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To cite this article: Liv Lofthus & Lars Frers (2021): Action camera: First person perspective or hybrid in motion?, Visual Studies, DOI: [10.1080/1472586X.2021.1878055](https://doi.org/10.1080/1472586X.2021.1878055)

To link to this article: <https://doi.org/10.1080/1472586X.2021.1878055>



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Published online: 13 Apr 2021.



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Action camera: First person perspective or hybrid in motion?

LIV LOFTHUS and LARS FRERS

In this article, we discuss the usage of action cameras in research. First, we elaborate on the idea of the camera providing a first-person perspective, possibly giving access to the research participant's subjectivity, and discuss this critically. Our discussion of these issues is based on data that was produced in two different research settings where action cameras were distributed to groups of students; one setting was an outdoor museum and the other a classroom. Second, we examine how using the action camera in research creates different hybrids involving the camera, the person carrying it, and both present and absent others. These hybridisation processes become evident in different ways. We argue that the camera is treated as a hybrid in four different forms. Arguing with these hybrids enables us to more adequately highlight aspects of the research process than understanding the action camera as providing a first-person-perspective.

INTRODUCTION

People move about in the moving and shaking images that unfold in the recording of the action camera. We look at the screen, trying not to be made nauseous by the wobbling up-down-around that we witness. At the same time, we try to understand how our experience as researchers overlaps with the experience of those that we see, including the person that is wearing the action camera. We are not part of what we see as embodied researchers, but we often encounter traces of us in the action that develops on the screen. We try to make sense of this complicated, embodied, and hybridised action and of the overlapping of different perspectives that display themselves in the recordings.

The use of action cameras to gather research data is becoming more and more widespread (Vannini and Stewart 2017).¹ In this article, we look at data generated in two different school-related research projects using action cameras. The main reason for choosing this approach was that, according to the literature, action

cameras can give the researcher a first person perspective on what is taking place, offering an insight into the world as it appears to the research subject (Lahlou 2011). According to Pink (2015), who develops and refines Lahlou's argument, the cameras worn by the participants can act as an expression of the subject's perspective. The first person perspective introduced through the camera may also help maintain a neutral and naturalistic approach to qualitative studies. Another intention connected to handing out a camera to research participants, is to give them increased control over what is represented in the study (Kinsley, Schoonover, and Spitler 2016). Action cameras have often been used to film sporting actions, or nature experiences, trying to record spontaneous reactions, feelings and experiences (Brown, Dilley, & Marshall, 2008). Regarding the claims made above, Pink makes it clear that these must be treated with caution, and that we never get total access to someone else's experience. She states:

[...] the use of first person image recording technologies does not limit 'intrusion' but rather implicates the role of the researcher/research technologies in a rather different way, which means that the site, nature and quality of researcher-camera-participant intersubjectivity shifts, and this is one of the relationships that needs to be reflexively explored (pp. 245–246).

In this article, we will discuss the different ways in which perspective (first person and otherwise) and the involvement of different actors is negotiated in the recorded action. Our first argument is that we need to refine the understanding of what a first-person perspective actually is or entails – we will do this in a brief detour, where we visit the concept 'first person perspective'. Following this, we put forward the argument that positing the relation of the researcher, camera and participant as being 'intersubjective' is not going far enough, and that it is more productive to approach the relation between those involved as a hybridisation. We will begin with discussing these two

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arguments conceptually and then move on by examining our data to further qualify these notions.

Before we move into the discussion of the first person perspective, we want to briefly place this study in relation to a few select publications on action cameras. In one of the earlier studies using action cameras, Kindt employs them in a classroom setting, providing them to the students. The reason for this was to see ‘through the eyes of the students’ (Kindt 2011, 180). Kindt argues that the biggest benefit is to get the participants’ view on what is happening, thus implicitly proposing a subjective first person perspective. The action camera makes it possible to see things he has not seen before, such as observing what is done when the students are divided into groups. He points out that these cameras can pick up the teacher’s talk and how the teacher behaves, making it possible to study body language and how this appears to students in the classroom. He also discusses other aspects such as the camera’s contribution to increased pressure on the students to perform, as the teacher (who can use the camera as a tool to develop her or his own practice) sees everything and thus increases surveillance, while at the same time opening new insights into collaborative work (Kindt 2011).

Kinsley, Schoonover, and Spitler (2016) discuss the issue of the first person perspective more explicitly. In their study, action cameras are used to observe how students orient themselves in a library. This is done to get a better insight into the first person perspective, the students’ experience in real-time, and to increase the researcher’s ability to observe and understand the challenges the students encounter when they orient themselves in a library (Kinsley, Schoonover, and Spitler 2016). Waters, Waite, and Frampton (2014) have conducted a study about children’s play in which they equip the children with action cameras during play. The researcher’s argument for choosing this approach is based on a critique of the standard camera as giving an impersonal, insensitive and distant and supposedly objective way of watching the children’s play. They argue that the action camera gives a first person perspective on what is happening and that this can counteract thinking video as a distancing tool, one that would suppose a more unfiltered way to observe than regular in-person observation. The authors’ point is here that even though the camera’s recording might be detached, the person using it still filters what he or she is filming. Attaching an action camera to the children is repositioning the researcher. The researcher is thus

asked ‘to take a “child’s view” on the world, [...] to take a view on themselves and to interrogate responses they make as both subject and researcher’ (Waters, Waite, and Frampton 2014, 24).

