Accessible Cinema for Older Adults.
Can an App for Blind Viewers Benefit the Sighted Population?

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Abstract

The impact of the age-related sensory and cognitive decline experienced by older people is not necessarily accounted for by providers of audiovisual services, including cinemas. While most studies on audiovisual translation and media accessibility have focused on young or adult audiences, little is known about the specific preferences and needs of older adults regarding AVT. A study carried out as part of the AudioMovie project in Poland has suggested that older adults may have issues with reading subtitles and that they may be willing to use an accessibility application to watch films with audio subtitles in cinemas. However, it is not yet known if this group is prepared to manage the functions of the technology once they start using it. The focus group study investigated whether older adults experience problems with reading subtitles, and whether they would be willing to use a smartphone application in the cinema. The results show that older adults may have problems reading subtitles, especially when watching fast-paced films. In the study, the overall reception of the app was positive, though the participants were not always proficient smartphone users. The study also suggests that such applications could help elderly cinema-goers watch films in their preferred AVT modes.

Key words: audiovisual translation, accessibility, older adults, accessibility app, AudioMovie, new technologies

1.   Introduction

Age can potentially have a significant influence on the film-watching process, as older adults may experience sensory decline – such as vision loss (Loh & Ogle, 2004), hearing impairment (Huang & Tang, 2010), diminished manual function (Carment et al., 2018) – and cognitive decline, which may affect processing speed, attention, and memory (Harada, Natelson Lovec & Triebeld, 2013). Although more research in this field is needed, these factors may influence older adults' preferences regarding AVT modalities.

There is a dearth of studies on how older adults process translated audiovisual content and what type of AVT they prefer, though in a study conducted in Italy by Perego et al. (2015), in which young adults and older adults watched the subtitled and dubbed versions of a film, no significant differences were found between the two groups in terms of comprehension, information processing, or levels of enjoyment. The researchers admit, however, that older adults will tend to perform slightly worse than young adults due to issues associated with aging.

A survey conducted in Poland by Jankowska (2019) among 37 Polish participants aged between 60 and 80+ suggests that if respondents were given a choice of AVT type in the cinema, the vast majority would choose dubbing or voice-over rather than subtitles (which is the standard type of AVT available in Polish cinemas). The participants declared that subtitled films do not generally prevent them from going to the cinema, though over half of them reported having problems reading the subtitles (Jankowska, 2019). The results of the survey indicate that older adults in Poland might benefit from an alternative that would enable them to watch films in the cinema with the AVT type of their choosing.

One solution to the above difficulties with subtitles may be found in an accessibility application, such as AudioMovie, which was developed as part of the "AudioMovie - Cinema for All'' project (Jankowska & Walczak, 2019). The primary objective of that project was to create an alternative method of providing blind and partially-sighted viewers with audio description (AD) and audio subtitles (AST) that would be compatible with the existing legal framework. It soon emerged that in order for the application to be attractive to the film industry, its target user group would have to be expanded to include older adults, who could potentially benefit from having audio subtitles read out by a voice talent (in a similar manner to voice-over) and provided through the application during cinema screenings (Jankowska, 2019). The premises and findings of the AudioMovie project are described by Jankowska (2019) and Jankowska & Walczak (2019).

The present paper reports on a usability test of the AudioMovie application, conducted in the form of a focus group. Its main objective is to determine whether older adults do indeed have problems reading subtitles, and whether they would be willing to use a smartphone application to watch films in the cinema. Since the study involved a smartphone app and the participants were not assumed to be digital natives, the following section briefly describes the attitudes of older people towards new technologies, according to the literature.

2. Older adults learning new technologies

Older adults often face difficulties regarding the use of information and communication technologies (ICTs, Barnard, Bradley, Hodgson and Lloyd, 2013), which may be related to their financial status, previous experiences, lack of confidence in their own abilities, the high risk of exploitation, or age-related impairments.

Many older adults report having a lack of financial resources to buy a computer or Internet access (Lee, Chen & Hewitt, 2011). In recent years, smartphones have become a more affordable tool for older adults to access the digital world (Hong et al., 2016). This trend is also visible in Poland, where 35% of people aged over 50 reported being smartphone-users in 2018, as opposed to 13% in 2015 (Silver, 2019). Regardless of which device older adults choose to purchase, both hardware and software are constantly being updated, which may soon generate additional costs (Olsson, Samuelsson & Viscovi, 2019).

