SEEING AS ONE?

Materialisation and Distribution of the Police-drone Gaze

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*From 2019, a one-year trial tested the use of drone technologies within the Norwegian Police Services. Drones, designed to facilitate the collection, storage, and dissemination of live film and images, were implemented with the expectation that shared visual data would enhance situational awareness and thus improve police practices. This study, based on ethnographic data collected during the trial period, examines how these new technological tools shape the practices of professional vision. It explores the relationship between **seeing** and **knowing** by looking at how drone technologies influence 'the police gaze' (Finstad, 2000), police officers' collection and processing of their visual surroundings. As the human gaze merges with the drone gaze, visual data is produced and can be distributed in larger police operations. Drones were intended to simplify team decision-making by providing images considered true and certain, thus reducing the need for oral radio communication. However, paradoxically, one outcome of the trial was the creation of an observation manual for improving the oral conveying of drone-collected information. The findings underscore the complexities of police knowledge production, illustrating the intricate interactions between human and non-human agents in operational policing. While drones materialize and spread the police gaze, merely sharing images does not ensure a shared understanding of an incident or operation. Establishing mutual comprehension of incidents or operations remains a nuanced and delicate process.*

Introduction

This article is an ethnographic exploration of how drones impact police practices and influence the police gaze (Finstad, 2000). It examines what happens as the gaze, materialised in the form of images and films collected using drones, is used in police decision-making. Researchers have discussed how this technology may be applied to policing (Engberts & Gillissen, 2016; Sakiyama et al., 2017), and critical questions have been raised. Such questions have been related to privacy and surveillance (Završnik, 2016), legal issues (Custers, 2016; Di Nucci & Santoni de Sio, 2016; Engberts & Gillissen, 2016), and moral and ethical concerns, especially for drones used with lethal outcomes (Cohn & Tutu, 2015; Davis, 2019; Di Nucci & Santoni de Sio, 2016; Sandvik, 2016; Stelmark, 2015) or problematic forms of automatization (Cuffe, 2021).

This study focuses on the less researched microlevel: the human-drone interactions and the impact the technologies have on the professional gaze. *Seeing* is crucial part of many professional practices (Goodwin, 1994; Lomell & Neumann, 2017). This is also the case for operative policing, where what officers sees defines their decisions and thus also their actions (Finstad, 2000). Understanding and interpretating visual perceptions is part of what the police often describe as the establishment of *mutual situational awareness* (Blandford & William Wong, 2004), a term adopted from a psychological model of decision-making (Endsley, 1995). In the Norwegian police, this term is often used to articulate officers' need for a common understanding of what they are facing so that, as each individual officer take action, the team pulls in the same direction. Here, I ask how drones influence the establishment of such situational awareness as the technology is used for information gathering and in decision-making.

Lundgaard (2023) showed how drones create new assemblages in policing at the legal, human, and operational levels. This paper can be considered a further elaboration of this argument but focuses on the professional and digitalised gaze. The gaze is constructed, not only by the assemblage of the drone and the police officer, but also as part of a larger whole: the team working together during a police operation. Drone images are constructed as actionable information in complex encounters of human and non-human actors where continuous processes of translations occur (Callon, 1984). This study examines how officers turn their gaze into images, and as these images are shared, are believed to become beneficial information in concrete operations.

In 2019 the Norwegian Police Directorate initiated a one-year drone trial, where the technology was tested by a group of officers from various districts. The empirically based argument in this article follows the observed development of the drone practices during this trial. The first part explores how the drone shaped the police-drone gaze. Here, the drone images are understood as materialisations of the police gaze, but as they spread in teams of officers during police operations, they were not always interpretated in the same manner. From this the focus of the second part of the article arises: To ensure that drone images were perceived in the same way, officers in charge of drone implementation focused on developing tools for better oral communication and wrote a 70-page manual for conveying observations. This development is used to discuss the possibilities and limitations arising from the digitalized police gaze, which is mediated by drones, and spread in complex police operations with the aim of better situational awareness.

