of discourse presenting a sequence of lexical, syntactical, ant typographical characteristics that help define its content and meaning. However, given the different amount of AVT programmes, it is evident that professional practice is rather heterogeneous, and the guidelines applied can vary substantially from one audiovisual programme to another, from one AVT company to another, and from one country to another.

4.1 Punctuation conventions

Subtitling follows a set of typographical rules that are not completely new, but are part of the grammar of a language, so that when viewers watch a subtitled programme, they do not have to learn a whole new body of rules. Subtitles are ultimately an instance of written text and they tend to follow the standard norms that govern punctuation. However, "the direct application to subtitling of conventions that have been designed for the delivery of other discursive practices less subject to media limitations can lead to errors" (Díaz Cintas and Remael, 2014: 103). In this context, attempting to offer a fixed and unequivocal set of guidelines is a challenging task. While some of the rules followed in subtitling today seem to be based on logic, many are probably applied arbitrarily and may be difficult to justify over others. Moreover, the rules applied within the professional setting are not homogeneous, and many big subtitling companies prefer to maintain their own punctuation conventions, which they apply as a part of their stylebooks and which are sometimes opposed to the conventions applied by competing companies. However, there is a set of punctuation conventions that are generally accepted and considered valid by professional subtitlers and by several AVT companies as well (Díaz Cintas and Remael, 2014: 104).

4.1.1 Commas (,) and semi-colons (;)

Since comma is possibly the most flexible of all the punctuation marks, it is difficult to number all its possible uses. Its main role is showing the structure of a sentence, dividing it into units to make the text more understandable. Both commas and semi-colons separate sections that are related to each other in the same sentence, and their usage allows a slight pause in the reading. They are written immediately after a word and leave a space before the following one.

The appearance and disappearance of subtitles on screen affects the viewers' readability and commas must be used in the appropriate way in order to facilitate the reading process. The use of commas in subtitling does not necessarily fully comply with grammar rules. Commas must be actually used whenever there is a risk for misunderstanding the original meaning. There are cases where the comma is contrastive, and its use has to follow the prosody of the dialogue (Díaz Cintas and Remael, 2014: 105). An example of this usage in English could be the following.

Netflix subtitles (English): 653: 00:38:28,053 --> 00:38:32,689 You know, a lot of hippie-type people.
Netflix subtitles (Italian): 614: 00:38:09,895 --> 00:38:12,606 Molti hippy.
My translation: 614: 00:38:09,895 --> 00:38:12,606 Parecchi hippy.

Here, the contrastive use of the comma is completely lost in both Italian translations. This is due to the lack of a colloquial expression like '*you know*' in the Italian language. As a result, it is not possible to render '*you know*' in the target language.

When possible, using commas at the end of a subtitle that continues in the next one should be avoided, since they may be confused with a full stop and lead the viewers to think that they have reached the syntactical conclusion of the sentence. For example:

Netflix subtitles (English): 624: 00:36:56,162 --> 00:36:59,530 It would have to be very massive, 625: 00:36:59,532 --> 00:37:02,800 at least three times the mass of our sun.
Netflix subtitles (Italian): 588: 00:36:38,845 --> 00:36:41,181 Sarebbe dovuto essere gigante, 589: 00:36:41,264 --> 00:36:44,309 almeno tre volte la massa del Sole.
My translation: 588: 00:36:38,845 --> 00:36:41,181 Sarebbe dovuto essere enorme, almeno tre volte la massa del Sole.

In this case both Netflix subtitles use commas at the end of a subtitle that continues in the next one, while I preferred to merge the subtitles in order to increase fluency and cohesion.

The actual physical disappearance of the written text from the screen imposes a pause in the reading pattern that many professionals consider having the same function as the use of a comma. If there are no punctuation marks at the end of a subtitle line, this automatically signals that the sentence goes on. Given the general recommendation that subtitles should be semantically and syntactically self-contained, subtitlers have to pay attention to the usage of commas and semi-colons that would make sentences longer.

Moreover, subtitles should not be overloaded with punctuation marks that may affect their legibility. In some cases, it may be more appropriate to split up the original sentence into several smaller units in one or more subtitles. According to Díaz Cintas and Remael, the use of semi-colon is very rare and should be avoided as much as possible because it is easily confused with the colon (Díaz Cintas and Remael, 2014: 106).

4.1.2 Full stops (.)

The full stop at the end of a sentence is an unequivocal signal that the subtitle is finished. Its presence on the screen tells the audience that the subtitle is over and sends them back to watching the image. The full stop is immediately after the word without a space and the next line or subtitle starts with the capital letter, as shown below.

Netflix subtitles (English): 289: 00:16:58,337 --> 00:17:00,604 The particles disappeared. Time stopped.
Netflix subtitles (Italian): 278: 00:16:59,250 --> 00:17:01,169 Le particelle erano scomparse. Il tempo si era fermato.
My translation: 271: 00:16:58,337 --> 00:17:01,839 Le particelle erano scomparse. Il tempo si era fermato.

However, there are companies that follow their own guidelines and do not make use of the full stop at the end of a subtitle. Consequently, this choice

> creates the most confusing and even irritating situation of all, as it may mean two contradictory things: either that the sequence stops there or that it goes on. Needless to say, this makes subtitles following this style very difficult to read (Cerón, 2001: 176).

4.1.3 Colons (:)

A colon is normally used with the same functions it has in standard grammar. It signals a small break and draws the reader's attention to the information that will follow. Some companies leave a blank space immediately before the colon, claiming that this way it stands out more visibly on the screen. This is a characteristic of some languages, e.g. French, and is also common practice in teletext subtitling. However, Díaz Cintas and Remael recommend using the colon immediately after the preceding word without any space and leave one space before the following word (Díaz Cintas and Remael, 2014: 107).

A colon could be used to introduce a list, an enumeration or, as in the example below, an explanation. A small letter should always follow the use of the colon in these cases:

Netflix subtitles (English): 475: 00:28:24,350 --> 00:28:28,953 But I can say this: black holes may be dark from the outside,
Netflix subtitles (Italian): 456: 00:28:06,083 --> 00:28:10,504 Ma posso dirvi questo: dall'esterno i buchi neri possono sembrare bui,
My translation: 456: 00:28:06,083 --> 00:28:10,504 Ma posso dirvi questo: da fuori i buchi neri possono sembrare bui,

4.1.4 Exclamation marks (!) and question marks (?)

Exclamation marks underlines in writing something that is normally said loudly or strongly in speech, with a certain prosodic pattern to convey, for instance, anger, surprise, disappointment, happiness, disgust. They are also used to indicate irony, to underline

insults and expletives, and to command something urgently. As with the colon, some companies prefer to leave a blank space immediately before the exclamation and the question mark, claiming that this way they are more evident on the screen. The common rule is that both signs are written immediately after the word that precedes them, without any blank space in between, and separated with a space from the word that immediately follows (Díaz Cintas and Remael, 2014: 109), as shown below.

Netflix subtitles (English): 35: 00:01:24,852 --> 00:01:26,418 I said, "Holy!"
Netflix subtitles (Italian): 29: 00:01:24,358 --> 00:01:25,776 Mi sono detto: "Porca vacca!"
My translation: 29: 00:01:24,358 --> 00:01:25,776 Mi sono detto: "Accidenti!"

Here the exclamation mark is used to underline the speaker's surprise. In terms of register, I preferred to translate "*Holy!*" as "*Accidenti!*" instead of "*Porca vacca!*" because I thought that "*Porca vacca!*" sounded a bit rude and out of context.

When the exclamation or question mark coincides with the end of a subtitle, it suggests the viewer that the sentence is over and does not spread over multiple subtitles and projections:

Netflix subtitles (English): 556: 00:33:19,745 --> 00:33:23,747 What is creating all this energy?
Netflix subtitles (Italian): 529: 00:33:01,587 --> 00:33:04,548 Cosa crea tutta questa energia?
My translation: 529: 00:33:01,587 --> 00:33:04,548

Cosa crea tutta questa energia?

