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Audio and Video Editing

Basic Editing Procedures and Visual Elements of the Frame

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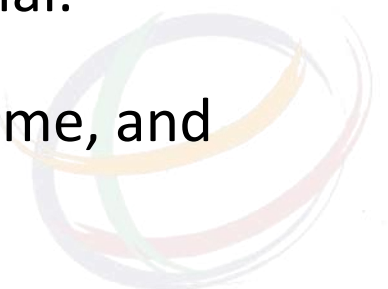
Non-Linear Editing

- Non-linear computer editing is a type of editing in which a computer allows instant access to any frame in the video, regardless of its position in the recording.
- This allows you to freely change the order of frames, add new versions of scenes and experiment with editing without losing quality.
- This way of working has completely replaced older linear editing systems (tape-by-tape).
- This system allows experimentation, reverting to older versions and working with multiple combinations of frames before making a final decision.



Offline and Online Editing

- In the Timeline panel, each frame receives its own address, i.e. its own timecode, which enables the creation of a list of editing decisions. Editing can be divided into offline and online editing .
- Offline editing is the phase in which a working version of the video is created in lower quality, without using the original full-resolution footage. It is used for trial assembly of material, making decisions about shot duration, rhythm, and structure.
- Only after a complete version of the edit is created does the process move to the online phase, in which all decisions are applied to the original video material.
- This system is still important in large productions because it saves space, time, and processing power.



Why is the Offline/Online System Used?

- This division exists to keep the original material intact until the last minute and to make editing faster and more efficient.
- In professional projects, offline and online are often performed by different people or teams: one tests the edit, the other creates the final version in maximum quality.
- Offline editing allows endless experimentation, while online editing ensures that the final result is technically flawless and ready for broadcast or export.



Frame: Basic Concept in Editing

- A frame is the basic unit of a video recording and represents the part of the footage recorded with one uninterrupted press of the record button, that is, with continuous camera operation.
- The frame is determined by the plan, duration and composition (harmony of visual elements - linear, tonal, coloristic, dynamic).
- The frame is characterized by a unique space, time and action. A good frame depends not only on what is shot in it, but also on how the frame is framed, illuminated and compositionally organized.
- In everyday practice, the frame is covered by the field of view of the lens (*fr. cadré* - frame, frame). In the editing, the frame is used as the basic segment that is cut, moved, shortened, merged and fits into the whole.



Story Frame

- The frame is not only an image, but also part of the narrative: it shapes the attention of the viewers, the pace of the scene and the emotion we convey.
- We need to learn that not every image is a frame, but that the frame is the result of a careful choice: what to show, for how long and from what angle.
- Depending on whether we want to emphasize the ambience, facial expression or some detail of the action, we will use different types of shots and film plans.
- In editing, each frame is seen as part of a wider composition, not as an independent element.



