Algorithmic Accountability and the Use of Real-Time AI Tools: An Ethnography of Police Officers' Daily Use of AI Violence Detection in Public Spaces

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Abstract

Police organizations are increasingly deploying artificial intelligence (AI) tools to analyse data streams (e.g. audio, text and video images) in real time to improve their detection and response capabilities. This article explores how these AI tools introduce new challenges regarding algorithmic accountability at the level of individual police officers. It examines how digital surveillance officers from a Dutch regional police unit perceive their accountability regarding the use of an AI violence detection system. This ethnographic study, consisting of approximately 145 hours of observational research and eighteen semi-structured interviews, identifies three distinct AI working styles among digital surveillance officers, each reflecting different modes of interaction with the AI system. The findings indicate how surveillance officers feel only limited accountability to promptly respond to AI notifications and continue to prioritize requests and enquiries from other police colleagues and departments with whom they collaborate. This research argues that algorithmic accountability at the level of police officers should be explicitly integrated within existing internal police accountability frameworks to be effective.

Keywords: AI, Violence detection, Ethnography, Policing, Surveillance.

1 Introduction

Artificial intelligence (AI) is playing an increasingly significant role in policing. AI offers police organizations new methods for collecting, analysing and interpreting data (Schuilenburg & Soudijn, 2023). AI tools are being used by police organizations to analyse data streams such as sound, text and video images in real time (Fontes et al., 2022). Examples include automatic gunshot detection, recognition of emotional states of crowds, identification of (wanted) individuals and violence detection in CCTV footage (Almeida et al., 2021; Europol, 2023; Joh, 2024; Kaur et al., 2020; Lubna et al., 2021; Schuilenburg, 2024; Sikora et al., 2021). Through the

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use of such real-time AI applications, police organizations expect to improve their prevention and response capabilities (Europol, 2023).

A key issue concerning the implementation of real-time AI tools is how police organizations can be held accountable for decisions and actions (Busuioc, 2021; Novelli et al., 2024; Wessels, 2024; Wieringa, 2020). Algorithmic accountability requires insight into the technical aspects of the AI application (e.g. input data and training of AI models) and sufficient opportunities for human control (Cobbe & Singh, 2024; Kacianka & Pretschner, 2021; Mäntymäki et al., 2022; Martin & Waldman, 2023; Selten & Meijer, 2021). Within police organizations, accountability for executive policing decisions made with the help of AI tools is usually assigned to individual police professionals. They are expected to integrate their own knowledge and experience with the technical output of AI tools (Brayne, 2020; Buffat, 2015; Busuioc, 2021; Meijer et al., 2021; Wessels, 2024). As a result, police officers are central to internal organizational algorithmic accountability frameworks (see e.g. Artificial Intelligence Act, 2024). However, AI applications are often opaque and difficult for police professionals to interpret (Pasquale, 2015). Consequently, algorithmic accountability in AI deployment presents a significant challenge (Sartori & Theodorou, 2022).

This article examines algorithmic accountability at the *individual* professional level regarding the use of real-time AI tools by the Dutch police. In respect to accountability, police officers are required to act "in full compliance with the technical rules and practices of the profession" (Cendon, 2000, p. 33). In doing so, they carry out their work "in a micro-network or 'web' of multiple, both vertical and horizontal relations" (Hupe & Hill, 2007, p. 284). Formal and informal norms and values play a significant role within accountability frameworks (Banks, 2013; Cendon, 2000; Hupe & Hill, 2007; Vriens et al., 2018). Multiple accountability relations coexist internally within police organizations (e.g. between officers and chiefs), and externally with broader societal audiences such as local communities (Feys et al., 2018). These relations can be based on norms and standards within the organization, standards of the profession itself or broader societal norms (Overman & Schillemans, 2022). The incorporation of AI into police processes introduces algorithmic accountability into current police accountability frameworks.

Police officers' interpretations of (algorithmic) accountability are closely related to the extent to which they actually expect to be held accountable for their actions and feel responsible for them, conceptualized as *felt accountability* (Hall et al., 2017; Hall & Ferris, 2011; Overman & Schillemans, 2022; Schillemans et al., 2020). This makes accountability at the level of police professionals an ambiguous concept, closely linked to individual beliefs and their social and organizational context (Harrits, 2019; Molander et al., 2012). This also extends to the manner in which AI systems are being integrated into daily use and how oversight is being performed by individual police officers. Johnson (2021) notes that current regulations, like the General Data Protection Regulation (GDPR), offer limited practical guidance on explaining decisions to affected individuals. This lack of clarity highlights the need for research into how police officers perceive their accountability when using AI tools.