As far emotional punctuation marks are concerned, there is always the risk of overusing them in subtitling. Subtitles should not be overloaded with unnecessary punctuation marks that do not add any information because this would be pleonastic and occupies space on screen.

In cases when the translation job needs to be done fast, i.e. mainly when translating directly from the dialogue list or from templates, there is a risk of copycatting in the subtitles the same amount of punctuation as in the working documents. Then, the subtitler may overuse exclamation marks to reflect an excited or histrionic performance. However, since subtitles are only a part of the whole audiovisual programme, viewers can also apprehend certain emotions, e.g. surprise, sadness, anger, disappointment, directly from the original soundtrack or image. For this reason, guidelines recommend not to rely only on the script when deciding whether to use exclamation marks and to listen to the actual dialogue and the way it is delivered by the characters (Díaz Cintas and Remael, 2014: 110).

4.1.5 Dashes (–) and hyphens (-)

Dashes and hyphens are different signs, but they both are considered the same sign for subtitling purposes. Their general function is to link compound words or create new adjectival groups:

We get a new 6,000-light-year distance.	*Abbiamo una nuova distanza di 6.000 anni luce.*

The parenthetical dash, used as an alternative to brackets, should be possibly avoided when subtitling, as shown in the following example:

Netflix subtitles (English): 75: 00:04:20,441 --> 00:04:25,311 here, at a remote location

in Washington state, 76: 00:04:25,313 --> 00:04:27,546 Where - for the first time -
Netflix subtitles (Italian): 67 00:04:03,225 --> 00:04:07,062 qui, in un luogo remoto dello stato di Washington, 68: 00:04:07,145 --> 00:04:08,939 dove, per la prima volta,
My translation: 67 00:04:03,225 --> 00:04:07,062 qui, in un luogo remoto dello stato di Washington, 68: 00:04:07,145 --> 00:04:08,939 dove per la prima volta

4.1.6 Triple dots (…)

As already mentioned, each subtitle is displayed on screen as an individual and isolated unit. In order to ease viewers' readability, when a sentence is not finished in one subtitle and needs to be carried over to the next subtitle or following subtitles, continuation dots are generally used as a bridge at the end of the first subtitle and the beginning of the following one (Díaz Cintas and Remael, 2014: 112). This use of the three dots is unique to subtitling and no spaces are left between the dots and the words or punctuation marks that precede or follow them. It is important to underline that the word following the dots is written in lower case, as it is a continuation of the previous subtitle:

Netflix subtitles (English): 61: 00:03:21,349 --> 00:03:24,116

Once thought too strange to be real... 62: 00:03:25,553 --> 00:03:29,722 ...black holes shatter our very understanding of physics.
Netflix subtitles (Italian): 54: 00:03:03,332 --> 00:03:05,918 Un tempo creduti troppo strani per essere reali, 55: 00:03:07,002 --> 00:03:11,256 i buchi neri mandano in frantumi le nostre conoscenze sulla fisica.
My translation: 54: 00:03:03,332 --> 00:03:05,918 Un tempo creduti troppo stravaganti per essere reali, 55: 00:03:07,002 --> 00:03:11,256 i buchi neri distruggono le nostre conoscenze sulla fisica.

Here, it is possible to see how the usage of triple dots is conceived in a completely different way by English and Italian audiovisual translators. As mentioned above, English has its specific guidelines about the use of the three dots, while Italian language prefers to limit their usage. According to RAI conventions, they should be possibly avoided in order to produce a more cohesive context within the subtitles (RAI, 2018). Moreover, as far as Italian subtitles are concerned, triple dots are now mainly used in audiovisual programmes designed for children and are still accepted in the case of sudden pauses in one character's speech or at the beginning of inaudible subtitles.

However, as Díaz Cintas and Remael (2014: 113) point out, the tendency of using triple dots to carry over the unfinished sentence to the next subtitle is now changing. The usage of dots with this function seems a rather uneconomical way of conveying information where space limits are often an issue. Therefore, "the trend nowadays is to act by default. That is, if the subtitle does not have a full stop at the end of the line, then it means that the sentence is not finished and continues into the following subtitle". The lack of a full stop, along with the fact that the next subtitle starts with a small letter, are sufficient signals to understand that the second subtitle projection must be the continuation of the previous one.

4.1.7 Cardinal and ordinal numbers

Subtitlers have to be careful when dealing with numbers, since certain strategies imply a degree of manipulation of the reading speed. They can condense the text physically but not semantically. However, the problem does not arise in isolated subtitles, but if many numbers appear in a sequence of subtitles, this may become an issue. One way of facilitating the reading process is then to leave the subtitles a bit longer on the screen, but without breaking the golden rule of the six seconds (Díaz Cintas and Remael, 2014: 137).

Another general stylistic recommendation, applicable also to other languages and text types, is that a subtitle or a new sentence should not start with a figure written in digits whenever possible. In the case of cardinal numbers, the general rule is to write them in letters from one up to ten included. From eleven onwards, numbers are written in digits, like in the following examples.

The first picture of a black hole was taken one years ago.	La prima foto di un buco nero risale ad un anno fa.
It originated over 50 years ago.	Ha avuto origine più di 50 anni fa.

Some exceptions to this rule are presented by the numbers of houses, flats, apartments and hotel rooms, which are always written in digits, as well as the days of the month in some languages. Moreover, numbers from one up to ten are written in digits

only if they are next to units of measurement (e.g. 7 kg, 2 meters, etc.) (Díaz Cintas and Remael, 2014: 134).

As far as ordinal numbers are concerned, there no particularly strict norms about how to present them on screen. Given their length, it is pretty common to find them abbreviated and written in digits. Depending on the subtitling programme used, the English 'st', 'nd' or 'th' endings may appear written in normal font or superscript, though the first case is more common.

Being able to detect black holes is one of the most important discoveries of the 21st century.	Being able to detect black holes is one of the most important discoveries of the 21st century.

4.2 The linguistics of subtitling

Translation Studies have long moved away from the idea of any translation being a faithful rendering of its source text (ST). From the 1980s, the scholars' viewpoint has moved from a fixation on the ST as a determining factor in the transfer from a language and culture to another, to an interest in the target text (TT) and its function at the receiving end. For this reason, as films and TV shows are made, sold, re-edited, translated, remade, re-translated and re-distributed in many formats for different media, "both notions of 'original text' and 'author' indeed seem to evaporate" (Díaz Cintas and Remael, 2014: 144). However, in Díaz Cintas and Remael's opinion, STs continue to be translated into TTs, and "there is no denying that translation remains a linguistic act as well as a cultural one" (Díaz Cintas and Remael, 2014: 144).

As already mentioned, space and time constraints, the task of rendering speech in writing, the presence of the image and the ST itself are some of the challenges that professional subtitlers must face, but all forms of translation present challenges and all translated texts are the final result of a process of reading, interpreting and making decisions. Whether a translation choice is a 'good' or a 'bad' one always depends on a range of different factors and cannot be judged out of context (Díaz Cintas and Remael, 2014: 145).

4.2.1 Text reduction

The written rendering of spoken parts in subtitles consists nearly always in a reduced form of the oral ST. It is obvious that subtitles can never be a complete and detailed version of what is being said in the ST. Consequently, professional subtitlers resort to text reduction as:

1. audiences/listeners can understand and absorb speech faster than they can read. For this reason, subtitles must give them enough time to register and comprehend what is written at the bottom of the screen;
2. viewers must also watch the action on the screen and listen to the original audio; therefore, they need enough time to combine reading with watching and listening;
3. subtitles are limited to a maximum of two lines (a top and a bottom line). How much text they can contain depends on a number of characters previously decided, the time available, the subtitle reading speed, and the speed at which the characters of the SL speak (Díaz Cintas and Remael, 2014: 144-145).

