

**Chapter 1 for the edited volume: Organizational Video-Ethnography Revisited.
Making Visible Material, Embodied and Sensory Practices**

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Palgrave Studies in Organisational Ethnography

Video-ethnography and video-reflexive ethnography: Investigating and expanding learning about complex realities

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Introduction

Visual methodologies have gained in prominence in recent years thanks to the widening availability and portability of cameras, batteries and screen technologies, easier access to and use of editing software, and greater public acceptability of the visual medium for purposes other than formal information dissemination and social entertainment (Pink, 2007). The rise in popularity of the visual medium in academic research also needs to be understood in the context of scholars' growing interest in complex phenomena – phenomena whose visualisation adds affective, embodied, spatial and temporal dimensions to what otherwise might have to rely on the linear and monomodal means of linguistic description. Visuality offers more routes into and through complexity – a factor that no doubt explains much of its current popularity in contemporary scholarship focusing on fast-changing social and institutional domains and the wicked problems that define these domains (Iedema et al., 2013).

Visualisation of *in situ* processes and practices enables scholars to engage with the multimodal dimensions of complex contexts and wicked problems (Goodwin and Goodwin, 1998; Goodwin, 1995). The finegrained manifestation of the bodily movements, kinesics and proxemics that accompany, structure and enrich discursive interaction may highlight aspects of sociality that a purely linguistic transcription risks omitting from the analysis (Knoblauch et al., 2006; Jewitt et al., 2016). In recent years, rich schemas have been developed for the production and analysis of video data, combining in-depth conversation analytical scholarship with expertise in bodily and spatial movement (Heath et al., 2010), linguistic analysis that nets in spatial, embodied and affective dynamics (Bezemer, in press), and anthropological ethnography that nets in the visual-temporal dimensions of *in situ* sociality (Redmon, 2019).

In addition to the rise in visual-analytical scholarship, there is now increasing interest also in participatory visual methods (Milne et al., 2012). To date, statements of participatory principle and interventionist intent (Hassard et al., 2018; Bauman et al., 2019) still outnumber actual instantiations and local realisations of participatory visual scholarship (Iedema et al., 2013). The difficulty of putting participatory visual scholarship into practice notwithstanding, these approaches' democratic and experimental ethos does not stop at handing the analytical reins back to those represented in the visuals and the footage. Rather, this ethos extends to inviting participants to be party to decision-making about what to video, how to video, what to edit, what to show back to participants, what to say about the footage, what learning and conclusions to draw from what is shown and discussed, and what to integrate into relationships, practices and systems (Iedema et al., 2006).

To do justice to these two recent developments in visual enquiry, the present chapter provides an overview of both video ethnography and video-reflexive ethnography. The chapter relates these two orientations as providing complementary perspectives on socio-

organisational complexity, and on enabling learning about that complexity. The chapter is therefore structured as follows: the next section provides more background to video ethnographic and video-reflexive endeavours that have been published in the last decade or so. The section after that provides two examples; one from the domain of gall bladder surgery, and one from ward-based infection control. The chapter's discussion delves more deeply into the links between visuality, complexity and pedagogy, before concluding with the assertion that visualisation will only grow in scholarly significance given the rising emphasis in contemporary civilisations on increasingly attuned, more multimodal, and more flexible ways of seeing.

Background: Video ethnography and video-reflexive ethnography

Video ethnography is the visualisation for ethnographic purposes of social and organisational processes and dynamics. Here, 'for ethnographic purposes' means that video-editing conventions are not imposed to create, sustain or enhance a particular narrative or argument. On the contrary, ethnographic video will seek to privilege an original continuity of process or event in real-time, thus respecting the spatio-temporal integrity of social-organisational phenomena, as well as the messy and complex aspects of events as they unfold. Video ethnography thus targets and captures socio-organisational happenings as they may be witnessed by someone (i.e. the camera person) dispassionately and from a relative distance: "video ethnography is a cinematic approach to recording ethnographic expressions of lived experiences" (Redmon, 2019: : 3).