Previous experiences, both positive and negative, may play a crucial role in older adults' use of technology, as once a particular mode of thinking about the subject has been established, it may be extremely difficult to change it (Barnard et al., 2013). One person interviewed by Barnard et al. (2013) admitted that when her company was implementing a new technology, learning to use it was such a nightmare that she decided to retire a few months earlier, and had not tried to use a computer or a smartphone since that time. This statement is in line with the results of the study by Olsson et al. (2019), who found a strong, positive correlation between older adults' use of computers and their experience with operating them.

Another possible obstacle which older adults may face while learning new technologies is a lack of confidence in their own abilities (Lee et al., 2011). They may avoid computers because they consider themselves too old to use one. hey may also believe that operating a computer is too complicated, or feel afraid that they might damage the device. Smartphones and computers, which offer access to online banking systems, might also be targets of cyber-attacks and various online scams (Phelan, O'Donnell & McCarthy, 2021). Due to lower exposure to technology, older adults might be particularly vulnerable to cybercrime, especially financial fraud (Karagiannopoulos, Kirby, Oftadeh-Moghadam & Sugiura, 2021), and develop a fear of using technological devices (Phelan et al, 2021).

Some older adults might feel reluctant to use the Internet due to age-related impairments, mainly hearing and vision loss (Chiu & Liu, 2017). Small smartphone screens, for example, might be considered troublesome to older adults because of problems with vision and motor skills (Hong et al., 2016). Phobias of technology might also be caused by age-related decline in cognitive functions, e.g., memory (Olsson et al., 2019).

In spite of the obstacles mentioned above, older adults do not oppose learning new technologies as such; studies suggest that they usually adopt a positive attitude towards technology, and are willing to use it once they perceive it as useful in everyday life (Guner & Acarturk, 2018). There are three learning styles that can be adopted by older adults during the learning process: relying on another

person's assistance and step-by-step instructions (which older adults usually write down), exploring a given device and asking for help once a problem occurs, and exploring a given device and consulting a manual once a problem occurs (Barnard et al., 2013).

The step-by-step learning style may not always be applicable, as new, dynamic technologies cannot readily be explained in a few simple steps (Barnard et al., 2013). Additionally, hardware and software constantly evolve, and users might be forced to update their knowledge regularly (Olsson et al., 2019). People who use the step-by-step learning strategy tend to remain attached to the instructions and may be less likely to explore a device, out of fear of making a mistake (Barnard et al., 2013). The exploring strategy, which according to Bernard et al. (2013) "is essential for learning how to use new technologies" (p. 1720), can be frustrating to older adults, who may feel irritated and unable to achieve expected outcomes when trying to use a computer without guidance. The more time is devoted to the exploration of new technologies, the more problems tend to occur (Tsai et al., 2019). That is when older adults should receive help so that they do not become discouraged.

Concerning the learning process, older adults might have specific expectations regarding the technology courses they attend (Bernard et al., 2013) and expect to learn something that can be incorporated immediately into daily routines. In other words, they tend to be interested in technologies that are "extensions of applications they already use" (Seals et al., 2008 p. 1067). For example, they may wish to learn how to access the newspapers they frequently read, via the Internet. Thus, teachers should not focus too much on the hardware, and avoid using technical terminology (Chiu et al., 2019). Technology instructors should also remember that older adults may feel discouraged when what they learn is too difficult (Chiu, Tasi, Yang and Guo, 2019). They should attempt to introduce new content that is connected to what their students already know. Then, older adults can usually see desired improvement and maintain the same level of motivation. It is important that the instructors create a friendly atmosphere, to facilitate older adults' learning processes (Tsai et al., 2019). Additionally, teachers should remember to give their students simple, step-by-step instructions and to adopt an individual approach when necessary (Seals et al., 2008).