Technologies come with promises (Marx, 1995), but because they are used by different people and groups, the result is not given. Pinch and Bijker (1984) described the implementation of technologies as stages, where things are initially flexible before becoming more stable and permanent. This is a heterogeneous, rather than a straightforward and given, process (Brenna et al., 2001). The structure of the article follows the chronology of the implementation of the drones in the Norwegian police, and this paper will be exploring the need for human dialogue to balance the digital interaction. During the trial period, misunderstandings and conflicting interpretations of drone images between officers occurred, and to answer to this problem the Police Drone Services created the observation manual, aimed at creating guidelines for improved communication about drone images and film. The first part of the paper reflects the flexible and early stages of the implementation of the technology, followed by a part that highlights the role of the observation manual, showing a step towards something more stable and unified. The professional development during the drone trial show the domestication (Gundhus, 2006; Tjora, 2009) of the technology, though drones are not yet fully domesticated and remain a 'young' technology still undergoing advances without a clear end point.

Police gaze as a technologically mediated and shared practice

The theoretical framing in this study draws on Science and technology studies (STS). Some of the early works in this tradition were groundbreaking explorations of visual interpretations in scientific practices (Lynch & Woolgar, 1990), and the relationship between seeing and knowing has continued to be investigated further by several scholars (Coopmans, 2014; Vertesi, 2015). Here, this theoretical framing is further made up of three co-constructing factors: the gaze as a professional practice, the technological mediation of the gaze by

the drone, and an understanding of the gaze as a team effort as the police aim at using drones for the establishment of a joint situational awareness. Thus, the framework is constructed as a combination of *gaze, technology,* and *team.*

This article is an engagement with Finstad's (2000) term 'the police gaze'. In her pioneering field study of the Oslo police in the 1990s, she used this term to describe the way in which police patrol officers visually collect and interpret their surroundings. The police gaze is both a description of police practices and a critique. As the gaze effectively categorises humans, constructing a basis for interventions in people's lives, the police become a sorting mechanism through which people, already carrying visual signs of troubled lives, become subject to intensified control. Thus, the gaze and the practices, perceptions, and assessment following are a foundational part of police practice, worthy of further assessment.

Lundgaard (2021) described how the at-site officers' visual inter-pretations of events and sites, by having 'eyes on the site', became an authoritative form of knowledge in operative policing—*to see is to know*. As the operative staff in control rooms deal with uncertain and ambiguous information, and do not visible access to the site, the information from officers on-site becomes a form of "pure" knowledge about ongoing incidents and is rarely contested.

The process of seeing is not simply bodily processes. Styhre (2010, p. 360) described its complexity, stating that 'vision is something which is produced through an intricate combination of physical and psychological processes. Vision and accompanying concepts, such as attention, are individual accomplishments, and is a capacity that can be trained and developed' (p. 360). Styhre links *seeing to knowing*, as 'vision is gradually established as an individual capacity that becomes part of the informed professional viewer's competence' (Styhre, 2010, p. 363). The police gaze is a professional and situated gaze that reflects Foucauldian perspectives on the medical one (Foucault, 2017 [1963]). The medical gaze is described as powerful and determinant in constructing the epistemic powers of the medical discipline: 'By means of looking, the gazing medical clinician may know how to treat the patient; it is a total and inclusive gaze' (Styhre, 2010, p. 364). Situated in a professional practice, the gaze is an example of what Goodwin (1994) calls *professional vision*. These are learned techniques of observation, specific to a particular profession, used to make meaning of what the professional actor observes. Goodwin described how seeing is 'a socially situated, historically constituted body of practices through which the objects of knowledge which animate the discourse of a profession are constructed and shaped' (Goodwin, 1994, p. 605). Police practitioners have a duty and right to exercise power on behalf of the state. Thus, understanding the basis for their decisions, construction, and consequences of their practices of seeing is pivotal, as is understanding how new technologies (re)shape these practices.

