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Change Your Perspective: 360°-Video in Video Based Observation

- Extended Abstract -

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Due to the rapid development and improvement of new information technologies, decreasing costs, increasingly easier production and storing of video data and almost permanent availability and accessibility of video technology (by smartphone or camcorder) the importance of visual media in our society is growing. And while visual communication has become increasingly important to society, the application of visual research methods has also become more widespread within social sciences (Schnettler & Raab., 2008). Nowadays video-based observation (Videography) is an established and indispensable method in various scientific disciplines (Jewitt, 2012; Schnettler & Raab; 2008). In general, observation is considered to be the "most original" data collection technique, as the proximity to everyday information gathering techniques becomes particularly clear. "(Schnell et al., 1999: 358) According to a general definition by Döring and Bortz (2016: 324), the term scientific observation refers to a focused, systematic and rule-based collection, documentation and interpretation of characteristics, events or behaviors that use human sensory organs and / or technical sensors at the time of their occurrence.

The advantages of video recordings for observation are manifold: Video provides the ability to capture participants' actions and activities that are not available through other methods like traditional observation or interview. Slow-motion, zoom, freezing and the ability to fast-forward or rewind allow a detailed examination of complex interactions beyond the capabilities of a participating observer (Schnettler & Raab, 2008). In addition, video can be analyzed by multiple reviewers, which can lead to a better intersubjectivity and "*provides a direct referent to behavior which can be checked for intercoder and interresearcher reliability and validity."* (Albrecht, 1985: 336)

But despite the advantages of videography, the use of video for observation is repeatedly critically questioned. A frequently discussed problem of videography is in particular the subjectivity of the data material and the related question of whether or to what extent the position and direction of the camera influences the analysis and evaluation of the recorded situation (eg Reichertz, 2014; Bohnsack, 2010; Frankenhauser, 2013; Knoblauch & Schnettler, 2015; Jewitt, 2012; DuFon, 2002, Luff and Heath, 2013). Because framing only reveals what happens in front of the camera, it is also determined what is outside. Framing separates the visible from the non-visible (Godman, 2007). For video-based observation, as well as analysis and assessment of a situation, this circumstance appears to be highly problematic. Irion (2010: 140) for example, criticizes the fact that information for the analysis of videotaped processes frequently lacks because it is outside the camera perspective. Rosenstein (2002: 6) notes that *"much depends on the eye and hand of the person holding the camera. Just as the quality of other forms of traditional observation depends on the skill of the observer, the quality of the filmed or videotaped document depends on the skill of the filmer."* In practice, the camera holding person has a great influence on the analysis. With an almost clairvoyant ability the videographer has to determine situationally, what should be in the focus of the camera and what not. The videographer always determines what can ultimately be analyzed. Therefore, the person holding the camera has a massive impact on the results. As a solution, Goldman (2007: 4) suggests the use of several cameras. He claims that the aim of using those video technologies is to embrace diverse points of viewing to prevent the hazards of bias, misrepresentation and missed-representation. The advantages of several perspectives are also embedded in many participatory researches. From these perspectives, several cameras are the preferred option. However, some researchers suggest that the use of multiple cameras is not advisable as they multiply the data collected, can overcomplicate the interaction by using multiple perspectives, can fracture sequences of interaction and present challenges for analysis (Jewitt, 2012: 16).

However, what has been ignored in this discussion so far is the use of 360° video recordings. 360° videos are video recordings where a view in every direction is recorded at the same time. During playback the viewer has full control of the viewing direction. At first glance, it seems like this technique could be a great advance for scientific observations. Framing is lifted, a "before and behind the camera" doesn't seem to exist anymore. Multi-perspectives become superfluous and the person holding the camera no longer needs clairvoyant abilities. In addition, multiple reviewers can analyze a scene without having a predetermined focus. It is no longer the person holding the camera who decides what is important for the analysis but the actual observer himself. Therefore, the use of 360° cameras makes it possible to digitize a comparatively realistic form of participant observation. However, this technology also raises many new questions. In the present paper we would like to discuss the impact of 360° video recordings on existing "techniques and rules" of scientific videography. It will be questioned whether current findings on this subject should be rethought or at least revised.

In order to understand the advantages and disadvantages of this technology better, a qualitative experiment with 26 participants was conducted. The research question was:

To what extent does the quality and quantity of a video-based observation differ by using "classic" and 360° video?

