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Reading of Humor-added Subtitles of Foreign Films in Persian: An Eye-tracking Study

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Abstract

It is becoming an established strategy to add humor in Persian subtitles even often when the original dialogue does not include the created or any other humor. This study measures the impact of this strategy on viewers' attention allocation while reading subtitles. The eye movements of 32 participants were recorded while watching a humorous and non-humorous version of the same scene extracted from *Superchondriac* (Boon, 2014), a French comedy. The results show that there is a significant difference between attention allocation in the two versions, and the viewers' attention to the subtitles with added humor is significantly larger than non-humorous subtitles. The interviews showed that some viewers liked the added humor because they thought it is funny and close to their cultural and ideological views. On the other hand, some of the participants opted for the non-humorous subtitles because they thought the added humor was distracting, confusing, at times offensive, and detached from the original culture.

Keywords: subtitling, humor, eye tracking, attention allocation, audiovisual translation

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1. Introduction

Subtitling films is a steadily gowning phenomenon even in locales where dubbing has been traditionally the common mode of audiovisual translation. That ensues from the facility and speed of producing subtitles in a world where "multimodality thanks to digital technology is becoming a dominant format of communication" (Gambier, 2023, p. 1). Reading subtitles is different from reading mono-semiotic texts. It is a complicated task of time management since viewers need to allocate their attention to visual (the image), textual (subtitles), and auditory (soundtrack and spoken dialogues) sources of information within a few seconds. Therefore, efficient subtitles are those that, besides transferring the meaning, demand less time and cognitive effort for reading on the part of viewers (Perego, 2012). The difficulty in perceiving subtitles and the expansion of the film industry have led to more focus on the technical aspects of subtitling (Díaz Cintas & Remael, 2007). More and more researchers are now addressing variables that may enhance or impede the subtitle reading process (Perego, 2012; Szarkowska et al., 2013; d'Ydewalle, 2007; Kruger, 2014; Jiang & Doherty, 2024). Over the past few years, many studies have investigated viewers' reception of subtitled audiovisual (AV) content through eye-tracking technology (Black, 2020). Eye-tracking studies on English subtitle reading have grown in number over the past few years, yet the number of studies that focus on other languages is significantly low. As Szarkowska et al. (2013) mention, there is a growing need to replicate the previous studies in new linguistic and cultural settings. Catching up with the increasingly diversifying kinds and functions of dubbing in Iran (Khoshsaligheh, 2022), subtitling in Iran, too, has considerably thrived, and there are currently various types and are gaining more popularity than ever. Amateur subtitling, especially, has become a popular practice in Iran over the recent years (Khoshsaligheh et al., 2019), and as can be seen in Figure 1, has developed into a variety of types and is widely used for various purposes (Khoshsaligheh et al., 2020), yet few studies have used eye tracking data to address the reading reception of Persian subtitles (see, for instance, Zahedi & Khoshsaligheh, 2021; Zahedi & Khoshsaligheh, 2020). The present study focuses on a growing subtitling strategy in Iran. Adding humor to subtitles where no equivalent for the added humor can be found in the original script is used for translation of subtitles into

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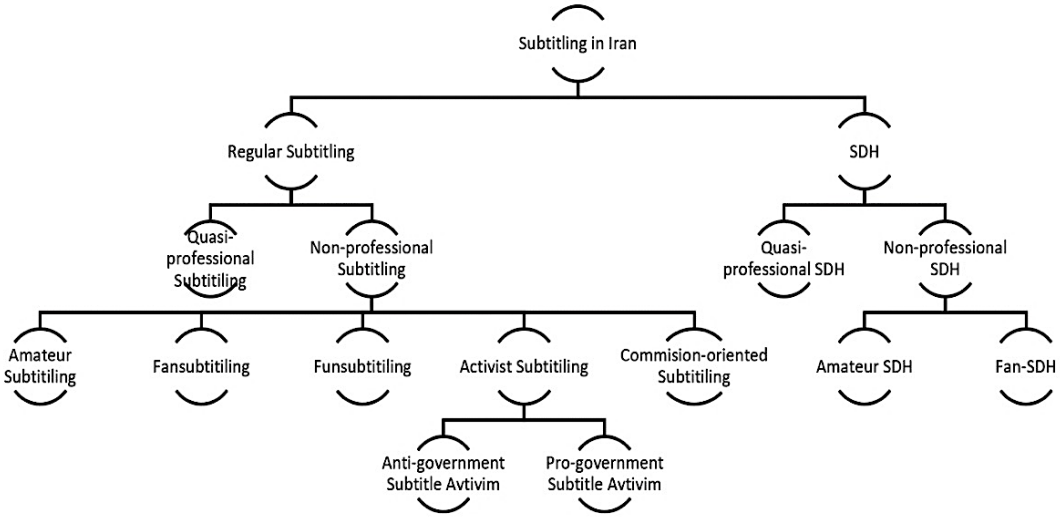
Persian. It especially happens as home cultural elements are used ironically where they are not needed, just to make viewers laugh. The reception of this added humor has remained unknown, just like many other uncharted territories of Persian subtitle reception. This study investigates the viewers' eye behavior while encountering humor, while the study also investigates the viewer's opinion of these added elements. Against this background, the current study was designed to investigate how the addition of humor that is not present in the original dialogue may affect the viewers' eye movements while reading subtitles and how they viewed the added humor.