There are two main types of text reduction: partial and total reduction. Partial reduction is possible through condensation and a more concise rendering of the ST. Total reduction is achieved through deletion or omission of lexical items. These two processes are often combined, which results in rewriting, which is a typical feature of subtitling. In other words, having evaluated how much time and space are available for a certain translation and having decided that some form of text reduction is needed, the subtitler moves on by:

- eliminating what is not relevant for the comprehension of the meaning;
- rephrasing what is relevant in as a concise form as is possible or required (Díaz Cintas and Remael, 2014: 145).

Generally speaking, subtitlers must act on the principle of relevance. The question of relevance and of how much can be omitted or otherwise reformulated needs to be

analysed according to the specific context because this varies from film to film and from scene to scene. The relevance theory basically claims that communication works on a principle which is based on a balance "between processing effort and pay off" (Díaz Cintas and Remael, 2014: 148). This is known as the 'mini-max effect', i.e. achieving a maximum effect with a minimum effort.

The best strategy might entail either rephrasing or eliminating, or a combination of the two, but must always be decided with reference to the given context. For example, when subtitling off-screen commentators in a documentary film, rendering all they say may be more important; therefore, a reformulation that helps the subtitler condense the meaning without losing relevant information may be the best choice.

4.2.2 Condensation and reformulation at word level

To what extent the ST should be condensed and rephrased depends on the possible solutions identified by professionals. Since some changes are due to the systemic differences between the two languages involved in the subtitling process, subtitlers must keep in their mind to use the target language intrinsic possibilities to the full, which is why a native or at least near-native proficiency of the target language is absolutely crucial (Díaz Cintas and Remael, 2014: 151).

4.2.2.1 Simplifying verbal periphrases

It is pretty common that colloquial language, especially English, makes considerable use of verbal periphrases that can be lengthy and occupy valuable space. Consequently, subtitlers should try to replace them with much shorter verb forms, if the target language allows to do so:

Netflix subtitles (English):	My translation:
57: 00:02:49,756 --> 00:02:51,890 **Black holes** actually 58: 00:02:51,892 --> 00:02:54,259	51: 00:02:49,756 --> 00:02:54,259 Inghiottono tutto ciò che **incontrano**.

will eat anything that comes in their path.	

In the example above, Jenna Levin, the narrator and author of the documentary, was talking about black holes' nature. In the first subtitle, I decided to simplify the verbal periphrasis by replacing it with a shorter verbal form and I also omitted the subject ('*black holes*'). Moreover, I managed to put all the relevant information into a one-line subtitle.

4.2.2.2 Using a shorter synonym or equivalent expression

Using shorter synonyms is obviously a good strategy in order to save valuable space on screen. However, professionals must consider that:

- synonyms are very often near-synonyms rather than exact equivalents;
- synonyms can belong to different registers and can therefore be less appropriate in a particular context;
- function words instead of content words affect textreadability because they require a longer cognitive processing (Díaz Cintas and Remael, 2014: 151)

As mentioned above, the subtitling process involves the combination of two channels: the audio and the visual one. For this reason, in the example below I decided to substitute the content word "*gravity*" with a function word:

Netflix subtitles (English):	My translation:
187: 00:11:06,552 --> 00:11:09,287 We're all familiar with gravity.	179: 00:11:07,524 --> 00:11:09,317 Tutti conosciamo la gravità.
188: 00:11:13,026 --> 00:11:14,592 **Gravity** rules our lives.	180: 00:11:13,279 --> 00:11:15,198 **Quest'ultima** è alla base delle nostre vite.

In the following example, I decided to use a function word (a pronoun) to replace the content word "*black holes*":

Netflix subtitles (English):	My translation:
148: 00:08:36,669 --> 00:08:39,370 Most of us have heard of **black holes**.	137: 00:08:37,374 --> 00:08:40,293 Molti di noi **ne** avranno sentito parlare.

In the example below, I tried to find a possible equivalent expression in order to save space on screen. In this way, I also managed to fit translation into only one subtitle rather than two different subtitles as in the ST:

Netflix subtitles (English):	A possible equivalent expression:
87: 00:04:47,641 --> 00:04:51,609 **In the early hours** of September 14, 2015, 88: 00:04:51,611 --> 00:04:53,678 they record a message.	87: 00:04:47,641 --> 00:04:51,609 **At the dawn** of September 14, 2015, 88: 00:04:51,611 --> 00:04:53,678 they record a message.

My translation:

80: 00:04:48,353 --> 00:04:52,441 **All'alba** del 14 settembre 2015 registrarono un messaggio.

Another translation that required an equivalent substitute was:

Netflix subtitles (English):	My translation:
175: 00:10:14,234 --> 00:10:16,634 So black holes have	164: 00:10:15,013 --> 00:10:17,557 **La fama** dei buchi neri **li precede**.

a **pretty fierce reputation**.	

I thought that a literal translation of "*pretty fierce reputation*" did not fit into the Italian TT, thus I replaced it with a famous equivalent Italian idiomatic expression, which conveys the same meaning as the ST.

Another case where a possible equivalent expression has been used is the following:

Netflix subtitles (English):	My translation:
133: 00:07:37,444 --> 00:07:40,078 The experiment 50 years in the making	123: 00:07:38,106 --> 00:07:43,320 L'esperimento in corso da 50 anni
134: 00:07:40,080 --> 00:07:42,980 **has finally hit the jackpot**.	124:00:07:43,403 --> 00:07:47,616 **ha finalmente avuto successo**.

According to the Cambridge Dictionary, "*hit the jackpot*" means "to have a big success or make a big profit, usually through luck". Since scientists have been studying black holes for over 50 years, I decided to render this expression with the idea of having an unexpected success.

4.2.2.3 Changing word classes

To solve space problems, another strategy is that of changing word classes. Short alternatives could be, for instance, turning a verb into a noun, an adjective into a verb, a verb into an adverb, and adjective into a noun or vice versa (Díaz Cintas and Remael, 2014: 152):

Adverb into a verb	The bizarre solution to a **seemingly** unsolvable equation.	La stravagante soluzione a quella che **pareva** un'equazione irrisolvibile.

Verb into an adjective	We are talking about things that **are** a billion times the mass of the sun.	Parliamo di oggetti con una massa miliardi di volte **superiore** a quella del sole.

4.2.2.4 Short forms and contractions

As far as English it concerned, the possibility of abbreviating and/or contracting words allows subtitlers to save valuable space on screen. This is the case of short verb forms like "*we're*" in the example below:

Netflix subtitles (English):	A possible reformulation:
63: 00:03:10,744 --> 00:03:13,311 But **we're going to learn** they may somehow be necessary	63: 00:03:10,744 --> 00:03:13,311 But **we'll learn** they may somehow be necessary
64: 00:03:13,313 --> 00:03:16,314 for the universe we know to exist.	64: 00:03:13,313 --> 00:03:16,314 for the universe we know to exist.

Besides saving some space, in this case a compound verb was turned into a simple verb thanks also to the contraction of "*we will*" into "*we'll*".

4.2.3 Condensation and reformulation at clause/sentence level

Changing the mode of a sentence can be useful to reduce subtitles' length. For example, in the subtitle below I decided to replace a negative sentence with an affirmative one in my Italian translation:

Netflix subtitles (English):	My translation:
24: 00:00:53,954 --> 00:00:55,888 Nature **doesn't** work that way.	18: 00:00:54,203 --> 00:00:56,038 La natura **funziona** diversamente.

In the example below, the main speaker was talking about the first concrete claim concerning a black hole existence. I turned an affirmative sentence into a negative one:

Netflix subtitles (English):	My translation:
645: 00:37:47,886 --> 00:37:52,455	618: 00:37:47,886 --> 00:37:52,455
It's a huge claim, and Murdin	**Non era un'affermazione da poco**
will have to convince skeptics.	e Murdin doveva convincere gli scettici.

Besides turning the sentence into a negative one, I chose to use the past tense because Levin was talking about Murdin's discovery in 1970.

