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*European Journal of Communication* 2002; 17; 325  
DOI: 10.1177/0267323102017003694

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# The Pros and Cons of Dubbing and Subtitling

■ Cees M. Koolstra, Allerd L. Peeters and Herman Spinhof

## ABSTRACT

■ Dubbing and subtitling are the most prevalent methods used to make foreign-language television programmes available to a domestic market. Each adaptation method has its advantages and disadvantages. This article provides an inventory of the pros and cons of both methods on the basis of three questions: Through which method can information best be transferred? What are the aesthetic advantages and disadvantages of each method? Which skills do viewers acquire 'incidentally' by using one of the two adaptation methods? The answers given to these questions are based as much as possible on the results of empirical research on dubbing and subtitling. The conclusion is that there is no empirical evidence for some frequently claimed advantages and disadvantages. With regard to other pros and cons, it depends on the viewer, the type of television programme and the way in which a programme is subtitled or dubbed as to whether the argument should be taken seriously. ■

**Key Words** aesthetic appreciation of television programmes, comprehension of television programmes, dubbing, foreign-language acquisition, subtitling

In the European Union many television programmes broadcast are imported from foreign-language countries. In the Netherlands, for example, about one-third of the television programmes come from abroad (Luyken et al., 1991; Spinhof and Peeters, 1999). Two adaptation

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methods are clearly favourite when foreign-language television programmes are made available to a domestic market: subtitling and lip-sync dubbing (Kilborn, 1993). There are three other adaptation methods that are used on a more or less regular basis, but these methods are applied only in a limited group of specific programme types: off-screen narration in programmes in which off-screen comments were also provided in the original language; voiceover in news programmes; and intertitles in documentaries and educational programmes that focus on pictorial information. There seems to be a real watershed between countries of the EU in the use of the two popular methods dubbing and subtitling (Danan, 1989; Luyken et al., 1991). Typical 'dubbing countries' are Austria, France, Germany, Italy and Spain. Typical 'subtitling countries' are Belgium, Denmark, Finland, Greece, Luxembourg, the Netherlands, Portugal and Sweden. The UK and Ireland are the only countries which cannot be allocated into one of the two camps, because the small amount of non-English-spoken movies and programmes that are broadcast in these countries are subtitled or dubbed on a fifty-fifty basis (Kilborn, 1993).

Both popular adaptation methods seem to be functioning well. Not only the translators – in this case the subtitlers and dubbers – but also the viewers are accustomed to the method that is used in their country. Moreover, in subtitling as well as dubbing countries there is a clear conviction that their 'own' method is also the best (Bruls and Kerkman, 1989; Kilborn, 1993; Luyken et al., 1991; Spinhof and Peeters, 1999). The choice to dub foreign television programmes is mainly defended with the argument that dubbed programmes are easy to follow because viewers do not have to read while viewing. In the camp of the subtitlers, on the other hand, there is annoyance about the imperfect lip-synchronicity in dubbed programmes, and subtitling is defended with the argument that the original voices of the actors are left intact. Besides these often-heard arguments against or in favour of subtitling and dubbing, there are many more arguments that can be heard in discussions between the supporters of each camp. Sometimes the arguments are based on prejudice; occasionally they are exaggerated; and often they are (purposely) forgotten. In addition, it must be noted that sometimes dubbing or subtitling is also criticized using 'false' arguments pertaining to the mere fact that the original foreign-language texts are badly translated. Because translation mistakes may occur both in dubbing and subtitling, only translation problems caused by the specific nature of the adaptation method (such as condensation in the case of subtitling and lip-

synchronicity in the case of dubbing) should be taken into consideration when discussing the pros and cons of the adaptation methods.

In the present article, we try to make an inventory of all adaptation-based arguments, whether common or not. For this purpose, the most important sources are the 'dubbing vs subtitling literature', in particular Bruls and Kerkman (1989) and Luyken et al. (1991), as well as the results of recent public opinion research (Spinhof and Peeters, 1999). For each argument it is determined whether or not support can be found in empirical research. Whenever possible we refer to studies in which the two adaptation methods are explicitly compared. In many cases, however, we may be forced to fall back on 'indirect evidence' or common sense. In the review of advantages and disadvantages we use a classification into three subjects:

1. Information processing. Through which adaptation method is information transferred best?
2. Aesthetics. Which adaptation method leads to the highest appreciation of television programmes by the viewers?
3. Learning effects. Which skills do viewers acquire by using one of the two adaptation methods?

In the Conclusion and Discussion we present a short overview of the advantages and disadvantages that have been discussed. Subsequently, we try to draw up the balance sheet by estimating how seriously the various pros and cons should be taken into account when comparing the two adaptation methods.

### Information processing

For several reasons, adaptation through subtitling or dubbing can have consequences for the transfer of information. First, it is not possible with either method to translate the original text literally. With subtitling the information often has to be condensed: not all of the words that are said fit into the subtitles. Dubbing too has a limitation: the texts have to fulfil the condition that they must seem to be spoken by the person(s) in the picture. Second, with dubbing the original soundtrack is removed, whereas with subtitling part of the picture is 'covered' with text. Finally, viewers do have to process the adapted information in different ways: in the case of dubbed programmes they have to listen to the information and in the case of subtitled programmes they have to read it.

In regard to the consequences for information processing we present 12 advantages and disadvantages. The first three pertain to the fact that

with both methods the translation has to be adapted to the information provided in the picture, the next four to the fact that either a part of the picture or the original sound is removed, and the last five to the fact that the texts are read or listened to by a viewer.

### *Condensation*

To determine the length of time a subtitle will be shown on screen the six-second rule is common: the longest possible subtitle of two lines containing a total of 64 characters (including spaces), is shown on screen for six seconds (e.g. Gielen and d'Ydewalle, 1989; Minchinton, 1987). When a subtitle contains fewer characters, the presentation time is decreased proportionally. For example, a subtitle containing 32 characters will be shown for three seconds. The presentation rate is therefore 10 characters, or about two words, per second. At an average speech rate a little more than two words can be spoken per second. In most cases, therefore, the text has to be condensed. For example, about 30 percent of the spoken text of an English-language programme has to be left out in the Dutch subtitles (H. Reid, pers. comm.). In the process of condensation, subtitlers will attempt to adapt the original spoken texts without leaving out information that is essential for the viewer's understanding. If that is not possible information loss will occur for the viewer. In most cases, however, experienced subtitlers are capable of producing translations that are of equal value to the original information and condensation will not lead to loss of information.