Figure 1

Subtitling Typology in the Iranian Mediascape (Khoshsaligheh et al., 2020)



2. Review of Literature

2.1. Subtitle Reading

Despite all cost-related arguments for the convenience of using subtitles, much of the criticism focuses on how subtitles may interfere with the process of watching films. As Perego et al. (2016) state, some argue that using subtitles in an individual product

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of any kind impinges on the product processing, and as a result, it stops the viewers from enjoying their experience. This is why some people champion dubbing as an option that does not disturb the viewers' watching experience. This is generally the case because subtitles are not originally meant to be on the screen, and they are added when multimodal products move beyond their linguistic territory, and in the majority of the cases, by third parties. This is tantamount to another source of information besides the other two that already exist, that is, auditory information (both soundtrack and spoken dialogues) and movie image (Perego et al., 2010). Therefore, subtitle reading happens in the presence of a multitude of information sources, and they are also the result of the interplay of many factors that influence the subtitle reading process (Kruger, 2013). Watching a subtitled film demands the constant integration of information from movie images and subtitles, and this needs more processing capacity than watching the moving image per se (Koolstra et al., 2002). This is why reading subtitles is fundamentally different from reading mono-semiotic texts such as printed books with no photos (Diaz Cintas, 2007; Gottlieb, 1994). While reading subtitles, viewers are also aware of the little time they have to read the subtitle. Although readers of monosemiotic texts are in charge of the reading speed, subtitle reading speed is dictated by the subtitle display time. Koolstra et al. (2002) state that viewers are not just engaged in watching and listening, but they also need to read subtitles, and some believe that watching a subtitled program requires more mental effort compared to watching original or dubbed programs. Another argument lodged against using subtitles is the distraction subtitles may cause for viewers (Koolstra et al., 2002). Therefore, a potential problem with employing subtitles is that they may distract the viewers. To properly follow the screen, viewers have to switch their attention between pictures and subtitles. When attention is paid to the subtitle, visual information might be lost.

Despite the difficulty in reading multi-semiotic texts, subtitle reading is an automatic behavior (d'Ydewalle et al., 1991; Liaoa et al., 2020) and takes place as subtitles appear on the screen. d'Ydewalle and Gielen (1992) believe that this automatic behavior seems to be true regardless of age, sex, and translation method. This lack of relation between such automatic subtitling behaviors as word recognition and emotional valence has been corroborated by recent empirical studies (Amini et

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al., 2022). Viewers can divide and shift their attention under such complex circumstances. There is no evidence suggesting that reading subtitles includes the failure to understand the sound and image at the same time (d'Ydewalle et al., 1991). Ghia (2012) believes that despite the fact that processing and perception of subtitled products need parallel attention to all different components of the message, viewers can pull it off through the presence of multiple interacting resource pools available for different modalities of information transfer. This automaticity, or semi-automaticity, or the "magnet effect of subtitles" (Duffy, 1992, p. 464) holds regardless of how compelling the image on the screen is. Research by Perego et al. (2016) showed that there was a difference between how viewers watched dubbed and subtitled products. While in dubbing, they focused on the moving image; in watching subtitled programs, the subtitle area was the major area of interest. However, no matter how demanding the subtitles were, they did not affect the comprehension and memory of the viewers, nor did they disturb the joy of the viewers. The following section will explain how humor can affect our attention, how Iranian amateur subtitlers have fostered a strategy for creating humor, and how humor may impact our understanding and perception.