As a term, video ethnography (VE) now provides a meeting place for documentary makers (Redmon, 2019; Rouch, 2003), anthropologists (Pink, 2007), cultural geographers (Rose, 2016), sociologists (Heath and Hindmarsh, 2002), semioticians and discourse analysts (Bezemer et al., 2011), psychologists and therapists (James et al., 2015) and organisational theorists (Iedema et al., 2013), each investing VE with their own unique political, methodological and analytical priorities to the use and analysis of video data. What unites these scholars, no doubt, is what Redmon identifies as VE's capacity to "plunge [us] into lived experience" and capture its multimodal manifestation:

Video ethnography plunges into lived experience and offers a bodily, visual, and sonic mode of evocation of subjects and their worlds, expanding the available means of knowledge production beyond the written text or written description. (Redmon, 2019: : 3)

VE takes us well beyond conventional textual renderings of sociality, making possible engagement with facets of behaviour and interaction that text transcription is hard pushed to reproduce: the embodied, affective, sub-conscious (prepersonal), and systemic (transpersonal) dimensions of everyday life. At the same time, the self-evident appearance of the imagery or footage is called into question through the need to make decisions about camera distance and focus, angle, duration, and so forth. These are decisions that foreground the role of those wielding the camera and that thereby may undo our claims about representational realism (Vannini, 2015).

VE provides opportunities for a variety of disciplinary angles on moving-image content, but in this chapter, one of our tasks is to focus on the depth of vision and insight that becomes

possible through the visualisation and in-depth analysis of events that otherwise might escape attention. This is how Heath and colleagues describe an operating theatre interaction:

... how the instrument or material is passed to the surgeon is prospectively oriented to the specifics of the particular action that will be undertaken on this occasion. The way in which a particular object is passed enables the surgeon to grasp and apply the instrument or material without the necessity to adjust or reposition the way in which it is received and held. The character of these exchanges suggests an extraordinary economy of action that relies on the ability of the scrub nurse to prospectively envisage just how the instrument or material will be deployed on this occasion and pass the object to enable the relevant grasping that in turn eases its application. (Heath et al., 2018: 303)

Complementing this fine-grained video-analytical approach, video-reflexive ethnography moves the research focus from in-depth analysis of available video data to the collaborative construction of a practical question (or questions) to be addressed by participants and researchers together; negotiation over what kinds of visual data may be gathered (and how) to help them answer this question (or questions), and shared reflection using footage of participants' own circumstances, spaces, relations and practices (Iedema et al., 2013; Iedema et al., 2019; Iedema et al., 2006).

Video-reflexive ethnography (VRE) compensates as it were for the assumption of 'representational realism' that inevitably motivates VE to enable it to concentrate on moving-image content and to make ontological claims about human sociality (Vannini, 2015). VRE counterbalances VE's focus on content and concern with ontological claims by shifting its point of gravity to the relationships that obtain between researchers and participants (Iedema and Carroll, 2015). This shift is explained with reference to VRE's ultimate goal: to engage participants (and not just researchers) in learning about the circumstances, spaces, relations and practices in which they are embroiled. VRE's main inspirations include Rouch's (2003) and MacDougall's (2006) participatory approaches to video-making, Wittgenstein's (1953) meaning-making games, post-cognitivist developments in psychology (Still and Costall, 1991) including Shotter's (1993) account of 'conversational realities', and Engeström's Vygotskian theory and video-enabled methodology underpinning 'expansive learning' (Engeström, 2008).

In essence, and in contrast to VE's micrological revelations, VRE is a *potentiation* technology (Andersen and Stenner, 2019). Potentiation refers to learning that reaches into the affective, embodied and habituated dimensions of people's lives. A potentiation technology is a resource that confronts participants with aspects of their own ways of being, saying, feeling and doing which they have come to take for granted. This process creates *liminality* (Stenner, 2018): a space outside of habituation and familiarity where participants' relationship to themselves, others and the world becomes questioned and potentially altered. Potentiation thus means that participants are enabled to experiment with their and others' ways of being, saying, feeling and doing. To achieve a safe environment in which such potentiating learning can occur, VRE researchers' primary concern is to build a 'weave of commitment' among participants (Iedema et al., 2013) which will sustain them when confronted with the (at times sub-ideal) realities of their ways of being, thinking, saying, feeling and doing.

