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Filming Research: Video Recordings Eric Andreae

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Researchers in the performative arts, fine arts, and design, not to mention the social sciences, are usually not trained filmmakers who are skilled at working with a video camera. Nevertheless, they too can shoot high-quality videos. Getting started is easy enough. In many cases, a high-end smartphone is all you need for a research project with moving images. However, every researcher should know and observe a few basic rules of thumb about video recordings, shots, and angles.

A conventional video can be understood as a “show-and-tell”: the filmmakers intend to depict something specific and rely on the medium to accomplish that. They understand precisely the objects and narratives that they intend to portray with the camera.

A research video is fundamentally different because the researchers cannot know with certainty what they will find. They are essentially gazing into the unknown. In this context, videos provide a means of gaining new insights when researchers repeatedly view and analyze the recordings later on. The phenomena and patterns that are of relevance to the study are often only discovered during the subsequent research process. Video researchers thus face a paradox. If they point the camera only at what is already known, the video may not produce any insights. If, on the other hand, they point the camera at what is unknown, this raises the question of what should be filmed, since what is new has not yet been revealed at the time of the recording. There are three solutions to this paradox.

Procedure of Filming

01 Clarify the questions

Clarifying the question and clearly establishing the factors to be examined requires a certain amount of prior knowledge about what exactly to expect, as well as where and how the relevant effects will manifest themselves.

02 Record as much as possible

If the researcher does not know if, when, and where effects will occur or what they may look like, virtually the only alternative is to record “everything”—although this immediately raises the question of what “everything” means in each specific situation. A number of video cameras and 360-degree cameras allow for a certain amount of selecting to be made when shooting. However, this produces an enormous amount of data, which can be overwhelming and only properly handled with automation.

03 Proceed intuitively

The exact opposite approach is to be radically selective during the recording process, and to record only phenomena that the researchers suspect may be the key to revealing hidden information. This skill must first be learned, similar to the way a mineral

collector learns to examine a rock to see whether it contains crystals or not. This third method is closely related to artistic research.

Regardless of which of the three approaches is selected, the videos must have a certain degree of quality to be suitable for subsequent evaluation. Researchers therefore require a certain basic level of expertise, which they cannot automatically be assumed to possess.

4.1 Camera Shots

Camera shots are the basic building blocks of filmmaking and video productions. They begin the moment the camera starts rolling and recording images. Unlike a still camera, a video camera can pan, track, and zoom. The shot ends when the camera stops filming. Within a single shot, the time of the filmed reality (action in front of the camera) is synchronous with the playback time (narrative time). Otherwise, real time is generally shortened or sometimes even stretched by “cuts”.

Shots only take on meaning when they are arranged as a sequence within a context. The process of interlinking shots obliges the filmmaker to consider transitions and junctions: image sizes, camera positions, angles, movement, and content-related associations between foreground, middle ground, and background have to be viewed and reflected upon over and over again.

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Shot Sizes and Angles

Extreme wide shots/wide shots/long shots	Best for a vast landscape or a town or village.
Totale	Emphasizes the scenery but includes subjects and/or objects in full view, essentially for orientation. Full shots have to be shown for much longer than wider shots because they usually contain a great deal of detailed information that the viewer needs time to absorb.
The medium long shot	In a medium long shot, there is no longer an emphasis on distance. Only part of a room or landscape is shown. Small groups become visible, for example. However, people can still be seen in their entirety and at full size, that is, for a small screen: facial expressions, gestures, and other subtleties still remain out of focus. This is still a shot that provides an overview.
Cowboy shot	This shot comes straight out of Hollywood westerns and shows actors with their Colt six-shooters visible on their thighs. It is suitable, for example, for capturing an image of a person who is presenting something. In this shot, you still have sufficient scope to react if the filmed object suddenly changes position.
Medium shot	This shows the subject with between half and one-third of their body visible. The camera abandons the position of an impartial observer and becomes selective in its view.
Medium close-up shot	The subject is shown from head to shoulder, and part of the upper body is visible. The emphasis is on the face or on the center of an object, but this shot still conveys the impression of maintaining the perceived personal space around the subject, that is, a distance of approximately an arm's length from the camera.
Close-up shot	In shots of people, a close-up face shot would fill the entire frame. All that can be seen here is the central motif, which the viewer simply cannot miss. The camera focuses on details that would otherwise escape the viewer's attention.
Extreme close-up shot	This is an extreme, superlative version of the close-up that shows, for example, only certain parts of the human face, such as the eyes and mouth, or details of an object, or perhaps objects that are important to the narrative. Details in the video have an emotional and suggestive impact.

