8

Publishing Research: Academic Conventions, Videos, and Annotations Gunter Lösel

- 8.1 Minimum Requirements**
- 8.2 Shareability of the Research Video**
- 8.3 Challengeability**
- 8.4 The Structure of a Research Publication**

Unlike text-based publications such as monographs, book sections, and articles, the new medium of annotated video has neither a long tradition in the academic world nor specific scholarly structures. The necessary conventions still need to be developed. This chapter focuses on the publication of “video articles” containing the findings of a specific research project.

8.1 Minimum Requirements

Many of the demands placed on scholarly work, such as the traditional quality criteria of validity and reliability, depend on individual research traditions. Because these criteria are discussed differently in each discipline, we will limit ourselves to two more general ones:

- **Shareability**

The publication must be available to the research community (and, according to current requirements for open access publications, this availability cannot be subject to a fee or blocked by other access barriers).

- **Challengeability**

Other researchers must be able to critically evaluate the publication. In other words, the methodology and exact process of knowledge generation must be transparent so that other researchers can understand and verify them.

8.2 Shareability of the Research Video

To meet the criterion of shareability, a publication must be transportable and unchangeable. A book meets these conditions in an exemplary way: it can be sent all over the world and will always have the same content for decades or even centuries; the same content in the same, precisely definable place.

This is not a given for digital objects but requires a technical solution. Digital objects are easily transportable, but are highly unstable and susceptible to change.

Creating a Permanent Link

For a Research Video project to be permanently locatable, it must be uploaded to a repository or a journal and assigned a permanent object identifier (such as a DOI number). From that point on, modification must be impossible—the file must be technically “frozen” and protected from subsequent change. We have defined a workflow in which a research video can be uploaded to the repository of the Zurich University of the Arts, where it is assigned a permanent link (→ see Chap. 7). The next step is to combine this

link with the Research Video tool, which in turn generates a (very long) link. This final link, which can be transmitted and distributed, opens the research video in view-only mode.

View-Only Mode

In view-only mode, most functions are disabled. Although the viewer/reader sees the same interface used by authors, he or she cannot add or delete annotations, tracks, or tags. Nevertheless, the interface has a number of interactive features: the viewer/reader can move the playback bar, display annotations in the Inspector, hide tracks, and select tags from a drop-down menu. This process ensures the shareability of Research Video projects.

8.3 Challengeability

Citability

We propose using conventions from film studies. When scholars in this field cite a specific scene in a film, they use the following citation formula:

(Director, Production year, Timecode)

There are different styles as to how to cite the timecode, here is one example:

(Christopher Nolan, 2005, TC: 00:14:03–00:15:52)

The start and end of the sequence are given. If reference is made to just one frame, a single timecode is all that is needed. Citations of annotated videos can follow the same logic. If an annotation is cited, the start is given with just a single timecode. In order to make clear that it is an annotation, we suggest adding an “a” (lowercase) to the citation formula. An annotation in a Research Video project would thus be cited like this:

Director, Year of production, a-time code

(Christopher Nolan, 2005, a-TC: 00:14:03)

This is a very precise way to cite an annotation. In the highly unlikely event that several annotations start the same second, they can be numbered, just as publications are numbered when an author publishes several during a single year.

(Christopher Nolan, 2005, a-TC: 00:14:03[1])

(Christopher Nolan, 2005, a-TC: 00:14:03[2])

etc.

Methodological Transparency

For a publication to be challengeable, its authors must include detailed information about the research method used. A Research Video project is ideally suited for this, as it usually presents the data analysis process in a transparent way and shows parts of the research material. The reader is given a direct understanding of the categories that have been defined and how these categories relate to the specific research material.

However, researchers must also share the context of their research—that is, the theories they have drawn on as well as the concepts, terminology, and research methods employed. They typically provide information about the precise data collection process and the steps of data acquisition. Finally, they discuss their conclusions and the implications for their research field. It is not easy to embed such information in a video, and the question of how this can be done was one of the more difficult ones we faced in our project. Here are our proposed solutions, neither of which is perfect:

Researchers as “talking heads”: A simple solution would be to film the researcher while he or she presents the above information. The corresponding clips could then be incorporated into the research video and annotated with more in-depth references. This is easy from a technical perspective, but requires researchers who are willing to appear before the camera.

Graphic visualization: This solution entails visualizing the information and recording it in the video. Options range from the simple filming of charts to complex animations, depending on the technical possibilities. As in (1), these clips could then be incorporated into the video and annotated with more in-depth information. Here we recommend working with trained designers from fields such as “motion design”, “visual communication”, and “knowledge visualization”.

8.4 The Structure of a Research Publication

In addition to these minimum requirements, there are established structures for the presentation of research articles, such as the relatively simple, widely used IMRaD model.

IMRaD model

- Introduction
- Methods
- Results
- and Discussion

When it comes to applying this model to video publications, it is worth noting that the model is based on a temporal structure and thus tells a story. The Introduction describes the current state of research before the start of the research project and identifies a gap in research, a question or a problem. In the Methods section, the author provides a detailed description of the steps taken to generate new knowledge. This section usually covers all processes, from data collection to data analysis. In other words, it recounts all the actions taken to fill the gap in research and answer the research question. In the following Results section, the author presents the research findings. In the final Discussion section, the author re-embeds the new knowledge in the research context, discusses alternative interpretations of the findings, and formulates new research needs as a starting point for subsequent researchers.