### *Conciseness*

Therefore, it may be concluded that most of the time the condensed information in subtitles is of equal informational value as the original spoken texts, but that information loss cannot always be avoided. On the other hand, it must be noted that adaptation can lead to an increase of information in cases where the information is presented more clearly and concisely in the subtitle than in the original spoken text.

### *Adjustment to speech duration*

In general, condensation is not necessary in dubbing (Luyken et al., 1991). The speech rates of most languages do not vary as much as one may think on the basis of subjective perception (Marsi, 1999) and although one language may be a little more long-winded than the other,

differences in this aspect are not great. Therefore, less often than with subtitling, there will be information loss for a viewer who is watching a dubbed version of a television programme. However, when individual sentences are considered, the problem of space may also occur in dubbing, for example when a pithy expression in the original language has to be spelled out in more words in the 'new' language. An opposite type of space problem may emerge when the translated text has to be stretched because the on-screen speaker is still talking while the translation is simple and short. Both types of space problems will arise only incidentally and when they do, they will probably seldom lead to information loss for the viewer.

### *Redundancy*

In special cases, subtitles are shown in the same language as the original spoken text. This type of subtitles, often provided by means of teletext, may be used to make television programmes available to the deaf and hard of hearing. Dutch, Flemish and British public stations, for example, use teletext page number 888 for this purpose. Incidentally, some stations, such as the French channel TV5, provide 'real' subtitles in the original language in addition to the soundtrack. In this case, hearing viewers are provided with strong overlapping information consisting of sound and text. Such a strong overlap does not exist with normal subtitling. When the spoken foreign language is totally unknown to the viewers, their comprehension of the verbal information is fully dependent on reading the subtitles in their own language. However, in Europe many foreign programmes originate from English-speaking countries or from neighbouring countries in which a related language is spoken. Thanks to linguistic affinity, school learning or experience, most viewers have some command of the original language of a subtitled programme, which may enable them to pick up a few words from the spoken language now and then. Indications that viewers in fact listen to and understand part of the foreign spoken language come from real-life experiences, for instance, when viewers notice a not-translated joke in the original dialogue or when viewers become aware of an especially good or bad translation of the original spoken text.

Additional evidence for the phenomenon of viewers listening to the dialogues of subtitled television programmes is provided by experimental studies in which, besides watching television, a second task had to be performed. An example of such an experiment is Sohl's (1989), in which the reaction times on flashlights were taken as a measure for the amount

of processing capacity a viewer uses while viewing. It was assumed that more capacity was used for information processing when reaction times to the flashlight were slower. Three versions of a television programme segment were compared: (1) subtitles and speech available, (2) no subtitles available and (3) neither subtitles nor speech available. The slowest reaction times were found in the presence of subtitles as well as speech (1), indicating that viewers pay attention to the auditory information when watching subtitled programmes. The assumption that viewers are also capable of using the redundant spoken information in the soundtrack comes from research investigating whether or not viewers can learn words from a foreign language while watching subtitled television programmes. Children (d'Ydewalle and van de Poel, 1999; Koolstra and Beentjes, 1999) as well as adults (d'Ydewalle and Pavakanun, 1995, 1997; Pavakanun and d'Ydewalle, 1992) appear to be capable of learning the meaning of some of the words spoken in a foreign language while watching subtitled programmes. Viewers of subtitled programmes, therefore, can profit from the redundancy in subtitles and spoken text. It must be noted that the expression 'redundancy' is often used when certain elements in an information system are predictable given the availability of other elements within the system. In the case of subtitled programmes, redundancy lies in the fact that the same information is offered twice, namely by two different types of stimuli (d'Ydewalle and Gielen, 1992). This information is complemented by information in the (moving) picture, so that viewers have 'multi-channel' information processing possibilities at their disposal (Koolstra and Beentjes, 1999).

### *Manipulation and censorship*

Because with dubbing the original spoken text is totally removed, a viewer does not dispose of redundant information. A disadvantage of this removal is that viewers in dubbing countries are more vulnerable to manipulation and censorship than viewers in subtitling countries. Unless a viewer can read lips perfectly in the foreign language, with dubbed programmes there is no way of checking the translation on the basis of the original soundtrack. With subtitling, censorship may also occur, but it will not escape the notice of an attentive viewer. An example of censored subtitling was found in a Dutch broadcast of the movie *Against All Odds* (T. Hackford): the sentence 'She nearly cut my balls off' was subtitled as 'She nearly cut it off' (Bruls and Kerkman, 1988).

*Easy adaptation*

The possibility of rigorously adapting the original texts with dubbing also has its advantages. When an original joke is untranslatable, a whole new substitute joke can be made up. Dubbing also provides the possibility to give unnoticed explanations when part of the content of the programme is unknown to the new target group (Kilborn, 1993). Subtitlers have the opportunity to change original texts too, but in this aspect they are more restricted than dubbers are, because viewers of subtitled programmes are able to check the adaptation with the original.

*Limited view*

Subtitles are thought to impede information processing because they reduce the visible area of the original picture (van Driel, 1983). In practice, however, viewers are scarcely hindered by a limited view. First, it may be assumed that the most important events occur in the middle part of the screen, whereas subtitles are presented at the bottom. Second, subtitles are not constantly shown, and when they are shown viewers can see most of the picture through the subtitles. There is, however, a problem when the original programme already shows a 'subtitle' in which, for example, the name and profession of the speaker is cited. In that special case the overlapping texts are difficult to read.