The perspective of the camera always corresponds to the imaginary position of the viewer. What is fascinating about video is that, unlike in reality, you can change perspectives at lightning speed.

The perspective and viewing line of the camera, in conjunction with the shot size, forge the intrinsic relationship between the viewer and the object being depicted. This renders the camera capable of exaggeration and distortion.

Eye-level shot	The subject is shown at “eye level.” Since the eye-level shot can appear static and monotonous, it is often replaced by a slightly high or low angle.
Extreme low-angle shot	The portrayed subject appears self-confident, superior, heroic, dominant; the viewer must look up to the protagonist.
Extreme high-angle/bird’s-eye shot	Subjects shot from above give viewers the impression that they are hovering above everything filmed. The subject appears miserable, lonely, and small.

4.2 The Continuity of the Images

A video tells a story, but it tells it differently than a written text. It is conveyed to the viewer through a series of images. Every image embodies an idea, and every scene is a sequence of ideas. Together they form a harmonious progression. If this visual harmony and continuity is then violated, the viewer may become confused and lose the thread of the narrative.

The Direction of Movement

If, for example, a person appears in the frame from the left and leaves the frame on the right, he or she must come from the left again in the subsequent shot to resume the previously shown movement. If this were any different, the viewer would have to be informed as to why the direction of movement has changed. For instance, an intermediate cut could show how the person stops, looks as if he or she has forgotten something, and then turns around. This would explain the change in the direction of movement.

The Line of Action

Subject movements can confuse viewers if they are interrupted by a change of setting and the new camera position jumps over the line of action, which is the direction in which a process takes place. If the camera crosses this imaginary line of action, the viewer suddenly sees a reversal in the direction of the action. The left-right orientation in the image is lost, and the viewer becomes disoriented. A shot that “inadvertently reverses direction” by crossing this line is a classic mistake and violates the “180-degree rule”. Hence, the camera should always remain on the same side of the line. The line of action can only be crossed and the direction reversed by a movement of the camera or by the protagonist(s). This can also be used to make a dialogue (a scene) more visually engaging and, for example, to mark or emphasize a turning point in the conversation.

Practical Tips for Shooting

Recording test	Before you actually start filming, make sure that the camera is recording correctly. Do a recording test for a few seconds, then play it back in the camera to check that it is working properly.
Natural lighting situations	Bright sources of light and windows should always be behind the camera when recording. Strong contrasts (bright background) are to be avoided by reducing the size of the frame, using the backlight button, or selecting the manual aperture control.
Frame	<p>Moving objects should be filmed with a larger frame (medium long shot, possibly a full shot) to give the subject some space and to be able to react quickly enough should an unexpected change in direction occur.</p> <p>In the telephoto range, pay close attention to the focal plane. If the distance between the lens and the subject changes, the focus may need to be readjusted during recording. With telephoto settings (close-ups), the depth-of-field range is extremely small. Consequently, movements should be recorded with the widest possible angle.</p>
Manual focus	Maximum zoom on the subject, focus, optimize the frame, and start recording! In most situations, it is worth working with manual focus. Almost all cameras have a button which, as long as it is depressed, activates the automatic focus. This can be used to adjust the focus if the time available or the circumstances do not allow you to focus the camera yourself. You have more control over the focus with the manual adjustment, though.
Camera movements	Slow panning! The viewer needs time to interpret the images. Simultaneous panning and zooming should be avoided; panning and zooming should have a specific purpose. The viewer expects to be shown something specific with a zoom or a pan (a clue of some sort). Aimlessly wandering camera shots, on the other hand, have a disorienting effect and can, at best, be used as a deliberate, stylistic method of expressing the restlessness of a protagonist.
Always keep the editing in mind	Two shots of the same subject should differ at least in terms of the shot size or the camera angle. If the difference in the image is not clear enough, the two shots will later appear to “jump” when edited together.
Scene lengths	Make sure that the recording is started well before the intended action and stopped again after the action is completed, even if it is a little too long, to avoid missing the recording of important information.