There is limited academic insight into how accountability regarding the use of real-time AI tools is taking shape in practice (Busuioc, 2021; Novelli et al., 2024; Wessels, 2024). This issue is relevant to academic discourse because real-time AI applications are increasingly used by police organizations and such applications require immediate action, often allowing little time to react. This can result in intuitive decision-making (also see de Groes et al., 2025), in which it is unclear whether – and if so, how – accountability regarding the use of AI tools is shaped. This issue is gaining relevance due to the obligation for appropriate human oversight in algorithmic accountability frameworks (see e.g. Artificial Intelligence Act, 2024).

The notion of *felt accountability* is closely linked to concepts such as "explainability" (Selten et al., 2023), "transparency", "legitimacy" (Grimmelikhuijsen & Meijer, 2022), "responsibility" and "discretionary space" (Fest et al., 2023). However, as these concepts require integration into a comprehensive accountability framework to be effective (Williams et al., 2022), this research adopts algorithmic accountability as its central theoretical lens, reflecting its importance as a legal and ethical obligation under the Artificial Intelligence Act (2024).

To gain more insight into this matter, ethnographic research was conducted into the use of AI violence detection technology by a regional surveillance unit of the Dutch police. This concerns a real-time AI application that can identify physical violence in CCTV footage of public spaces. This study answers the following research question: How do police professionals interpret their algorithmic accountability in relation to the use of a real-time AI violence detection tool?

This article is structured as follows. The next section describes the investigated Dutch police case, the research method and the theoretical relationship between AI violence detection technology and the issue of algorithmic accountability at the level of individual police professionals. Next, the results of the ethnographic fieldwork at the regional surveillance unit are presented. Two key findings are discussed: three distinct AI working styles and interpretations of algorithmic accountability by police professionals in relation to the use of AI. The conclusion and discussion of this article examine the implications of the research findings regarding the current legal and academic understandings and assumptions of establishing accountability within police organizations.

2 Research Design

2.1 Research Setting

This article examines how an AI violence detection application is used in a regional digital surveillance unit of the Dutch police. The surveillance unit supports the emergency centre, local police units and individual police officers through camera surveillance to ensure public order and safety. This includes law enforcement tasks and contributing to investigations. The digital surveillance officers monitor public spaces 24/7 through CCTV cameras. The allocation of the camera locations falls under the jurisdiction of local authorities (i.e. the municipality). The digital

surveillance officers can control and rotate the cameras, zoom in and out and rewind and review footage within the legally permitted retention period. Surveillance tasks are conducted both reactively, responding upon request, and proactively.

The police surveillance unit uses a video wall displaying a grid of camera images (see Figure 1). The workstations are divided based on geographical regions. Surveillance officers communicate with the emergency centre, local police officers and police stations in these areas via police radio, depending on the locations of the cameras. The AI violence detection technology is installed on selected camera feeds. The surveillance officers are briefed on the operation of the AI system. The unit's product owner serves as the first point of contact for system-related questions. Surveillance officers are responsible for responding to the AI's notifications and prioritizing them within their workflow.

Figure 1 ***A digital surveillance officer at one of the workstations. The AI violence detection tool is positioned at the top of the right video wall.***

The AI violence detection technology relies on machine learning, where a computer vision model is pretrained using a video dataset. The AI application is visible at a dedicated spot on the video wall – a screen labelled "violence detection" (see the red square in Figure 1) – and through a red visual alert at the bottom of the computer screens at the workstations of the digital surveillance officers. If the AI application detects violence in the CCTV footage, the screen at the video wall is turned on and the live camera footage is displayed. The notification is then reviewed at the workstation by the surveillance officers. Based on their interpretations, the AI notification can be disregarded or acted upon; for example, by informing police officers of the characteristics of the current situation. The surveillance officers record in an open text box what has been observed and whether the notification is accurate. When multiple AI notifications occur simultaneously, the video wall display of the violence detection tool alternates between the different cameras

where notifications have occurred. The AI tool is incorporated into the local IT infrastructure as an independent system. All data are processed on-site.