*Distracting attention away from the picture*

Another possible disadvantage of the use of subtitles is that they might distract the viewer's attention away from the screen. In order to follow a programme, viewers have to alternate their attention to picture and subtitles. When the attention is focused on the subtitle, information provided in the picture might be missed. This effect, however, has never been demonstrated empirically. There is more reason to assume that switching attention from picture to subtitles (and vice versa) proceeds automatically and effortlessly (e.g. d'Ydewalle et al., 1987). An eye-movement-registration experiment conducted by Gielen (1988) has shown that viewers, when watching a subtitled programme, employ a 'viewing strategy' in which the eye is focused primarily on the area just above the subtitles, a tactic that makes it easy to monitor the most important events in the picture and read the subtitles almost simultaneously.

*Concurrent activities*

Dubbed programmes are easy to follow because viewers 'only' have to listen and do not need to be involved in reading. Listening to a dubbed programme seems to be especially easy when watching television is secondary to a primary task, such as reading a newspaper. A Dutch time-budget study (Huysmans and de Haan, 2001) has shown that this way of 'watching' television occurs during about 23 percent of the time viewers are in front of the screen. When, for example, a person is busy reading a newspaper, the developments in a television programme can be monitored with only half an ear. When the auditory information justifies it, the primary activity can be postponed and full attention can be paid to the screen. Limited attention for television can also occur when watching television is the primary activity but it is combined with another activity. It is unknown how often viewers combine television viewing with another activity, but at moments when the viewer is not watching the screen, dubbed programmes can be monitored via the soundtrack. In theory, subtitled programmes can also be followed with half an ear, but this strategy seems to be more difficult, because viewers often do not have command of the foreign language as well as their mother tongue.

*Environmental noise*

In contrast to the advantage of being able to follow dubbed programmes via the soundtrack, there is the disadvantage that the sound of the television may be overwhelmed by other sounds in the room, such as the noise of conversations held by members of the family. In noisy environments, subtitled programmes are of course easier to follow than dubbed television programmes.

*Mental effort*

Because a viewer is not only busy watching and listening but also reading, it is sometimes assumed that watching a subtitled television programme takes more mental effort than watching a dubbed programme. According to Marleau (1982), reading takes up so much energy that French cinema audiences leave the theatre in a worn-out state after they have watched a subtitled movie. In principle, viewers could neglect the subtitles and focus their attention on the dominant moving pictures that seem to provide the most important cues for good comprehension of a television programme or movie (e.g. Hayes and Birnbaum, 1980; Pezdek and Stevens, 1984). However, eye-movement-registration studies

have shown that reading subtitles cannot be neglected and that reading, on the contrary, is an automatically elicited behaviour (e.g. d'Ydewalle et al., 1991). As soon as a subtitle appears on screen the viewer's attention is drawn to it (d'Ydewalle et al., 1987). The attention for subtitles is so compelling that viewers also focus their attention on subtitles in an unknown foreign language (d'Ydewalle et al., 1991) and on subtitles of programmes that contain sound as well as subtitles in their own language (d'Ydewalle et al., 1987).

### *Efficiency*

For reasons of efficiency in information processing it seems to be smarter to read subtitles, because reading is usually faster than listening (d'Ydewalle et al., 1991). Viewers also have the opportunity to read ahead and back as long as the subtitle is available on the screen.

Two studies on subtitle recognition indicate that subtitles are indeed processed efficiently. In a study conducted by Gielen (1988) recognition was measured directly after watching a subtitled programme with a multiple-choice test that included one correct subtitle and three (very similar) distractors for each subtitle. Adult viewers chose the correct alternative in 97 percent of the cases. In a study by Koolstra et al. (1999), in which recognition was measured in an identical way among children, it was found that youngsters too are reasonably capable of recognizing the subtitles they had just seen on television. Recognition was shown to increase with age (and level of reading ability): children from Grades 2, 4 and 6 chose the correct subtitle in respectively 51, 71 and 83 percent of the cases.

Subtitles seem to be processed efficiently, but is information processing as efficient as with dubbing? There have been three studies in which subtitled and dubbed programmes were explicitly compared with regard to the transfer of information. In a Swedish study conducted by von Feilitzen et al. (1979) it was found that children aged seven to eleven had more problems comprehending a subtitled television programme than a dubbed version. It cannot be excluded, however, that processing the subtitle information while watching television in the study was much more difficult than doing so with today's programmes, because in the study an out-of-date subtitling technique and black-and-white television sets were used. Through technical improvements such as colour television, subtitles with contrasting letters and increased brightness of the picture, the readability of subtitles nowadays is much better than two decades ago.

In a more recent Dutch experiment conducted by Peeters et al. (1988) it was also investigated whether children in Grades 2, 4 and 6 learn more from a dubbed than from a subtitled television programme. After watching a subtitled or dubbed version of an English-language children's movie four types of comprehension questions were asked. The questions pertained to (1) images that are essential for story comprehension, (2) text that is essential for story comprehension, (3) details in the images and (4) details in the text. Differences in comprehension were found particularly in questions about detailed information: pictorial as well as verbal details were conveyed better with the dubbed television programme than the subtitled version. These differences were especially apparent among the youngest children (Grade 2). Second graders, however, did not only respond better to questions about detailed information, but also to essential pictorial information after watching the dubbed television programme. Problems with understanding the subtitled programme were explained as follows: the pictorial information (detailed information included) is conveyed better through dubbed programmes, because viewers have time to take a good look at the pictures as no time is wasted on subtitle reading. While watching subtitled programmes, detailed textual information is not processed very well by beginner readers, simply because they do not always have enough time available to read the subtitles completely.

Mangnus et al. (1994) investigated whether or not adult viewers retain more information from watching a dubbed television programme than from watching a subtitled programme. In both situations questions about the dialogue and the images had to be answered. Contrary to expectations, viewers recalled an equal amount of information from the subtitled and from the dubbed television programme. The researchers sought an explanation in the greater efficiency of processing written information. However, some remarks can be made about the study. First, it is questionable whether equal recall scores can be attributed exclusively to the efficiency argument. All the pros and cons of the two methods regarding information processing we have mentioned earlier may play a role. Second, the study was not about understanding but about recalling information. It is likely that recalling information, which means reproducing explicitly presented content, is easier than understanding information. If comprehension had been investigated it might have turned out that processing capacities were subjected to a stronger test while watching a subtitled programme than during a dubbed programme. Third, the method of dubbing utilized in the experimental programme was different from 'normal' dubbing, because a voiceover in

which the commentator read the exact texts of the subtitled version was used. The accordance between commentary and subtitles facilitated a statistical comparison between the two adaptation methods, but is questionable in terms of ecological validity, because in general commentary texts accompanying television programmes are more extensive than texts in subtitles.