Framing: What Determines the Look of the Frame

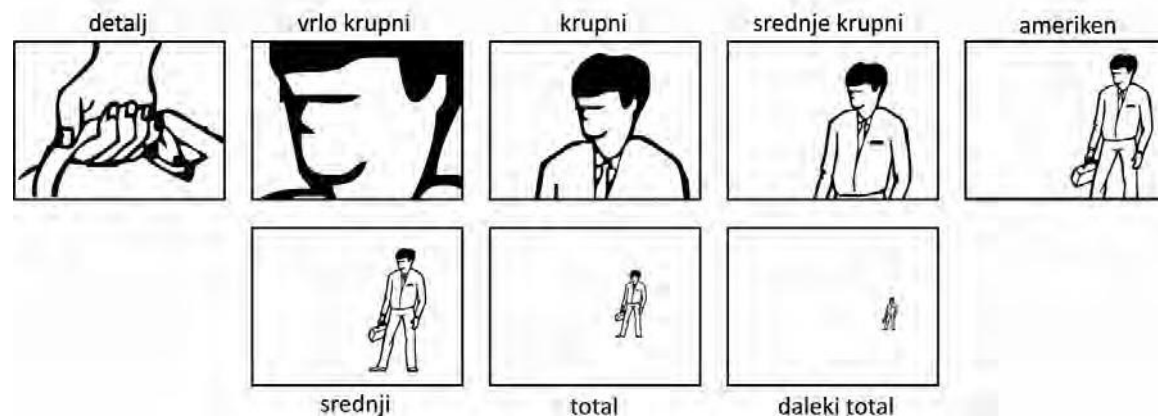
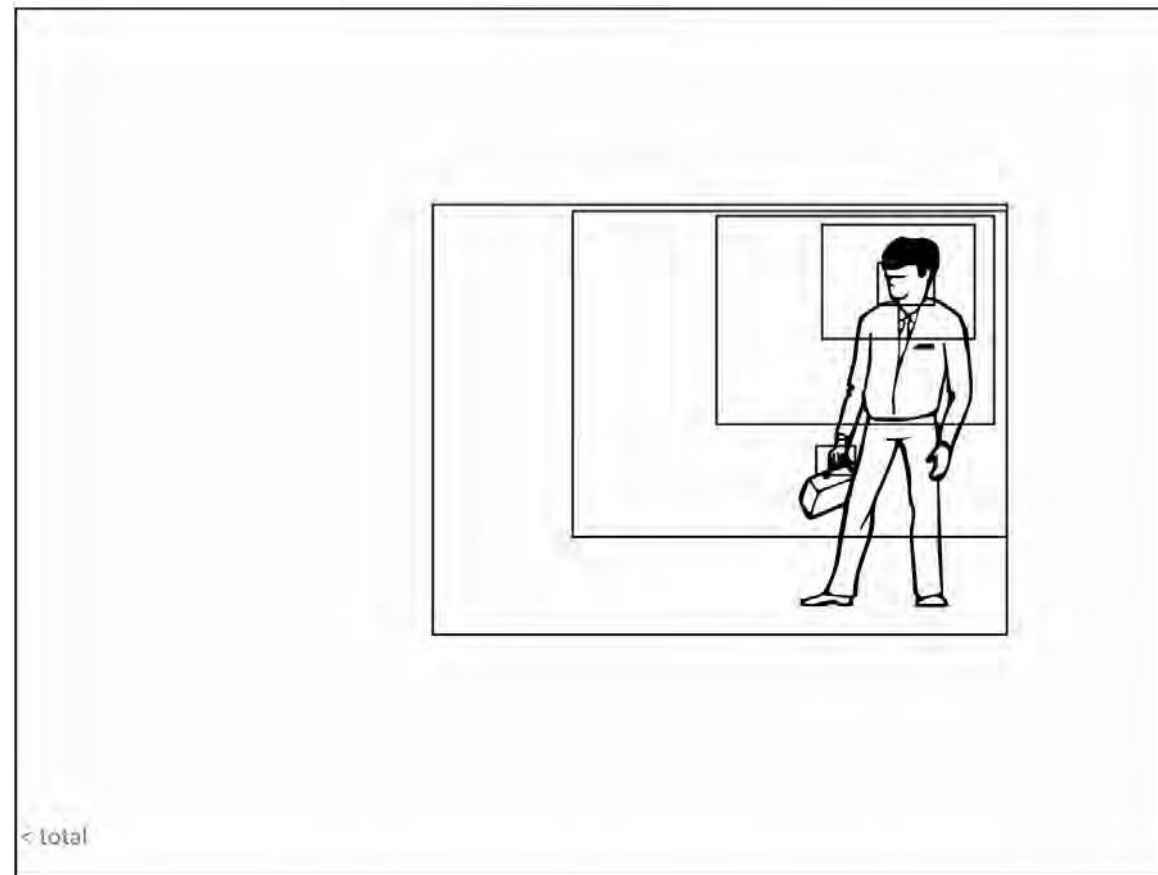
- Framing is the process of determining exactly what will be seen in the frame and in what way.
- The basic parameters of the frame are: plan, shooting angle, camera tilt, composition and camera state (dynamic or static).
- Proper framing affects how the viewer understands the image, what attracts their attention and what visual impression they get.
- In video, as in photography, framing is not spontaneous, but a planned part of visual storytelling.



Film Shots (Framing Types)

- A shot size (plan) is the size of the filmed subject, most often the human figure, within the film frame. In other words, it represents the difference between shots depending on how much the subject is enlarged relative to the frame.
- Distinguishing between shot sizes is important because each serves a different purpose in the story: some depict space, some emotions, some details of the action.
- During the process of film development, a universal system of shot-size classification emerged, which allowed all members of the production team, especially the director and cinematographer, to communicate easily (Figure: Shot sizes).





Shot sizes



Film Shots (Framing Types)

- **Extreme long shot** shows the entire scene from a great distance and is used to show space, location, or landscape. The environment dominates, and people appear as small figures in the scenery.
- **Long shot** shows characters in space but keeps the focus also on the environment; it is often used at the beginning of a scene as an “establishing” shot. By narrowing the long shot to a medium shot and removing unnecessary parts of the scene, the audience can see the participants’ actions more clearly. These shots are not intended to emphasize faces or details, but to present the environment in which the action takes place. The narrower the shot, the more attention shifts from the environment to the subject.