3. Focus group

As mentioned above, in the field of AVT, research regarding older adults is rather scarce and the specific needs and preferences of this age group remain unclear. The survey conducted by Jankowska (2019) suggests that older Polish adults might be more inclined to watch films with dubbing or voice-over and that they might have difficulties with reading the subtitles which are widely used in Polish cinemas. Therefore, it is reasonable to assume that the AudioMovie application, which provides spoken translation in the form of audio subtitles (which closely resembles voice-over), might be a solution of interest to elderly viewers. Since Jankowska's survey did not include a usability test of AudioMovie, the main purpose of the present study was to introduce the application to a group of older adults and gather their opinions.

In the study, three main research questions were investigated:

(Q1) *Do older adults experience problems with reading subtitles?*

(Q2) *Would older adults be willing to use a smartphone application?*

(Q3) *Would older adults be willing to watch films with audio subtitles in the AudioMovie application in the cinema?*

Given that some older adults are visually impaired and may be experiencing a decline in cognitive functions, it was hypothesised that they would find it difficult to read subtitles and might prefer that the translation be provided orally, either through dubbing or voice-over. Furthermore, many older adults either have a fear of new technologies or need help to learn how to operate various technological devices, meaning that they could feel discouraged about using a smartphone application. Finally, since older adults are familiar with voice-over, which is widely used on Polish television, it is possible that they would be willing to watch films with audio subtitles provided in the AudioMovie application.

The study was conducted in the form of a focus group to give the participants an opportunity to express their opinions freely. As such, it is largely qualitative and exploratory in nature. It may constitute a valuable point of departure for future research on older adults as recipients of audiovisual content.

3.1. Participants

Six people aged from 67 to 78 (*M*=72.8, *SD*=3.8) volunteered to participate in the study (2 men and 4 women). The minimum age of the participants was 60, following the rationale provided by Jankowska (2019):

> The threshold for becoming a senior is not clearly defined. While some institutions set it at 65, others prefer 60 or even 55. In our study we opted for 60, following the recent publications by GUS (the Polish Central Statistical Office, 2016).

Two participants stated that the highest level of education they had completed was secondary school, and four of them reportedly had higher education. All of the participants were active members of a local association of older adults from Stare Babice, a town near Warsaw. The study was organised in the seniors club where they met regularly. The participants were asked to bring their own smartphones and headphones; however, having them was not a prerequisite for participation, and the necessary equipment was provided to those who did not own any.

3.2. Materials

The participants watched a 12-minute fragment of a short film called *What Happens While* (2015), directed by Núria Nia, which has a low level of narrative and linguistic complexity. This film was chosen because it had previously been displayed during screenings organised under the "AudioMovie - Cinema for All'' project. The AST (in the form of voice-over) already existed for the film, and permission to use it was granted to the researchers. To create a similar environment to the one the participants would find in Polish cinemas, the same translation was provided in the form of AST and subtitling. The AST was delivered through the AudioMovie application, which the participants could download for iOS or Android systems.

3.3. Procedure

After the participants had familiarised themselves with a description of the experiment, they signed an informed consent form to take part in the study. Then, their task was to download the AudioMovie application, download the soundtracks, and turn off audio description, while following the instructions of the researchers as well as a step-by-step guide (Figure 1) displayed on the screen.
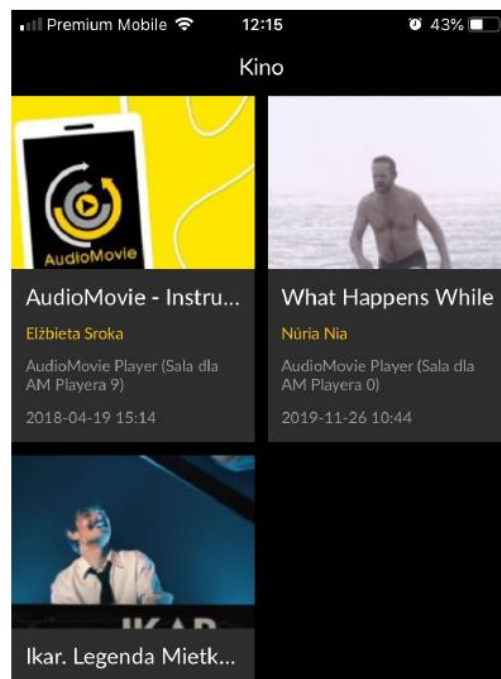

Figure 1: *AudioMovie App: Step-by-step guide*

Then, the participants were asked to put on headphones and wait for the film to begin. They could adjust the volume of the audio subtitles to their liking during the film. After watching the film, they

were asked to complete a survey, consisting of demographic information and their preferences regarding the use of technologies. Finally, the participants took part in a semi-structured focus group discussion, which was recorded and later transcribed and coded.