The gaze here in question is determined not only by the professional police context but also by the tools used for seeing. Mol (2002) highlighted the role of physical instruments in the diagnostic medicine

practices she studied, and inspired by her, this study examines what happens as the police gaze is mediated by a technology. At the core of drone technology is a unique combination of an ability to produce digital images that can be distributed and reproduced, and a breach of the traditionally symbiotic connection between the camera and the street level (Choi-Fitzpatrick, 2014). According to Kaufmann (2016), this breach is linked to how drones are promoted as something that extends human capacities and senses, as they locate the police gaze in the air (Klauser, 2021). Lundgaard (2023) described how an airborne gaze can be both helpful and deceiving. At times, the drone acts as a problem solver, providing easy-to-read images that would otherwise not be available, but it can also work as a troublemaker, as images used for decision-making can be misinterpreted and misleading. Thus, the drone becomes a powerful actor (Kaufmann, 2016; Lundgaard, 2023), playing a significant role in mediating and shaping police practices.

This study examines digital tools used for professional practices of seeing, focusing on the ways that technologies change how knowledge is produced within these practices. Seeing and knowing are connected, but how does *what someone sees* become *what we know*? This question was also at the core of Vertesi's (2015) study of how a robot, the rover, was used to gather information about the planet Mars. She shows how the images provided by the rover were co-produced as knowledge by humans and technologies together. What she called to 'see like a rover' entails how '(l)earning to see requires both bodily skills and instrumental techniques' (Vertesi, 2015, p. 9).

The practices Vertesi studied, and other socio-technical knowledge-constructing practices explored by Coopmans (2014) were all scientific practices. Although policing is not science, it is knowledge work, as modern policing is concerned with information gathering and data collection (Ericson & Haggerty, 1997). Policing is a specific epistemic culture (Cetina, 2007) where knowledge in operative police work is linked to knowing what is taking place during concrete events and incidents (Flinterud & Lundgaard, 2024). Exploring the professional gaze as it is redefined by technology provides insights into the complex construction of police knowledge. In policing, establishing a mutual ground for decisions, that is, a suitable form of knowledge, is crucial. Such knowledge, what they themselves call mutual situational awareness, consists of many forms of information, including previous formal or personal knowledge, and current contextual or explicit knowledge (Diniz et al., 2005), including information from databases and registries (Lundgaard, 2021). Thus, the question arises: how does the drone affect the police's knowledge of a current situation?

Choi-Fitzpatrick (2014) highlight that drones offer spreadability of images and film. This is another aspect crucial to policing, as it implies that the gaze of the pilot officer merges with the drone and can be distributed and shared. By sending images and live films, other members of a team of officers can seemingly see what the drone pilot sees. As many police efforts require the actions of several officers working in teams, the role of the images from drones becomes crucial within teams. This leads to another important question regarding the police gaze: What does it mean to share a gaze?

Background and methods

The analysis in this article uses data collected in an ethnographic study of the initial stages of drone implementation in the Norwegian Police Services. During the Police Directorate's drone trial, the technology was utilised in ordinary policing. In the trial, eighteen officers from three selected police districts were trained as pilots and then carried out their ordinary duties, putting drones to use where they deemed it potentially beneficial. This trial period resulted in drones becoming a permanent tool in all police districts (for details, see Lundgaard, 2023).

In line with what Latour (2005) and Law (2007) emphasised, STS researchers should be in proximity to the field of study to empirically grasp the actual socio-material practices as they are carried out. This makes ethnographic methods suitable. Here, the ethnographic data answered to the projects aim, which was '[…] to assemble concepts, empirical data, and epistemological and ontological perspectives into an analytical story' (Aradau et al., 2015, p. 9), investigating the practices of drone use in policing. Ethnography (Geertz, 1973; Hammersley & Atkinson, 2004 [1996]) is not only central in STS, they also have a long tradition in studies of policing (see Finstad, 2000; Høigård, 2005; Manning, 2014; Reiner, 2015), as they provide much-needed and insights into police practices and exercise of power. Such methods provide proximity to practice (Brewer, 2005; Salter, 2013), as the researcher is situated where the officers are (Law & Singleton, 2012), in this case providing in-depth understandings of the human-drone interactions.