Film Shots (Framing Types)

- **Medium long shot**, or **medium full shot**, shows the space in which the human figure is visible entirely, with free space above and below it equal to roughly half the figure. In this shot, multiple figures appear in a space whose character and size dominate. It resembles the space and figure size seen on a theater stage.
- **Medium close-ups** - Medium close-up and **American shot** serve as intermediate categories between close-ups and long shots, where it is still possible to follow body gestures and see them more clearly at the same time.



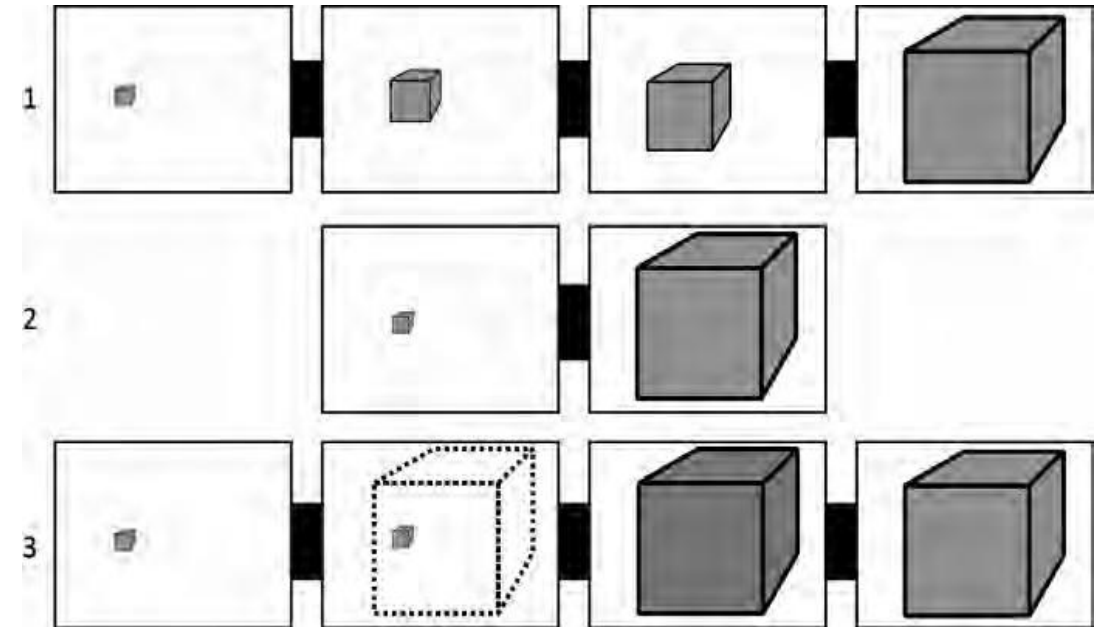
Movie Plans (Types of Total Frames)

- **Close-up, extreme close-up, and detail** – Close-ups are used to emphasize, reveal a reaction, and dramatize. A close-up is a very strong expressive form because it draws the viewer's attention. Extreme close-ups can emphasize information that would otherwise be overlooked or hard to notice. They focus our attention and highlight important elements. A detail shot contains only a part of the human body (mouth, eyes) or an object or part of an object (trigger of a gun).
- When showing any the close-ups, the audience should not feel:
 - deprived of a wider angle, where something more important is happening,
 - disoriented, repeatedly repeating close-ups, ignoring the wider shot in which the full action is visible.