3.4. Method

Data obtained from the focus group was analysed following the guidelines formulated by Rabiee (2004). Rabiee based her recommendations on framework analysis by Krueger (1994) and Ritchie & Spencer (1994) and her own experience with this method of data analysis. The analysis consisted of five major steps: *familiarisation, identifying a thematic framework, indexing, charting,* and also *mapping and interpreting*. Familiarisation involved listening to the recording and reading the transcript as well as observational notes in order to acquaint oneself with the details of the interview and determine its main themes. The process of identifying a thematic framework consisted of writing down comments in the margins to establish specific thematic categories. Indexing involved selecting relevant quotes and comparing them. Charting included assigning each selected quote to a given thematic category. Finally, mapping and interpreting dealt with the interpretation of the gathered data, which was achieved using the following criteria: *words* (concentrating on the words used in each quote and deciphering their meaning), *context* (taking into consideration the context in which a given statement was uttered), *the frequency and extensiveness of comments* (considering how many times a given comment was expressed and by how many participants), *the intensity of the comments* (concentrating on the feelings behind each comment), *internal consistency* (noting any change of opinion), *the specificity of responses* (concentrating on the participants' personal experiences rather than their hypotheses), and *big ideas* (noticing which tendencies become apparent during the analysis).

3.5. Results

The questions posed while speaking to the focus group (see Appendix 2) were divided into three sets, corresponding to the three research questions. The first set of questions was intended to determine whether the participants experienced problems with reading subtitles. First, older adults were asked how often they went to the cinema. If they answered that they went a few times a year or less, they were asked to state the reasons, to see whether subtitling would be listed as one of them. Subsequently, they were asked to identify their preferred mode of AVT and justify their choice. The purpose of the question was to establish if their answers would coincide with the study by Jankowska (2019), which suggests that older Polish adults usually opt for dubbing or voice-over rather than subtitling. Assuming that subtitling might be their least preferred AVT mode, there was another question aimed at investigating in greater detail whether they experience problems with reading subtitles.

The objective of the second set of questions was to establish whether older adults would be willing to use a smartphone application to watch films in the cinema, and to assess their attitudes towards new technologies in general. The participants were asked if they found the interface of the application to be intuitive, if they would be able to navigate it a second time without assistance, and what they thought about the necessity of using headphones.

The purpose of the last set of questions was to gather participants' opinions on the app itself and determine whether they would be interested in watching films with the AudioMovie application in the cinema.

The quotes reported in this section were translated from Polish into English by the author.

Q1: Do older adults experience problems with reading subtitles?

To begin the discussion, the participants were asked to state how often they go to the cinema. The majority of them reported that they do so a few times a year. Among the reasons for not going more often they mentioned the following: other responsibilities, high ticket prices, an uninteresting repertoire, the distance to the closest cinema and the need to use public transportation, the fact that other viewers eat popcorn during screenings, and their preference for television.

- *The biggest problem is to find something that you really want to watch. Not all of the films are interesting to us* (female #1).
- *I prefer studio cinemas where there is no popcorn* (female #3).
- *It is more comfortable to sit on a sofa at home* (male #1).

Subsequently, the participants were asked to choose their preferred mode of AVT. The majority of them opted for dubbing or voice-over, although they named some issues they had with both of those AVT methods.

- *I would opt for dubbing, then voice-over, and subtitling at the end. However, when a voice talent speaks in a monotone voice, it bothers me* (female #3).
- *I agree with this hierarchy, although dubbing needs to be of good quality. Sometimes the voice does not match the character on the screen* (female #1).