This article is not intended as a review of existing and now burgeoning research that employs action cameras, the above glances at existing literature only serve as brief pointer to different ways in which action cameras have been used in research, and how this research raises the issue of the first person perspective and the relations between camera, participants and researcher. As has been discussed by Pink (2015) and others, the challenge here is to walk the fine line between assuming that a so-called first person perspective gives (some) access to a subjects’ perspective, while not pretending that the analysis will naturally become less biased or not rely on many of the same (re-)constructive moves that are involved in other, more established or ‘less innovative’ approaches to data analysis. Thus, we align with the argument that the researcher is still the main subject in the analysis of recorded data and we contribute to this perspective by further inspecting the contents of the peculiar ‘black box’ of the action camera, in which the world is constituted through a mobile lens attached to a person. We will employ two terminological registers to achieve this goal. On the one hand, we will use the well-established concept of *affordance* established by Gibson (1986), Greeno (1994), and Norman (1999). This will allow us to focus on the specific role of the action camera as a thing that affords specific actions under specific circumstances. We will not spend much time on this term, as it is frequently used in the relevant literature, even though it is not uncontested. On the other hand, we want to examine our data with an epistemological approach that looks at agency as a distributed phenomenon, creating different kinds of hybrids or assemblages and producing effects that go beyond the realm of intentional object-subject relations. (Pickering 1995, 54) From this perspective, we can ask how the action camera enables the researcher and the one who is wearing the camera by giving access to new or different actions. How does it figure into and produce hybridised situations, where the researcher-as-camera is weaved into (and out of) the field of action that includes those that record and are recorded in multiple open-ended ways?

One of the central issues in this context is getting to grips with the multiple ways in which the camera, the person wearing it, co-present others, the present or absent researcher (i.e. the person responsible for the research project and doing the analysis – not the

participants in the study), and the making of the recording as a process figure into the data production. Also, how the agencies of the different components involved in the recording process overlap, conflict and fold into each other in impure ways. When looking at the world through the eyes of another, as we will argue, this 'other' is a subject-camera *hybrid*. If we as researchers want to account for what happens in the recordings, we need proper conceptual tools to understand and disentangle the recorded action.

In the next section, which can be read as a kind of digression, we will discuss the roots of the concept of the first person perspective, and argue for why it is important to differentiate between various kinds of first person perspectives. We will then return to discussing the different hybridisations that play out in the field, before diving into the data, analysed with the different hybrids as lenses.

CONCEPTUALISING FIRST PERSON PERSPECTIVE

How to understand the construct 'first person perspective' is obviously of terminological importance. While it has been addressed in the context of (auto-) ethnographic research (Chandler and Torbert 2003), it has to our knowledge not been addressed in a sufficient manner in existing literature on the use of action cameras as research tools. Before being used in relation to film and video recordings, 'first person perspective' was employed to refer to a point of view used to tell the story in a written narrative in the I and me form, as opposed to a second or third person perspective. As the medium we refer to here is different, we will only briefly address the classical use, and then contextualise the term further by pointing to its use in film and movies. Following this, we briefly address its use in computer games before we discuss the concept of first person perspective in the context of producing video data. We want to inspect these facets of the term a bit closer, to determine what is useful or not and why in our context.

In a *narrative, or written story*, the first person perspective is used by telling the story in a way that gives the reader access to the characters' thoughts and emotions, centred in the self of the authorial voice, also described as a homo-diegetic voice in narrative theory (Genette 1980). The one telling the story is the I, me, in some cases also the we or us of the story. (An exception would be the use of an impersonal voice, see Nielsen 2004). It is told in a way that gives access not only to the protagonists eyes, but also their thoughts and aspects of their experience that usually are characterised as being

internal and (mostly) invisible to others, both intimate and strangers. The reader does not get access to the subject's free will, but they can be given insights into the character's reasoning for their choices, into their inner world (Keen 2006). The world arises from the narrator's perspective, thus implying some limitations.