### *Summary*

Subtitled television programmes can be processed well by viewers. Most likely, the necessary condensation involved in the adaptation of spoken text to subtitles does not lead to information loss and subtitles do not distract the viewer's attention from the picture. Even when the sound of the television is drowned out by other noises in the room, subtitled programmes can still be followed. Because reading is faster than listening, information processing while watching subtitled programmes is also efficient. Dubbed programmes too can be processed well by viewers. Listening to spoken texts is evidently not very demanding mentally, because viewers do not need to be reading at the same time. Especially when watching television is a secondary activity, dubbed programmes are easy to follow. Because with dubbing the original soundtrack is totally removed, dialogues can be adapted easily, with the disadvantage that viewers are more vulnerable to manipulation and censorship.

### **Aesthetics**

In general, domestically produced television programmes are more popular than similar programmes imported from abroad. The higher popularity of domestic programmes can possibly be attributed to content: domestic programmes are more closely related to local situation and culture than foreign programmes. It cannot be ruled out, however, that subtitled or dubbed programmes are judged less attractive simply because of the adaptation. In this section, seven aesthetic arguments are discussed. The first two pertain to whether or not the original soundtrack is preserved, the next two to the fact that with subtitling part of the picture is covered, and the final three to the fact that with both adaptation methods the translation has to be tailored to the information presented in the picture.

### *Authenticity*

An advantage of subtitling is that a subtitled programme is more 'real' and more closely resembles the original programme than a dubbed programme, because actors, presenters, etc. are heard with their own voices (Luyken et al., 1991). Dubbing is criticized because popular 'voice-actors' participate in so many programmes that viewers may hear the same familiar voices again and again, even when they belong to very different characters in very different television programmes (Groenewold, 1986). As the original voices of the actors cannot be heard, an important part of the acting performance is lost. With non-fiction, such as news programmes, when the original voice is dubbed over, the non-verbal part of the paralinguistic information is lost. The tone in which a subject answers a question, or a hesitation at a certain moment, might be very important to the viewer's interpretation.

### *Familiarity (through bearing own language)*

Because viewers hear their own language, dubbed programmes may come across as more familiar than subtitled programmes (Mailhac, 2000). Possibly viewers can more easily identify with actors who 'speak' the same language. By listening to their own language, viewers may also think that the events presented on screen are 'normal' and that the events could have been situated in the viewer's own environment. In countries in which television stations broadcast in a minority language, dubbing provides the possibility to confront viewers extensively with the 'beautiful and rich' sound of their own minority language (see also Danan, 1989).

### *Overlapping the picture*

An aesthetic disadvantage of the use of subtitles is that they 'smudge' the picture (Ivarsson and Carroll, 1998). In particular film directors (for example Bernardo Bertolucci and Eric Rohmer) have objected to subtitling, because they strive to present aesthetically attractive images, possibly more so than television producers. In addition, the technique of providing movies with subtitles is more drastic than subtitling television programmes. When movies are subtitled, a copy of the original tape is used to 'burn in' subtitles with the use of chemical, optical or laser techniques (Ivarsson and Carroll, 1998). In contrast, when television programmes are subtitled, the original tape is not changed, as through electronic means the subtitles are broadcast separately at the same time as the programme is broadcast.

Peeters and van Merwijk (1995) conducted an experiment investigating where subtitles should be placed on the screen when viewers watch television programmes produced for wide screen (16: 9) on 'classic' screen (4: 3) television sets. Sixty participants watched three versions of a programme on classic television sets, one with subtitles in the active screen, one with subtitles in the black area under the picture, and a full-screen version that was made by cutting off part of the picture on the right and left (pan-scanning). The presentation mode was systematically varied. Participants were asked to judge the attractiveness of the programmes, and their attention was not drawn to the fact that different adaptations were used. Each programme was judged on about 30 aspects. Some aspects pertained to the attractiveness of the picture ('Is the programme nice to watch? What do you think about the camera work?'); some aspects were about the music; and some aspects were very general ('Did you enjoy looking at the programme?'). There were no significant differences found between the three versions. When debriefing the participants, it appeared that no one had noticed that the subtitles were presented in three different ways.

#### *Unity of picture and sound*

Another aesthetic argument against subtitling is that the artistic unity of picture and sound is lost when the dialogue is presented through on-screen texts. According to Teunissen (NRC Handelsblad 24 April 1981, cited in Bruls and Kerkman, 1988), subtitling causes an 'attention split' which negates the audiovisual power of the medium. Presentation of the translation through dubbing stays within the boundaries of the medium, whereas subtitling leads to an improper addition to the images. This addition harms the continuity of the medium and turns it into a kind of cartoon.

#### *Tortuous translations caused by the requirement of lip-synchronicity*

Dubbed texts should more or less fit the lip movements of the persons who are seen speaking: the translated sentence should begin when a speaker opens his or her mouth and end when the speaker is finished, and the sounds of spoken words should be congruent with the lip movements of the speaker. The first requirement entails that sentences sometimes are shortened or lengthened. The second requirement means that the choice of words and the tempo of a sentence must be adjusted to the lip movements of the speaker on screen. Sometimes, maybe often, 'mickey-

mousing' occurs: synchronizing leads to concessions in the quality of the translation. It must be noted that the first requirement is also true for subtitling, because identification problems may arise when a subtitle is not presented at the moment a speaker is moving his or her lips and because incongruity between the subtitled texts and non-verbal communication (such as facial expression or vocal dynamics) or visual events has to be prevented. According to Luyken et al. (1991), there are strong differences between the European dubbing countries in the amount of effort invested to attain lip-synchronicity. In Germany, for example, synchronicity is estimated so highly that translators often use loan words from the foreign language. The actor dubbing for John Wayne might therefore say: 'Hello baby, ist alles ok?' instead of 'Hallo Schätzchen, wie geht es dir?' In some other countries, such as Italy, dubbers deal more freely with the lip-synchronicity problem, because faithful translations and sentences that flow well are more highly valued than synchronicity (Luyken et al., 1991).