The two participants who had hearing aids chose either subtitling or subtitling and dubbing. One of them was not able to justify her choice; the other stated that he would benefit the most from a combination of dubbing and subtitling.

Another question concerned older adults' difficulties with reading subtitles. The participants generally agreed that the main problem they face is the speed of subtitles during fast-paced films, or in the scenes in which characters speak quickly.

- *(...) in the film we watched today, everything moved very slowly. I didn't have any problems. (...) I noticed, however, that actors in modern films speak very quickly and*

the subtitles are fast as well. That's how I realised that I often can't keep up. Besides, it is tiring because I am concentrated on reading, not on watching (male #2).

- *I simply lose focus because I am not able to read* [the subtitles] *and I don't understand the film. (…) If I am not able to read* [the subtitles] *in their entirety, then I feel like something is missing* (female #3).

Two participants admitted that sometimes subtitling discourages them from going to the cinema and they opt for other activities, instead.

- *If I have to go to the cinema and read subtitles, then I would rather sit at home and read a book* (male #2).
- *When I go to the cinema, I say: "Oh no, I am going to have to read". I don't have to do that when I watch television* (female #3).

However, as explained by one participant, subtitling does not make him avoid cinema altogether, but he associates watching films in a voice-over mode with comfort and relaxation.

- *It is very important to me…. In the summer, we have a big screen here, and we can watch films every week. (...) I specifically asked the organisers if the film would be displayed with subtitles or voice-over. (...)* [If the film had been subtitled], *I would still have gone to see it, but this way I could sit comfortably on a deckchair (...) and watch the film* (male #2).

During the discussion on subtitling, the participants pointed out that one of the problems older adults encounter is the speech rate of the news anchors on Polish television. They noted, however, that selected programmes are available with subtitling for the deaf and hard of hearing, which they sometimes use to enhance their understanding.

- *I can't listen to the news. I have heard from a lot of seniors that people who read the news speak very fast. You can't process it that fast. Sometimes we miss some words and we ask each other, "What did he say?"* (male #2).
- *I think that on television now there is not only dialogue, but also subtitles. They describe what is happening. People who are hard of hearing can use* [these subtitles] (female #3).

Q2: Would older adults be willing to use a smartphone application?

First of all, the participants were asked, after some basic instructions, whether the use of the application was intuitive, or whether they needed more help from the researchers. Two female participants immediately stated that they needed a great deal of assistance, while two male participants were convinced that it would be quick and easy to learn how to navigate the application.

- *I needed a lot of help because I simply don't use it* [the application] (female #1).

- *It is a matter of learning how to use it. One moment and you know what to do* (male #1).

This question inspired a debate on the participants' attitudes towards technology in general. Female participants treated it with caution, while male participants seemed more open to incorporating it into their daily lives.

- *We were not born with it. It is the younger generations who know how to operate it* (female #1).
- *If someone uses a smartphone, they read it, click on it, and it goes on somehow, step by step. Recently, I flew somewhere by plane and I had tickets on my phone* (male #1).
- *You can learn it but you also have to trust it. Technology has yet to win our trust but I think there is not enough time, because it would require 20, 30 years or even more* (female #1).
- *I agree, we need to trust* [technology]. *I do everything over the Internet. I am not afraid of it but my brother won't buy tickets, he won't shop…* (male #1).
- *He* [the brother*] is afraid of being robbed! He is afraid that someone might steal the money from his account. And he is right to think that way. The same with me* (female #3).
- *But shopping online is very easy. The program has step-by-step instructions. You can do it intuitively* (male #2).

Subsequently, the participants were asked whether they believed they would be able to use the application for a second time without assistance. Male participants expressed confidence in their own abilities; one of them assumed that in case of any problems, the cinema staff members would know how to help him. Female participants stated that they would need help, either from their husbands or "a guardian angel", but in general believed that they would be able to learn how to navigate the application after a few attempts.

- *Only with my husband* (female #2).
- *I couldn't do it by myself. I would need help from a guardian angel. (…) I am not very good at operating a smartphone. Maybe I use it too rarely* (female #3).
- *First, we would have to practice it once again. This information can't be consolidated after one try* (female #1).
- *No problem. The public library organises internet courses, the Counsel of Seniors is active. We can learn everything there* (female #1).