In this experiment, each participant sat in front of a computer with two different videos from two varying scenarios. Both scenarios were recorded using multiple cameras from different angles. For each of the two scenarios, the participants received standardized observation tasks. In the first scenario, a 360° video was compared to a "classic" moving camera (panning shot). Since the panning shot was generated from the material of the 360° recording, the camera position was exactly the same for both shots. In the second scenario, a 360° video was compared with a fixed camera perspective. Here, the cameras had different positions. The assignment of the camera perspective as well as the sequence of the videos to be processed

were chosen randomly. In addition to each video, a NASA TLX test was conducted in order to be able to determine possible Workload effects with regard to the used video type. Moreover, participants had to take two short Spatial Ability Tests. The entire editing was done with paper and pencil. The data evaluation is currently in progress.

The aim of this work is to discuss problems and challenges of 360° video-based observation in order to be able to make statements about which changes (or even new problems) arise for the scientific video-based observation. Based on the results of this study, we would like to discuss the pros and cons, opportunities, risks and challenges of 360° video for scientific observation and try to provide new ideas for future methodological research.

References:

Albrecht, G. L. (1985). Video tape safaris. Entering the Field with a Camera. *In: Qualitative Sociology,* 8 (4), 325-344.

Bohnsack, R. (2010): Zugänge zur Eigenlogik des Visuellen und die dokumentarische Videointerpretation. *In: Corsten, M., Krug, M.,Moritz, C.,Videographie praktizieren. Herangehensweisen, Möglichkeiten und Grenzen*, Wiesbaden: Springer

DuFon, M. A. (2002): Videorecording in SLA Ethnographic Research: Some issues of validity in data collection. *In: Language Learning & Technology* Vol. 6, No.1, pp. 40-5

Döring, N., Bortz, J. (2016). Forschungsmethoden und Evaluation in den Sozial- und Humanwissenschaften. Berlin: Springer

Fankhauser, R. (2013). Videobasierte Unterrichtsbeobachtung: die Quadratur des Zirkels? *In: Qualitative Social Research*, *14*(1), Art. 24, http://nbn-resolving.de/urn:nbn:de:0114-fqs1301241.

Goldman, R., Erickson, F., Lemke, J.; Derry, S. (2007): Selection in video. *In: Guidelines For Video Research In Education:* Recommendations From An Expert Panel, Data Research and Development Center (NORC at the University of Chicago) Retrieved 24.10.2017 from http://drdc.uchicago.edu/what/video-research.html

Heath, C., Hindmarsh, J., and Luff, P. (2010): Video in qualitative research: Analysing social interaction in everyday life. London: Sage.

Irion, T. (2010): Hypercodierung in der empirischen Lehr-Lern-Forschung. Möglichkeiten der synchronen Analyse multicodaler Datensegmente zur Rekonstruktion subjektiver Perspektiven in Videostudien. *In: Corsten, M., Krug, M.,Moritz, C.,Videographie praktizieren. Herangehensweisen, Möglichkeiten und Grenzen*, Wiesbaden: Springer

Jewitt, C. (2012): An Introduction to Using Video for Research. *NCRM Working Paper. NCRM.* Retrieved 20.10.2017 from http://eprints.ncrm.ac.uk/2259/

Knoblauch, H.; Schnettler, B. (2015): Video and Vision: Videography of a Marian Apparition. *In: Journal of Contemporary Ethnography,* Vol. 44(5) pp. 636–656

Luff, P., Heath, C. (2012): Some „technical challenges" of video anaysis: social actions, objects, material realities and the problem of perspective. In: Qualitive Research. Vol. 12(3) pp. 255-279

Reichertz, J. (2014): Das vertextete Bild. Überlegungen zur Gültigkeit von Videoanalysen. *In: C. Moritz (Hrsg.), Transkription von Video- und Filmdaten in der Qualitativen Sozialforschung.* Wiesbaden: Springer

Rosenstein, B. (2002). Video use in social science research and program evaluation. International Journal of Qualitative Methods 1 (3). Article 2. Retrieved 29.10.2017 from http://www.ualberta.ca/~ijqm

Schnell, R.; Hill, B.P.; Esser, E. (1999): Methoden der empirischen Sozialforschung. Oldenbourg: Oldenbourg

Schnettler, B.; Raab, J. (2008). Interpretative Visual Analysis. Developments, State of the Art and Pending Problems [45 paragraphs]. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, *9*(3), Art. 31, http://nbn-resolving.de/urn:nbn:de:0114-fqs0803314, S.14-15

Tuma, R.; Schnettler, B.; Knoblauch, H. (2013): Videographie. Einführung in die interpretative Videoanalyse sozialer Situationen. Wiesbaden: Springer