Inspecting the different constructions of a point of view as used in *movies*, moves us closer to the perspective emerging in the later discussion of our video material. To create a first person perspective in movies, the point of view of the main character is (re)created, i.e. the supposed location of his or her moving eyes is the point from which the filming is done. As this still does not give insight into the first person's thoughts, in contrast to the first person perspective in a written narrative, another modality is used to achieve this, for example when a voice-over is included, or the sound of breathing or a heartbeat is mixed into the soundtrack to recreate a similar narrative effect, increasing identification with the camera's perspective. This way of dealing with a first person perspective in movies displays some of the crucial aspects of our argument about the incongruities or misfits implied in supposing that a first person perspective can be achieved by strapping action cameras to people's heads or chests. Even if a film is shot in what can be characterised as a first person perspective, it does not automatically give a subjective perspective, as we, as the viewers, are not getting access to the character's thoughts. We are rather placed on the back, or the forehead, or the chest of the protagonist. Whether this is a particularly informative or illuminating view highly depends on what the intention is, which story is being told and on the expectations of the viewers. Crucially, this type of first person perspective also does not give the viewer access to a subject's free will, and it does not open a window into the character's thoughts or feelings.

In computer or console gaming, the same modalities as in film come into play, but the first person perspective is markedly different from what happens in a movie, film or video – even though both appear in the same medium, on the screen. The reason for this categorical difference is that a first person or ego perspective in gaming gives the acting character the will of the person playing the game. The character thus becomes an avatar, inhabiting and acting in the scenery that displays itself on the screen through a variety of interfaces and digitised affordances. Accordingly, the phenomenology of playing a first person perspective computer game is completely different (de Freitas 2018). Playing through a first person perspective mediated by a screen does not give a character depth in a physical plane, but it enables

movement, orientation and relation-building that reaches through the screen and into a world of other interfaces that are being activated (Eugeni 2012).

Drawing on this typological sketch of different first person perspectives, we might say that the perspective we get when using the action camera is perhaps closest to the first person perspective as employed in movies. While we might lack the insight into a protagonist's thoughts that we get in a movie's narrative, we lack the capacity to act through an avatar as in gaming even more. As we will discuss in more detail later, we do get some access to the person's mobile, material/embodied, and first person centred experience of the world. We still do not get a window into people's thoughts and emotions, even though emotion and affect figure into and can become tangible in data that is produced with action cameras. We might have some access to the sphere of intentionality in a different way, as we will discuss later.

HYBRIDS IN MOTION

We argue that the camera can best understood as one component in a hybrid. More precisely, it is experienced, perceived and employed as a hybrid. One reason for this is that it becomes part of the field of perception, which simultaneously is the field of action. Action and perception are linked inextricably and they also – necessarily – are mangled with material agency (Pickering 1995). As such they make up the practices of the group or, rather, of a growing and moving assemblage, an impure hybrid of things and people that also encompasses the person wearing the action camera. This entanglement extends to include others who move in and out of the recording, who add their voice from the 'off', or who remain silent.

To produce our data, the first author distributed action cameras to groups of students in an outdoor museum and to other groups of students in a classroom setting. Which hybrids do we encounter in our data? We will briefly present an overview of four different hybrids, before demonstrating them in the action recorded by the cameras:

- (1) *Student-camera hybrid*: One hybrid that we encounter in the data is created in the embodied interweaving of the agency of students wearing the camera with the camera's agency. The role of this *student-camera hybrid* within the group is shifting, constantly re-negotiated and not clearly defined.
- (2) *Camera-as-researcher hybrid*: Another hybrid, the *camera-as-researcher hybrid*, is produced through the ways in which the researcher is becoming present in or through the camera. As is demonstrated in our data, the researcher's gaze is a present absence in the recording practices. While the researcher is bodily absent, it is the researcher who brought the camera into the field, and it is the researcher who will take the camera out of the field. It is the researcher who has exclusive access to all the processes and events that have been recorded or that are recorded in the now of the field situation. The researcher is thus not just absent, she is present in her absence (Frers 2013, 434) to those that wear the camera and act in its presence. This also makes the researcher's role less clear, thus requiring extra efforts in the analysis. The researcher-as-camera or the camera-as-researcher is made relevant and makes itself relevant in different constellations, or sites of agency, as Pickering (1995, pp. 23–26) puts it.
- (3) *Camera-wearer-researcher-camera hybrid*: A third hybrid includes all of the three components brought into play in 1. and 2.: the student who wears the camera, the researcher, and the camera itself. Together, these three also set in motion a different set of agencies that again alter the negotiations in the field, with (a) the student wearing the camera having an impact on what is being filmed and focused upon, (b) the researcher's impact on design, scene-setting and her giving an intentional directedness to the recorded interactions, and (c) the camera with its own agency (which goes beyond just affording specific actions – it rather emerges as an entity that is giving impulses affecting the direction into which the interaction is moving).
- (4) *Students-not-wearing-the-camera and camera hybrid*: A fourth hybrid of lesser evidence, but still discernible in our material, emerges between the students not wearing the camera and the camera. It only comes into being when the action camera's display shows what is being filmed, and this again is witnessed and referred to by co-present students that can see the camera's display. This creates a different kind of asymmetry, as the display is not

seen by the person wearing the camera. The display is only available to those that are positioned behind, looking at the screen on the backside of the camera. They see what is recorded and later accessible to the researcher, what will become 'data'.