4.2.3.1 Changing the subject of a sentence or phrase

Changing the subject of a sentence means also modifying the sentence structure and this may sometimes involve major translation shifts (Díaz Cintas and Remael, 2014: 156). For example, in the subtitle below I decided to change the subject from "*we*" to "*our existence*" and, as a result, I modified the sentence structure as well:

Netflix subtitles (English):	My translation:
40: 00:01:44,472 --> 00:01:48,841	34: 00:01:44,670 --> 00:01:48,924
Is it possible **we** might	La **nostra esistenza**
not exist without them?	sarebbe compromessa senza di loro?

4.2.3.2 Use of pronouns and other deictics to substitute nouns or noun phrases

Deictics are words such as pronouns and adverbs or expressions whose meaning depends on the context in which they occur (e.g. here, the one, we, her, etc.). Since they are strictly dependant on a situation or visual information that has already been established, deictics can provide short translation solutions (Díaz Cintas and Remael, 2014: 160). The subtitle in the first example below is understandable only if read while watching the video as the adverb "*here*" refers to a specific location shown in the documentary:

Netflix subtitles (English):	My translation:
459: 00:27:08,013 --> 00:27:13,283 From **here**, I can see the shadow of the event horizon approaching.	440: 00:27:08,943 --> 00:27:13,572 Da **qui** posso vedere avvicinarsi l'ombra dell'orizzonte degli eventi.

In this other case, the demonstrative pronoun "*these*" is used as a substitute for the noun "*people*":

Netflix subtitles (English):	My translation:
513: 00:30:43,328 --> 00:30:45,161 And **these** do look a lot like baseball fans.	496: 00:30:43,532 --> 00:30:46,034 **Sembrano** proprio dei tifosi di baseball.

4.2.3.3 Merge of two or more phrases/sentences into one

Another strategy to solve space problems can be merging short sentences of the ST. An advantage of this practice is that of rendering the narration's actions more explicit, so that viewers see or understand them quickly while watching the video. However, subtitlers should keep in mind that improving clarity and readability by cutting up lengthy interventions may affect the final meaning of the TT.

Since Levin speaks really slowly throughout all the two-hour documentary, the ST subtitles are fragmented into many one-liners. For this reason, I often decided to merge subtitles in order to enhance TT readability, cohesion and fluency:

Netflix subtitles (English):	My translation:
106: 00:06:03,717 --> 00:06:07,986 It sends out a wave not of heat, or light, or sound, 107: 00:06:07,988 --> 00:06:11,222 but of gravity.	102: 00:06:03,717 --> 00:06:07,986 Non invia né un'onda di calore né di luce o sonora, bensì di gravità.

The ellipsis in the example below (the repetition of "*black holes*" has been avoided) is filled by the previous question and the context of the narration, so I thought that repeating "*black holes*" was unnecessary to the comprehension of the TT. Moreover, I managed to save space on screen by merging two subtitles into one:

Netflix subtitles (English):	My translation:
177: 00:10:20,907 --> 00:10:24,842 But in reality, what exactly are **black holes**? 178: 00:10:24,844 --> 00:10:26,577 And where do **black holes** come from?	166: 00:10:21,853 --> 00:10:25,482 Ma nella realtà, cosa sono i **buchi neri** e da dove provengono?

4.2.4 Omissions

As shown above in many examples involving reformulation, omissions are inevitably part of the subtitling process. Indeed, according to Díaz Cintas and Remael, "omissions and reformulation go hand in hand, and sometimes reformulations may be more effective than downright omissions, but foolproof guidelines do not exist" (Díaz Cintas and Remael, 2014: 162). The usage of omission is pretty common in cases of redundancy because a word, phrase or its content may be repeated elsewhere in the same or the previous/following subtitle or may not be relevant. In other situations, the images usually bridge the gap.

In order to omit or delate something, professionals need to distinguish what is essential from what is not relevant. The omission of entire parts of a dialogue may affect readability and alter the meaning of the ST.

4.2.4.1 Omissions at word level

The decision to omit words in the examples below stems from redundancy or relevance issues. When translating from English into Italian, for instance, it may not always be necessary to translate modifiers, mostly adjectives and adverbs, if they do no more than

modifying the information carried by the verb or noun. For example, in the subtitle below I decided to delate two adjectives ("*closer*" and "*faster*") to avoid redundancy in TT:

Netflix subtitles (English):	My translation:
97: 00:05:32,218 --> 00:05:34,252 **Closer** and **closer** they come, swirling **faster** and **faster**, 99: 00:05:36,923 --> 00:05:39,824 until finally, they slam together.	93: 00:05:32,218 --> 00:05:34,252 **Più** si **avvicinavano**, **più giravano** vorticosamente fino a scontrarsi.

I also decided to merge two two-line subtitles in order to keep all the information in one two-liner and enhance readability. Moreover, I chose to use the past tense because Levin was talking about how the impact of two black holes generated a gravitational wave over a billion light years ago.

Here, again, the Levin was speaking about the inception of gravitational waves and I chose to omit an adjective:

Netflix subtitles (English):	My translation:
90: 00:04:59,853 --> 00:05:01,553 Just a **little** chirp.	86: 00:04:59,853 --> 00:05:01,553 Come un cinguettio.

In my opinion "*chirp*" is already something perceived as almost inaudible. For this reason, I thought that the modifier did not add other relevant information to the ST meaning.

The example below is about a scene where Levin is giving a concrete example about how gravity works. I decided to omit the adverb "*now*" because I thought it did not add relevant details or information to her explanation:

Netflix subtitles (English):	My translation:
217: 00:12:43,483 --> 00:12:47,818	208: 00:12:43,912 --> 00:12:46,122

Now, if I throw the apple, 218: 00:12:47,820 --> 00:12:51,756 it falls along a curved path.	Se lancio la mela cadrà seguendo la traiettoria di una parabola.

In this way, I also managed to merge two different subtitles into one and to save some valuable space without affecting the final meaning of the explanation.

There is also the possibility to omit entire sentences or even clauses, though it is certainly not advisable. However, there are cases in which a certain intervention may convey a very little relevant information. This is the situation that occurs, for instance, in a noisy crowded scene where some interventions may not require to be subtitled. In other cases, the music may cover the spoken parts, or several characters may be talking at the same time. In such situations the dialogue may function as a frame for the background (Díaz Cintas and Remael, 2014: 166).

As far as this dissertation is concerned, omissions at clause/sentence level did not occur during the subtitling process of the Netflix documentary. The ST parts subtitled were full of crucial information about how gravitational waves were 'heard' for the first time in 2015 and how new discoveries concerning black holes are now having a strong impact on studies within the discipline.

4.2.5 Segmentation and line breaks

A careful segmentation of the ST information can help reinforce coherence, cohesion and fluency during the subtitling process. Professionals are responsible for creating subtitles that can be easily read and understood in the short time they appear on screen. Moreover, they should consider leaving some space to isolate them from previous and following subtitles. To achieve this goal, one of the golden rules is to structure subtitles in such a way that they are semantically and syntactically self-contained. When possible, subtitles should have a clear structure and try to avoid ambiguities. However, this is not always the case and it is then that a careful segmentation becomes fundamental (Díaz Cintas and Remael, 2014: 172).

In subtitling, segmentation is the process involving splitting up the ST into sections or segments (subtitles) that the viewers can easily understand while watching the video. Segmenting can be done on two different levels:

1. a sentence may require to be spread over the two available lines of a subtitle;
2. the same sentence may go on to the next or more subtitles.

In these cases, the segmentation rules are basically the same within and across subtitles, but when distributing text over more than one subtitle, subtitlers should consider the memory span of viewers of any age group is different and limited. Therefore, complex sentences that are difficult to be read quickly should be split into smaller units (Díaz Cintas and Remael, 2014: 172).

As far as segmentation is concerned, two-line subtitles should be segmented following syntactic and grammatical considerations rather than aesthetic rules, e.g. having the bottom line longer than the top one. Neither should subtitlers wait to fill the top line before dealing with the bottom one. Sometimes, the second line can be shorter than the first one and vice versa (Díaz Cintas and Remael, 2014: 172-173).

4.2.5.1 Line breaks within subtitles

Due to their narrative style, documentary scripts usually have quite long lines. However, in this documentary about black holes, most sentences were shortened to help viewers understand the whole context and enjoy the images at the same time.