2.2. Humor

Humor is the experience of what is funny, responded to with an emotional reaction including vocal-behavioral expressions such as laughter and smiling (Chen & Martin, 2007). Humor can take universal or cultural shapes. As Martine and Ford (2018) state:

> Humor is a universal human activity that most people experience many times over the course of a typical day and in all sorts of social contexts. At the same time, there are obviously important cultural influences on the way humor is used and the situations that are considered appropriate for laughter (p. 30).

Suls (1983) proposed that humor includes the activation of a wrong schema, finding a new schema, understanding the error in using the earlier schema, and being amused with the new interpretation. This wrong schema or error in using the schema results in incongruity (Chen & Wang, 2020), the understanding of which provokes a

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humorous effect. Incongruity could take many shapes, such as phonological, lexical, temporal, background knowledge, among others. Humorous information is assumed to receive more attention compared to non-humorous elements. Research by Strick et al. (2010) examined if enhanced attention to humor decreases attention to non-humorous information located in close temporal proximity. The participants read humorous, non-humorous, positive and non-humorous neutral texts while the eye movements were captured by an eye-tracking device. The results showed that the participants had longer fixations on the humorous material, which meant less attention to non-humorous information. Their findings show that "humor does not only impair the free recall of context information but also affects cued memory processes such as recognition" (Strick et al., 2010, p. 12). Martine and Ford (2018) also believe that people can remember a general gist of humorous information more efficiently than non-humorous information, and humor works both on encoding (intake of information) and retrieval (remembering information). Scholars have noted a differential processing for allotting attention to humor, which enhances attention given to these items (Schmidt, 1994; Waddill & McDaniel, 1998). For instance, Schmidt (1994) examined the humor effect on remembering humorous and non-humorous cartoons. It was found that the proper recall of humorous cartoons occurred at the expense of recall of non-humorous cartoons. The reason for this greater level of attention could be the incongruity (Raskin, 1985) or the positive emotional response humor creates in recipients (Cuthbert et al., 1996). Viewers need to divide their attention between humorous and non-humorous elements, and probably, most of the viewers' cognitive resources will be used to give attention to humor, and this leaves less cognitive space for processing of non-humorous information (Strick et al., 2010).

Despite dozens of studies addressing the translation of humor in subtitling (Elbakri, 2021; Mikolčić, 2021), the cognitive aspects of humor in subtitling are still unknown.

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3. Method

3.1. Participants

Forty undergraduate students studying at Ferdowsi University of Mashhad (17 males and 23 females, mean age =19.55, *SD* = 1.121) were invited to the experiment. They were Persian native speakers with normal or corrected-to-normal (only contact lenses) vision. They had no familiarity with Translation Studies. We made sure they had zero knowledge of the film's original language (French). Before the experiment, the participants were asked whether or not they had watched the film, and those who had already watched the film were eliminated from the study. The data of one male and seven females had to be discarded due to the low quality. They were all informed about the procedures of the study, yet the purpose remained unknown to them. The eye-tracking was not overexplained since it could make them conscious of their eye movements. If they were too concerned about the fact that people will know what they are looking at, then they might try not to look at things that could be embarrassing or personal (Pernice & Nielsen, 2009).

3.2. Stimuli

Two versions (humorous and non-humorous) of a two-minute scene were extracted from *Superchondriac* (Boon, 2014) and given to the participants to watch. The subtitles were made by the authors via Subtitle Edit software. The number of subtitles for both humorous and non-humorous versions was the same. In the humorous version, out of 34 subtitles, 13 included cases of humor. Each subtitle consisted of a maximum of 36 characters (which is the same observation made by Ghia 2012 and Díaz Cintas & Remael, 2007) and they followed the established criteria for length, synchronization, character number, and presentation duration. Both versions had the same segmentation patterns and line breaks. The non-humorous and humorous subtitle conditions were controlled for other factors, e.g., length, complexity of vocabulary, etc., all of which may affect the results. Table 2 displays both versions of the 13 subtitles that included the added humor.