THE STUDY

The data that is analysed in the following sections were produced in two research projects. In both projects the usage of tablets in educational settings is in focus (Lofthus and Silseth 2019). One project was carried out in an outdoor museum, the other in a group setting in the classroom. In both projects, the students were divided into groups, and equipped with action cameras to record their activities. The aim of the studies was not to inspect learning processes, not to see how the students used the action cameras. This methodological question became relevant when working with the data material. In both cases, we were studying students in 9th grade who were using mobile digital tools in an institutionalised learning situation. They were divided in groups of four or five. One student in each group was designated by the teacher to wear the action camera. The camera was mounted to their forehead. That means that the view we got was not at eye level but slightly above. All groups were working alone, while the teacher and researcher were available at a distance.

In both of the projects we are referring to, the students are using the camera for the first time. Both groups have been shown the camera, and told how it is used, as the research design was presented in advance. The students filming in the outdoor setting only used the cameras on the day the study was performed. The students in the classroom wore the camera during group work sessions for one week. The students visiting the outdoor museum are being filmed/ filming themselves in an unfamiliar setting. As we will show, this affects the way they go about with the camera, and the way they act towards each other. The outdoor setting is markedly different from the classroom setting, where the students are filming their everyday classroom activities. At the same time, we see that there are many similarities in how they relate to the camera in both projects. We see these similarities as strengthening our arguments.

ANALYSING HYBRID AFFORDANCES IN DIALOGUE

In the following, we will present and discuss four different extracts from the data material. The first two

examples are from the outdoor museum setting, the last two from the classroom. The examples have been chosen to illuminate our arguments, as they all explicitly focus on the camera in action in different ways. The excerpts show various stages and aspects of the camera use. We use these differences to highlight our argument that the camera is never just supplying a first person perspective. It does more than that because it unfolds its agency in a set of hybridisations.

The student's utterances have been translated from Norwegian to English by the authors, and the use of comic grammar in the visual transcripts is inspired by Eric Laurier (2014). We have developed a two-step approach that serves to anonymise the data while also keeping facial expressions readable. In a first step, we use the so-called 'liquify' filter in Photoshop to alter facial features, like nose, forehead and chin height, the distance between eyes etc. This step serves to defeat identification by face recognition technology. In the second step, we use another filter to pixelate the faces. This serves to obscure recognition by human viewers. As discussed below, in one case we black out the whole head of a person in the recording, to respect the stance displayed by the person in the recording. We do not try to achieve complete and total anonymisation (see Saunders, Kitinger, and Kitinger 2015, for a discussion of the real-world limits of anonymisation in interview data; Stephens Griffin 2019; Wills et al. 2016, for discussions on visual data), as this would require getting rid of most of the setting and change the aesthetics of the visual transcript in a way that would remove it even further from the specific field and that would purge it of the excess data that characterises non-staged images and recordings (Liggett 2007). Since the data presented here is of very low sensitivity, we decided for this approach.

Exploring Agencies: Getting to Know the Student-camera Hybrid

In this visual transcript (Figure 1), we are looking at a group of five students. They have just finished attaching and starting up the camera, and are now figuring out how it works. They are actually recording while wearing the camera, as they have been asked to by the researcher. Their getting started thus already produces data. As will become apparent, this early data is quite rich regarding the theme of this article, as the students reflect-in-action about roles and affordances, while they enact and shift between different hybridisations. They display their different degrees of awareness about when and where the camera would be filming, thus giving rise to a range of new affordances in



FIGURE 1. Getting to know the student-camera hybrid.

their explorative practice. One of the most surprising aspects for us was the inversion of hierarchies that arises from the fact that the student wearing the camera (as part of the student-camera hybrid) is the only one in the group that does *not* have direct access to check what is recorded through the lens, even though it is his perspective we are getting access to.

Based on the data presented in the visual transcription presented in Figure 1, we get access to the conversations and actions taking place after the students started the recording. S1 (wearing the camera) asks if the camera is on, S2 (wearing a dark blue beanie) confirms that it is.

S2 leaves the camera's field of recording, making himself absent. S3 (wearing a dark blue hoodie) asks to not be filmed, underlining his wish by moving his hand up in front of the camera and also leaving the field of recording. S1 responds to this with an objection 'But hell, I look at you and then I film you', displaying an awareness that looking and filming happens in parallel for him. This understanding is then checked, explored and confirmed by S3, who states 'I can see what you see from back here'. S3 is thus referring simultaneously to himself looking from the student-camera hybrid's corporal perspective and to the field of view of the recording, thus demonstrating his understanding of the

hybridity of the arrangement. This production of a shared understanding is underlined further by S1 interjecting “oh yeah, what do I see?“, to which S3 responds with ‘you are looking there’. S1 is thus displaying his alignment to the statements and activities of the students that are currently behind him, out of his and the camera’s field of view, but very much present to him through voice and sound, as well as touch and even through their shadows on the ground, which are in his field of view (even though they are only occasionally in the camera’s field of recording).