This project was initiated in collaboration between officers working in the Police Directorate and the researcher. The directorate welcomed the researcher from an early stage, and after their assessment of the project's legality, it was possible for the researcher to follow both the planning and carrying out of the trial project, with full academic freedom to plan and carry out the research as seen fit. The officers who chose to participate were exempted of their code of silence, making it the researcher's responsibility not to disclose sensitive data regarding concrete persons, operations, or tactics in the finished publications.

In this project, the researcher followed the implementation of drones closely over time, mainly by conducting participant observations with police officers. A total of 390 hours were spent doing field work in several districts and one specialised unit, mostly in 2020–2021, but also in 2023. Owing to the COVID-19 pandemic, the planned field work had to be changed and adjusted numerous times and did not become as extensive as planned. The research included observations of the majority of the 18 officers trained as pilots, who were followed both during their training to become pilots and during their daily duties. There were also some participant observations together with officers from specialised units policing public protests. Three districts were part of the drone trial, but this study included visits to six of Norway's twelve police districts as some of the drone pilots assisted in operations outside of their own district. The researcher was present and interacted with the officers, both in formal and informal settings, but was not involved in carrying out any actual police work. Fieldnotes were taken both during and after the observations, and later analysed using the theoretical concepts of the professional gaze, the technological mediation, and the team practices of constructing knowledge, to make sense of and discuss the socio-technical practices of seeing, as constructed in the interactions of drones and police.

The focus of this article is on the role of live images during ongoing police operations, how the images spread, and when they become knowledge. The majority of the drone pilots were emergency patrol officers, but some had other primary functions. In this article, the drone pilots working as forensic technicians are part of the analysis, as they have experiences with photography going back further than the drone trial, making them more attuned of the similarities and differences between ordinary forensic photography and drone photography. The main data comes from the observations of operative personnel, working in a different context, where the spreading of images and film have been used to a lesser extent.

As drones became a permanent fixture in the police, the initial training course offered to police officers was revised based on experiences throughout the trial period. The researcher observed parts of this training, focusing on the implementation of methodologies for observation. These new methodologies were developed by the Drone Services, a unit within the Police Helicopter Services established after the trial period. The Drone Services presented their methodologies in an observation manual released in 2022. The manual is a 70-page document meant to structure and support visual and oral mediation during operations. Data from this manual underline and supports central dilemmas observed during the field work. As the manual is an internal police document, its content cannot be referred to in detail, only at a more general level. It is used here to illustrate the shift that took place during the trial: From a belief that drones would reduce the need to talk, to an understanding that this was not necessarily the case, and the following development of the manual for improving oral communication when using drones.

Materialising the gaze:
Drone images in a forensic context

Drone images are co-produced by multiple actors: the pilot, the technology, and the context in which they operate. The commercially available drones used during the trial were made for information gathering through images and film. They were equipped with basic features, such as cameras with zoom and thermal functions, a speaker, and a spotlight.

This article is mainly about operative policing, but to illustrate how the drone materialises the gaze, the analysis will first look at some forensic practices. In forensics, the focus is on constructing images that can be used as evidence that need to depict truth, and thus bears clear similarities with scientific evidence. Amman and Knorr-Cetina (1990) explored the role of visibility in the natural sciences, where the notion of evidence is linked to what can be observed and seen. In contrast to what is only heard or believed: 'only seeing bestows on objects an accent of truth' (p. 86), yet they also point out that 'nothing is more difficult than to know exactly just what we do see' (ibid). Lynch and Woolgar (2014) described the difference between perceptions, observations, and visualisations, where the latter is a more precise term for the process of making something visible in a scientific practice. Using this distinction, we can separate the act of seeing, as done by the drone pilot, from the drone's own contribution as it, together with the pilot, constructs 'witnessable and accountable material and virtual displays' (Lynch & Woolgar, 2014, p. vii).