Changing the Shot Size

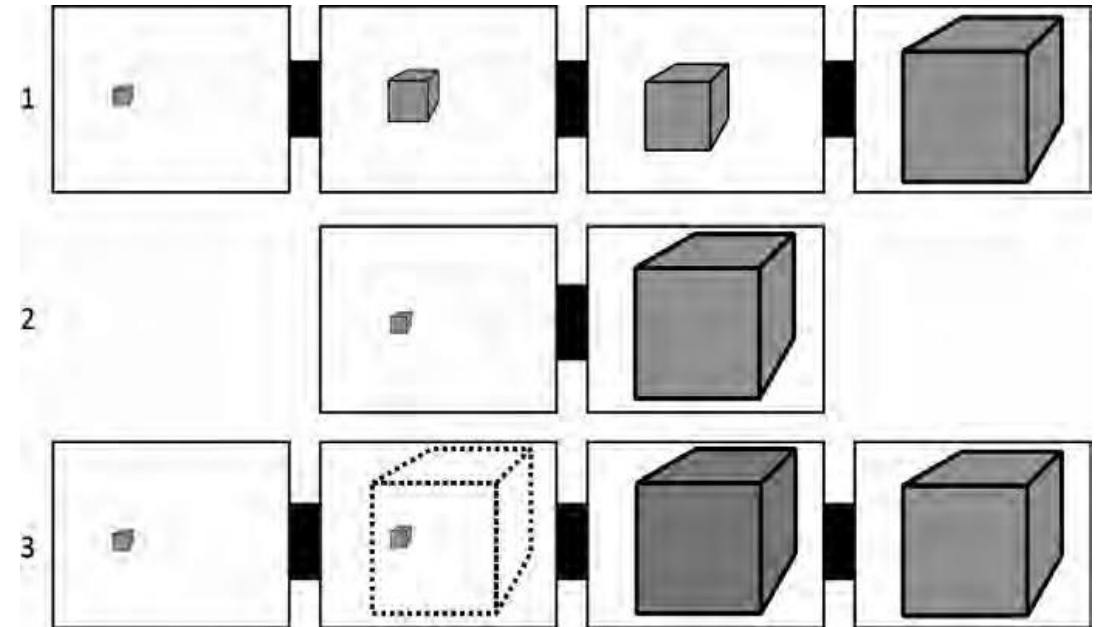
- Instead of showing the scene at the beginning in a wider shot, you can reveal it gradually, shot by shot, using close-ups.
- By moving the camera forward using a dolly crane (Figure: Changing the shot size 1), tension gradually builds and the importance of the subject increases. By moving the camera backward using a dolly crane, tension slowly decreases and the importance of the subject is reduced. Using a zoom can, in some cases, replace a camera movement. Camera movement is sometimes difficult to execute when a quick change of viewpoint is required.



Changing the shot size

Changing the Shot Size

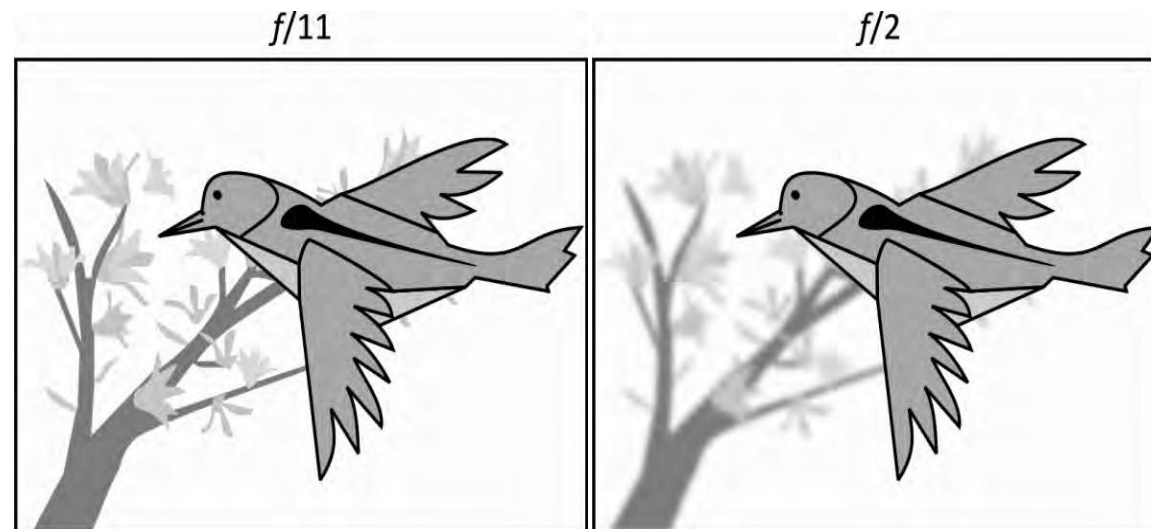
- A cut (Figure: Changing the shot size 2) instantly changes the viewpoint. A cut from a wide shot to a close-up immediately increases the importance and strength of the subject, while the opposite transition (from a close-up to a wide shot) creates immediate relief and reduces the subject's importance.
- A dissolve (Figure: Changing the shot size 3) has, in a certain way, a similar effect to a camera move, but lasts for a shorter time. It allows the viewer to compare both viewpoints and experience them more easily than with a cut. Long dissolves can be confusing.



Changing the shot size

Focusing (Sharpening)

- Depth of field in a scene depends on the aperture, exposure time, and focal length of the lens (types of lenses – wide-angle, normal, and telephoto). When the aperture is set to a value such as $f/11$, everything from the foreground to the background is sharp enough, creating a sense of great spatial depth (this aperture requires a higher light level).