When S1 turns around (not visible in the visual transcript), bringing S4 (blacked out) into the field of recording in the fourth panel, she tries to move out of the field of recording but is still followed by the student-camera’s gaze, while she says ‘don’t . don’t film me’, and then begins to laugh as she is still being followed by the gaze of the hybrid who now utters ‘I’m looking at you’, picking up the same argument he used in his prior interaction with S3. (We blacked her head out to make her wish of not being filmed explicit in the visual transcript. Why don’t we do the same for S3 in the first panel? The reason for this is that he changes his attitude and later uses the camera’s recording as providing a stage for him to perform, i.e. he actively affirms the recording and uses this for his own purposes, to some degree even undermining the hierarchy established in the situation.) S4 then walks up behind S1 and starts looking at the camera from behind. To this, S1 responds by instructing her to ‘don’t press . don’t press’, fearing that she might deactivate or fiddle with the camera’s buttons. S4 says ‘no, I only look what is on the screen’. Of course, the students can ‘see’ more than just the screen, but like S3 in the third panel, she is ‘looking’ only at what is on the screen. S2 and S3 follow up on this interaction and S2 asks ‘one sees that?’ before they also move behind the student-camera hybrid, while S1 confirms; ‘yes, you see what I see’. From behind, S2 now utters ‘oh my god’, while he further evidences this shared understanding of overlapping fields of view by waving his hand in front of the camera while looking at the screen. The fact that this is quite a feat as an interactional achievement is then expressed in the ‘wow’ uttered by S4.

Now, the students have together built a very encompassing and varied understanding. They are able to engage with the different hybrids that arise in these situations and their entanglements: (a) looking and filming go in parallel for the student-camera hybrid, (b) they confirm or establish the existence of the hybrid presented as 4. in the list above, i.e. the overlap of the perspectives of other students with the student-camera hybrid’s perspective.

While the students negotiate their shared understanding and the different perspectives that are established, they also try out and learn about the involved agencies. They are subordinating themselves to hierarchies that are established but they are also challenging them. As they learn how the camera is filming and what its field of recording covers, they explore different responses and how these work. This ranges from holding a hand up both to shield themselves or their faces, or, when a hand gets close enough to the camera’s lens, to blot out or cover much of the recording, and leaving the field of recording more or less completely. The students thus display different methods of relating themselves to the student-camera hybrid in the start-up process. But rather than just adapting and succumbing to the camera, they also respond by making themselves absent, by staying clear of where S1 is looking, as S4 in the fourth panel. Or, they undermine the hierarchy of the gaze (Frers 2009) by positioning themselves behind the student-camera hybrid in a way that gives them privileged access to both the camera’s screen and (potentially) to the camera’s controls, something that the action camera does not afford for S1 while he is wearing it. One consequence of this testing sequence is that the students stop displaying regular awareness of the student-camera’s recording role and complication his performance of this role. This could be characterised as going from testing out the camera, to a more resigned approach, where they do not challenge or avoid the hybrid gaze with such explicitness or intensity. As the rest of the data shows, the students never ‘forget’ about this gaze, as they again and again demonstrate different kinds of alignments towards the hybrid and as they actively relate themselves to the camera’s affordances, dancing Pickering’s ‘dance of agency’ in myriad and highly competent ways.

In this example the student-camera hybrid is most evident. The group states that they see what the student wearing the camera sees when looking through the camera. The focus is not on what the researcher gets an insight into, but what is seen through the camera when this student is wearing it.

The Lonesome Hybrid?

In this section we are following a different group, currently consisting of three students. As the data discussed here and displayed in [Figure 2](#) demonstrates, group composition is somewhat fluid. This becomes even more evident when groups meet each other and membership and recording boundaries get blurred. We are unpacking the student-camera hybrid to see what

kinds of affordances arise when it/he is trying to make conversations with the rest of the group, and we also examine how the student-camera hybrid dissolves to a certain degree when he/it is alone. In addition, the participants also actively display an orientation to the camera as a camera-researcher hybrid in the data discussed here. The absent researcher thus enters the fluid negotiations in the field, becoming present in her absence.