An illustrative example of the making of such representations through visual material was found during a ride-along where the researcher was following a forensic technician drone pilot. We talked about the potential use for drone images. He expressed a need for more focus on what he called 'the quality of drone images' to heighten their value as potential evidence. He believed that much drone photography was meagre, and when asked what he meant by 'good images', he spoke of how images can lie, and about the augmented quality in images taken by those with more photographic experience. His descriptions of 'good images' had much in common with general rules for ordinary photography, such as attention to the focus in the image; the presence of clear, visual lines, and the absence of noise and distractions. He described his goal as making sure that anyone viewing the images he captured would experience the scene as he saw it when taking the photo—this applied equally to his drone images. For him, this meant that the image should depict what he believed was the actual situation; it should not be subject to interpretation or be critiqued for hiding or enhancing specific parts of the situation documented. Thus, his goal was to make a visual foundation, a mutual gaze, through material images that would 'speak for themselves' as objective conveyers of truth.

Another pilot, also with the primary function of forensic technician, further underlined this point when he was showing the researcher images from an accident between a trailer and a car where the driver of the latter was killed. The images taken by the drone provided an overview of the entire site. He pointed to areas of the image: scratches in the asphalt from bent metal, pieces of broken glass and plastic spread across two areas of the road, and noticeable break marks from tires. According to him, the image told 'the whole story', as it made it possible to trace where the initial crash happened, the subsequent movements of the vehicles, and the damages occurring during the various stages of the accident. He believed that the images provided more certain information than the traditional alternative; drawn illustrations, written text, and supplementing images of limited sections of the site. His stance reflects Amman and Knorr-Cetina (1990) who highlighted the fixation of the visual as evidence. He was convinced that the drone images could participate in ensuring a just trial, in this case supporting the confidence that the trailer's driver was not responsible for the accident.

However, 'the whole story' is also subject to interpretation. After a different car accident, this time non-lethal, the researcher was on site with an emergency response unit. When arriving at the scene, other units were already on site working. The drone pilot started photographing but was rushed by the police's tactical command officer who wanted to open the road to traffic. He also had to stop staff from the fire department who had started removing remains from the accident from the street. The pilot quickly took some images, but back at the station, he was not too pleased with them. He pointed at a vehicle with a hanger dominating several of the images. At the site, he thought the vehicle was involved in the accident, but it was not. Consequently, the story the images depicted became unclear. He was also frustrated by people present in the images, and by a fire truck covering most of the rubble from the crash. Although the drone images were supplemented by images taken on the ground, he believed the messiness of the images caused a need to supplement them with explanatory text.

The still-images taken by the drones in these examples were all meant to be used in later contexts, such as investigations and court trials. The forensic approach illustrates how the drone, as other cameras, works as a way of materialising the police gaze, but also points to how images can be misinterpreted. Images can be clear and indisputable, but they can also be the opposite, making unwanted room for more than one interpretation. This tension, between the indisputable and the interpretative, is the starting point for the rest of this article, which deals with the complexities of operative policing.

From an individual gaze to a team perception?

In operative policing, the police gaze is materialised and co-produced by officers and drones during ongoing events and incidents and can influence collective decision-making processes. There, the images constructed by the drone are used for a more immediate purpose than in investigations. In police operations, drones may be used to provide overview of sites and situations, to search for people or places, to explore hard-to-reach areas, or to mitigate risk before sending human personnel into an area or a building. In smaller operations, these tasks can be conducted by a singular pilot officer without spreading the images to other staff. However, the officer can also be part of larger team operation, with multiple units and officers and where images and films can be shared with the control room, tactical command officers, or other police. In the early stages of the trial, most work was done by the individual pilot alone, but as the trial continued, there was a shift towards more sharing of images. The increased spreading of images was wanted by the officers and became possible due both technological advances in the software.