Examples of VRE studies are ones that have involved patients at the end of their lives reflecting on their dying trajectories (Collier et al., 2016), patients reflecting on clinicians' infection control methods (Wyer et al., 2017), clinicians' re-evaluating their approach to breast milk sharing (Carroll, 2014), ambulance paramedics and emergency clinicians in developing a programme of communication to ensure the safety, appropriateness and comprehensiveness of their handovers (Iedema et al., 2012), to name but some (see Iedema et al., 2019; Iedema et al., 2013: for more examples).

In what follows, we describe two studies whose focus was on complex care circumstances. Both studies used video to capture care complexity, but they did so in different ways. Using an 'outside' perspective, the first study captured and analysed a surgical trainee being guided through a complex surgical procedure. Adopting an 'inside' perspective, the second study visualised for a team of clinicians their own infection control efforts, and analysed the space that this feedback process created for team-internal deliberation and reflection. We provide these accounts not just to explore the nature of *in situ* behaviour amidst complexity, but also to outline the methodological and theoretical connections among visuality, complexity, reflexivity and learning.

Two video-based studies

The two studies described here both focused on the moment-to-moment unfolding of care. The first was a video-ethnographic program of work targeting clinical practice in the operating theatres of a major teaching hospital in London (Bezemer, Murtagh & Cope 2019). The sequence focused on here is taken from a collection of 14 video-recorded laparoscopic cholecystectomy cases, involving 6 consultant surgeons and 6 surgical trainees. In it, a surgical trainee in his fourth year of specialty training ('ST4') is performing the operation under the supervision of a consultant. The consultant is not 'scrubbed in'; he watches the operation on one of the screens in theatre projecting the laparoscopic view.

The second study involved clinicians and patients in video-reflexive ethnography (Iedema et al., 2013) whose central component is frontline actors' reviewing footage of their behaviour as they provide (or receive) care. In this instance, the focus was on hospital infection control. This study took place in two Sydney metropolitan teaching hospitals with a total of 177 participants: 107 nurses, 44 doctors, 9 allied health staff, and 17 administrative or cleaning staff. It took place over 3 months in the ICU of one hospital and in two mixed surgical wards in a second hospital. Eighteen reflexive sessions were conducted in total. Prior to, as well as during, the video-reflexive ethnography, ward observations and interviews were carried out.

1. "I think you're fine there"

Our first description portrays surgeons at work, engaging in a routine elective operation: the laparoscopic cholecystectomy. In the UK, this procedure is performed more than 60,000 times each year (National Institute for Health and Care Excellence, 2014). The aim was to explore how surgeons define, recognize and respond to challenges in the context of this procedure, and how they enhance their capacity in this regard. The stills in Figure 1a-c and the accompanying transcript give an impression of how the operation unfolded. The

transcript captures the 'run up' to what surgeons generally recognize as a complex manoeuvre, namely the dividing of the cystic duct and the cystic artery.

Some background is needed to appreciate the challenges inherent in this manoeuvre. After the introduction of laparoscopic cholecystectomy in the 1990s reports were published showing a notable increase in cases where the cystic structures were misidentified, leading to injury of the common bile duct (a serious 'complication'). One of the responses to this increase has been the explication and teaching of identification methods, such as the 'Critical View of Safety' (CVS). This method involves demonstrating, in a 'time-out' just before the cystic structures are divided, (1) that the lower part of the gall bladder is detached from the liver; (2) that only two structures are attached to the gall bladder, and (3) that these structures are freed from fatty and fibrous tissue (Strasberg and Brunt, 2017). A range of other methods for systematically identifying the cystic structures have been described; there is as yet no official guideline advocating one particular method.

During the operation in question here, surgeons 'slowed down' (Moulton et al., 2010) and examined the state of the cystic structures prior to dividing them. This involved exposing particular parts of the structures (e.g. by flipping them to one side) and viewing them from different angles; and 'touching' the structures with the tip of an instrument, drawing out their contours, and 'feeling' what is inside and around them. Through these examinations, visible to those co-present in the room in the moving image produced by the laparoscopic camera, they jointly engaged with the case 'in hand'.