In the beginning of the episode, S1 who is wearing the camera seems to be well aware that the camera is filming others. The camera affords a specific way of getting into the conversation, and his ability to perceive this affordance is demonstrated in the interaction, as he accompanies his call for a response to his opening of the conversation by pointing out “the camera is filming“. The camera is filming and what is visible to the gaze of the camera is thus visible to the researcher. After the group is merged again (second panel), S1 states ‘and you just: let’s check facebook’, to which S2, using a tablet that is currently logged into facebook, aligns himself with a raised gaze and a slightly skewed smile. The students implicitly refer to the use of facebook in a school setting, which could be classified as

deviant behaviour by the researcher, who also is a representative of a higher education institution. The camera-as-researcher (or as-adult or as-teacher) thus becomes a topic, although the evidence for this link is mostly implicit at this point. This statement also shows that S1 still is quite aware that the camera is filming others. At the same time, one could argue that he only shows a limited degree of awareness of his own role in the recordings, as he, in the first panel, keeps calling S2’s name to get his attention in a very repetitive way that does not work very well when looked upon from a film-producer’s or cameraman’s perspective.

When he is alone with the camera, the camera’s gaze or the camera-as-researcher hybrid gets a much more prominent status in the interaction. Now, it is no longer only treated as a camera with a camera’s affordances, but as the researchers’ camera, with a different role in the interaction. When he is alone with the camera, S1 is talking, without initially making it explicit whether he talks to himself or the camera-as-researcher. This can be understood as a collapse of what is front stage and what is backstage (Goffman 1969, pp. 109–125) in a social performance. Is he alone, or does he still play a role for an



FIGURE 2. The lonesome hybrid?

audience? As mentioned, he seems to be very well aware of the camera filming others, but not so much that it is filming him. When he settles down at a table with the camera attached to his head, however, it becomes evident that S1 has the ability to perceive the affordances the camera has as a camera-researcher hybrid: he displays an awareness of the camera's gaze when typing his password. When he starts the login process, he bends his head backwards repeatedly (panel four and five), so that the keyboard and his hands entering the password is moved out of the action camera's field of recording, thus making sure that we cannot see his password. He then states: 'and there we are on facebook', thus making his alignment to the researcher as an absent presence evident. Thus, the camera unfolds an agency where it is not just a recording device, but a recording device that is mixed with the researcher's eyes and ears and thus giving access to the same login interface as the student, potentially compromising his privacy. He further demonstrates this awareness by holding one hand (which is now no longer needed in typing the password) in front of the camera's lens, thus blocking the field of recording. This sequence is another example of the first person perspective not being

relevant as such. It is neither relevant in the production of the data nor in the related practices nor in the analysis. Even though the camera remains attached to the head of the student, providing an almost but not quite eye-level perspective on the unfolding events.

Taking the Director's Role

In the following sequence, we get access to how a group of four students are starting to work on their classroom-based group task. Throughout the episode S1 is taking responsibility for what the researcher gets to see.

Again the camera affords topic development (Atkinson and Heritage 1984, 165–166) and features as a theme in an extended social interaction. This is displayed in the first panel (Figure 3), where S1 uses the camera as a starting point in the conversation. S1 gives a cue to S2, asking her to 'Say hi to the camera'. Thus he is taking the role of a director, who is asking the actors to perform their role in a certain way, thus arranging the frontstage. In this case, S1 asks S2 to treat the camera



FIGURE 3. Taking the director's role.

or the recording as requiring introductions from those that are being recorded, asking her to say hi and thus to introduce herself. At the same time, S1 is acting as student-camera hybrid, but even more than that, he is explicitly concerned with positioning the camera on and with his head in a way that will document the unfolding events, thus setting the agency of the student-camera-researcher hybrid into motion. He also tries to get the others to engage in the task designed by the researcher. He is taking the director's role in a play meant for a specific audience: the researcher. S1 is concerned with what is being filmed, asking the co-present others 'Who am I filming now?', and more specifically regarding the camera's field of recording when he asks 'Higher up?' and 'Am I targeting the iPad with the camera now?' and again, he demonstrates his ability to perceive the cameras' affordances both as an object and in its hybrid quality. In the latter it is placed quite specifically in a research and learning context that requires performing certain tasks in the group's social context. He works to get the rest of the group to orient themselves towards the camera, and to treating it as a relevant in framing their task. He does so by demonstrating how he himself orients himself towards the recording, commenting – similar to a comment from the off in a documentary – that 'Now we are watching this video'. The rest of the group, on the other hand, does not display a strong orientation towards the camera and the task at hand, with the exception of S3 in the centre of the second panel, when he gives feedback on the camera's field of recording. In addition to the camera affording topic development and similar aspects of social interaction, S1 also displays his ability to perceive the responsibility afforded to him as researcher-student-camera hybrid. In case that the visual evidence recorded by the camera might not be enough for the researcher, S1 takes responsibility and tries to organise the interaction so that it supplies additional information about what they are currently doing. S1 is making the hybridisations accountable.

The sequence analysed here thus displays a first person perspective, in this case occasionally supplied, movie-like, with a voice over or commentary from the off. Rather than providing closeness or intimacy regarding the group and its interactions – as one would guess would be the case for a first person perspective view –, the first person perspective camera is here folded into the development of the interaction in a way that adds distance, and that introduces the perspective of an outsider. This underlines the fact that the camera is actively treated as a hybrid, and that the researcher is made present in her absence through the camera.