4.3 Conveying Knowledge with the Emotional Medium of Video

If you want to use video as a medium to convey knowledge and information, you should always keep in mind that images, with their symbolic meaning, appeal first and foremost to our emotions. Anyone who creates film scenes will always evoke an emotional response; and before you accidentally achieve the wrong one, you should make a deliberate effort to create intentional effects and steer the audience in a specific direction.

For example, if you jiggle your camera around, you are not drawing attention to the content of the images, but to the improperly operated equipment. Wobbly shots will make your viewers feel anxious and stressed. You should use a tripod whenever possible.

If scenes that are recognized in four seconds are left standing for twenty seconds, viewers will become bored. You should keep this rule of thumb in mind when shooting to avoid changing shots too quickly and too frequently, unless absolutely necessary.

At every shooting location, you need a clear concept for the images and sounds that are essential to the narrative. This applies both to staged and documentary work and to artistic-performative research. In any event, you have to think carefully about what you intend to tell viewers and which images you need for this narrative.

Should unexpected events influence the shooting, adaptations must be made without losing sight of the actual narrative. It is especially important to have internalized the overall concept in the event that unexpected situations arise. This allows you to react in a carefully considered manner to unanticipated developments at short notice.

Types of Cameras for Research Videos

Semiprofessional cameras	Semiprofessional cameras (for example, the Sony PXW-FS7) are relatively inexpensive, but still offer all the required functions to achieve excellent results. They have the necessary size to perform smooth camera movements and can be combined with professional auxiliary equipment. They tend to be too complex for absolute beginners, though. Semiprofessional cameras are best suited for recordings over a longer period of time because they are highly reliable and have a large storage capacity and long battery life.
Single-lens reflex (SLR) photo cameras with video recording capability	SLR cameras with video recording capability (such as the Canon 5F Mark 4) are very popular because they offer a combination of professionalism and handiness. Impressive moving images can be created quickly and easily. These cameras are very easy to transport. However, sound recording is limited and requires quite a few accessories for improved performance, which makes the camera slightly less handy to use.
Smartphones	Popular smartphone models (iPhone, Samsung Galaxy, etc.) have integrated high-resolution cameras that can compete with conventional camera models. Convenience, handiness, and speed are the main arguments here. Sound capabilities are limited here, too, and require accessories to achieve better quality. There are many innovative accessory solutions.
Action cams	Action cams are extremely small and very stable devices that can be mounted on helmets, handlebars, poles, and windshields. The shot is reduced to a single very wide angle setting so that the camera shoots as much as possible. These cameras are ideally suited to recordings of sporting or performative activities. They are waterproof and virtually indestructible. In terms of the scope of artistic creativity, however, you quickly reach your limits. Sound recording options are available but limited. No additional devices can be connected to the camera.
360-degree cameras	360-degree cameras are available from very small and handy types (such as the Ricoh 360) up to high-end models with outstanding recording quality (for example, the Insta360 Pro II). An image that allows you to turn your gaze 180 or 360 degrees offers many exciting possibilities and can be an ideal solution when observing a landscape or a room, for example. It is not possible to change the lens (wide angle to telephoto). Viewers can focus on different elements or angles in the same video, that is, they can experience the same video differently.

The phenomena and patterns of study are often only discovered in the research process. Video researchers, if they point the camera only at the action, the video may not produce a useful record. On the other hand, if they point the camera at the researcher, it raises the question of what should be recorded. What is new has not yet been revealed by video recording.

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