The examinations were typically (in 13/14 cases) accompanied by verbal communication between consultant and trainee, in which they extrapolated beyond the case in hand. For example:

That's what you call the critical view. Because now, I think here's the vessel. Well I can't do it more. So um can you (.) please that's what I want in all the cases. Is that okay? Here this is definitely going to the gall bladder and is not a continuous x of the cystic duct. (Consultant Surgeon)

With these verbal comments, consultants connected the personal ('I') to the collective ('you'), the momentary ('now') to the timeless ('always'), and token (identified by pointing) to type ('artery', 'cystic duct'). In this way, specific, momentary anatomical configurations were objectified ('that's the critical view') and courses of action in the here-and-now were validated ('therefore I can now divide the structures'). This validation occurred with reference to rules or principles that are claimed to have validity beyond the messiness of the here and now. Indeed, these rules/principles are terminologically and conceptually related to the published guidance referred to above; they represent common, consensual, professional knowledge.

It is important to note that these rules and principles in themselves cannot identify or generate best-for-now responses to local, emergent situations and complex problems. As instructions for (future) action they are of limited value to trainees. At the same time, the consultant's verbal guidance alone could not spell out what 'clean' or a 'nice big window' might mean. It is only the live image that showed concrete instances of 'nice big windows' and other surgical categories. Coming together in the flux of the here-and-now, the knowing-cum-seeing that occurs during the operation likely became the basis for the

consultants' situated actions and proposals for action, and drew the trainee's attention to the anatomical specificities that were visible and to what was doable at a particular moment in time.

The limited generative value of the general rules formulated by consultants is illustrated in the following episode (see Figure 1). Here, a trainee is operating, clearing the cystic structures, when the supervising consultant proposes to 'take it all'. In response, the trainee ceases his work on the structures and checks his understanding of this proposal ('Clip em?'; Table 1a), which the consultant confirms. In all but one of the 14 cases we observed did a consultant make this call.

[Insert Figure 1 here]

Figure 1: Extract and visual from a laparoscopic cholecystectomy (Cons = consultant surgeon, ST4 = surgical trainee in his fourth year of specialty training)

In the exchange that follows, the consultant sought to validate his proposal. He did this by getting the trainee to manipulate structures so as to create a particular view on the situation, and, when that view was obtained, by declaring that 'you've got a nice big window', thus explicating his interpretation of the current state of the structures being mobilized. He then contrasted the window in this patient to 'the ideal', intimating that at this point more dissection could be done to add certainty. Nevertheless, the consultant stated 'you're fine', and he did so twice, prompting the trainee to proceed to divide the structures.

The consultant also specified where the structures should be divided, namely high on the gall bladder, as 'there's something in there' (possibly referring to gall stones in the cystic duct). By drawing attention to this specific circumstance, he justified his proposal to deviate from 'the ideal' (more dissection), and divide the structures now ('So I'd take these structures'). His concern might have been that continued dissection could have caused damage and leaks (of gall and stones from the duct and blood from the artery). The decision to divide the structures, then, was not one that was free of risk and guaranteed of success. The learning that transpired for the trainee was that a common surgical procedure such as this may be highly complex and risky, and can involve a trade-off between relative uncertainty and potential damage resulting from continued inspection. This procedure's particular trajectory could not have been anticipated by the explicit rules, principles and knowledge in place to guide the surgeons.

In sum, the consultant helped the surgical trainee appreciate the specifics of the situation, and connect these to more general considerations that applied to what he was seeing. The consultant talked the trainee through the procedure by highlighting identifiable anatomical features, attuning the trainee to risks and risk trade-offs, and guiding him through appropriate actions. In essence, the consultant provided the trainee with what is at once a more detailed and a more detached view of what was in front of them and on their actions. In this bifurcated way, the consultant modelled a way of seeing that is critical to the negotiation of complexity: he wove together for the trainee formal knowledge (details of the surgical procedure, anatomical structures, the 'critical view of safety'), situational observations and experiences, the flux of activities, assessments of risk, and best-for-now scenarios for going on. Once the structures were divided in an irreversible way, this delicate

configuration of knowledge and practice evaporated, but the trainee’s recollection of it will (or should) help them to perform this procedure in the future.