#### *Tortuous translations caused by condensation*

Subtitlers too are sometimes compelled to use less than optimal translations (e.g. Gottlieb, 2000). Most of these adjustments relate to the necessity of condensing the original text. A common solution is to change the compound past tense used in the original dialogue into the simple past tense in the subtitle. For example, 'I did that' is used instead of 'I have done that'.

#### *Unnaturalness caused by asynchronicity*

Viewers may experience dubbed programmes as unnatural, if the synchronicity between lip movements and sound leaves much to be desired. This is a serious problem, because a perfect lip-synchronization is impossible to achieve. As far as we know, only one study dealt with the question of whether the viewer's appreciation of a programme is dependent on the adaptation method. In the previously mentioned study by Peeters et al. (1988), children from Grades 4 through 6 were presented with a subtitled and a dubbed version of the same television programme. The subtitled programme was preferred over the dubbed programme, even by the youngest children in the sample who had more problems understanding this version. Presumably, dubbed programmes were less appreciated because of their unnaturalness caused by asynchronicity, although other disadvantages of dubbing may also be held accountable.

It is important to note that habituation plays an important role in experiencing unnaturalness. Viewers who are accustomed to watching subtitled programmes will be more disturbed by the unnaturalness of dubbed programmes than viewers who are used to dubbed programmes. In contrast, viewers in dubbing countries may experience dubbed voices as 'natural', because they speak in their own language. The question of how habituation affects the viewer's judgement of an adaptation method is addressed further in the Discussion.

### *Summary*

Dubbed programmes have the advantage that no texts are projected over the pictures. Dubbing therefore maintains the unity of picture and sound. Another advantage is that viewers may experience dubbed programmes as familiar, because they hear their own language. Disadvantages are that the voices of the original actors cannot be heard and that viewers may experience unnaturalness when the lip-synchronicity is inadequate. In subtitled programmes, on the other hand, the original voices can be heard, but the screen is 'polluted' with lines of texts.

### **Learning effects**

Watching television may be regarded as an active process in which viewers are constantly watching and listening, and in the case of subtitled programmes, also reading. The effect of watching a programme may be that viewers acquire the information intended to be conveyed by the producers of the programme. But watching television may also lead to unintentional learning effects: merely by participating in the activity, television viewing leads to acquiring skills that are not directly related to the content of the programme. Four (dis)advantages are discussed. The first two pertain to the way in which viewers process texts – reading in the case of subtitling and listening in the case of dubbing – and the last two arguments deal with the availability of the original soundtrack.

### *Facilitation of reading development*

Because watching subtitled programmes also implies reading subtitles, viewers get experience in reading. Assuming in the Dutch situation that viewers watch almost 20 hours per week, that about 40 percent of the programmes (foreign and Dutch programmes in which foreign languages are spoken) are subtitled and that subtitles are displayed during 75

percent of the time, Dutch viewers spend about five to six hours per week reading subtitles. Viewers in subtitling countries, therefore, read a fair number of 'books' per year through television. However, the language used in subtitles is different from the language used in books: subtitles comprise colloquial speech instead of written language. In addition, much of the language presented in subtitles is condensed or simplified. Nevertheless, a study conducted by Koolstra et al. (1997) indicates that watching subtitled television programmes leads over time to better reading skills in children. The three-year panel study included more than 1000 primary school children whose reading skills, reading comprehension and decoding skills were measured. Reading comprehension was defined as understanding information from texts and decoding skills involved the accuracy and speed of word decoding. On the basis of the 'on-screen reading hypothesis' it was expected that watching subtitled television programmes would facilitate the development of decoding skills through the reading practice resulting from reading subtitles displayed on television. This hypothesis was supported: children who frequently watched subtitled television programmes showed a stronger progression in decoding skills than children who watched subtitled programmes less frequently. Obviously, the on-screen texts do indeed provide practice in decoding words, and because the words are exposed only for a short moment and then replaced by new on-screen texts, children are constantly trying to keep up with the presentation tempo of the subtitles. Reading subtitles did not affect the development of reading comprehension. According to the researchers this result was not surprising, because reading subtitles does not provide practice in comprehending coherent texts (Koolstra et al., 1997).

### *Vocabulary acquisition in the viewer's own language*

When watching non-subtitled television programmes (including dubbed programmes), viewers are engaged in listening to spoken words and watching the pictures that may support these words. In this activity viewers are confronted with many known and unknown words, sentence structures and expressions in their own language. Listening to these utterances could stimulate the development of linguistic skills. Not much research has been done on native language learning from television, but at least two studies (Oetting et al., 1995; Rice and Woodsmall, 1988) have shown that watching television can help young viewers develop their vocabulary. While listening to spoken texts on television 'fast mapping' occurs: on the basis of only one exposure, partial

understanding of the meaning of a new word can lead to reorganization and expansion of vocabulary knowledge (Carey, 1978). The study conducted by Oetting et al. (1995) showed that six- to eight-year-old American children can learn the meaning of new words from watching animated films with voiceover narration. In Rice and Woodsmall's (1988) study it was demonstrated that children from three to five years old pick up two to five new words through watching a 15-minute television programme. These quantities may seem low, but of course the total amount of words learned increases enormously when it is assumed that every 15 minutes of watching television has the same effect. Children's learning of their native language through listening to television is in fact comparable with language learning through listening to other people talk in daily life, especially as dialogues on television programmes have been shown to be very similar to the way mothers speak to their own children (Rice, 1984).

### *Foreign-language acquisition*

Because the foreign language can be heard while the translation is being read in subtitled television programmes, viewers might be able to pick up some words of the foreign language. More than one-third of Dutch adolescent viewers are convinced that watching subtitled television programmes is indeed beneficial to learning foreign languages (de Bock, 1977). In addition, one-quarter of Dutch primary school children are convinced they even learn more English from radio and television than at school (Vinjé, 1994).