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Table 2

Subtitles Including Humorous Elements

	Original dialogue in English	Non-humorous version	Gloss translation of non-humorous version	Humor-added version	Gloss translation of humorous version
1	Do I look like a revolutionary? Jesus!	به من میخوره انقلابی باشم؟ یا حضرت مسیح	Do I look like a revolutionary? Jesus Christ	به من میخوره انقلابی باشم؟ یا حضرت عباس	Do I look like a revolutionary? Hazrat Abbas
2	I'm not Anton Miroslav. I'm Romain Faubert.	به خدا، من آنتون میروسلاو نیستم، من رومن فوبرتم.	Honest to God, I am not Antoan Miroslav. I am Roman Fobert.	به همین سوی چراغ، من آنتون میروسلاو نیستم من رومن فوبرتم.	Honest to Quran, I am not Antoan Miroslav. I am Roman Fobert.
3	or Jean Valjean? Pick one!	یا ژان والژان؟ یکیشو انتخاب کن	or Jean Valjean? Pick one of them!	یا ژان والژان؟ یکیشو انتخاب کن (چشاشو)	or Jean Valjean? Pick one of them! (look at his eyes!)
4	That's nonsense.	مزخرف میگی.	That's nonsense.	شعر میگی.	That's a poem.
5	I swear, I was born July 17, 1973 in the Paris suburbs.	قسم میخورم، من ۱۷ جولای ۱۹۷۳، تو حومه پاریس پاریس به دنیا اومدم.	Honest to God, I was born July 17, 1973 in the suburbs of Paris.	به قرآن، من ۱۷ جولای ۱۹۷۳، چاله میدون پاریس به دنیا اومدم.	Honest to Quran, I was born July 17, 1973 in the suburbs of Paris.
6	I was born French.	از وقتی به دنیا اومدم، فرانسوی بودم.	I have been French since I was born.	از وقتی تو گوشم اذون گفتن فرانسوی بودم.	I have been French since they first sang Azan I my ears.
7	- Prove it! - I lost my ID.	- ثابت کن! -کارت شناسایی‌ام رو گم کردم	- Prove it! - I lost my ID.	- ثابت کن! - کارت ملیم رو گم کردم	- Prove it! - I lost my Melli Card.
8	Sure.	آره جون خودت!	Sure, swear to your life!	آره جون عمت!	Sure, swear to your auntie's life.
9	Jean Valjean is no one.	ژان والژان هیچ کسی نیست.	Jean Valjean is no one.	ژان والژان هیچ خری نیست.	Jean Valjean is no donkey.
10	You arrested me	پلیس منو به جای	The police	۱۱۰ منو به جای اون	110 caught me

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	Original dialogue in English	Non-humorous version	Gloss translation of non-humorous version	Humor-added version	Gloss translation of humorous version
	instead of him.	اون گرفت.	caught me instead of him.	گرفت.	instead of him.
11	It's her brother's fault, he took me to Calais.	تقصیر برادر آناست که منو برد کالایس	It's her brother's fault, who took me to Calais.	تقصیر اخوی آناست که منو برد کالایس	It's her Akahavi's fault, who took me to Calais.
12	You seem confused. I feel like I lost you.	به نظرم گیج شدی. فکر کنم گیجت گردم.	You seem confused. I think I confused you.	به نظرم قاط زدی. فکر کنم گیجت گردم.	You seem confused. I think I confused you.
13	Of the forged IDs.	جاعل کارت شناسایی	Of the forged ID	جاعل کارت ملی	Of the forged Melli Card.

The criterion for what makes a subtitle humorous was Suls' (1983) proposition that humor includes the activation of a wrong schema that results in an incongruity, the understanding of which causes a humorous effect. The critical point, however, is that it did not matter to us whether the subtitles could make the audience laugh or not. The important point was the motivation of making the audience laugh.

As Table 2 shows, in the humorous version of the first subtitle, the phrase "Jesus Christ" in the original is replaced by "حضـــرت عبـاس" (Holy Abbas2), while the audience is aware of the movie's context and does not expect to hear such a word from a non-Muslim French character (incongruity). The same pattern could be observed for subtitles 2 and 5, where "Honest to Quran" is used to replace "Honest to God" in the humorous version. The audience does not expect a French character to swear to "Quran" in this context (incongruity). The third subtitle is for a scene in which the police agent seems to be partially suffering from crossed eyes. Although there is no implicit or explicit reference to this condition in the original dialogue, the humorous version refers to the man's eyes in a parenthesis. In the 4th subtitle, the word "شعر" (roughly meaning poem) is used to refer to translate the word "nonsense".