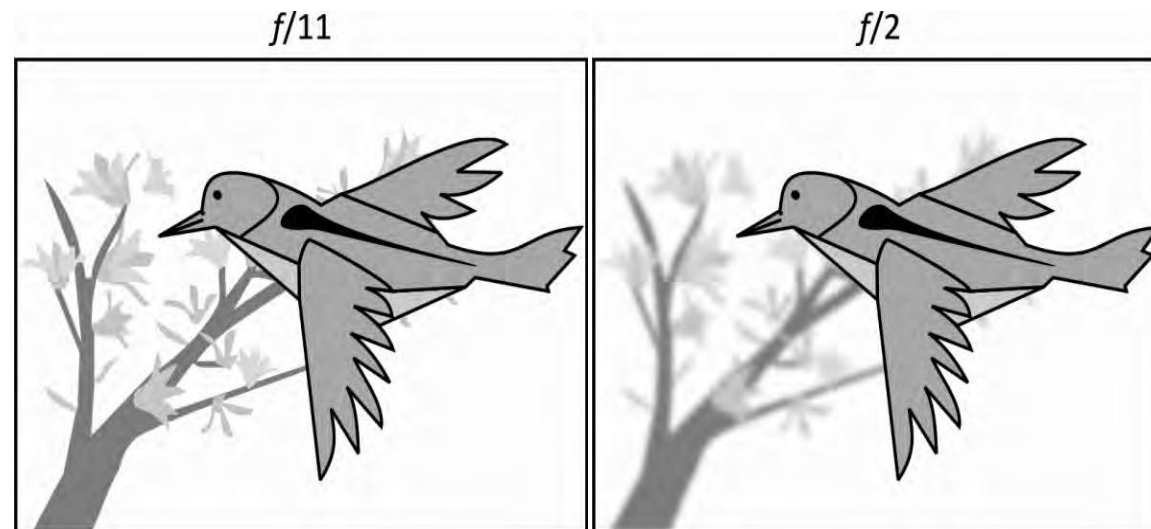


Changing the focus



Focusing (Sharpening)

- Using a wider aperture, such as $f/2$, allows the subject to be separated from the background, making the subject sharp and the background blurred. The eye is drawn to the parts of the image that are in focus, not those outside of it. If you choose such aperture values, it is very important that the subject you want to keep in focus is actually in focus.

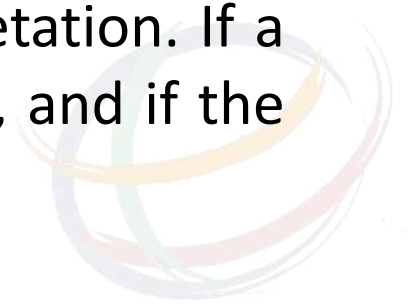


Changing the focus



Camera Angle

- Camera angle is the tilt of the camera relative to the horizontal axis.
- The angle from which the camera films the subject has a very important influence on the viewer and their perception. In dramatic action, determining the height of the camera can strengthen the position of the character or completely weaken it. It can also affect the importance of a particular event.
- Filming at the subject's level is usually at chest height, but filming can be done at a lower level as well. This camera angle does not have a specific interpretation. If a person is standing, the camera should be at a height of 120 to 180 cm, and if the person is sitting, the camera should be at a height of about 110 cm.