Generally speaking, it is advisable to use one line for each clause if a subtitle consists of a sentence with two long subordinated or coordinated clauses and inserting one after the other is impossible because of spatial constraints:

Netflix subtitles (English):	My translation:
68: 00:03:27,561 --> 00:03:32,230 Where are they, **and** how do they control the universe?	64: 00:03:27,561 --> 00:03:32,230 Dove si trovano? **E** come controllano l'universo?

Another example of coordinated clauses:

Netflix subtitles (English):	My translation:
158: 00:09:01,728 --> 00:09:06,731 Approach one, **and** time itself begins to change.	153: 00:09:01,728 --> 00:09:06,731 Avvicinandosi a un buco nero **anche** il tempo inizia a variare.

In this case, I was forced to explicit the subject ("*black hole*") in order to make the sentence easily understandable. Moreover, the meaning of the TT is slightly different from the meaning of ST and this is mainly due to spatial constraints and fluency issues.

There are situations in which it will be impossible to segment subtitles in such clear ways. Some professionals feel that having equilibrium in line length is more aesthetically pleasing and sometimes the client will decide the layout rules. However, which line is the longest is first determined by word groups that must not be divided (Díaz Cintas and Remael, 2014: 177). For example, it is not advisable to separate adjectives from nouns or adverbs, adverbs from verbs, articles from nouns, prepositions from propositional clauses:

Netflix subtitles (English):	My translation:
53: 00:02:38,545 --> 00:02:40,211 Black holes are **the greatest** **mystery** in the universe.	47: 00:02:38,545 --> 00:02:40,211 Sono **il più grande mistero** dell'universo.

Since in Italian subjects are often implicit, I managed to omit "*black holes*" and keep all the relevant information in a one-line subtitle.

If a sentence contains a to-infinite, a phrasal verb, or collocation, an attempt should be made not to split them up:

Netflix subtitles (English):	My translation:
56: 00:02:45,986 --> 00:02:49,754 They can tear a star **to** shreds.	53: 00:02:45,986 --> 00:02:49,754 Possono **ridurre** una stella a brandelli.

1486: 01:25:20,669 --> 01:25:23,703 It's something we'**ve** all **seen** in nature.	1419: 01:25:21,515 --> 01:25:24,017 È una cosa che **abbiamo** già **osservato** in natura.

In the case a sentence contains a compound verbal form, subtitlers should try not to separate the auxiliary from the lexical verb (past participle or infinitive). In the example below, I managed to put all the information in a one-line subtitle:

Netflix subtitles (English): 446: 00:26:10,789 --> 00:26:13,423 and we'**re going to start** **experiencing** the effects.	My translation: 427: 00:26:11,844 --> 00:26:14,305 e **stiamo per sperimentarne** gli effetti.

4.2.5.2 Line breaks across subtitles

As I already mentioned, this documentary had a pretty fragmented narrative structure. For this reason, in many cases it was impossible to make sentences and subtitles coincide because the subtitles' structure had already been divided into smaller units. Therefore, there are many examples in which sentences had to run over two or even more subtitles. As Díaz Cintas and Remael point out, in these cases the same rules concerning "syntactic-semantic segmentation has to be applied […]. The clause or word group that constitutes it must take sense and anticipate the ending that is still to come" (Díaz Cintas and Remael, 2014: 178).

However, it is not advisable to display a sentence made of too many subtitles on screen. Dividing it into smaller units with a full stop at the end would avoid straining viewers' memory. For example:

Netflix subtitles (English): 15: 00:00:34,168 --> 00:00:36,635 First discovered on paper... 16: 00:00:36,637 --> 00:00:38,871	My translation: 14: 00:00:34,168 --> 00:00:36,635 Sono stati teorizzati per la prima volta frettolosamente 15: 00:00:38,873 --> 00:00:40,439

On the back of an envelope, 17: 00:00:38,873 --> 00:00:40,439 some squiggles of the pen. 18: 00:00:40,441 --> 00:00:42,908 ...the bizarre solution 19: 00:00:42,910 --> 00:00:46,578 to a seemingly unsolvable equation... 20: 00:00:46,580 --> 00:00:47,413 A mathematical enigma...	con degli scarabocchi a penna. 16: 00:00:40,441 --> 00:00:42,908 La stravagante soluzione a quella che pareva un'equazione irrisolvibile. 17: 00:00:46,580 --> 00:00:47,413 Un enigma matematico.

When possible, I tried to avoid splitting word groups which were supposed to be together. Therefore, in order to save some space on screen and enhance the viewers' readability, I decided to merge two different subtitles: number 14 with number 15 and number 18 with number 19. Moreover, I also put a full stop at the end of three subtitles (number 15, 16 and 17) to have more cohesion in TT.

5. “THE BLACK HOLE APOCALYPSE” SUBTITLES

5.1 Introduction and the plot

The Black Hole Apocalypse is the first episode of Nova series produced by the American Public Broadcasting Service (PBS). In 2019, the documentary rights were obtained by Netflix and the media giant decided to produce its own subtitled tracks in many different languages. The documentary is a two-hour programme about the enigmatic and exotic nature of black holes. The astrophysicist Jenna Levin plays the role of the narrator and takes the viewers on a journey to and beyond the frontiers of black hole science. The narration starts from the first discoveries about black holes and gravitational waves and ends with the latest news about them in 2018. Many scientists and astrophysicists are interviewed about black holes’ evolution throughout the whole documentary.

At the beginning of the documentary, some basic notions about astrophysics are introduced and then explained in detail using specific terminology. Thanks to a great use of computer-generated imagery (CGI) and metaphorical language, the narration is really captivating and able to grab the viewers’ attention. Although the narrative style simplifies notions a lot, the programme can be still considered scientifically accurate and coherent. This documentary is designed for a general public, ranging from those who hardly know something about black holes to people with some basic knowledge about these matters and a general interest in science.

I chose to subtitle two different parts of “*The Black Hole Apocalypse*” documentary: the first 45 minutes and the last 20 minutes. Therefore, this translation involves a brief history about black holes, the inception of gravitational waves, an explanation about how gravity and black holes work, the Newton’s laws of motion, Einstein’s theory of general relativity, and the latest discoveries within the field.

5.2 Part 1

00:00:34,168 --> 00:04:13,471

First discovered on paper...	*Sono stati teorizzati*
On the back of an envelope,	*per la prima volta frettolosamente*
some squiggles of the pen.	*con degli scarabocchi a penna.*
...the bizarre solution	*La stravagante soluzione a quella che*
to a seemingly	*pareva un'equazione irrisolvibile.*
unsolvable equation...	
A mathematical enigma...	*Un enigma matematico.*
Einstein himself	*Lo stesso Einstein*
could not accept black holes	*non riusciva ad accettare*
as real.	*che i buchi neri fossero reali.*
People didn't even believe for	*Per molti anni la gente*
many years that they existed.	*non credeva nemmeno che esistessero.*
Nature doesn't work that way.	*La natura funziona diversamente.*
Yet slowly, as scientists	*Eppure, man mano che*
investigate black holes	*gli scienziati li studiano,*

by observing
the effect they have

osservando che effetti hanno

on their surroundings,

su ciò che li circonda,

evidence begins to mount...

ci sono sempre più indizi...

That is the proof
of a black hole.

È la prova che
i buchi neri esistono.

Millions of times
the mass of the sun.

Una massa milioni
di volte superiore a quella del Sole.

Cutting-edge discoveries show...

Le ultimissime scoperte dimostrano...

We did it!

Ce l'abbiamo fatta!

...black holes are very real.

...che i buchi neri esistono eccome.

I thought it was crazy.

È stato pazzesco.

I said, "Holy!"

Mi son detto: "Accidenti!"

But what exactly are they?

Ma cosa sono esattamente?

If we could visit one,
what might we see?

Se potessimo visitarne uno,
cosa vedremmo?