[2] A major religious figure in Shia

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Although the word "مـزخـرف" is commonly used as the equivalent in Persian, the translator has decided to use a more informal and humorous term (شـــعر) (Aslani, 2015) to translate the same word. In subtitle 6, a famous Persian cultural tradition is referred to make incongruity. The phrase "تو گوشـــم اذون گفتن" refers to a Persian tradition in which the eldest family member sings Azan into the ears of a newborn, and in a majority of cases, it is metaphorically used to refer to someone's birth, as in the case with this subtitle. In subtitles 7 and 13, ID card is replaced by the National Identity Card, known as Kart-e-Melli in Iran. In subtitles 8, 9 and 12, the translator has used terms (قاط, جون عمت and خری) that are usually used in a humorous context in Persian to replace گیج, خودت and کسی, which are normally used in formal and non-humorous contexts. In subtitle 10, the term "police" is replaced by "110" which is the emergency telephone number of the Iranian Emergency Police Centre. From the translator's point of view, this may lead to an incongruity for the audience and a humorous effect as a result. In subtitle 11, the term brother is replaced with the Arabic term "اخوی", which became widely used among the religious population of Iran after the 1979 Islamic Revolution and among Iranian soldiers during the Iran-Iraq war.

3.3. Eye-tracking Device and Eye Metrics

The eye-tracking device used in the study was an SMI eye-tracker with 60Hz of speed. Four eye metrics were used, including fixation duration, fixation number, first fixation duration, and subject hit count. Fixation duration is the time spent on a specific area. The time of fixation shows the degree of complication of where eyes fixate. The longer the fixation, the greater difficulty and cognitive effort that the readers encounter (Duchowski, 2017). First fixation duration is the time spent during the first fixation. Our eyes tend to fixate for a longer period when more difficult items are read for the first time (Duchowski, 2017). This suggests more cognitive effort employed to read and process. The number of times the participants looked at a word is called fixation number or fixation count, and it signifies reading difficulty (Duchowski, 2017). Subject hit count, also known as hit ratio, is the number of participants who fixate at least once on a particular area of interest. It also shows which points are dismissed (Duchowski, 2017).

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3.4. Retrospective Interviews

Retrospective interviews have proven useful for recalling "what information [subjects] are attending to while performing their tasks" (Ericsson and Simon, 1993, p. 220). After the eye tracking experiment was finished, the participants were interviewed retrospectively and were asked about the difficulties they faced while reading the subtitles of the two versions and the reason they liked or disliked the added humor. These semi-structured interviews addressed the challenges they encountered as they read the subtitles, especially those that were the object of this study, and the potential reason behind these difficulties. While being interviewed, they were also shown the scene with its corresponding subtitle to help them better remember the details. Then the viewers were asked how they felt about each scene, including the humor addition and the added humor in particular. The interview transcripts were prepared and annotated, and the data were analyzed via thematic content analysis. Initial codes were assigned to the in order to formulate themes.

3.5. Experiment Design

Prior to the experiment, the participants were informed about the experiment procedures and the recording of their eye movements. A written consent was obtained from each of the participants. After making necessary arrangements, the participants attended the Motor Behavior Lab of the Faculty of Physical Education at Ferdowsi University of Mashhad. They were told that the experiment included watching a few short videos and a retrospective interview. The participants, one by one, sat on a height-adjustable chair at almost 60 cm from a 15" monitor in a sufficiently lighted room. They were randomly assigned to two inter-subject groups ($n1$= 16, $n2$= 16) to counterbalance the within-subject presentation of the two versions of the same video. Therefore, the order of showing the videos was reversed in the two groups. One group (n=16) first watched version 1 and then version 2, and for the second group, the order was reversed. The goal of counterbalancing is to counter the order effect that is assumed to happen in a within-subject research design. A three-point calibration was performed to make sure the eye-tracker correctly recorded the participants' eye movements.

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3.6. Data Collection and Analysis

Eye data collection in this experiment had two major phases. The first phase was the recording of the eye movement, in which there was a need for the actual presence of the participants and stimuli display. However, the mere recording of eye movements with no statistics and meaningful data was of no use. Therefore, in the second phase, the eye data were analyzed. After doing the calibration, the participants' eye movements were recorded by iView software. During the data recording, the process was monitored by an eye-tracking expert. The eye movement recording phase lasted for two weeks. After the data recording phase, the data extraction stage began by developing areas of interest (AOIs) in BeGaze software. Each AOI was given a name and number. After determining the areas of interest, the eye movements had to be tracked and mapped from the recorded videos onto a photo shot of each scene with separate subtitles. In order to rule out any bias, the tracking phase was done by the eye-tracking expert. The extracted data for each participant were imported into IBM SPSS software. Then, paired sample t-test was used to find if there was any significant difference between the attention allocation in viewing the two versions (the same statistic was used by Orrego, 2015; Ghia, 2012; Caffrey 2012; Perego et al., 2016).