The possibility of learning a foreign language through watching subtitled television programmes is not only highly valued, but also demonstrated in studies with adults as participants. In a series of experiments conducted in Leuven, Belgium (d'Ydewalle and Pavakanun, 1995, 1997; Pavakanun and d'Ydewalle, 1992) students watched subtitled 15-minute cartoons. The cartoons were provided with normal subtitles (subtitles in the own language and sound in the foreign language) as well as 'reversed' subtitles, in which the soundtrack was in the known language and the subtitles in the foreign language. Directly after watching a subtitled cartoon, participants were tested for increased understanding of words in the foreign language. It was found that through both types of subtitles word meanings were learned. The series of experiments included not only subtitles in the most common foreign language, English, but also unfamiliar languages such as Hungarian and Chinese (d'Ydewalle and Pavakanun, 1997). Participants were even able

to pick up word meanings from those unfamiliar languages, and the comparison between learning from familiar and unfamiliar languages surprisingly showed that both types of languages were learned equally well.

In two other studies, it was investigated whether children too were able to learn foreign-language words through watching subtitled programmes. In an experiment conducted by d'Ydewalle and van de Poel (1999) children in Grades 4, 5 and 6 were presented with a 10-minute programme of still pictures. In this experiment normal as well as reversed subtitles were again used, the languages being French and Danish. Compared with children who watched the same programme in a version with a Dutch soundtrack and Dutch subtitles, the children in the foreign-language conditions learned more words from the foreign language. In contrast to the findings from the experiments with adults, this experiment showed that more was learned from the familiar language (Danish) than from the unfamiliar foreign language (French). In an experiment conducted by Koolstra and Beentjes (1999), children from Grades 4 and 6 were shown a normal television programme, that is a 15-minute documentary about bears. Foreign-language acquisition was compared across three conditions: a normal subtitled version (sound in English and subtitles in Dutch), a 'foreign television' version (without subtitles, but sound in English) and a control programme (Dutch spoken, no subtitles). Although children from both age groups learned most in the normal subtitled condition, it was shown that they could even pick up some of the English words through watching the foreign programme version without subtitles.

Apparently, these experiments have shown that young and adult viewers are able to learn the meanings of foreign-language words just by watching a very short subtitled television programme. The explanation that the researchers provide for the learning effect is that viewers inadvertently listen to the words spoken in the foreign language; most of the translation can be read in the subtitle; and learning seems to be facilitated through the pictures that provide support for understanding the meaning of the foreign-language words.

It seems reasonable to suggest that watching subtitled television programmes is also advantageous for the pronunciation of foreign languages, because viewers are auditively exposed to enormous amounts of foreign-language texts. Because in the majority of the European subtitled countries most of the foreign-language programmes originate from the USA or the UK, the pronunciation of English/American words would likely profit most from watching subtitled television. As far as we

know, there have not been studies on the question of whether listening to foreign languages spoken on television facilitates pronunciation. In addition to listening to English-language music and playing English-language computer games, frequently watching subtitled television programmes may be responsible for the well-known phenomenon of Dutch and Flemish children being able to pronounce English or American words perfectly – even ‘slang’.

### *Barbarisms*

In the eyes of language purists, foreign-language acquisition through watching subtitled television programmes may be considered a disadvantage, because it can lead to barbarisms that contaminate the mother tongue (Bruls and Kerkman, 1989). To prevent that happening, local nationalistic television channels, such as the Basque channel in Spain, seem to prefer to dub television programmes.

### *Summary*

Dubbed as well as subtitled television programmes may facilitate language acquisition. Through watching dubbed programmes (and original programmes in their own language) children learn the meaning of words in the context of spoken words supported by pictures on television. Subtitled television programmes provide beginner readers with the opportunity to practise reading words presented in the subtitles, with the result that their decoding skills are developed. Subtitled programmes offer young and adult viewers the possibility of learning the meaning of foreign-language words, because the spoken words are accompanied by their translations in the subtitles and supported by the pictorial information. A disadvantage of subtitling, however, is that the own language may be polluted by the foreign languages heard on television.

## **Conclusion and discussion**

### *Overview of the advantages and disadvantages*

Table 1 presents all the aforementioned advantages and disadvantages of subtitling and dubbing. Of course, although every disadvantage (–) or advantage (+) is linked to only one of the two adaptation methods, an advantage connected with one method can in fact be regarded as a

**Table 1** Overview of the pros and cons of dubbing and subtitling

	<i>Pro or con</i>		<i>Based on</i>	
	<i>Subtitling</i>	<i>Dubbing</i>	<i>Modality</i>	<i>Omission Conversion</i>
<b>Information processing</b>				
Information loss through condensation	-			•
Conciseness through condensation	+			•
Incomplete or stretched translations		-		•
Redundancy and additional information	+			•
Easy manipulation and censorship		-		•
Easy adaptation		+		•
Limited view on moving pictures	-			•
Distracts attention from the picture	-		•	
Viewing easy to combine with other activities		+	•	
Viewing possible with environmental noise	+		•	
Asks for high mental effort	-		•	
Efficiency through reading	+		•	
<b>Aesthetics</b>				
Authenticity through hearing original actors	+			•
Familiarity through hearing own language		+		•
Overlaps with the picture	-			•
Disturbs the unity of picture and image	-			•
Bad translations because of lip-synchronicity		-		•
Bad translations because of condensation	-			•
Unnaturalness through asynchronicity		-		•
<b>Learning effects</b>				
Stimulates reading development	+		•	
Stimulates vocabulary acquisition in own language		+	•	
Stimulates foreign language acquisition	+			•
Helps against developing barbarisms		+		•

disadvantage of the other method and vice versa. The advantage of dubbed programmes being accessible to beginner readers, for example, is a disadvantage of subtitled programmes: subtitled programmes are difficult to follow for beginner readers.

Three characteristics of subtitling and dubbing form the basis of the advantages and disadvantages that have been examined in this article (see the last three columns of the table). The characteristic of 'modality' pertains to the fact that viewers read texts when they are watching subtitled television programmes, whereas they listen to texts while watching dubbed programmes. 'Omission' with regard to subtitling concerns covering up part of the picture, whereas with dubbing the original soundtrack is deleted. The third characteristic, 'conversion', pertains to the most distinctive restriction in the way in which the translation has to be adapted to form an 'organic unity' with the original components that stay intact (Luyken et al., 1991): condensation in the case of subtitling and lip-synchronicity in the case of dubbing.