2. “That’s a good idea”

Our second initiative captured what happened when frontline actors scrutinised video footage of their own *in situ* practices. Where in the previous section the consultant helped the trainee distance himself from and learn about the flux of the here-and-now whilst in the midst of the operation, this section homes in on a team of nurses viewing their own actions and decisions *post hoc* as they were replayed on a video screen (Iedema et al., 2019).

The team had just witnessed footage of team members administering medications to MRSA-positive patients in isolation rooms. The focus of the feedback meeting at issue here was on clinicians’ behaviour in and around patients’ isolation rooms. Its purpose was to explore how infection risk is dealt with and how it might be dealt with around patients with MRSA. The extract in Table 1 is taken from a transcript generated from a reflexive feedback meeting held in June 2013. Figure 2 provides a visual impression of the meeting.

Table 1: Extract from video-reflexive meeting (NUM= Nurse Unit Manager; N1/5/7/8/11 = Nurses; CNE = Clinical Nurse Educator)

NUM:	Yeah, but why would you take your gloves off if you’re still carrying a sharp?
N5:	Yeah, that’s it.
NUM:	You want to protect yourself when you’re carrying the sharp.
N11:	That is not going to protect you. It’s still going to pierce you if...
NUM:	Yeah... it’s still got to get through the gloves first. But where she put the... where she put the kidney dish was straight on top of the desk.
N8:	Yeah.
...	
CNE:	Maybe we need sharps containers in every room?
N7:	That’s right, yeah.
N8:	Yeah.
N3:	Yeah, that’s a good idea.
CNE:	You know what I mean? Prevent all these...
N1:	The thing is, she’s just done her hand cream, so the hand cream you can... you know... it’s safety, so you can just push it so... I don’t think it’s any danger. Do you know what I mean?
NUM:	Yeah, but then if you get rid of the sharp within the room then you can also get rid of the kidney dish at the same time, straight into the bin.
N8:	That’s right and then the gloves as well.
N1:	That’s right, yeah.
CNE:	It’s just minimising all these risks.
NUM:	But still the big thing there is that chart getting taken into... into the patient’s room. You go... when you put the gloves on you touch the patient, touch the gloves...

[Insert Figure 2 here]

Figure 2: Visual impression of video-reflexive meeting

The transcript extract shows the clinicians discussing the problem of how to avoid cross-infection when caring for patients in isolation rooms. The conversation about gloves, sharps, hand cream and charts arose because the nurses were shown a video clip in which their use of those objects highlighted infection risks previously not noticed. In effect, the facilitator (pointing at the display screen in the accompanying photo; Figure 2) and the video clip

together played a role not unlike that of the consultant surgeon above where the focus was on how to divide anatomical structures.

Thus, here too the nurses' attention was on an unfolding of *in situ* circumstances including care decisions and activities, material objects, clean/dirty boundaries and infection risks. These circumstances became discussable through the nurses' viewing of the video clip. As in the surgery scenario, the nurses' comments vacillated between articulating the messiness of the situation and invoking formal rules governing infection control, such as the rule to wear gloves while handling sharps. The practical problem that the video clip helped foreground centred on what to do with used sharps while needing to proceed with the care. The suggestion that every isolation room needs a sharps container served to contain the problems that had now become reflexively apparent. The conversation picked up on this, and sought to flesh out and render workable a more general gloving policy.

Discussion

The case studies targeted two different but related modes of activity: *in situ* meaning making (foregrounded in VE) and *post hoc* meaning making (foregrounded in VRE). In the first case study portraying the gall-bladder surgery, clinical practice is analysed and is shown to involve attentive teaching, deep concentration and careful 'reflection-in-action' (Schön, 1983). This reflection-in-action is co-performed between the senior surgeon and the trainee to ensure no damage is done to anatomical structures. The formal analysis of the video data was conducted collaboratively by a linguistic-ethnographer and a surgeon (not the one filmed) (Bezemer, 2015; Bezemer et al., 2019). The case study presented one aspect of how the surgeons' reflection-in-action unfolded, and of how they made sense of and shared information about what was happening, what the risks were, and what should and could be done next.