4. Results

4.1. Fixation Duration

The difference between the fixation duration for reading the whole of humorous and non-humorous subtitles was investigated after calculating the fixation durations of the subtitles for all participants. The results revealed that there was a significant difference ($p<0.001$, $t(31)=4.89$) in attention allocation to the humorous ($M=1192.57$ ms, $SD=368.55$) and non-humorous subtitles ($M=1507$, $SD=518.41$). The fixation duration for reading the whole humorous subtitles was significantly higher than the fixation duration of all non-humorous subtitles. Table 3 also shows the results of the paired t-test for the humorous and non-humorous subtitles.

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Table 3
Paired t-test of Fixation Duration for All Humorous and Non-humorous Subtitles

Category	*SD*	*M*	*t*	*df*	*P*
Subtitles with humorous words	5176.26	1519.18	4.89	31	<0.001
Subtitles with non-humorous words	3868.71	846.86			

4.2. Fixation number

The number of fixations showed that the viewers more often gazed at the humorous subtitles. The mean fixation number for all humorous words was 25.12 (*SD*=5.77) while the mean fixation number of all non-humorous subtitles was 20.40 (*SD*=3.17). According to the paired t-test results, the difference between fixation numbers for humorous and non-humorous subtitles was significant ($p<0.001$, $t(31)=4.64$), and the fixation number of the humorous subtitles was significantly higher compared to non-humorous subtitles. Therefore, the participants more frequently gazed at humorous subtitles, which is an obvious sign of more attention given to the humorous subtitles. The results of the paired t-test are also displayed in Table 4.

Table 4
Paired t-test of Fixation Number for the Humorous and Non-humorous Subtitles

Category	*SD*	*M*	*t*	*df*	*p*
Subtitles with humorous words	5.77	25.12	4.64	31	<0.001
Subtitles with non-humorous words	3.17	20.40			

4.3. First Fixation Duration

Table 4 displays the results of the paired t-test for the viewers' total first fixation duration. The results showed that there was a significant difference between the humorous (*M*=2163.84, *SD*= 537.92) and non-humorous (*M*=2116.03, *SD*= 481.13) words in terms (*P*=0.674, $t(31)= 0.424$). The FFD for the humorous words was lower compared to the non-humorous words, yet this difference was not significant. Table 5 shows the mean of FFD and the paired t-test results for humorous and non-humorous words.

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Table 5
Paired t-test of First Fixation Duration for the Humorous and Non-humorous Words

Category	*SD*	*M*	*T*	*df*	*p*
Subtitles with humorous words	537.92	2163.84	0.424	31	0.674
Subtitles with non-humorous words	481.13	2116.03			

4.4. Subject Hit Count

The results of subject hit count indicated that, on an average basis, 87.29 % of the participants focused on the humorous words, and skipped 12.71 % of the humorous words. However, the subject hit count for the non-humorous words was 95.23%, and 8.38% of the participants skipped them. However, the results of the paired t-test showed that the difference between the two groups was significant (p=0.028), yet this time it was not in favor of non-humorous words. More participants had focused on non-humorous words. Table 6 shows the results of the paired *t*-test for subject hit count while encountering humorous and non-humorous words.

Table 6
Paired t-test of Subject Hit Count for the Humorous and Non-humorous Words

Category	*SD*	*M*	*T*	*df*	*P*
Subtitles with humorous words	15.62	87.29	-2.468	31	0.028
Subtitles with non-humorous words	8.38	95.23			

4.5. Retrospective Interviews

Retrospective interviews were conducted to understand why participants may favor or disfavor the addition of humor to the subtitles. Although some participants preferred non-humorous subtitles, some were also interested in humorous subtitles. They were specifically sensitive to religious items that were used to create humor. The major reason for liking this type of humor was the feeling of attachment between the viewers' and the humor. For instance, one of the participants stated that "I liked humor in the form of local religious items because it is closer to my own ideas"

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(participant 18). Another participant stated that "such humor is easier to understand because it is more common, and we use it in our daily lives" (participant 10). Another reason was that they thought adding humor would make the subtitle funnier and more interesting to read. Participant 13 preferred the humorous subtitle because he thought it was funnier. Another participant stated knowing that the translator himself/herself has added the humor makes it interesting: "I liked the humor because it amuses me, and it is more interesting. I know it is the work of the translator" (participant 19).