This study focuses on the experiences and interpretations of the digital surveillance officers. Therefore, no quantitative data were collected on the performance of the AI tool or on the robustness and limitations of the AI model (this concerns, e.g. the reliability and validity of the AI, see Kitchin, 2025). Moreover, the computer vision techniques applied in the AI tool were not assessed (for an overview of computer vision methods, see e.g. Ramzan et al., 2019). Nevertheless, an impression of the types of AI notifications was gained during the fieldwork. Most AI-generated alerts did not correspond to incidents of physical violence, but were instead related to activities such as dancing, jumping, playful interactions or environmental occurrences such as overturned waste containers. In some cases, the reasons for the alerts were not clear to either the ethnographer or the surveillance officer. A small proportion of observed instances involved the AI detecting actual physical violence.

2.2 Studying Accountability in Relation to the Use of AI

This research adopts a sociomaterial approach to understand how police professionals interpret their accountability in relation to their interaction with the AI violence detection technology (de Moura & de Souza Bispo, 2020). This approach assumes a reciprocal relationship between AI technology and the social and organizational context and helps examine the interaction between AI technology and police professionals (cf. Brayne, 2020; Meijer et al., 2021; Soares et al., 2024). Accordingly, a practice-based research approach is employed to examine how surveillance officers utilize AI in their daily operations and how it reshapes their workflows. Furthermore, it can help in understanding the norms and standards underlying the felt accountability of the surveillance officers when using the AI tool.

This study focuses on how the *internal* algorithmic accountability framework is shaped within the executive layer of a regional police unit. Algorithmic accountability requires elaborate governance processes in which roles and responsibilities are assigned to both the AI system's providers and deployers (Artificial Intelligence Act, 2024). This is especially prevalent for law enforcement agencies due to potential power imbalances (Recital 59, Artificial Intelligence Act, 2024). Among these is the appropriate use and human oversight of the AI system in which there is an "adequate level of AI literacy, training and authority to properly fulfil those tasks" (Recital 91, Artificial Intelligence Act, 2024). With respect to human oversight, it is mandatory that police officers are aware of the limitations of AI systems, remain vigilant regarding automation bias and can decide to refrain from using the system or disregard their outcomes (Art. 14, Artificial Intelligence Act, 2024). Aspects of algorithmic accountability associated with earlier phases of the AI lifecycle, such as the requirements for AI development and the legal basis for data processing and deployment, fall beyond this study's scope.

It remains unclear how surveillance officers understand algorithmic accountability in the context of the broader police accountability framework. This requires analysing daily practices and uncovering underlying formal and informal

standards, norms and relationships related to the use of the AI violence detection system. Understanding the responsibilities of surveillance officers, who hold them accountable and which formal and informal norms guide accountability for the AI tool, is essential (Novelli et al., 2024; Overman & Schillemans, 2022).

To examine the practical functioning of algorithmic accountability structures, this ethnographic study investigates the daily interactions between digital surveillance officers and the AI violence detection system. It takes a deductive approach, uncovering different AI working styles that emerged from the fieldwork. This analytical approach is informed by prior research on police working styles (see e.g. Terpstra & Schaap, 2013).

2.3 Data Collection and Analysis

Ethnographic research was conducted to study how police professionals interpret their accountability in relation to their use of the AI violence detection tool. This research methodology provides insight into the organizational context and formal and informal interactions within the surveillance unit. An ethnographic approach helps to understand interactions between police professionals and AI technology in a realistic setting (Christin, 2020; Kitchin, 2017). Additionally, the methodology facilitates understanding norms, standards and relationships associated with the AI violence detection system, which collectively form the police unit's algorithmic accountability framework. This approach allows for sensitivity to interactions between police professionals and the AI tool, as well as within the police unit. It provides the opportunity to examine gaps and silences (van Voorst & Ahlin, 2024, p. 3), through which formal, informal or absent accountability relationships can be studied.