In our review of the (dis)advantages of both adaptation methods, we did not yet pay attention to the difference in costs involved to apply the techniques. The difference in costs, however, is huge: subtitling is 10–15 times cheaper than dubbing (Luyken et al., 1991). In most of the cases, subtitling is also faster than dubbing. This 'time-and-money' advantage of subtitling is mainly important for producers of programmes. When the advantages and disadvantages for viewers are considered, however, it is more difficult to pick the 'winning' adaptation method. It can be seen in Table 1 that the two methods have about an equal number of pros and cons. In order to choose the best adaptation method for viewers, one must estimate which of the pros and cons mentioned weigh most heavily. In this article, it has already been suggested that some of the pros and cons did not turn out to be valid when the research findings were taken into account. For the rest of the pros and cons, in our opinion, the choice depends on three questions: (1) For whom are programmes subtitled or dubbed? (2) How are programmes subtitled or dubbed? (3) Which programmes are subtitled or dubbed?

#### *For whom are programmes subtitled or dubbed?*

For some special groups of television viewers the choice of adaptation method is critical. When a television programme is dubbed, it is still accessible to blind and partially sighted people. Because there is much variation in the level of a visual handicap, it is difficult to estimate how many partially sighted are not able to watch subtitled television

programmes. It is certain, however, that for a part of the population the use of an adaptation method is so 'disadvantageous' that television programmes cannot be watched at all. As opposed to the advantage of dubbing for the visually handicapped there is the advantage of subtitling for viewers with hearing problems. In some dubbing countries, however, the deaf and hard-of-hearing have access to subtitles for many television programmes through the teletext system (van Son, 2000).

Problems with watching subtitled programmes also apply to young beginner readers. A Dutch survey conducted by van Lil (1988) showed that about 90 percent of the children in Grade 1 indicate that subtitles 'often disappear too quickly'. This percentage gradually decreases during the primary school period to 10 percent for children in Grade 6. When the speed at which subtitles are shown is too fast for beginner readers, it seems logical that they have more trouble understanding subtitled programmes than dubbed programmes.

Besides young viewers, some older people may also have problems with reading subtitles. In the Netherlands, between the age of 15 and 49 there are few people who find it a problem in keeping up with subtitles (less than 5 percent), whereas 11 percent of viewers older than 50 indicate that they have problems with reading subtitles (Spinhof and Peeters, 1999). The question of whether or not complaints by older viewers about the fast pace of subtitles are manifested in their actual viewing behaviour has been investigated in a Flemish eye-movement-registration study conducted by d'Ydewalle et al. (1989). The study suggested that older viewers (about 60 years old) spend less time reading subtitles and more time watching the moving images than younger viewers do. According to the researchers this mechanism may be explained as follows: watching a subtitled programme requires a continuous integration of information from pictures and subtitles, in which reading subtitles takes up more processing capacity than watching pictures. Assuming that older viewers have a limited processing capacity, they seem more capable of integrating information when they primarily watch the pictures instead of focusing on reading the subtitles. Older people therefore use a special viewing strategy in which there is not much time to process the subtitles (d'Ydewalle et al., 1989). Whether older viewers also have more problems with comprehending subtitled programmes has never been investigated, but this seems likely because they apparently do not profit to the fullest from the information provided in the subtitles.

For foreigners subtitled programmes are often more accessible than dubbed programmes, because most foreign productions originate from English-speaking countries and many foreigners speak English as their

first or second language. Therefore, foreigners who live in dubbing countries often choose to watch television programmes broadcast by subtitling countries, at least when those programmes can be received.

For 'normal' viewers the extent to which pros and cons weigh heavily is largely dependent on habituation. Opinion polls have shown that viewers have a strong preference for the adaptation method to which they are accustomed (e.g. Kilborn, 1993; Luyken et al., 1991). In the EU the most recent comparison ratings show the biggest contrast in preference between Dutch and German viewers: in both countries 80 percent or more of the viewers prefer the method that is common in their own country (Luyken et al., 1991). The most recent Dutch figures reported by Spinhof and Peeters (1999) indicate that the preference percentage among Dutch viewers has risen to 93. When viewers are accustomed to one adaptation method they seem not to worry about the disadvantages that go with the method. In addition, they seem to dislike the other method. Dutch viewers will be annoyed by all the shortcomings of dubbing when they watch dubbed programmes, whereas German viewers will demonstrate the same type of aversion when watching subtitled programmes. The effect of habituation should also be taken into account in the interpretation of the results of studies which explicitly compare subtitling and dubbing. These comparative studies (Mangnus et al., 1994; Peeters et al., 1988; von Feilitzen et al., 1979) have been conducted exclusively in subtitling countries. Because it is likely that programmes adapted with the familiar method are better received by viewers than programmes adapted with the unfamiliar method, these studies may well give a positively biased picture of information processing when watching subtitled television programmes.

### *How are programmes subtitled or dubbed?*

Up to this point, subtitling and dubbing have been compared as if the two methods are clearly defined and uniform. Although both methods comply with certain conventions, there are also some variations in the way each method is used. These variations can also affect how we should look at the pros and cons.

With subtitling there are two clear conventions: the amount of text is almost always limited to two lines and the duration of the presentation follows the six-second rule. The letter form and background used for subtitles, however, may differ. In the Netherlands and Belgium, for example, subtitles are mostly shown with white, shadowed letters through which the picture is (partly) visible, whereas in other countries

letters do not have shadows and/or are displayed on a grey or black background that covers up most of the lower part of the screen. According to Ivarsson and Carroll (1998), the presentation of white subtitles on a black background facilitates readability, but the disadvantage is of course that the lower part of the screen cannot be seen.

