

How to overcome communication barriers in nature experience

Annex 1: Universal filmmaking

Guideline - How to create a movie about nature experience that overcomes communication barriers

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When describing the concept of creating a film for visually-, hearing- and intellectually impaired people, one should start with the general connotation that the film is an audio-visual work, i.e. it affects the recipient through two stimulus channels, visual and sound. In general, their mix creates a set of stimulus factors constituting the narrative of the film, i.e. building a specific story or message. Two analogous narrative layers of the film serve this purpose: visual and sound.

Visual and auditory stimuli

A viewer with all mechanisms of perception functioning properly, while watching a film, perceives it as a result of a mixture of visual and auditory stimuli.

On the other hand, for people with disabilities such as mentioned above, each of the narrative layers (and sub-layers) may constitute a separate source of stimulus factors. These layers can also create mixes of stimulus factors in various combinations depending on the perceptual abilities of the viewer.

For example, deaf and hard of hearing people will focus on the perception of visual stimuli, whereas blind and visually impaired people will focus on the perception of auditory stimuli. On the other hand, intellectually disabled people will benefit from a

mix of stimuli provided by both narrative layers, similarly to non-disabled people, but their perception will be more limited.

Often the two main narrative layers of a film, visual and audio, consist of different sub-layers. For example, a visual layer can be composed of:

- Main images that are either video shots or, for example, animations, assembled into scenes, sequences, etc.
- Auxiliary materials: drawings, charts, animations, other visual materials, e.g. a video with a sign language interpreter.
- Subtitles.

In turn, the sound layer can be built by two main groups of sub-layers:

- Diegetic sounds (coming from the world presented in the film, i.e. mainly ambient sounds, dialogues, etc.).
- Non-diegetic sounds (coming from outside the world presented), i.e. voice over, sound effects (synchronous and asynchronous) and music.

When developing a film with visually-, hearing- and intellectually impaired people in mind, special attention should be paid to the role that particular narrative layers in the perception of the film have for these people. This will allow you to create a stimulus mix appropriate for each audience, ensuring optimal perception of the work.

For deaf and hard-of-hearing viewers, you should prepare an appropriate mix of visual stimuli, using appropriately selected images. For example, showing leaves moving in the wind in the film will allow viewers to guess that the wind is blowing and thus "feel" it.

On the other hand, blind and other visually impaired viewers should be provided with an appropriate mix of sound stimuli. In this case, adding a sound that reflects the noise of the wind, while at the same time they can hear the voiceover describing the leaves swaying in the wind, will make them able to "feel" the wind and "see" the leaves moving in it.

In nature films, it is very important to ensure the credibility of the stimuli both in the visual and auditory layer. When presenting a specific natural environment or a tourist attraction, both layers should include materials that are specific to the place. In the sound layer it can be, for example, the sound of a ringing bell, singing of specific species of birds or the noise of a river. On the other hand, in the visual layer, we should

put materials that will correlate with the sound; it would be a view of moving bells, shots of the appropriate species of birds and flowing river waters.

Internal coherence

For intellectually disabled people, a film should be presented in the most harmonized way, i.e. the sound layer should correspond to the visual one, e.g. the image of bending grasses in the visual layer should be accompanied by simultaneous wind noise in the sound layer. Additionally, care should be taken that the narrative in both layers does not change too quickly (the viewer needs time to absorb it), and that the number of stimuli is not too high.

The general principle of editing films intended for the deaf, hard-of-hearing, visually or intellectually impaired people is to ensure that the materials placed in the visual and sound layer complement each other, are consistent with each other and appear as simultaneously as possible. Therefore, L- or J-cut should be avoided, unless they have a strong justification and are sufficiently long, e.g. they serve to show slowly progressing changes, such as the changing seasons etc.

Quality of materials

In all cases, the appropriate quality of the materials used in the editing is important, too. For visual materials, it will be, for example, the right frame resolution, wide tonal dynamics, correct white balance, appropriate depth of field, etc. The sound materials should be characterized by high sampling frequency (guaranteeing the perception of a wide frequency band) and no disturbances or sounds not coming from a given environment, such as random knocks or voices.

We are all viewers

When making certain editing decisions, three other important issues should be kept in mind. Firstly, the film can be watched many times, which means that its content does not have to reach the viewer in its entirety the first time. Secondly - the majority of the film's viewers will be non-disabled people and they should also enjoy watching it. Thirdly, the film should be a factor that integrates disabled with non-disabled people, because we are all parts of the same world. Therefore, when making a film for impaired people, it should be made with non-disabled people in mind as well, so that everyone can experience the film at the same time together.

Visual narration

1 The main visual sub-layer of the film are the edited film shots (or animations). The shots used in the movie should be as stable as possible. Avoid shots that are excessively shaky, too difficult and too tiring to watch. Camera movement should be

smooth so that the viewer does not have to make much effort to follow the main subject or action.

The editing should be consistent with the movement of the camera, e.g. if the previous shot is a pan to the left, the next one must not go in the opposite direction.