In this article, the drone-gaze is conceptualised as a larger team effort and as the production of a 'shared vision' (Vertesi, 2015, p. 9). Vertesi showed how the knowledge produced about Mars was not the result of individual endeavour, but by a collective team consisting of scientists, engineers, and robots, who decided what the images depicted, the result being recognized as knowledge. The police gaze is not explicitly coined by Finstad (2000) as a larger team practice, though the patrols mostly consist of two persons. The team described in this article is larger, and also include the technology used. We can thus ask: What happens as a gaze collected through a technology is spread to devices and humans other than the officer filming?

Drones were applied in the Norwegian police with a great deal of techno-optimism and a belief that the technology would change policing for the better, making it more precise and efficient (Lundgaard, 2023). There were several reasons behind this sentiment, including the believed significance of image sharing during operations. The common understanding was that drones would ease the establishment of a mutual situational awareness, and assist in ensuring that all officers subsequently pull in the same direction (Lundgaard, 2021). Constructing such a mutual understanding of the incident is a complex yet crucial process. Sharing images was initially perceived as an easy and efficient way of sharing information, as images and film were considered to provide true and solid information. These ideas can be coined as a belief that drones can establish a *mutual gaze*, where officers watching the same image would see the same thing, thus sharing a gaze.

Lundgaard (2021) showed how the understanding of an incident is constructed in the initial stages of an incident, when the starting point is a notification from a caller to the police emergency control room. Such operative policing is often described as incident-driven but is more precisely described as driven by the control rooms' interpretation of the information from the caller and any additional information present (Lundgaard, 2021). These intricate processes result in the control room's situational understanding, which is then conveyed to and interpreted by the patrols on their way to the site. Once on site, the patrol officers' comprehension of the situation can differ from that of the caller or the control room. This can either result in unclarity or conflict, or in an updated mutual situational understanding of the incident.

The use of drones can be understood as reducing the number of translations taking place, as illustrated when the understanding of an incident significantly changed once the drone was 'on site' (Lundgaard, 2023): Information from a caller had led to concern that two groups of youth were about to start a violent fight, but the drone images were recognized as showing a group of youth filming each other rapping and dancing. From a chain of translations (Callon, 1984) that included the caller, the call handler, the other staff of the control room, officers on their way to the site, as well as telephones, radios, and data from the call handling system, the inclusion of drone images reduced this chain to the interpretation of the live images by the officers watching. As images are transferred by humans and technologies, there is always translations and mediation taking place.

The idea that drones will make it easier to establish a mutual situational awareness reflects what Amman and Knorr-Cetina (1990) calls a 'fixation of visual evidence'. At times, this evidence is clear-cut, but in practice it is often neither straightforward nor easily managed. To the STS scholars who investigated how images become knowledge (Coopmans, 2014), this is no surprise, and the challenges and developments of the polices' drone practices serve as further empirical evidence of these theoretical notions. Latour (2014, p. 349) rhetorically stated: 'if only there was no mediation at all, how much more accurate our knowledge would be', and followed up by emphasizing the need to understand images as visualisations of practices, referential to and moving along 'cascades of successive traces' (p. 347). Although many such aspects are visible in the drone images used as forensic evidence and for smaller human-drone interactions, they become crucial in larger-scale police operations where the police gaze is not only technologically mediated but spread and shared, with the ambition of creating a mutual gaze, resulting in better situational awareness.