In this study, data were collected based on i) participatory observations, ii) informal conversations and iii) semi-structured interviews with surveillance officers, managers and the product owner of the AI system in a regional surveillance unit of the Dutch police. Between February and April 2024, approximately 145 hours of participant observations were conducted to observe the behaviour of digital surveillance officers and their interactions with the AI violence detection technology. Eighteen shifts were observed, in which attendance was divided between early shifts (4), late shifts (9) and night shifts (5) on various days of the week (see Figure 2). This approach aimed to obtain a representative overview of the work at the surveillance unit and the different contexts in which the AI application is employed.

The focus of the observations was between Thursday and Saturday during late and night shifts. It was expected beforehand that most interactions with the violence detection system would be observed during these times and days. The data were collected through participatory observations and informal conversations with surveillance officers, recorded through *jotting* (Emerson et al., 2011). The researcher could sit behind an unmanned workstation, so that notes could be taken on a laptop. Thoughts and interim reflections of the researcher were recorded in memos (Emerson et al., 2011). After each shift, the notes and memos were promptly developed into comprehensive observation reports.

Figure 2 Overview observations.

Day	Shift		
	Early (6.30-15.00)	**Late (14.00-23.00)**	**Night (23.00-7.00)**
Monday			1
Tuesday	1	1	1
Wednesday	1	1	
Thursday	1	2	1
Friday		3	1
Saturday		1	1
Sunday	1	1	

Eighteen semi-structured interviews (approximately 15.5 hours) were held with digital surveillance officers (13), managers (4) and the product owner (1) of the violence detection system within the surveillance unit. The interviews took place during the shifts where the researcher was present and after the observational fieldwork was completed. The interviews discussed topics that emerged from the literature on accountability, supplemented by insights from the observations: work experiences, prioritization, AI attitudes and working styles. The interviews were recorded and transcribed. The observation reports and interview transcripts were analysed using the qualitative analysis software Atlas.ti in an iterative process of open, axial and selective coding (Boeije, 2010).

2.4 Methodological Limitations

The research design has several limitations in scope and methodology. First, during the empirical research, it became clear that AI violence detection technology has undergone multiple iterations in the past. This study examined the interactions with the most current version of the application. This implies that as the AI application evolves, the interactions and experiences of digital surveillance officers could also change. In addition, as discussed earlier in the case description, the technical performance of the violence detection system was not examined. Nevertheless, considering the study's emphasis on digital surveillance officers' experiences with the AI tool and uncovering the unit's algorithmic accountability framework, this does not undermine the validity of the ethnographic research. Second, given the timeframe of this ethnographic study, the researcher was able to obtain only limited empirical data concerning prior activities related to training and communication about the AI system. As a result, these activities could not be directly studied or analysed. However, the research examines the current level of knowledge regarding the AI system, thereby providing insight into the present state of AI literacy within the surveillance unit. Finally, the presence of the researcher sometimes appeared to be a reason for police professionals to pay more explicit attention to notifications from the AI violence detection system. This has been mentioned several times during the fieldwork by the surveillance officers.

This observer effect was minimized by concentrating the fieldwork at the surveillance unit over a short period and thereby normalizing the researcher's presence.

3 Findings

In this section, the findings from the ethnographic fieldwork are presented. To address the main research question – how digital surveillance officers interpret their accountability in relation to the use of an AI violence detection system – two themes from the data analysis are highlighted. The first part of this section describes the different AI working styles of the digital surveillance officers that emerged deductively from the fieldwork. These working styles indicate different interactions with the AI violence detection system. The second subsection examines how these different AI working styles are explained by the digital surveillance officers' interpretations of algorithmic accountability.

3.1 AI Working Styles: Hunter, Investigator and System Keeper

The fieldwork shows that the organizational standards and requirements for the digital surveillance officers are relatively abstract. Informal conversations and interviews with the surveillance officers reveal that, although their legal mandate is clearly defined, explicit norms and standards are lacking. Job descriptions of the digital surveillance officers are generic and do not adequately reflect the nature of their work. Surveillance officers believe they meet the minimum requirements as long as they respond adequately to requests from local police and the emergency centre. A manager explains:

> It is not described in a specific way what [a surveillance officer] needs to do and what qualities are required.... It is a self-established norm. (Interview P9)

This "self-established norm" allows for different working styles within the surveillance unit. The digital surveillance officers can organize and perform their work based on their interpretation of proper police work:

> Some are proactive and others are somewhat passive.... Some are looking for incidents for criminal offences or violations by themselves, whilst others wait for a request to come in. (Interview P20)

Important indications of the different working styles are particularly visible at the start of new shifts, when a new team of surveillance officers begins. Surveillance officers often prefer – and consistently choose – to work at the same workstations. Their preference is often determined by the number of cameras assigned to the workstation and the number of reports and requests expected to be handled during a shift. Some officers prefer "busy" workstations, while others prefer a less hectic one.