On the other hand, many disfavored the addition of humor because it acted as a distraction and interfered with reading the subtitles. This was similar to the result of the eye data analysis, which showed that three metrics (fixation duration, fixation number, and subject hit count percentage) were significantly higher for the subtitles with humor, suggesting more cognitive effort and attention given to them. "When I see such humor, my mind gets distracted because I think about our own conversations, and it does not let me think about the movie itself" (participant 2). Another participant stated that "when I face humorous items, I get totally detached from the film and entirely distracted by it" (participant 21). Participant 15 preferred the non-humorous subtitle because it was "more understandable and less distracting. Too much colloquialism and humor added by the translator is not good at all". In one of the subtitles, the phrase "Jesus Christ" in the original was replaced by "حضـرت عباس" (Holy Abbas). In reaction to this subtitle, one of the viewers had the following issue: "I prefer 'Jesus Christ' because it is so unusual to see the name of 'Hazrat Abbas' in a French comedy. I want to understand the film, and I don't like to be bothered by these uncalled-for and so-called humorous phrases" (participant 11). Some participants did not like the addition of religious items because they simply found them offensive in this context. They believed that "the use of religious items is impolite and blasphemous" (participant 6), and "using this kind of humor is silly. It does not fit into the context" (participant 25). Participant 12 could not find any connection between these phrases and the movie context: "I don't like local elements in the subtitles, especially the religious items. I don't like to see religious words in the context of a foreign comedy film". A majority were even confused when they encountered the humor and had a hard time understanding it. They simply thought that "the subtitles are easier to understand when no humor has been added"

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(participant 23). Participant 7 made the following complaint: "These additions confuse me. It is odd to hear a foreign character using localized words". Participant 20 voiced the same concern: "When I see this sort of humor, I get surprised. They don't make much sense. In addition, since some people don't know the language of the original, they think that the added humor is a part of the film, which will further add to their confusion". One of the participants raised an interesting issue that made her angry: "When I watch a subtitled film, I would like to become familiar with the original culture, and use of localized humor does not allow me to do so. When I read such humorous words, I become mad with it for a while. Even when I watched them in this experiment, I became angry" (participant 24).

5. Discussions

To create humor in subtitled foreign movies, Iranian subtitlers attempt to add humor to the subtitles where there is no equivalent for that humor in the original film. The research findings showed that attention allocation to added humor in the subtitles was significantly higher compared to the non-humorous subtitles, as shown by three eye metrics (fixation duration, fixation number and subject hit count). The retrospective interview showed that the participants preferred no addition of humor because it acted as a distraction and interfered with reading the subtitles. However, some participants in the eye-tracking experiment also felt attached to the religious nature of the added humor.

Our results show that the addition of humor interferes with the process of film perception by making the subtitles incongruent with the viewers' experience. This is in line with what is known as the humor effect, which holds that proper recall of humorous information occurs at the expense of recalling non-humorous information. As Schmidt (1994) showed, sustained attention to humorous information is frequently done at the expense of non-humorous material introduced simultaneously. His findings indicated that proper recall of humorous cartoons occurred at the expense of the recall of non-humorous cartoons. As Schmidt and Williams (2001) suggest, there is sustained and increased attention to humorous materials. Our mind tends to sacrifice the perception of ordinary content for processing humorous

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information. Consequently, this results in more attention given to the humorous content as shown by fixation duration, fixation number, and subject hit count in this study. They showed that our memory is strengthened for humorous information compared to non-humorous materials. This especially gets important as one knows that when the difficulty related to perceiving the foveal word increases, the processing of parafoveal information drops (Rayner, 1998).

An eye-tracking study by Strick et al. (2010) investigated if attention to humor reduced attention to non-humorous information in close temporal proximity. The subjects read humorous, non-humorous positive, and non-humorous neutral texts while their eye movements were captured by an eye-tracker. The findings indicated that the participants experienced longer eye fixations on the humorous material, which meant less attention to the non-humorous information. Their findings showed that "humor does not only impair the free recall of context information but also affects cued memory processes such as recognition" (Strick et al., 2010, p. 12).