The machinery of seeing and the repeated need for talk

The formation of the collective situational awareness in police operations is a complex and fine-tuned process in which humans and technologies both contribute. When a singular officer is looking at a site using the drone, the two make up a small team, that is, an assemblage of human and drone (Lundgaard, 2023). In other police operations, numerous persons and technologies participate in team efforts, just like in Vertesi's (2015) study, where the notion of 'seeing like a Rover' is understood as a joint practice. This is also the case for the drone, as it connects the various functions in the police (Lundgaard, 2023). For example, an officer might ask the pilot to investigate a specific area or an individual, the images might be shared with other officers on their electronic devices, or the control room might define a special task for the pilot to carry out. There is additional complexity added as officers may be positioned in different locations, as an operation might consist of many tasks, and due to the time-restraint often present in police operations. In Vertesi's study, everyone involved got to speak and bit by bit they reached an agreement. This is rarely the case in police operations, as radio communication has to be short and limited, with little room for in-depth discussion and nuance.

Establishing a mutual understanding based on visual images is a complex practice where the production of knowledge is distributed to all actors involved. There were often differences in the perceptions of drone images between officers. At times, the observed differences between various individual perceptions of drone images in the teams merely reflect how some images are poorer than others. Lundgaard (2023) illustrated how images can be unclear, ambiguous, or in other ways difficult to use for decision-making. In other cases, the interpretation of an image differs between officers.

During the fieldwork, the researcher observed the police's handling of several political protests, where drone images were spread throughout large teams. In such police operations many officers from various backgrounds need to work together for a short period. The teams consisted of officers specialised in a wide variety of tasks, from surveillance and community policing to the use of physical force and arrest, and all had to co-function during the police operation. During one of these manifestations, the police feared physical confrontations between groups with opposing views. On a roof nearby, two officers were using drones for surveillance. They came from a highly specialised unit that worked and trained together daily and were there to assist the district police. This district was not part of the drone trial and had little knowledge and experience with the use of drones in policing. One officer was operating the drone, and the other communicated by radio with other units. They hardly needed to talk between themselves, and their actions were so synchronised that they seemed part of a frictionless whole. By contrast, the other units involved were not familiar with drones, and some ambiguities and frictions arose between them and the drone

pilots. The tactical command officer was pleased to receive images from the drone on the screen of his device, but being less familiar with the technology, he asked for drone assistance in less suitable tasks, such as searches in areas hard to explore from above. The command officer also asked the drone pilot questions regarding the images and needed help to understand what they depicted. Such uncertainties occurred during several operations, especially in police districts where drones were less used. When the officers and pilots had different levels of knowledge there was room for friction to arise.

By sharing images and film between the various actors in a police operation, the drone establishes teams, but the individual gaze of the pilot is not necessarily the same as that of the viewer of the images. The drone established connections, but not automatically shared perceptions. The potential solutions for such frictions were articulated in diverse ways during the trial. While some believed images would speak for themselves and should be transferred throughout the organisation without further explanations, others believed that there was a need for more training and development of methods for how to request and convey information. The initial expectation in the trial was that sharing images would reduce the need to talk and thus reduce the need to communicate by or listen to the police radio. However, the trial period ended, somewhat paradoxically, with an increased focus on oral communication. This outcome was materialised in the observation manual describing how police officers and pilots should be communicating about drone images. One of the officers in charge of developing the manual stated that he believed the crucial questions were 'What should we describe, and why? When should we describe what, why, and to whom?'

So, the implementation of a technology believed to reduce the need for oral communication had made talking even more pertinent than before. The operation manual was written by the officers at the Drone Services, whose job is to oversee the professional development and training of pilots. This article will not go into detail on the manual; here, the question is how to understand the seemingly paradoxical outcome of the drone trial, as 'talk' became so central when the starting point was 'seeing'. The aim of the manual was to establish and standardise observation practices, which was previously regarded as tacit knowledge, and propose various techniques for how to convey information about observations. The manual states that whilst all police must express themselves clearly, effectively, and correctly when communicating by radio, this is especially crucial for those conducting observations which are passed on to other units. There were guidelines on how to describe individuals, vehicles, sites, directions, movements, and other potentially police-relevant observations, in ways that aim at avoiding confusion. The manual covered assorted topics such as how the human attention works and how information gathering is performed. Alongside the development of the manual, the training

programme for the new pilots was changed, with an increased focus on the topics described in the manual.