As a basic rule, the editing of the film should be linear, i.e. ensuring the continuity of the narrative; avoid parallel editing, as well as fast linear cutting based on very short shots. You should also not use cutaway shots, which might distract the viewer from the current topic.

You should take care of the spatial compliance of the cut material, so that the viewer has no problem with the understanding of the directions of the action, especially in the case of shots with moving animals and birds, but also with people. This is one of the basic principles in film editing, but it is especially important when the viewer is, among others, a person with intellectual disabilities.

The shots should be cut according to the principle of visual continuity. This rule comes down to the right selection of shots, and the method of combining them so that after a cut the viewer's eyesight does not have to search the screen for what should be noticed immediately.

The rhythm and pace of the editing should be adjusted to the desired reception by the target audience.

As said above, editing a film for the blind, deaf or intellectually disabled people should be linear, as calm as possible, based on relatively long shots. However, care should be taken to ensure that the film does not become lengthy or boring. It is important that non-disabled people can also watch it with interest.

2 The second sub-layer, consisting of auxiliary materials in the form of drawings, charts and animations, and possibly short descriptions (name of the place, presentation of a person), should harmonize with the assembled shots. If the auxiliary materials correspond with specific shots and are synchronized with them, they neither should appear on the screen too early nor finish too late. Their duration should be long enough for their content to be understood but not longer.

3 The third sub-layer, made up of subtitles that are a transcription of the commentary's voice (VO), should be correlated in terms of time and content with the two previous sublayers, but above all with the voice of the commentary. So that for the deaf and hard-of-hearing people, the subtitles support the voice of the commentary (VO). Sometimes, due to the limited time space between the shots, the subtitles may go slightly beyond the shots with which they are related in terms of content, as long as it does not negatively affect the perception of the narrative.

When managing the transcript of your comment, make sure that the viewer can understand the content. They must be legible and last long enough. Legibility means choosing the right typeface, including proper kerning or leading in the case of two-line

subtitles. Subtitles with more than two lines should be avoided. Ideally, they should be single-line. The captions should fit in the so-called safety margins, i.e. equal to at least 20 percent of the width of the screen with an aspect ratio of 16: 9 (typical panorama). We use two-line subtitles as a last resort; they should fit within margins equal to at least 30 percent of the screen width. Captions that extend beyond certain margins are harder to read, especially for visually impaired people or people with intellectual disabilities, and may also be cut off on older types of TVs.

One of the basic factors of legibility is also the size of the font and the distinction between the text and the background. Therefore, it is important to choose the right color and its degree of saturation.

When adjusting these features, it should be remembered that the recipients of the film are also people without disability. Therefore, the subtitles should not be too large or too contrasting. Sometimes it is helpful to add an additional graphic layer that cuts off the subtitles from the background and improves their legibility without the need to increase the font size, brightness or contrast.

Audio narration

In the audio layer, the narrative of the film (and at the same time the stimulus material) is built by diegetic sounds, i.e. those found on the spot during shooting, and non-diegetic sounds, i.e. added to the film in the post-production process, such as the voiceover (VO), sound effects and music.

The layer of diegetic sounds plays a huge role in films presenting natural attractions. It is the main sound illustration of the reality presented in the film and complements the stimulus material for hearing people, and largely - for visually impaired people.

The voiceover should not only be pleasant and encouraging, but also understandable, with proper diction. The voice actor must clearly pronounce all syllables and properly emphasize the meaning of the words. Ideally, the text should be read by a professional, voice or film actor.

The voiceover's sound should be lower (but not flat) than most diegetic background sounds, which usually operate in higher frequency registers. The lower frequency voice sounds warm, pleasant, inviting and inspires a sense of trust.

The other sound elements, i.e. sound effects and music, should be used with restraint, if at all. It is always worth considering the purposefulness of using these stimuli. Particular care should be taken with non-diegetic music, because it may inappropriately influence the perception of the environment presented in the film. In addition, non-diegetic music and sound effects used more widely in the film can disturb the perception of diegetic sounds, including e.g. the so-called natural silence (which is in fact never without any sound, by the way). It is recommended to avoid non-diegetic sounds in general, although in many contemporary nature films music is widely consciously used as one of the main narrative layers, having a huge impact on the

reception of the film. However, it is worth remembering that deaf or hard-hearing people will not experience it.

The use of music, on the other hand, is recommended as the opening and closing of the film, unless it disturbs important diegetic sounds.

Emotions

Regardless of the production techniques used, whether at the production or post-production stage, the film should be interesting, engaging the viewer into a new and different reality and encouraging activity after watching it. Therefore, the most important thing should not be forgotten: emotions. Efficient transmission of information about tourist or nature attractions is one thing, but the emotional involvement of the viewer is something else.

Therefore, before we start making a film, it is worth considering its overall concept and writing a good script at preproduction stage. The nature film is not only meant to inform, it is also supposed to give emotions and build relationships.