One person pointed out that older adults cannot operate technological devices as well as the younger generations, who are considered to be digital natives. A difference in skill was especially visible when the participants were asked to install AudioMovie. The interface of the application differs depending

on the operating system. The participants who had iPhones saw buttons with commands like *Pobierz* (Download) or *Skanuj* (Scan), which were easy to understand (Figures 2 and 4).

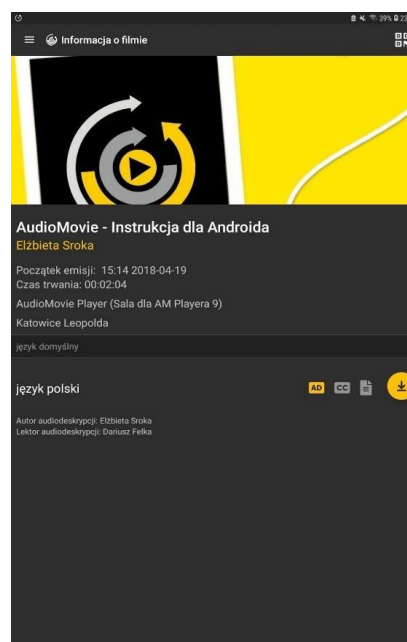

Figure 2: *AudioMovie app (iOS)*

Figure 3: *AudioMovie app (Android)*
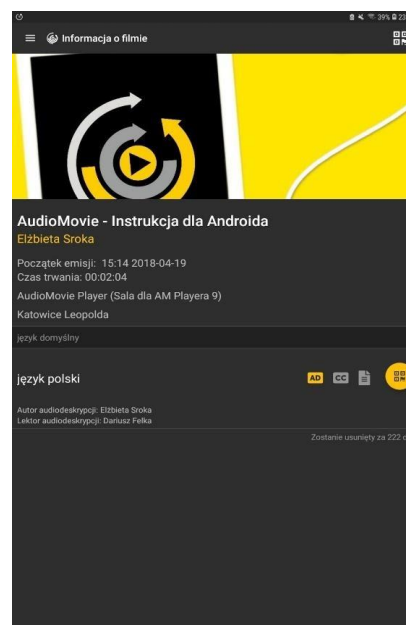

Figure 4: *AudioMovie app (iOS)*

Figure 5: *AudioMovie app (Android)*

Another focus question concerned headphones. Two participants used hearing aids. Only one respondent conceded that wearing headphones would constitute a problem. The other one stated

that he was willing to take his hearing aid off, if necessary. Other participants did not voice any issues connected with headphones.

- *It may be a problem for those who have hearing aids. I have one, for example (…) But when I am in the cinema (…) then I have nowhere to keep it* (female #2).
- *I sit down, I take out the headphones, I put [the hearing aid] into my pocket and I turn on the application* (male #1).
- *The problem is that there are two kinds of people. Some always have a negative attitude and they look for problems everywhere. I try to eliminate such obstacles* (male #2).

Q3: Would older adults be willing to watch films with audio subtitles in the AudioMovie application in the cinema?

As mentioned above, the study was designed to simulate the experience that AudioMovie users would have in Polish cinemas, where they would be provided with subtitling and voice-over simultaneously. Thus, the researchers inquired whether the combination of these two AVT modes caused additional difficulties. The participants reported that they had not identified any problems. Some of them stated that they could focus either on subtitling or on voice-over. Others admitted, however, that even though they listened to voice-over, they automatically read the subtitles, as well.

- *It didn't bother me because I could turn off reading. However, I read* [the subtitles] *from time to time* (female #3).
- *You can't turn off reading when you watch a film* (female #4).

Finally, the participants were asked to give their opinions about AudioMovie in general. The older adults' attitudes towards the application were positive overall. They identified several advantages of the application. For example, one participant emphasised that older adults who tend to avoid cinemas because of subtitling could benefit the most from AudioMovie.

- *We have contact with many different seniors and I have to say on their behalf that it* [the application] *would be very helpful. Some of them don't go to the cinema because they have trouble reading* [the subtitles] (male #2).