With their immense power,
do black holes somehow shape

Grazie al loro immenso potere,
in qualche modo danno forma

the very structure

alla struttura dell'universo?

of the universe?

Is it possible we might
not exist without them?

La nostra esistenza
sarebbe compromessa senza di loro?

It's quite a journey.

È incredibile.

There are apocalyptic objects
in the universe:

Esistono dei corpi apocalittici
nell'universo:

engines of destruction,

motori di distruzione,

menacing and mysterious.

minacciosi e oscuri.

Black holes.

I buchi neri.

Even scientists
who study them

Anche gli scienziati
che li studiano

find them astonishing.

li trovano sorprendenti.

Black holes can sort of
blow your mind.

I buchi neri
sono davvero strabilianti.

I'm amazed that these objects
actually exist.

Sono stupito
che esistano davvero.

Black holes defy
our understanding of nature.

I buchi neri sfidano
la nostra comprensione della natura.

Black holes are the greatest
mystery in the universe.

Sono il più grande mistero dell'universo.

They're completely invisible,

yet powerful beyond imagining.

They can tear a star
to shreds.

Black holes actually

will eat anything
that comes in their path.

You really want to avoid them
at all cost.

Black holes even slow time.

Once thought too strange
to be real...

...black holes shatter our very
understanding of physics.

But we're learning they may
somehow be necessary

for the universe we know
to exist.

They might well be the key

Sono totalmente invisibili,

eppure potenti
oltre ogni immaginazione.

Possono ridurre
una stella a brandelli.

Inghiottono tutto ciò
che incontrano.

Meglio evitarli ad ogni costo.

Rallentano perfino il tempo.

Un tempo creduti
troppo bizzarri per essere veri,

i buchi neri mandano in frantumi
le nostre conoscenze sulla fisica.

Ma stiamo iniziando a capire
che potrebbero essere indispensabili

per l'esistenza dell'universo che conosciamo.

Potrebbero svolgere

players in the universe.

un ruolo chiave nell'universo.

What are these strange,
powerful objects,

Cosa sono questi
Oggetti così bizzarri, potenti,

outrageous and surprising?

eccezionali e sorprendenti?

Where are they, and how
do they control the universe?

Dove si trovano?
Come controllano l'universo?

The search for black holes
is on.

La ricerca dei buchi neri è iniziata.

And it will be a wild ride
across the cosmos

E sarà un'avventura nell'universo

to places where everything you
think you know is challenged --

dove tutto ciò che credete
di conoscere sarà messo in discussione.

where space and time,
even reality,

Dove lo spazio, il tempo
e perfino la realtà

are stranger than fiction.

sono più straordinari della fantasia.

And we're starting that journey
at a very unlikely place:

E inizieremo questo viaggio
in un luogo davvero improbabile:

here, at a remote location
in Washington state,

qui, in un luogo remoto
dello stato di Washington,

where-- for the first time--

dove per la prima volta

a radical new experiment

has detected black holes.

un esperimento del tutto nuovo

ha rilevato i buchi neri.

5.3 Part 2

00:08:41,941 --> 00:12:51,756

We are talking about things

that are a billion times

the mass of the sun.

Parliamo di oggetti con una massa

miliardi di volte

superiore a quella del Sole.

Bizarre.

Stravaganti.

A physical entity

with infinite density.

Un'entità fisica

con una densità infinita.

No beginning, no end.

Senza inizio né una fine.

They pull things in.

Attirano gli oggetti.

And warp light.

E distorcono la luce.

Approach one, and time itself

begins to change.

Vicino a un buco nero

anche il tempo inizia a variare.

The gravity is so intense

that a moving clock

will tick slower.

La gravità è così intensa

che anche un orologio funzionante

andrebbe a rilento.

Time will become so slow for you

that you will watch the entire
future of the universe

unfold before your very eyes.

Fall in, and you'd be squeezed
as thin as a noodle.

You'll be extruded through
the fabric of space and time

like toothpaste through a tube.

Today, we know more about
black holes than ever before.

But the more we learn,
the more mysterious they become.

They're the most exotic objects
in the universe.

We don't have the physics
to describe them.

No matter how well
you understand them,

Il tempo scorrerebbe così lento

che si potrebbe osservare
l'intero futuro dell'universo

aprirsi davanti agli occhi.

Cadere al suo interno significherebbe
comprimersi come uno spaghetto.

Si verrebbe espulsi
dal tessuto spazio-temporale

come dentifricio dal tubetto.

Oggi conosciamo i buchi neri come mai prima d'ora.

Ma più si studiano,
più diventano misteriosi.

Sono i corpi più insoliti
di tutto l'universo.

La fisica
non è in grado di descriverli.

A prescindere
da quanto si possano comprendere,

they remain unreachable

in some sense.

Now man is about to enter...

the black hole!

So black holes have

a pretty fierce reputation.

And if you want a villain for a

sci-fi movie, cast a black hole.

But in reality, what exactly

is a black hole?

And where do they come from?

You might think a black hole

is like this-- an object.

But it's not.

It's a hole

in the fabric of space.

A place where there is nothing;

nothing except gravity,

gravity at its most intense

and overwhelming.

rimangono pur sempre

irraggiungibili.

Ma ora l'uomo sta per entrare...

nel buco nero!

La fama dei buchi neri li precede.

I buchi neri sono il cattivo perfetto

per un film di fantascienza.

Ma nella realtà, cosa sono

e da dove (pro)vengono?

Penserete che il buco

nero sia come questo.

Ma non è così.

È un buco

nel tessuto dello spazio.

Un luogo dove non

c'è nulla tranne la gravità,

gravità all'ennesima potenza.

So if black holes are
all about gravity--

gravity at its most extreme--

what exactly is gravity?

We're all familiar
with gravity.

Yep, it's Friday.

It rules our lives.

But even so,
for a very long time,

how gravity actually works

was one of
the greatest mysteries.

Over 300 years ago,

Isaac Newton was fascinated

with the behavior
of moving objects.

Eventually he figured out
his laws of motion.

Quindi, se i buchi neri
non sono altro che gravità

ai suoi massimi livelli,

che cos'è la gravità?

Tutti conoscono la gravità.

Sì, è venerdì.

Governa le nostre vite.

Ciononostante,
per molto tempo,

come funzionasse la gravità

è rimasto uno
dei misteri più grandi.

Più di 300 anni fa,

Isaac Newton si interessò

al comportamento
degli oggetti in movimento.

Comprese poi
i principi della dinamica.

They work so well,
we still use them today.

Lift-off, we have lift-off
at 9:34 a.m.

But Newton's laws can only
describe gravity's effects,

not explain what it is.

And here's where
Albert Einstein comes in.

Like Newton, he thinks
about objects in motion.

And he wonders
what gravity actually is.

Is it a force?

Or could it be something else?

Here's what concerns Einstein.

Take this apple.

I can't move it
without touching it.

Funzionano così bene
che li usiamo tutt'ora.

Decolliamo
alle 9:34 di mattina.

Ma le leggi di Newton descrivono
solo gli effetti della gravità

senza spiegare cosa sia.

E qui entra
in gioco Albert Einstein.

Come Newton, osservava
il moto degli oggetti.

E si chiedeva che cosa
fosse realmente la gravità.

È una forza?

O potrebbe essere qualcos'altro?

Ecco cosa si domandava Einstein.

Prendete questa mela.

Non posso muoverla
senza toccarla.

But if I drop the apple,	*Ma se la faccio cadere,*
it moves toward the Earth.	*si muove verso la Terra.*
But what if I take my hand away,	*Ma cosa succederebbe*
	se togliessi la mano?
and the floor, and the basement,	*E togliendo il pavimento,*
and the floor below that?	*il seminterrato e ciò che c'è sotto?*
Then what happens?	*Cosa accadrebbe?*
The apple just keeps falling.	*La mela continuerebbe a cadere.*
Einstein realized that gravity	*Einstein capì che la gravità*
had something to do	*aveva a che fare con il cadere.*
with falling.	
Now, if I throw the apple,	*Se lancio la mela cadrà seguendo*
it falls along a curved path.	*la traiettoria di una parabola.*

5.4 Part 3

00:36:28,740 --> 00:38:03,266

The crucial issue in deciding	*La prova definitiva per decidere*
whether Cygnus X-1	*se Cygnus X-1*
was a black hole	*fosse un buco nero*
was to measure the mass	*era misurare la massa*

of the X-ray-emitting object.