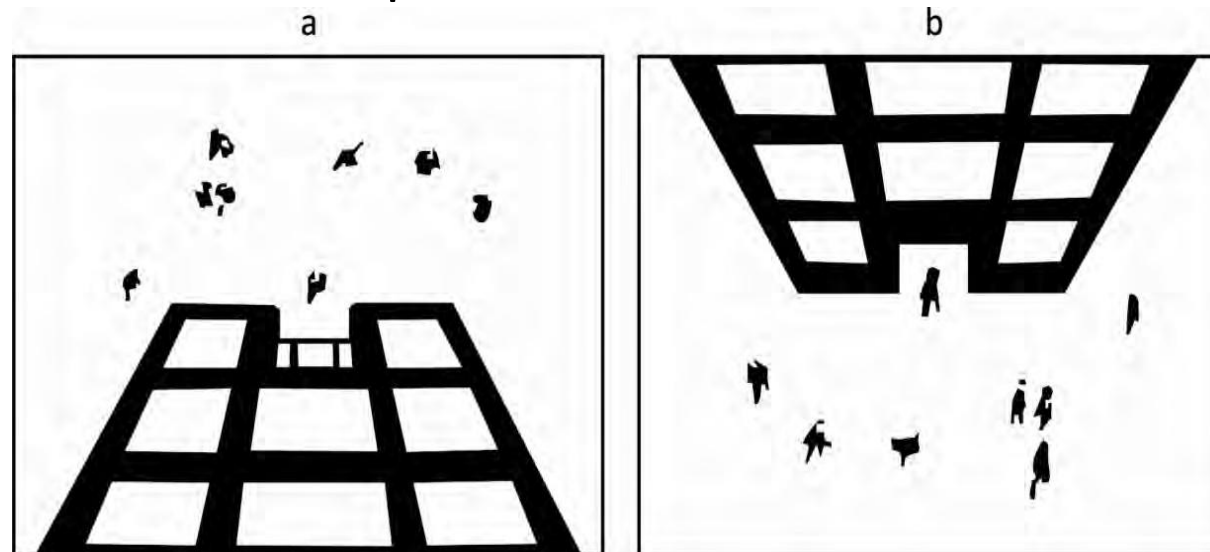


Extreme Angles

- The use of extreme camera angles (shooting) should be natural, stemming from the dramatic action, not distracting the viewer's attention to the question: "How did they put the camera in such a strange place?"
- A very pronounced upper rack at an angle of 50°-60° gives the impression of surveillance, and an overhead shot gives a special impression of the movement of a particular group, or individual (battlefields, ballet), and reveals isolation or crowding.
- Shooting from a low angle of 20°–40° usually makes the subject appear stronger, more imposing, more threatening. If filming is done in a closer shot size, movements appear more important and dramatic, and are intensified by moving closer. If a very strong low angle is used at 50°–60°, subjects gain a mystical appearance and seem unusual, and if wider shot sizes are used, subjects appear distant and unfamiliar.

Extreme Angles

- In shots taken from above the head, the camera position relates to strong verticals in the scene itself and can influence the message it conveys. A strong vertical line at the bottom of the frame increases tension and instability (image Strong verticals in the frame a), while a strong vertical at the top (image Strong verticals in the frame b) completely eliminates these qualities.



Strong verticals in the frame

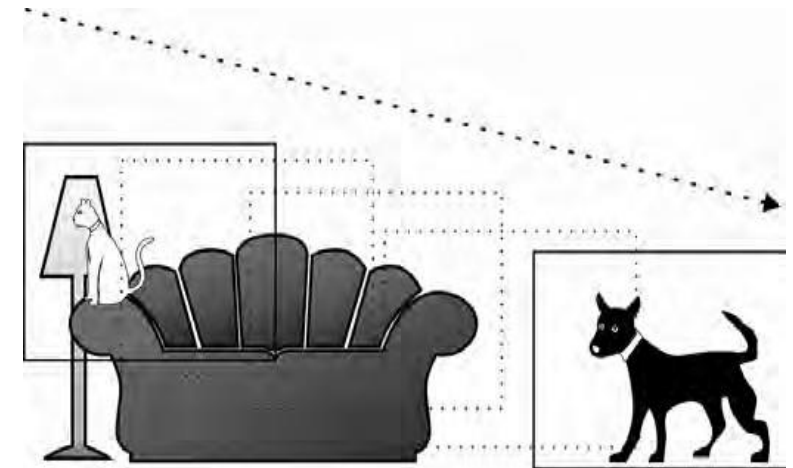


Panning - Panorama, Whip Pan

- Horizontal panning allows establishing the space between two subjects or two different spaces. Panning across irrelevant parts of the scene should be avoided (e.g., a large empty space between two characters). Panning should be smooth, without stopping or shaking.
- An extremely fast camera movement along the horizontal or vertical axis is called a whip pan. In such a shot it is impossible to recognize its content. It enhances the impression of quickly switching from one content to another and sharply (artificially) separates one space-time from another space-time and increases dynamics.
- Speed of the pan is very important. If the camera pans slowly across a series of objects that become increasingly interesting and important, the movement will hold our attention and lead to a climax. If it pans across a scene with no objects important to us, attention is quickly lost.

Panning - Panorama, Whip Pan

- A following (corrective) pan is the most common form of camera movement – the camera pans while following a moving subject (Figure: Following pan).
- Vertical panning is used when it is necessary to emphasize height or depth (e.g., a pan from a climber to the cliff they plan to climb), or the relationship between subjects positioned at different locations (e.g., a pan from a sniper on a rooftop to a potential victim walking down the street).
- Moving upwards causes greater interest and emotion, anticipation, hope... On the other hand, the downward movement serves to reduce interest, emotion, or emphasize dissatisfaction, etc.