Another participant pointed out that the application could be used both by older adults with vision loss and older adults with hearing loss. As suggested by one participant, people who prefer different modes of AVT could go to the cinema together and use the application.

- *The headphones solve another problem because if other people don't want to listen* [to voice-over], *I can have it just for myself. This [service] is provided only to those who need it. (…) I would say that it is good to have that option, to listen and to read. A combination of the two* (male #1).

One person also indicated that AST would allow him to concentrate more on the images on the screen. Finally, some participants stated that owing to headphones and the ability to increase the volume of the translation, they could stifle the sound of other viewers eating popcorn in the cinema.

- *Besides, I can drown out the sound of popcorn!* (male #2).

It is worth noting, however, that the participants were concerned about possible increases in the prices of cinema tickets.

- *For sure there will be people (...) who will ask, "How much more would we have to pay to watch films like this?" Unfortunately, our community of seniors varies in terms of finances* (female #1).

4. Discussion

The main objective of this focus group study was to introduce the AudioMovie app to older adults and see whether they would be interested in using it in the cinema. Due to age-related sensory and cognitive decline, the researchers hypothesised that the participants would prefer watching films with an oral translation provided by the app instead of reading subtitles. Additionally, we assumed that the app might be appealing to older adults, given the prevalence of voice-over on Polish television.

Generally, older adults' reception of the AudioMovie application was positive. All of the participants (apart from one) declared that they would be willing to use the application in the cinema. Moreover, after the official part of the study had finished, they wanted to receive information about when AudioMovie would be available, and in which cinemas. In the course of the discussion, the participants listed many advantages of the application. For example, it was mentioned that it could be a good solution for those who avoid going to the cinema because of subtitling. These findings are consistent with the survey by Jankowska (2019), in which older adults also expressed their interest in using AudioMovie in the cinema. It is worth mentioning, though, that the participants in her study did not test the application.

The results of the study suggest that because the complexity of the stimulus was low, the participants did not report having any difficulties with reading subtitles. However, they admitted that such problems may arise when they watch fast-paced films. Older adults do not usually have sufficient time to read the subtitles, they claim, if the characters on the screen speak quickly. The participants also stated that they tend to miss important parts of dialogues, which may negatively affect understanding the film as a whole. These findings correspond to the study by Perego et al. (2015), who also used a "moderately complex" stimulus. They found that older adults' performance did not differ significantly from the younger group's performance, regardless of the translation mode (dubbing or subtitling). The researchers suggested, however, that the film genre might have a

considerable influence on the results of similar studies, which was confirmed by the participants in the present study.

Despite problems with reading subtitles, older adults who participated in the study do not avoid watching foreign films in the cinema altogether. They acknowledged, however, that when they know they are going to have to read a translation, they sometimes choose other activities instead. Moreover, the participants appear to associate watching voiced-over films with comfort and relaxation, and it is important to them to check the AVT mode provided for a given film before its screening. If the participants were to identify their preferred AVT modalities, the majority of them would opt for dubbing and voice-over, which coincides with the results of the survey conducted by Jankowska (2019). Two participants who had hearing aids mentioned subtitling as one of the AVT modes they considered the most beneficial. Thus, it is reasonable to assume that films displayed with two different forms of translation simultaneously – in this case, subtitling and voice-over – may appeal to a larger group of older adults. However, although the participants reported that watching the film with both AST and subtitling was not bothersome, many of them admitted that they could not "turn off" reading subtitles. Taking into consideration that concentrating on two things simultaneously might be more challenging, the combination of two AVT modes could become overwhelming for elderly viewers once it is used to translate a more complex film, especially when the text in the subtitles differs substantially from the AST.

The study also confirmed that, in general, older adults are willing to use technology (in this case a smartphone), though there are several obstacles that have to be overcome before it is incorporated into their daily lives. They stressed that first of all they need to trust it and consider it useful. As one of the most significant reasons for fear of technology, the participants identified the risk of having their money stolen. That is why one of the female participants had asked her children to block the capability for downloading applications on her phone, and borrowed a smartphone from the researchers in order to take part in the study. If older adults are to be prospective users of AudioMovie, they need to be assured that the application will not have access to their bank accounts. Thus, the present study confirmed Guner & Acarturk's (2018) suggestion that older adults often feel motivated to learn new technologies if they find them useful and safe.