Our question was: could we transfer the IMRaD structure to an annotated video? Today, our answer is: not on a one-to-one basis. The IMRaD structure was not conducive to the presentation of research material in any of our use cases. It proved to be difficult to structure the information such that the reader could see the “introduction” first, then the “method”, and so on. Instead, videos make it possible to provide the information in parallel tracks. On a superficial level, though, researchers can at least imitate the IMRaD model: in several use cases, our researchers created tracks for “methods”, “observations”, “analysis”, and “discussion” that built on the IMRaD model but did not represent a chronology (→ fig. 01).

Instead of understanding structure as a series of successive sections of an article, readers can see and process it as parallel tracks. They can view the different sections of the video in their

own chosen order, which enhances the sections' interactivity and comprehensibility.

The IMRaD model, seen through the lens of the research video, seems very artificial and one-dimensional. Even when it was possible to transfer the model to an annotated video, the chronology of the IMRaD structure was never really supported by the multitemporal logic of the research video. This came as a surprise and can be seen as evidence that textual forms of publication create a perceptual framework that is incompatible with the multiperspective, multitemporal framework established in the context of an annotated video. However, further studies are needed to validate this conclusion.

Structure as a Process of “Coloring” Data

The fact that a research paper reconstructs the temporal structure of the research process is certainly important for the publication of a video as a temporal medium. We therefore propose presenting the story of the research process chronologically, though not artificially segmented as in the IMRaD model. Instead, we suggest basing the story of the research process on the actual movements of the researchers (→ for more, see Chap. 9). During the video analysis phase, for example, researchers switch between a detailed analysis of the material and the theoretical level of concepts and terminology.

This process resembles the forward-and-backward movements of a painter who repeatedly steps away from the canvas and then moves back toward it. Researchers make an analogous movement: they step very close to the subject, study details, merge with the phenomenon, then distance themselves again to gain a more detached view. In other words, they switch back and forth between macro- and microanalysis in the generation of new knowledge (→ fig. 02).

The analysis usually starts at the macro level, with researchers gaining an overview of the material in its entirety. The next step is to divide the material into appropriate sections based on the chosen method and questions. Proceeding from this rough coding, researchers identify key sequences (samplings) on the basis of the research question and/or the underlying theoretical assumptions (Glaser and Strauss 2010).

It is important to identify an initial key sequence (S 1), as it is here that the detailed analysis begins. The detailed analysis then

attempts, using one strategy or another, to cause the researchers' suppositions to germinate, allowing new perceptions and interpretations. This is usually achieved by moving very close to the material and remaining in front of it for a longer time. The detailed analysis may be protracted and involve several persons and phases. It is deemed "complete" when the interpretive space becomes saturated, that is, when no new interpretations arise.

At some point, a new supposition will emerge. We call this the "structural hypothesis" (SH) because it condenses and re-structures the material. This structural hypothesis forms the basis of a new round of reflections at the macro level. In other words, at the theoretical and conceptual level, researchers look for new connections that incorporate or differentiate the structural hypothesis. Based on these reflections, they then seek sequences of the material that can support and expand the newly formed structural hypothesis. This process is called "minimum contrast formation".

If such a sequence (S 2) is found, it is once again subjected to detailed analysis, which leads to a new structural hypothesis. The second structural hypothesis (SH 2) may be identical to the first or elaborate on it and thus lead to further reflections at the macro level. The researcher can now comb through the material for sequences that are as dissimilar as possible to the identified phenomenon and may even contradict the structural hypothesis. This process is called "maximum contrast formation". This produces a heightened awareness of contrasts; similarities and differences become more prominent.

This process is not so much about verification or falsification but about strengthening perception, and it can be narrated as such. A research video makes this mode of presentation possible. Video sequences that present theoretical reflections can be followed by sequences showing detailed analyses, allowing the viewer to understand the process by which data are "colored" and by which patterns gradually become visible.

In this chapter, we have suggested which academic conventions should be transferred to the research video as a new publication format and how this can be achieved. The process is associated with many uncertainties, which we approached heuristically in our project. Using the analogy of established text-based formats, we investigated related standards, working on the premise that we should remain as independent as possible from disciplinary conventions and define only minimal requirements.

Finally, the potential of a productive, alternative, epistemic perspective should not be sacrificed in the effort to comply with existing conventions. After all, the goal is to further develop and give greater visibility to the specific forms of knowledge generation that are disadvantaged in traditional research.

01

02

Fig. 01:
Emulating the IMRaD model in RV
(illustration by author)

Fig. 02:
Oscillation between macro- and microanalysis
(illustration by author)

Analytical Method

- Macroanalysis
- Logbook to get an overview of all data material
 - Description of interesting sequences for “theoretical sampling”
 - Selection of key sequences
 - Selection of contrasting sequences (minimum/maximum contrast)

- Microanalysis
- Detailed analysis of selected sequences
 - Minimum contrast formation
 - Maximum contrast formation

- Formulation of Structural Hypotheses
- At least three iterations
 - Final structural hypothesis

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