In some cases, even the subtitle convention of the six-second rule is not sacred. In programmes for young children who cannot yet read well, subtitles may be presented for a longer period of time, for instance using an eight-second rule. In an eye-movement-registration experiment, Koolstra et al. (1999) have investigated whether beginner readers will profit from lengthening the presentation time of subtitles. In the experiment, identical television programme segments were subtitled according to the six-, eight- and 10-second rule. Irrespective of the presentation time, children from Grades 4 and 6 (the 'good' readers) used about the same amount of time to read the subtitles. Beginner readers from Grade 2, however, spent very little time reading subtitles presented according to the normal six-second rule, but much more time on reading the subtitles in the 10-second situation. These results suggest that for the youngest readers the usual presentation time of subtitles is so short that they invest little effort in trying to read them. In cases when the presentation time is lengthened, the disadvantage of difficult-to-read subtitles for younger readers is no longer valid, as the non-conventional presentation time leaves them enough time to read the subtitles (Koolstra et al., 1999). Of course, it must be noted that lengthening the presentation time of subtitles makes it necessary to condense the translations even further than with the six-second rule.

Dubbing also has its conventions and small variations. A rule is that the dubbed text is lip-synchronized with the speaker in the picture. As we have seen, however, there are differences in the effort dubbers make to aim at 'perfection'. A high level of synchronicity gives a stronger illusion of the speaker speaking, but information may be lost and the order of words may seem unnatural. With a looser synchronization the speech illusion is weaker, but less information is lost and sentences may sound more natural.

### *Which programmes are subtitled or dubbed?*

The importance of a (dis)advantage may also be dependent on the type of television programme. For an educational programme, for example, that aims at effective information processing, pros and cons that pertain to information processing will be important, whereas possible aesthetic

drawbacks can be put up with. For cultural television programmes, on the other hand, aesthetics will play an important role. Formal or structural characteristics of programmes may also affect pros and cons. Movies or programmes in which many close-ups of people are used may suffer strongly from the disadvantage of imperfect lip-synchronicity, because mouth movement is clearly visible from nearby (Dries, 1995; Kilborn, 1993). In practice, adjustment of adaptation method to programme type is often used. For example, cult movies in which the original dialogues form an inseparable part of the movie are usually subtitled, even in typical dubbing countries such as Germany. Movies with puppets (animation) are almost always dubbed, because the imperfect synchronicity is also present in the original language and it is characteristic (and maybe also attractive) for this programme type.

#### *Variations, combinations and alternatives*

Sometimes in broadcasts of dubbed television programmes, besides the dubbed soundtrack the original soundtrack is provided via one of the two stereo sound channels. This is quite common practice in Germany when late night movies are broadcast. In that case, owners of a stereo television set can choose between one of the two languages.

An additional disadvantage of subtitled programmes is that they are not allowed to be broadcast by satellite in the complete form, including the original sound track. When, for instance, a Dutch television channel buys a foreign television programme, there is the right to broadcast it for Dutch viewers. Because satellite broadcasts can be received over a much larger area, subtitled programmes that include the original language have to be 'scrambled' to prevent viewers who have not paid for it from being able to watch the programme.

Incidentally, both adaptation methods can be used alternately within one programme. An example of such a combination of methods within a programme was the English broadcast of the 10-episode German series *Heimat* (1998) by Edgar Reitz. Each episode of this series was introduced with a summary of the previous episode. The narrator Glasisch (played by Kurt Wagner), who also acts in the same series, made the introduction with pictures lying on a table, telling the story off screen. In the English version this prologue was dubbed in English by the actor himself, whereas the rest of the episode was broadcast in subtitled form.

The example of *Heimat* demonstrates another method of making translations available. In the prologue of *Heimat* off-screen narration was

used. This method is also frequently used in documentaries. The narration can be added to a programme easily and quickly, because there is no need to worry about synchronization. Another method, voiceover, is also cheap and fast. With the voiceover method a speaker can be seen, but the volume of the original sound is decreased shortly after the speaker has started his or her story, after which the translation can be heard spoken over the original sound. A third alternative for subtitling and dubbing is the use of intertitles, i.e. written texts inserted between sections of a programme. 'Intertitling' is mainly applied in documentaries and educational programmes.

### *Recent and future developments*

Because each of the two most used adaptation methods has its own distinct qualities, it would make sense to choose a method for each new programme on the basis of programme type and targeted audience. A 'choice' based on tradition resulting in the watershed between European countries does not seem necessary. Maybe the continental countries should follow the example of the UK and Ireland who use each adaptation method with about the same frequency. Although viewers in these neutral countries still prefer dubbing over subtitling (Kilborn, 1993), it seems that a situation in which both methods are well accepted is not far away. This development can be seen in the results of an experiment conducted in 1987 by Channel 4. The French drama series *Chateaufallon* was broadcast simultaneously in subtitled and dubbed versions. Although about twice as many viewers watched the dubbed version, it was found that in particular younger viewers (and highly educated viewers) chose to watch the subtitled version (Kilborn, 1993). These findings suggest that the preference for an adaptation method is not immutable. It must be noted, moreover, that the Channel 4 experiment and also opinion research (for a review, see Luyken et al., 1991) in fact point in the direction that younger viewers – in subtitling as well as dubbing countries – seem to be developing a preference for subtitling. Another indication of a trend towards a preference for subtitling can be seen in foreign films shown in cinemas. Although almost all foreign television programmes in France are dubbed, about half of the movies are already being subtitled (Ivarsson and Carroll, 1998).

Globalization means for television that the same popular television programmes are being broadcast in more and more countries. The use of language adaptation will therefore undoubtedly increase in the future. An increase in the number of co-productions of television programmes and

movies will also make language adaptations more necessary. The increase in adaptation use goes hand in hand with the technical possibilities to provide optional adaptation methods in one or more languages. Besides the availability of language choice in stereo and satellite broadcasts, digital video discs (DVDs) provide the choice between languages and adaptation methods while watching movies (Rose, 2000). The upcoming introduction of digital television broadcasts also provides ample opportunity to include different languages and/or adaptation methods with the digital signal. Of course, making different languages and adaptation methods available at the production stage asks for a high investment of time and money, but when the product is ready, it can easily be distributed on a wide scale. Once viewers get accustomed to both adaptation methods, it is possible that their preference will change. In any case, television viewers in the EU – in particular those living in dubbing countries – will be increasingly confronted with the practical advantages and disadvantages of both adaptation methods.

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