This outcome, where new forms of seeing ended up demanding new ways of talking, reflects early works of STS on the process of turning visual evidence into knowledge. In a study, Amman and Knorr-Cetina (1990) examined the role of sense data in knowledge-producing practices, highlighted that seeing is a product embedded in talk, that talking is what turns observations into perceived truths, and that at its core, 'the machinery of seeing is talk' (Amman & Knorr-Cetina, 1990, p. 92). The drone becomes an active part of this interaction and influences both the seeing and the talking.

However, there is also a disruptive element in the drone, as it can not only unite things that were previously separated (Lundgaard, 2023) but also separate what was previously united. The Drone Services' effort at establishing a new framework for talk can thus be understood as an attempt at bring together disruptions and enhance the drones' perceived ability to display images that may serve as actionable knowledge. Thus, the development of drone practices are continuous 'processes [that] constitute what we have called the fixation of evidence' (Amman & Knorr-Cetina, 1990, p. 115) but with an increased focus on the need for better oral communication, in contrast to the early idea that drones would reduce the need for talk.

Conclusion:
A complex path from gaze to knowledge

This article has empirically examined how the police gaze is mediated by the drone and what it means to see through technology. The police-drone gaze is a specific and complex form of professional vision in which humans and technology must learn to co-produce and make sense of material and spreadable images and film. According to Styhre (2010, p. 365):

> Learning to master a specific form of professional vision is [...] a matter of individual training and practice, but it is also a matter of being part of a community and sharing a belief in what to see and how to interpret and inscribe meaning into what is observed [...]—it is both an individual and a collective accomplishment.

This collective accomplishment is made up not only of the interactions of the drone and the officer but also of the watchers of film and images. In police operations, images can become powerful in determining how a situation is perceived and therefore, how it should be handled. The process of turning the gaze of the individual officer into spreadable information useable for decision-making is complex. The drone reveals some of these complexities, showcasing that not all images speak for themselves and that the perceptions of images must be articulated orally to gain status as knowledge in a team. The establishment of the operation manual highlights the need to find ways of turning individual observations into collective and shared information.

The technological spreading of a materialized and shared police gaze through drones made it crucial to develop new ways of speaking, in contrast to the saying, 'a picture is worth more than a thousand words.' Thus, the drone trial underlines Vertesi's (2015) point that images do not show things in themselves but are the result of interpretations and that '[s]cientific seeing is not a question of learning to see without bias. Instead, scholars of

scientific observation remind us, it entails acquiring a particular visual skill that allows a scientist to see some features as relevant for analysis and others as unimportant' (Vertesi, 2015, p. 8). This is also the case for the police where professional vision is a particular skill to be developed, both at an individual level and in teams consisting of both human and non-human actors.

Drone practices in policing reveal how the police gaze is not one, but several. By the drone's affordances, the gaze can be turned into images and film spreadable throughout an organisation. But the individual police gaze cannot be spread as information to a team without being translated into talk or text. The images, what they show, and how they are understood, must be articulated orally to ensure the establishment of a mutual awareness of a situation. Thus, the drone is only a first step in turning the gaze into material and shareable information, and to orally convey information creates a space for potential nuances is also created, conflicting understandings, and thus new and adjusted situational awareness in the team. When discussing visual representations of the realities used in scientific practice, Law (2014) argued that the social does not only shape but also misshapes representations as 'realities are enacted in technoscience practices' (Law, 2014, p. 338), with emphasis on *difficult*. Policing, like science, is about producing knowledge that is peculiar but useful in a specific epistemic culture (Flinterud & Lundgaard, 2024). To explore the concrete ways in which the police gaze is turned into live and still images, and how such images gains status as collective knowledge should thus be subject to more research, as it reveals important aspects of police decision-making. As policing is also inherently an exercise of state power (Guillaume, 2013), research must scrutinise the ways in which various types of information enacts the realities that lead to police interference in people's lives through investigations, intrusions, and other actions.

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