Humor is differently processed in our mind, with increased attention allotted to these items (Schmidt, 1994; Waddill & McDaniel, 1998). The reason for this greater level of attention allotted to the humorous subtitles in this study could also be the incongruity of the humorous elements (see Raskin, 1985). Ohman (1979) states that attention to incongruity is an automatic process. It could also be due to the positive (or negative) emotional response the humor created in the recipients (see Cuthbert et al., 1996).

Another reason for such a difference between the perception of humorous and non-humorous subtitles could be the different processing of the two. The viewers had to divide their attention between the humorous and non-humorous units, and probably the majority of the viewers' cognitive capacity was spent on the humorous parts, and less cognitive space was left for receiving non-humorous information (see Strick et al., 2010).

Martine and Ford (2018) also believe that people can remember a general gist of humorous information more efficiently than non-humorous items, and humor works both on encoding (intake of information) and retrieval (remembering information). Another reason for more focus on the humorous information in the subtitles was that

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it was extraordinary and distinct information (see Martine and Ford, 2018).

In the case of subtitles in this study, the participants were very sensitive to the use of Iranian local or religious items, which is very frequently used in translating subtitles into Persian and results in incongruity. Incongruity forms the basis for any type of humorous experience (Suls, 1972). Many participants stated that they found a massive contradiction between the religious terms used to make humor and the foreign context of the French film. Some participants found it funny and some offensive, but they both had to invest a significant amount of time and attention in reading humorous items, as shown by the eye metrics. One might also ask whether every viewer finds these words humorous or not, which is a question to be further investigated. The important thing in this research — to call the elements funny or not — was the translator's intention.

6. Conclusion

With the advent of social media and digital technology, viewers have become an important part of media content circulation over the past few years. The monopoly formerly held by reputable and large companies is now disturbed as more and more common people are actively engaging in the process of disseminating audiovisual products. This major upheaval is "demotic turn" (Turner, 2010), a turn that has taken place in audiovisual translation (AVT) as well and emancipates audiences from the control and hegemony of state media. Customers have turned into producers, or "prosumers", and this underscores the role of audience both as a consumer and prosumer. The situation is no different in Iran, where state media and private companies formerly owned the production of audiovisual products and their translation. This dominance has recently become shaky by the emergence of amateur subtitling, which has been increasingly employed by Iranian viewers for audiovisual products.

However, studies on the reception of AVT in Iran have just started to develop and will continue to grow. Reception studies will continue to add to the growth and maturity of AVT through the provision of important and inspiring findings from the world of receivers. Adding humor to subtitles has become a prevalent strategy among

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Iranian subtitle prosumers. It usually happens in subtitled foreign comedies by adding humor to the subtitles for which there is no equivalent in the original dialogue. To create the humor, Iranian culture-specific items are usually within a different cultural context with the goal of violating the viewers' expectations, which may lead to incoherence in reading subtitles since unexpected elements can severely impinge on the reading process (Koornneef, 2021).

Using eye-tracking technology and retrospective interviews, this study focused on the impact of humor addition on reading Persian subtitles. The study showed that attention to humor added to the subtitles was significantly greater in comparison with non-humorous subtitles, as shown by three eye data: fixation duration, fixation number, and subject hit count. This finding meant that the addition of humor interferes with the process of reading subtitles due to what is known as the humor effect. According to this effect, the correct recall of humorous information jeopardizes the recalling of non-humorous information. The responses to the retrospective interviews showed that some participants like the use of humor addition because they felt a sort of attachment between their own beliefs and the religious or cultural items added with the goal of creating humor. Some found it funny and enjoyable. On the other hand, a few participants did not favor the addition of humor because it distracted them and interfered with their reading process.

Although this research focuses on the attention allotted to subtitles with and without added humor, it does not measure if viewers find this strategy funny or not. Therefore, future research can conduct a quantitative analysis of whether viewers prefer or disfavor the use of added humor and if added humor is an efficient strategy for making the audience laugh. Lastly, given the thriving nature of eye-tracking research and the established position of this strand of audiovisual translation research (Szarkowska et al., 2024), systematic review studies (e.g., Derakhshan et al., 2024) could prove fruitful in establishing solid avenues for further research.

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