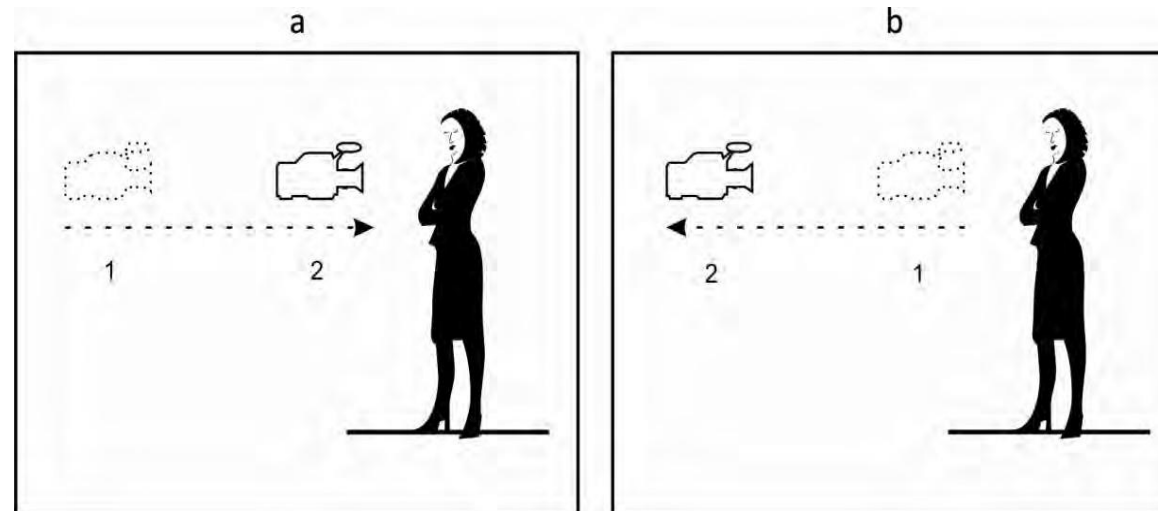
Following pan

Camera Movement

- Well-designed camera movement can attract the viewer's attention. Camera movement that includes a change in shot size provides a sense of spatial continuity and depth, a realism that no zoom lens on a static camera can achieve.
- It is very important that camera movement is appropriate, has a suitable speed, and is executed smoothly.
- The effect of camera movement is most noticeable when filming a static subject. Camera movement is proportionally less visible when the subject also moves with the camera (e.g., following from behind a running subject or moving away from a subject who is approaching). If the subject's movement and the camera movement align, the dynamic effect of the background will still be visible. If the subject's movement and the camera movement are in opposite directions, the overall effect of movement is much greater.

Camera Movement

- Camera movement towards the subject (Figure: Camera movement and subject, a) directs the viewer's attention to the subject, and camera movement backwards (Figure: Camera movement and subject, b) shifts the viewer's focus to the surroundings.
- Camera movement toward or away from the subject using wide-angle lenses appears faster than it really is, and slower when using normal lenses.

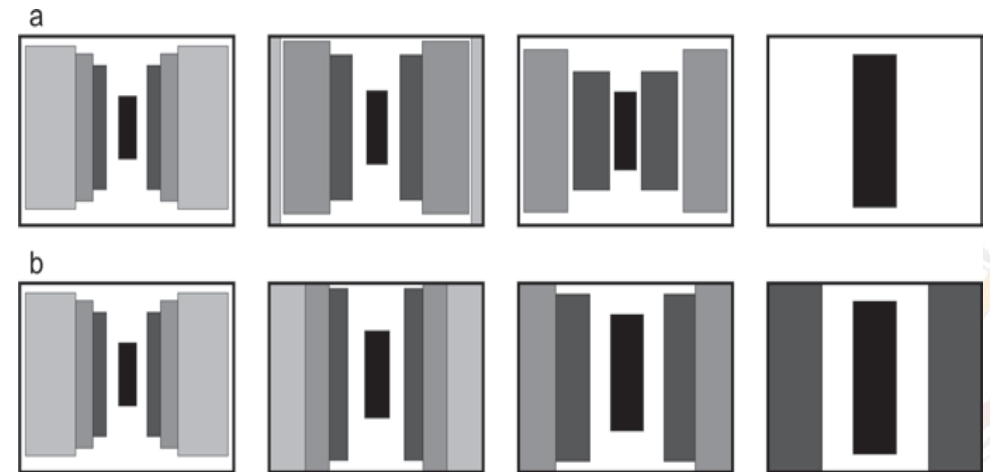


Camera motion and subject



Using the Zoom Lens - Optical Movement

- Inexperienced camera operators often cannot resist using the zoom instead of camera movement. Zooming only simulates camera movement. There are moments when zoom is necessary and justified, but it should not be used often because it irritates the viewer.
- Zooming in should be used to attract the audience's attention, and to emphasize.
- When the camera moves (Figure: Camera movement, a), the relative relationships of objects or subjects in the scene, that is, perspectives, change proportionally. When zooming (Figure: Camera movement, b), the relative relationships in the scene are not proportional. Perspective is changeable.