When to Turn It OFF?

In the last sequence that we want to examine in this article, the students in the classroom setting are about to turn off the camera. However, they do not agree when to turn it off. This is an important moment in the filming, and it shows once more that the camera is not forgotten, that it always lingers at the margins of the unfolding events, ready to enter the dance of agency. It also, again, functions as a device that can be used for topic change or elaboration, giving the students, even across groups, a thing in common to relate to.

The visual transcript starts when the group work is over (Figure 4). S1 asks 'Do I keep wearing the camera?', thus expressing uncertainty about what to do with the camera. S2 replies with an affirmative 'yes', telling her that that she should keep wearing it, but not providing any further reasons or explanation for this. S1 continues to display insecurity about what is expected of her. Yet she decides not to take or turn the camera off, still wearing it when searching for her chair. It is obvious that the group and the rest of the class is aware of the camera, even though they have not displayed this in an explicit way in the prior work session. Thus, they also demonstrate that they have certain ideas about when and where the researcher hybrid should or should not be a part of their interaction – they negotiate recording ethics differently, but also similar to students in the other examples that we discuss. Again, this sequence shows that the camera affords specific interactions between the students, and that their ability to perceive and act upon this is displayed in how they use the camera in their interaction. This is demonstrated both in how S1 asks the others when and how to turn it off, and, even further in the third panel, when members of another group tell S1 'you have to take off the camera', with S1 aligning with this but also continuing to display insecurity by saying 'I don't know. Do I just take it off?' in the fourth panel. In fifth and last panel, another member of a different group displays how the presence of the researcher's camera in their interaction gives the students an opportunity to talk about and thus achieve a shared experience of employing this peculiar device. The way they are talking about this shared experience also displays shared distance and empathy, when she makes the utterance "Did it fall off? Mine was like on my nose" in a jovial way.

This example shows how the camera is more than a camera also when it comes to turning it off. Again, its agency unfolds as a camera-researcher hybrid. The added dimension in this sequence is that in physical