It would have to be
very massive,

at least three times
the mass of our sun.

If not, it's probably
just a neutron star--

a collapsed star that's dense,

but not heavy enough
to be a black hole.

So the observers needed
to come up with a conclusion

that the dark object,

the X-ray-emitting object
in Cygnus X-1,

was heavier, hopefully
substantially heavier,

than three solar masses.

From his observations, Murdin
is able to make an estimate

del corpo che emetteva raggi X.

Sarebbe dovuto essere gigante,

almeno tre volte
la massa del Sole.

Altrimenti con molta probabilità
si trattava solo di una stella di neutroni,

ovvero una stella collassata densa

ma troppo leggera
per essere un buco nero.

Gli osservatori conclusero
che l'oggetto oscuro,

quello che emetteva raggi X in Cygnus X-1,

fosse più pesante,
magari più di tre masse solari.

In base alle sue osservazioni,
Murdin fu in grado di stimare

of the mass
of the invisible partner.

la massa dell'oggetto invisibile.

And the answer came out to be
six times the mass of the sun.

E la risposta fu che era
sei volte la massa del Sole.

So there was a story, then,

Allora si cominciò a credere

that Cygnus X-1
was a black hole.

che Cygnus X-1
fosse un buco nero.

And the key to the argument was

E la prova principale

that the mass of the star
you couldn't see

era che la massa
della stella invisibile

was more
than three solar masses.

fosse più grande
di tre masse solari.

When I'd finished writing it all
out, I sat back and thought,

Quando finii di scrivere tutto,
mi fermai e pensai:

"It's a black hole."

"È un buco nero."

This would be the first actual
detection of a black hole.

Sarebbe stata la prima vera scoperta
di un buco nero.

It's a huge claim, and Murdin
will have to convince skeptics,

Non era un'affermazione da poco
e Murdin doveva convincere gli scettici.

starting with his boss.

The Astronomer Royal,

Sir Richard Woolley.

He didn't really go

for black holes.

"It's all fanciful..."

A cominciare dal suo capo:

l'astronomo reale,

Sir Richard Woolley.

I buchi neri

non lo convincevano.

"È solo fantascienza."

CONCLUSIONS

The aim of this dissertation was to stress how AVT, and particularly subtitling, plays now a key role in popularizing science in the digital era. An analysis of the subtitling practice was possible thanks to the translation of the Netflix documentary "*Black Hole Apocalypse*" subtitles, with special reference to punctuation conventions, reformulation, omissions and segmentation that helped me carry out my analysis and research.

In the first chapter, a definition and an overview of popular science were provided to underline the necessity of communicating science in an easy understandable language to bridge the gap between scientists and the general public. The documentary I translated was a good example of how it is possible to simplify scientific language and notions in order to make science accessible to everyone. Indeed, people are more likely to care about science when they understand what scientists will eventually do.

The second chapter was entirely based on AVT and its crucial role in the digital era. The advent of globalization, as a process involving people all over the world, and the new technologies, had an undeniable impact on many fields and professions, including translation.

Another task of this dissertation was to show that subtitling should not be underestimated as a form of translation. Although it might seem a simple practice, subtitling requires skills such as technical, linguistic, general, project management and interpersonal skills. Consequently, learning, mastering and applying these skills take a long time and proper academic training.

While translating, I realized that the decision-making process is sometimes pretty challenging. The most difficult part of my work was trying not to omit or sacrifice relevant information of the source text (ST). There were cases in which I decided to rephrase in order to enhance readability and the fluency of the target text (TT). Therefore, I tried to render the original meaning of the ST from English into the Italian as much as possible. However, there were also situations in which I had to cut out elements that I thought were not essential for the final comprehension of the TT, e.g. adjectives or adverbs that would have otherwise been redundant. Also, rephrasing was necessary to save some valuable space on screen and enhance the viewers' readability.

Such operations were not always easy because the ST was sometimes loaded of information and specific terminology could not be sacrificed or substituted. Translating and communicating popular science may be very challenging, but, in my opinion, it is a worthy effort AVT programmes should do in order to reinforce the link between science communication and the general public. Hopefully, given the growing interest in AVT modes, universities will invest more resources to research this field of Translation Studies in the next future.

REFERENCES

Antonini R., Chiaro D., (2009), *The Perception of Dubbing by Italian Audiences*. London: Palgrave Macmillan.

Baker M., (1998), *In Other Words: A Coursebook on Translation*. New York: Routledge.

Bartusiak M., (2015), *How an Idea Abandoned by Newtonians, Hated by Einstein, and Gambled on by Hawking Became Loved*. New Heaven, Connecticut: Yale University Press.

Bassanese P., (2017), "*Translating Netflix Subtitles: Netflix and Earn? (The Hermes Test)*", https://www.energyanaturalfacelift.com/2017/04/translating-netflix-subtitles/, (last visited on 06/06/2020).

Bernal-Merino M.À., (2008), *Translation and localisation in video games: Making entertainment software global*. New York: Routledge.

Bond E., (2018), "*Why Netflix Shut Down Its Translation Portal Hermes*", https://slator.com/demand-drivers/why-netflix-shut-down-its-translation-portal-hermes/, (last visited on 03/09/2020).

Bond E., (2020), "*How Netflix Researchers Simplify Subtitles for Translation*", https://slator.com/machine-translation/how-netflix-researchers-simplify-subtitles-for-translation/, (last visited on 03/09/2020).

Bosseaux C., (2019), "*Investigating dubbing: learning from the past, looking to the future*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 48-63.

Broks P., (2006), *Understanding Popular Science (Issues in Cultural and Media Studies)*. London: Open University Press.

Bucchi M., (2004), *Science in Society: An Introduction to Social Studies of Science*. New York: Routledge.

Burnham J.C., (1987), *How Superstition Won and Science Lost: Popularizing Science and Health in the United States*. New Brunswick, New Jersey: Rutgers University Press.

Cambridge Dictionary, (2020), *Cambridge Dictionary Online*, https://dictionary.cambridge.org/it/, (last accessed 06/09/2020).

Campbell V., (2016), *Science, Entertainment and Television Documentary*. London: Palgrave Macmillan.

Cerón C., (2001), "*Punctuating subtitles: typographical conventions and their evolution*", in Gambier Y. and Gottlieb H. (eds.), (2001), *(Multi)Media Translation: Concepts, Practices, and Research*. Amsterdam and Philadelphia: John Benjamins, pp. 173-177.

Chaume F., (2004), "*Discourse Markers in Audiovisual Translating*",

https://www.erudit.org/fr/revues/meta/2004-v49-n4-meta832/009785ar/, (last accessed 14/09/2020).

Chaume F., (2012), *Audiovisual Translation: Dubbing*. New York: Routledge

Delabatista D., (1989), *Translation and Mass-Communication*. Babel 35 (4)

DePalma D. A. et al., (2014), *The Language Services Market*. Cambridge, Massachussets: Common Sense Advisory, Inc.

Derasse B., (1987), "*Dubbers and subtitlers have a prime role in the international distribution of television programmes*". EBU Review. Programmes, Administration, Law 38(6), pp. 8-13.

Dìaz Cintas J., (2008), "*Teaching and learning to subtitle in an academic environment*", in Dìaz Cintas J. (eds.), (2008), *The Didactics of Audiovisual Translation*. Amsterdam and Philadelphia: John Benjamins, pp. 89-103.

Dìaz Cintas J., (2013), "*The technology turn in subtitling*", in Thelen M. and Lewandowska-Tomaszczyk B. (eds.), (2013), *Translation and Meaning*. Maastricht, Netherlands: Zuyd University of Applied Sciences.