Camera movement

Editing

- Editing is one of the key and most creative parts of video production. In the first films, editing was almost non-existent – the entire film was often just a single frame, without any cutting or linking.
- It is only with authors such as Edwin Porter and David Griffith that the development of film editing in the form we recognize today begins.
- Their combining of multiple separate shots into a single whole is considered the true beginning of film narration and modern storytelling in moving images.
- From that moment, editing becomes a way of controlling the flow of the story, rhythm, and viewer attention.



Editing

- The purpose of editing is to create a film story – introducing the structure into a series of shots. Just as a book has an introduction, development, and a conclusion, so does a movie have a beginning, a middle, and an end.
- Editing also allows for different narrative forms: flashback, flashforward, parallel actions, time jumps – all of which can contribute to an interesting and solid film structure.
- The task of editing is to place a large number of recorded shots in the right place, consolidate the storytelling structure and show the "essential". Just as we use letters to speak, we use shots in the film. They are the basis of the film.
- The editing cuts are not only a technical procedure, but a decision that shifts the viewer's attention, changes the space, time or meaning.

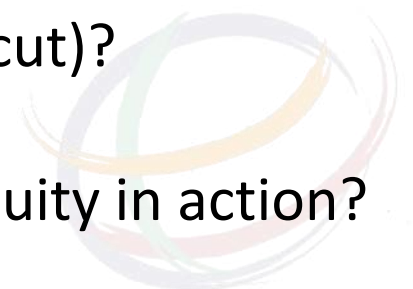


Editing

- Editing is the process of selecting shots, their layout and determining the duration of each of them.
- Some of the basic tasks of editing are: choosing the most suitable shot, determining the logical and emotional sequence and setting the rhythm of duration.
- It is very important that editing is adapted to the target audience – the tempo, rhythm of shots, visual style, and level of attention required by the film depend on this.
- Editing is both a creative and technical process: it requires time, consideration, trial versions, but also respect for deadlines and production technical limitations.
- If performed successfully, editing makes the film appear natural and seamless, even though it contains hundreds or thousands of carefully arranged shots.

Editing

- The editor must be well acquainted with two different aspects of his job:
 - technological process related to hardware and software manipulation,
 - Psychological-aesthetic impact that editing has on the viewer.
- During the editing process it is necessary to answer the following questions:
 1. Which shots from those available do you want to use?
 2. What is the order of the shots?
 3. How long does a shot last and what effect does it have on the audience?
 4. At what moment should you move from one shot to another?
 5. In what way will the shot continue into the next one (transition, cut)?
 6. If it is a transition, at what speed will it take place?
 7. Is there good continuity in image and sound that supports continuity in action?
 8. Are special effects needed in editing?



Order of Shots

- The order of the shots affects how the viewer experiences the events on the screen.
- Let's explain this in a simple example: a burning building – a car – a man running. Changing the order of shots, will change our perception of what is happening.

1. Car – man – building on fire;

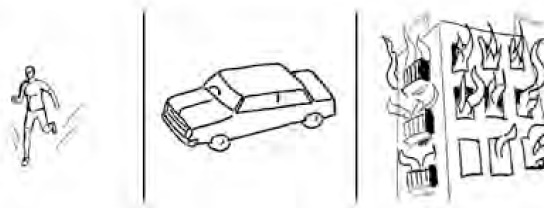
The man arrives by car and runs toward the burning building.



2. Building on fire - man – car; Running from the fire, a man runs to the car to save himself.



3. Man – car – building on fire; The man who caused the fire is fleeing the building by car.



Duration of the Shot

- If the shot is too short, the viewer has insufficient time to understand the information. On the other hand, if the shot is too long, the viewer's attention weakens.
- The duration of the shot depends mostly on its purpose.
- A number of factors affect how long a shot should last:
 1. the amount of information to be accepted,
 2. the clarity and simplicity of the information displayed,
 3. our familiarity with the subject,
 4. the action, change and movement contained in the shot,
 5. image quality (contrasts, details, strong composition).



Questions & Answers

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