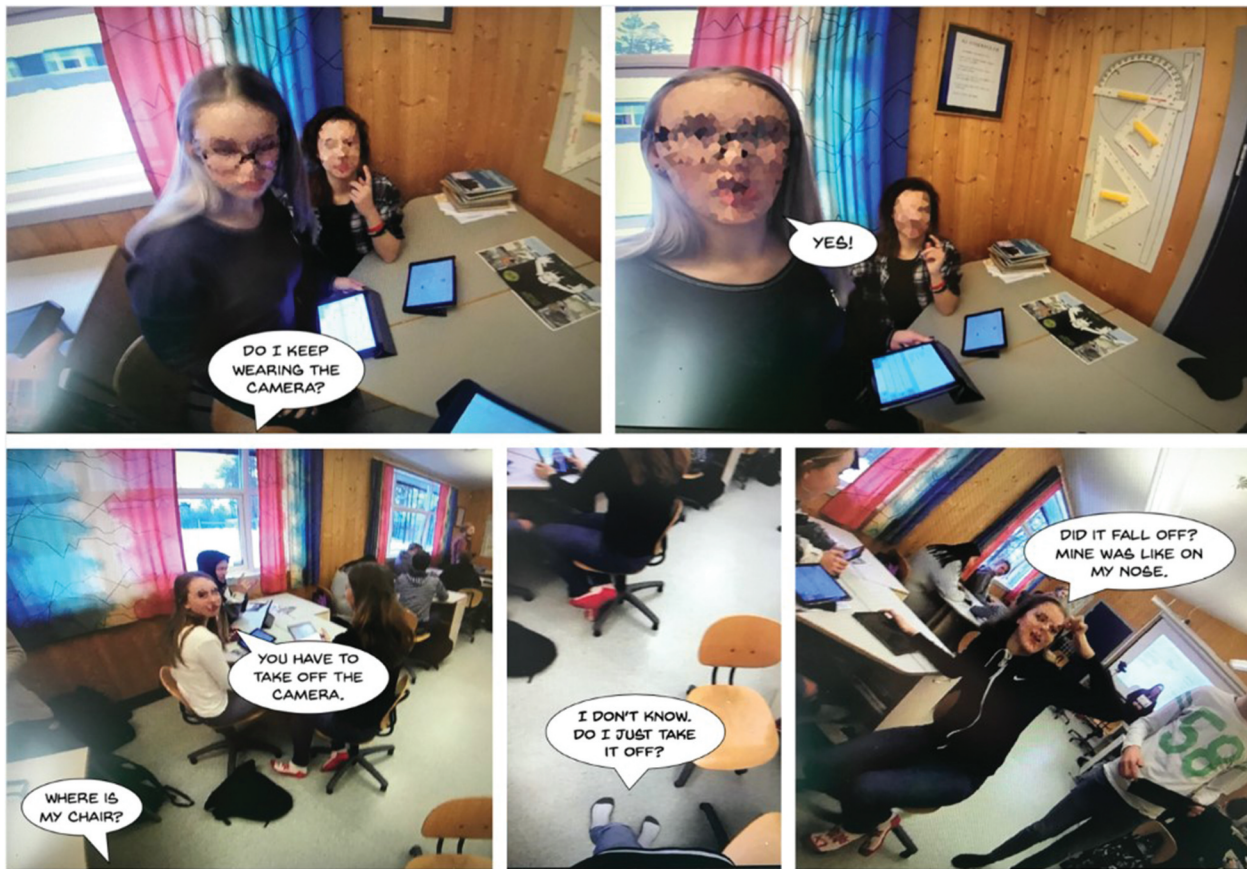


FIGURE 4. When to turn it OFF.

absence of the researcher, the student wearing the hybrid experiences insecurity in how to treat the camera and this insecurity extends into her/its interaction with co-present others.

CONCLUDING REMARKS

In this article, we have discussed how action cameras mounted on the study participants' heads feature into their recording practices as well as into the practices of co-present others – and thus also into the produced data. We have examined the camera's specific affordances, both technical and social, and the different hybridised agencies that are set into motion, along with the way it features into the negotiation of different roles by those that are co-present in the recording (in and beyond its actual recording field). In the course of this examination, we were able to establish a more nuanced understanding of what kind of perspective comes into play. While positing the head-mounted action camera as providing a first person perspective might describe part of the action, it does not provide an understanding that is taking account of the different hybridisations that are enacted in the recording field.

One of the reasons for choosing an action camera when planning our research was that it affords a certain 'data greed'. Using action cameras makes it possible to simultaneously gather data from several groups in motion. This data greed is rooted in a wish to get as much data as possible from as many groups as possible in the restricted amount of time available for the research project.

As the participants of the project demonstrate in our data, this type of camera use entails specific ethical qualities and challenges. It gives the informants authority to decide what they display, and what they want to record. The action camera also establishes a certain distance between the researcher and the informants, removing her from the physical action and thus giving access to interactions taking place without direct influence from a researcher 'stalking' around with a camera. However, the researcher remains present in her absence, figuring into the hybridisations generated in conjunction with the camera's agency.

Along with the mentioned data greed, one main reason for choosing this type of camera was to get a more holistic view of the situation we were studying, and to get access

to a first person perspective. During the project, and even more so when studying the data after its production, it became evident that this type of data was less straightforward than we thought to begin with and assuming a first person perspective is not adequate for understanding the multiplicity of perspectives that are embodied and negotiated in different hybrids in action.

Based on the analysis presented here, we can thus confirm that using action cameras generates data giving insight into interaction-in-motion. However, when using this type of camera in research, it is still important to keep in mind how the camera is folded into the interactions, and to continuously examine how a first person perspective established by the camera, but is at the same time embedded into hybridised interactions.

Using a camera that students can attach to their body when recording can be very useful for reasons that have already been established by other researchers, which we have briefly touched on in the introduction. Among other things, it is easier to produce data from multiple groups at multiple, also simultaneous times. It may also be useful to generate data in situations where the researcher's bodily presence would negatively affect the observed practices or the participants and thus hamper the generation of good, meaningful and ethically produced data.

The action camera's recording offers a perspective that in some areas overlaps with a first person perspective, but – as we discuss in our digression on what a first person perspective is in different media – as we show in the analysis of our data: this is not at all a given. There is no 'natural' connection between the perspective of a person involved in the action and participating in it in real time, and the recording of these events by a head mounted action camera. These connections must be carefully reconstructed in the analysis while at the same time paying attention to the areas where there is a disconnect, where the action camera is nothing but a natural part of the recorded practices' background. We also argue that focusing on these areas – areas where the roles, affordances and hybrid nature of the action camera and the recorded practices of the participants are made explicit – is a highly productive area of study. Using an action camera as a research tool certainly is a useful way to study interaction-in-motion. The action camera can provide insight that is undisturbed by the researcher's presence, but never unaffected by the researcher entering or being pulled into the hybridisations that are being enacted and actively negotiated by the participants.

ACKNOWLEDGEMENTS

We would like to thank all the teachers and students who have been part of this project, and given us the opportunity to learn about assessment practices in school. Your hospitality and openness has been valuable to an international research community, and to the field of teacher education.

DISCLOSURE STATEMENT

No potential conflict of interest was reported by the authors.

NOTE

- [1] With the term 'action camera' we refer to cameras specifically built to be worn by people, things or animals in motion. Action cameras often provide wide angle recordings and can be attached to the body in different ways – with headbands, on the chest, on a helmet, or they can be attached to bicycles and other devices. The GoPro models are a well-established brand in this category, but many other companies offer similar products.

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