Díaz Cintas J., Orero P., (2006), "*Voiceover and dubbing*", in Gambier Y. and van Doorslaer L. (eds.), (2006), *Handbook of Translation Studies: Volume 1*. Amsterdam and Philadelphia: John Benjamins, pp. 441-445.

Díaz Cintas J., Remael A., (2014), *Audiovisual Translation: Subtitling*. New York: Routledge.

Díaz Cintas J., Sánchez M. P., (2006), *Fansubs: Audiovisual Translation in an Amateur Environment*, in The Journal of Specialised Translation 6:37-52.

Drake N., (2019), "*First-ever picture of a black hole unveiled*", https://www.nationalgeographic.com/science/2019/04/first-picture-black-hole-revealed-m87-event-horizon-telescope-astrophysics/, (last accessed 04/08/2020).

Estopace E., (2017), "*Netflix Has Nearly 20 Official Localization Vendors as Global Subscriptions Boom*", https://slator.com/demand-drivers/netflix-now-has-nearly-20-localization-vendors-as-global-subscriber-growth-booms/, (last accessed 03/05/2020).

Fetner C., Sheehan D., (2017), "*The Netflix HERMES Test: Quality Subtitling at Scale*", https://netflixtechblog.com/the-netflix-hermes-test-quality-subtitling-at-scale-dccea2682aef, (last accessed 02/09/2020).

Gambier Y., (2012), "*The position of audiovisual translation studies*", in Millán C. and Bartrina F. (eds.), (2012), *The Routledge Handbook of Translation Studies.* New York: Routledge, pp. 45-58.

Georgakopoulou P., (2009), "*Subtitling for the DVD industry*", in Díaz Cintas J., Anderman G. (eds.), (2009), *Audiovisual Translation*. London: Palgrave Macmillan, pp. 21-35.

Georgakopoulou P., (2019), "*Technologization of audiovisual translation*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 516-539.

Gregory J., Miller S., (1998), *Science in Public. Communication, Culture, and Credibility*. London: Plenum.

Gottlieb H., (1992), "*Subtitling – a new university discipline*", in Dollerup C. and Loddegaard A. (eds.), (1991), *Teaching Translation and Interpreting*. Amsterdam and Philadelphia: John Benjamins, pp. 161-172.

Guillot N., (2019), "*Subtitling on the cusp of its future*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 31-47.

Ho G., (2011), *Globalization and Translation*. Saarbrücken: VDM Verlag.

International Language Center, (2018), "*HERMES was a flash in the pan for Netflix's growing translation needs. Now what?*", https://ilcworldwide.com/2019/01/30/hermes-was-a-flash-in-the-pan-for-netflixs-growing-translation-needs-now-what/, (last accessed 31/08/2020).

Ivarsson J., (1992), *Subtitling for the Media. A Handbook of an Art*. Stockholm: Transedit.

Ivarsson J., Carroll M., (1998), *Subtitling*. Stockholm: Transedit.

Kruger J. L., (2008), "*Subtitler training as part of a general training programme in the language professions*", in Dìaz Cintas J. (eds.), (2008), *The Didactics of Audiovisual Translation*. Amsterdam and Philadelphia: John Benjamins, pp. 71-87.

Lewis P. E., (1985), "*The measure of translation effects*", in Graham J. F. (eds.), (1985), *Difference in Translation*. Ithaca: Cornell University Press, pp. 31–62.

Lomheim S., (1995), "*L'écriture sur l'écran: stratégies de sous-titrage à NRK, une étude de cas*". Translatio, Nouvelles de la FIT/FIT Newsletter XIV (3-4): 288-293.

Manfredi M., (2019), *Popular Science Discourse in Translation*. Castellò de la Plana: Publicacions de la Universitat Jaume I.

Massidda S., (2015), *Audiovisual Translation in the Digital Age: The Italian Fansubbing Phenomenon*. London: Palgrave Macmillan.

Merchán B. C., (2019), "*Audiovisual translator training*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 468-482.

Merriam-Webster's Dictionary, (2017), *Merriam-Webster's Advanced Learner's English Dictionary*. Springfield, Massachusetts: Merriam-Webster, Incorporated.

Minchinton J., (1993), *Sub-Titling*. Hertfordshire, England: Manuscript.

Mortillaro N., (2020), "*Discovery of record-breaking black hole collision surprises astronomers*", https://www.cbc.ca/news/technology/black-hole-collision-astronomers-1.5708404, (last accessed 01/09/2020).

Munday J., (2016), "*Introducing Translation Studies: Theories and Applications*". New York: Routledge.

NASA, (2014), "*What is a black hole*?", https://www.nasa.gov/audience/forstudents/5-8/features/nasa-knows/what-is-a-black-hole-58.html, (last accessed 06/08/2020).

Netflix, (2019), "*Black Hole Apocalypse*", https://usa.newonnetflix.info/info/81121172, (last accessed 20/06/2020).

Neves J., (2019), "*Subtitling for deaf and hard of hearing audiences: moving forward*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 82-95.

Nornes A. M., (2007), *An Eclectic and Pioneering Combination of Approaches to Film Translation History, Including a Provocative Essay on Subtitling and One of the most Comprehensive Available Treatments of Translation in Silent Film*. Cinema Babel, Minneapolis: University of Minnesota Press.

O'Sullivan S., Cornu J. F., (2019), "*History of audiovisual translation*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 15-30.

Oxford, (2020), *Oxford English Dictionary Online*, http://www.oed.com (last visited on 08/09/2020).

Pérez-Gonzáles L., (2019), "*Rewiring the circuitry of audiovisual translation: introduction*", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 1-12.

RAI, (2018), "*Norme e convenzioni essenziali per la composizione dei sottotitoli televisivi per non udenti a cura di Servizio Sottotitoli-RAI*", http://www.rai.it/dl/docs/1521654837138PREREGISTR_22_feb_2016_-_Norme_e__Convenzioni_essenziali_per_la_composiz....pdf, (last accessed 31/08/2020).

Perdersen J., (2018), "*Transcultural images: subtitling culture-specific audiovisual metaphors*", in Ranzato I. and Zanotti S. (eds.), (2018), *Linguistic and Cultural Representation in Audiovisual Translation*. New York: Routledge, ch. 2.

Reeves C., (2005), *The Language of Science*. New York: Routledge.

Rembert-Lang L. D., (2010), "*Reinforcing the Tower of Babel: The Impact of Copyright Law on Fansubbing*", Intellectual Property Brief, 2(2), pp. 21–33.

Romero-Fresco P., (2011), *Subtitling through Speech Recognition: Respeaking*. Manchester: St. Jerome.

Rovelli C., (2014), *Sette brevi lezioni di fisica*. Milano: Adelphi.

Russell N., (2010), *Communicating Science: Professional, Popular, Literary*. Cambridge, England: Cambridge University Press.

Science Applied to Life 3M, (2019), "*3M state index of science*", https://www.3m.com/3M/en_US/state-of-science-index-survey/about-2019-survey/, (last accessed 04/09/2020).

Secară A., (2019), "Surtitling and captioning for theatre and opera", in Pérez-González L. (eds.), (2019), *The Routledge Handbook of Audiovisual Translation*. New York: Routledge, pp. 130-144.

Tinker Perrault S., (2013), *Communicating Popular Science: From Deficit to Democracy*. London: Palgrave Macmillan.

Törnqvist E., (1995), *Fixed pictures, changing words. Subtitling and dubbing the flm Babettes Gæstebud*. TijdSchrift voor Skandinavistick 16(1): 47-64.

Tveit J. E., (2009), "*Dubbing versus subtitling: old battleground revisited*", in Díaz Cintas J., Anderman G. (eds.), (2009), *Audiovisual Translation*. London: Palgrave Macmillan, pp. 85-96.

Venuti L., (2008), *The Translator's Invisibility: A History of Translation*. New York: Routledge.

Wheeler J., (2007), *Cosmic Catastrophes: Exploding Stars, Black Holes, and Mapping the Universe*. Cambridge, England: Cambridge University Press.