The participants also emphasised that they would need help, both to learn how to navigate the application and to ensure that in case of issues, there would be someone in the cinema to assist them. Moreover, in order to prepare the application before a screening (to download the soundtrack, scan the code, etc.), the participants relied on clear, step-by-step instructions. Some older adults used a guide displayed on the screen, while others needed researchers to show them individually what to tap. In general, the majority of participants were positive that after devoting more time to consolidate their knowledge of the application, they would be able to use it without assistance. That is why in order to address the needs of older adults, AudioMovie could offer a step-by-step guide for users to read; moreover, cinema staff members could be trained to help viewers navigate the application if necessary, and the use of the application could be taught during technology courses for

older adults. These results are in line with studies by Barnard et al. (2013) and Seals et al. (2008), which also highlighted the importance of step-by-step instructions and an individual approach.

Before concluding, it is important to consider the limitations of the present study. Due to the small sample (six people), the results of the experiment cannot be generalised. Instead, they could be regarded as a point of departure for future research in the field of AVT involving older adults. All of the present participants live in a rural town near Warsaw. The results of the study would have been more complete if the opinions of people living in urban areas had been included. It is worth noting that two additional studies involving older adults from Warsaw had been scheduled. However, they had to be cancelled due to the restrictions introduced by the Polish government in response to the COVID-19 pandemic. Finally, the participants were all active members of a local association, who are generally more open to learning about new opportunities.

5. Conclusion

The results of the study show that older adults might be interested in using the AudioMovie application in the cinema. Since the participants reported problems with reading subtitles quickly, an accessibility app providing oral translation may prove particularly useful during fast-paced, complex films. Such a solution might also cater to older adults' requirements regarding the mode of translation, as the majority of the participants identified dubbing or voice-over as their preferred AVT methods. The study also indicates that older adults are willing to use a smartphone. However, in order to feel fully safe and comfortable, they may need technical support and step-by-step instructions.

This study shows that older adults may benefit from access services whose primary recipients are either the deaf and hard of hearing, or the blind and partially sighted. As highlighted by Jankowska (2019), cinema owners might consider access services worth pursuing although they would have to be certain of the potential financial benefits. The inclusion of older adults in the group of target users of SDH, live subtitling, or AST may render access services more attractive to the cinema industry, which might in turn bring significant improvements not only for elderly viewers, but also for the deaf and hard of hearing and the blind and partially sighted.

Since the needs and attitudes of older adult recipients to audiovisual translation remain under-researched, future studies in this area – both quantitative and qualitative – are necessary to better understand the needs and characteristics of this age group. Such studies could investigate, for example, whether a combination of two AVT modalities may improve elderly viewers' understanding of a film or constitute a highly demanding cognitive task.

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Appendix 1

Survey

1) Gender

    a) Female

    b) Male

2) Age

3) Education

    a) Primary

    b) Secondary/technical/vocational training

    c) Higher

4) How often do you use a smartphone?

    a) Never

    b) Once a month

    c) 2-3 times a month

    d) Once a week

    e) 2-3 times a week

    f) Every day

5) How often do you go to the cinema?

    a) I've never been to the cinema

    b) I've been to the cinema once

    c) Once every few years

    d) Once a year

    e) A few times a year

    f) Once a month

    g) A few times a month

Appendix 2

Focus group questions

1) How often do you go to the cinema? (If rarely) Why?

2) What do you think about the fact that cinemas offer the vast majority of foreign films with subtitles?

3) Would you be interested in watching foreign films in the cinema with voice-over (like on television)?

4) What is your preferred mode of audiovisual translation: subtitling, dubbing or voice-over? Please explain your answer.

5) Was the use of the application intuitive for you? Did you require a great deal of assistance or were you able to deal with the app yourselves?

6) Do you think you would be able to use the application by yourselves next time?

7) What do you think about the fact that you were required to use headphones during the film?

8) According to you, what are the advantages and disadvantages of the application?

9) Would you be willing to use the application in the cinema?