In the second case study of nurses' everyday infection control, clinical practice unfolded in rather more hurried and in relatively habituated fashion, offering less evidence of and opportunity for 'reflection-in-action'. This second case study foregrounded 'reflection-on-action' as a mode of activity that involved these same (videoed) practitioners in *post hoc* deliberation about what happened in practice, and what this reflection now made practically and psychologically possible. Instead of seeking to derive principles about how to teach and learn risky procedures, the VRE study involved the practitioners themselves in engendering personal and team-based insights about their own ways of working and relating. This process resulted in dishabituation, practice change and a more reflexive attitude among practitioners towards *in situ* infection control (Iedema et al., 2015). The table below summarises these differences.

Table	<i>In situ</i> meaning making	<i>Post hoc</i> meaning making
<i>VE case study</i>	<ul style="list-style-type: none"> -process: ethically approved and consented videoing of gall-bladder operation -participants: operating trainee, unscrubbed supervisor -conditions: small, stationary team in operating theatre, limited time but no 	<ul style="list-style-type: none"> -process: in-depth analysis of visual data -participants: non-clinical researcher ('outsider') and surgeon-co-researcher ('insider')

	<p>urgency: opportunities for teaching and reflection</p> <p>-outcomes: surgical outcomes;</p> <p>teaching/learning: '<i>reflection-in-action</i>'</p>	<p>-conditions: individual and joint replaying of video data off-site; ample time for close analysis (five days for 1hr of footage)</p> <p>-outcomes:</p> <ul style="list-style-type: none"> • in-depth understanding and account of material-semiotic dimensions of <i>in situ</i> surgical practice • resources for clinical-surgical training focusing on teaching of critical surgical procedures
<i>VRE case study</i>	<p>-process: everyday clinical team infection control practices</p> <p>-participants: multi-disciplinary team including medical and nursing clinicians</p> <p>-conditions: busy ward, sense of urgency, little to no opportunity for reflection on what is happening</p> <p>-outcomes: infection control conducted with variable levels of risk and unsafety</p>	<p>-participants: multidisciplinary clinical team ('insiders') involved in visualising, reviewing and deliberating aspects of their practice with facilitators ('outsiders'): '<i>reflection-on-action</i>'</p> <p>-conditions: on-site team reflexive sessions focusing on co-selected video clips; six 1-hr reflexive sessions per team (3 teams; 18 sessions total)</p> <p>-outcomes:</p> <ul style="list-style-type: none"> • team-generated insights into taken-as-given dimensions of practice, and team-initiated proposals for and implementation of practical changes; • video-based infection control improvement and training strengthening clinicians' practical reflexivity

Conclusion

The two case studies described above provided brief examples of video-ethnographic and video-reflexive ethnographic studies. The accounts made possible through these two visual-ethnographic endeavours offer significantly more detail about *in situ* practice than conventional text-based ethnographic accounts. The VE study portraying a gall bladder operation revealed the delicate negotiation involving a hands-off consultant surgeon and his trainee attempting to separate the cystic duct from the cystic artery. The analysis revealed the uncertain visibility of critical structures, the dynamic complexity of the surgical manoeuvring around these anatomical structures, and the risk-charged trade-offs that permeate these kinds of surgical and pedagogic activities.

For its part, the video-reflexive ethnographic case study revealed infection control behaviours to emanate from largely habituated practices rather than considered choices. The VRE enabled the nurses to start asking questions about how they work together now and how they might want to work together in the future. In sum, a powerful way of conducting research is by harnessing *both* VE and VRE to engage with social problems. Examples of such endeavours are becoming more common now that the public is rapidly accommodating to the visualisation of everyday life. We expect social research to make increasing use of these approaches given the rising complexity of contemporary social and institutional life, necessitating more rapid, more local and more multimodal feedback, learning, and intervention.

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