This observed working pattern appears to be strongly linked to the interactions and experiences with the AI violence detection system. The fieldwork deductively reveals three different AI working styles: digital surveillance officers who i) proactively look for violations or offences (*hunters*), ii) want to thoroughly collect information of past cases and events (*investigators*) or iii) respond primarily to calls and requests from colleagues (*system keepers)*. In general, colleagues switch between these working styles, depending on the context (e.g. time of day, situation on the street and incoming requests from other organizational units). Nevertheless, they exhibit strong preferences in how they approach police work.

3.1.1 Hunters

The "hunters" within the surveillance unit proactively look for security incidents that ideally lead to arrests. A manager describes this working style as follows:

> Very exaggerated, we really have "incident cowboys" amongst us. They want to go above and beyond during each incident. (Interview P8)

This group of surveillance officers seems most supportive of the AI violence detection system. They review notifications as promptly as possible, believing they could indicate potential incidents. The fieldwork shows that the hunters mainly position themselves at workstations covering the most camera footage and connected to high-activity local police units, such as those in the city centre. During their shifts, hunters look proactively at places where they believe incidents are most likely to occur, such as entertainment areas or bicycle parking facilities:

> They are always looking for that stimulus, the real hunters. They always want to look for incidents…. Those people are often working at table 3…. Generally speaking, these are often the hunters. They are really crook-catchers. (Interview P9)

Hunters get satisfaction from completely resolving an incident:

> If you are working on a case and it is resolved, you know, when the case is fully completed…. I can go home all happy and tell stories about work like: "This is what happened! I had another one!" So, a complete police case, from start to finish. (Interview P11)

Hunters not only review reports and respond to colleagues' queries, but are also proactive in identifying individuals who may turn to criminal or undesirable behaviour. During the fieldwork, several times a hunter was observed looking at situations for longer periods of time, waiting for an eventual offence. As a hunter explains during an interview, they are convinced that there are cases or incidents that would go unnoticed without "hunting":

> Then you just start looking. You just search. There is always something [to find]. (Interview P13)

The proactive working style of the hunters is supported by an observation during a late shift on Thursday evening. It is a rainy night:

> After a long wait, P13 spots one of the boys he has been watching – sitting at a desolate terrace of a restaurant – rolling a joint. P12, who is also monitoring the screen, asks if that is legally allowed or not. P13 replies that it depends on each municipality, but adds: "But you don't want a joint to be smoked in front of your restaurant, do you?" Eventually we observe the boys lighting the joint. P13 decides to call the local police station. (Observation 240222)

Hunters feel accountable for contributing to arrests. This informal organizational norm is constantly being reinforced in the workplace, especially during shift transfers. Officers often highlight the arrests during the past shift. The following passage provides an illustration:

> P13 asks P15 about last night: "Was it a quiet night?" P15 replies: "I had 4 AT's [arrests] on this side". P13: "Good job, my friend". (Observation 240315)

The urgency associated with identifying and resolving cases prompts hunters to consistently monitor reports generated by the AI violence detection system.

> Despite my frustration, I continue to do so. But there are also plenty of people who think: just let that thing go off. (Interview P11)

Hunters also typically express interest in participating in the ongoing development of the AI violence detection system. This group of surveillance officers believes that the system could continue to improve if they continue to provide enough feedback. For example, an officer explains his frustration that not all colleagues properly respond to the notifications of the AI system, or even want to do so:

> If there is a notification when I'm just typing, and I see it appear, I'll pick it up right away. Because I've had several times that there was actually something going on. Well, that's great. So it's actually a shame that the development [of the AI system] is limited because people no longer fill out the text [i.e. the assessment of the notification]. They enter a full stop or something, but provide no explanation. (Interview P26)

At the same time, live cases and incidents always maintain the priority of hunters over AI notifications. There is often little attention paid to the AI tool when hunters are working on a live case. In the vast majority of the observed interactions with the AI system, it appears that there is a delayed response to the notifications of the AI violence detection system:

> While P11 is recording video footage to send to police colleagues on the street, P15 says: "Violence notification at [Square A], [street A], but nothing to see". None of the officers respond. A minute later, the system also goes off on a

> camera at [street B]. A few minutes later, when P11 has finished sending the footage, she says: "Violence notification on [Square A]". P11 reviews the footage, but nothing appears to be amiss. She wants to process her review in the violence detection registration system, but while doing so, she also notices the notification at [Street B]. She then looks up the camera footage and reviews it. It turns out that two men are hugging. P11 processes the reviews. (Observation 240315)

This observation illustrates how immediate requests and live cases are prioritized. The fact that P11 does not seem to have heard P15's earlier comment about the AI notification illustrates the focused attitude of hunters to contribute to the best of their abilities to a live police case. This illustrates that there is no accountability felt regarding responding promptly to the AI system or the colleague notifying the AI alert for P15. As a result, alerts from the AI violence detection system are often overlooked or addressed with delays.

3.1.2 Investigators

The second group of digital surveillance officers, the investigators, are mainly focused on solving police cases. Similar to the hunters, the investigators are concerned with assisting in arrests or providing further information or evidence for a police case. They consider their contribution to ongoing police investigations as part of their accountability. A surveillance officer says in an interview:

> I like to find things out and track them down. For example, during a police investigation, we may get a request to trace back someone's origins or track their movements. I really enjoy doing these things because then you can see where a person is coming from and what that person has done…. I like tracking down much more. (Interview P16)

This group finds legitimacy in the completion of police investigations. For instance, a manager shared an account of a missing person case, highlighting the persistent attitude of an investigator:

> The case was already finished, case closed. [Name of colleague] is still searching and says: "I see someone!" … Then you really made a difference and were able to really save someone. (Interview P9)

Investigators must maintain a high level of concentration when examining past CCTV footage, as details are crucial to their work. During the fieldwork, the focused and concentrated attitude of the surveillance officers when reviewing footage was often observed. A manager explains how the investigators like to carry out their work:

> They really go like crazy in the mornings. They even print out images of the faces of persons [of interest]…. They really go back to [the footage of] the night before. Because they don't trust their colleagues. They think their colleagues

> have not done that. They are going to look back at the footage from the night before and they are going to look for that face. I think that's beautiful to see. You know, those guys, they don't get bored for a second. (Interview P8)

Similar to the hunters, the investigator's working style requires a focused attitude and shares the urge to solve police cases. It is therefore not surprising that some hunters within the surveillance unit also derive satisfaction from this investigative working style.

Like the hunters, who focus on live cases over notifications from the AI violence detection system, investigators also tend to give lower priority to alerts generated by the AI violence detection system. An observation during the fieldwork illustrates this interaction with the AI tool:

> P11 rewinds the video footage. She is looking for an incident in which a person spat at an officer. She fast-forwards through the footage. "It would be nice if we have the spitting on record", P11 says to P15. They are unable to pinpoint the exact moment when the spitting occurred.… P11 goes to other footage and starts looking. She does not seem to be able to find it: "Is it not recorded, seriously?" she mutters. Then she finally sees the officer being spat on. "Ah! No, dude! He's spat on", P11 cries out. She rewinds one more time and zooms in. She then sees the moment when he is spat on. P11 starts processing the incident. While P11 does all this, the violence detection system notification remains activated. Only after completing the report P11 processed the alert from the violence detection system. (Observation 240226)

This group of surveillance officers seems to be less interested in the AI violence detection system. Investigators focus on gathering information about past incidents, placing less emphasis on responding promptly to the AI's alerts.

3.1.3 System Keepers

The third group of digital surveillance officers, the system keepers, are characterized by their reactive working style. They aim to remain available to respond promptly to requests from officers in the field or in the emergency centre, but tend to be less motivated to proactively search for potential incidents. A surveillance officer reflects on this type of working style as follows:

> There are colleagues who are very relaxed. They have an attitude like: if a request comes in, I'll then look at it and handle it. (Interview P16)

Compared to the hunters and the investigators, the system keepers are the least likely to respond quickly to notifications of the AI violence detection system. During an informal workplace conversation, this is explained as a "return" in surveillance work (Observation 240320). This term refers to the idea that their actions contribute directly to real incidents or assist with enquiries. They feel accountable for adequately responding to colleagues' requests, but do not prioritize

an immediate response to the AI violence detection system. In an interview, the difference between human and AI notifications was discussed:

> Those [notifications from the security staff of the cafes] are more reliable. Because such notifications are not made without reason.… That report is made deliberately. So, that's always more [accurate] than those nine hundred and ninety-nine alerts of that violence detection [system]. (Interview P17)

System keepers assess the feasibility when engaging with an incident. If contributing to a case is not feasible, they quickly accept it and disengage. The observation below is illustrative:

> The phone rings at 0:27 at night. It is the control room asking if a camera can be directed on a car that is on fire. However, P20 replies that this is not possible. The person on the other end of the phone thanks him. There appear to be several other reports of the fire, so P20 is looking to see if he can see anything with other cameras. "We need to keep an eye on it a bit", says P20. He rewinds camera footage, but at the moment there do not appear to be enough clues. He resumes the puzzle he had been working on. (Observation 240227)

System keepers' perception of accountability is based on their availability to assist colleagues. These officers derive less satisfaction from actively looking for incidents. An officer attributes this to his extensive work experience with the police:

> I think when you're young, yes … Maybe those people who haven't been [working at the police] for that long [want] to prove themselves a little bit.… That's fine, that's okay. I think that's a normal attitude when you are new. But you know how I see it? … I do the things because I have to.… I don't get a huge kick out of my work because we have been busy, or that you can tell the new shift what you have experienced.… Personally, that is no longer the case to me. (Interview P17)

This explanation by the surveillance officers reveals an important reason why less attention is paid to the AI violence detection system by this group of officers. The interviewee states that he does not get a "huge kick" from incidents during his work, unlike hunters and investigators who perceive their police work and accountability differently. This affects how they react to the AI's notifications. Even when the system's notifications are accurate, they are not highly valued by this group of officers. One officer explains:

> [The AI violence detection system] only reacts when something is already occurring. So, it can make a contribution, but for me it's not like: "wow". No, it is not. (Interview P18)

An important intended added value of the AI violence detection system is to speed up and improve the detection and response time of the surveillance unit. However, the system keepers do not see this as an addition to their work:

> Not for me, because the notification will arrive three seconds later anyway, because there is always a bystander who calls in [the police] … In my experience, when violence occurs somewhere we learn about it very quickly. Even if we don't see it … security staff is everywhere…. (Interview P17)

According to this surveillance officer, the AI violence detection system provides minimal, and potentially unnecessary, value in police work.

Overall, the fieldwork highlights that each of the three working styles engages with the AI violence detection system to a limited extent. This raises questions about why surveillance officers use the AI system in this manner, and how this relates to their interpretations of accountability surrounding its use. The subsequent section examines this issue in greater detail.

3.2 Accountability and Real-Time AI Violence Detection

This section discusses how the different AI working styles can be explained by the digital surveillance officers' felt accountability. Based on the surveillance officers' perceptions of their police accountability, four interconnected reasons emerge for why they give relatively low priority to the AI violence detection system. Each is discussed below. The explanations can be viewed as factors contributing to limited algorithmic accountability, due to the system not being incorporated into officers' felt accountability.

3.2.1 Human Relationships Remain the Foundation of the Felt Accountability of Digital Surveillance Officers

The fieldwork shows that a dominant workplace norm is to provide "service" to local police units and the emergency centre. This organizational value forms the foundation of the surveillance officers' perception of accountability. Surveillance officers are held accountable for providing an immediate and adequate response to requests and reports. However, as the ethnographic research shows, the AI violence detection system is not perceived as part of this accountability relationship.

The accountability of the digital surveillance officers is grounded in human interactions rather than in their relation to the AI violence detection system. During the fieldwork, a constant discrepancy was observed between requests and reports from local police officers and those generated by the violence detection system. Even requests of colleagues that are not deemed promising are still fulfilled by the digital surveillance officers to the best of their abilities:

> Yes, I simply remove myself from the equation…. For instance, yesterday…, Two motorcyclists were racing through the streets and we recorded them briefly. But they drove so fast, they were mere two black spots in the footage. I told this to [the officer that requested the footage]…. But he still wanted it. Fine…. Because then he is also reassured. (Interview P18)

Two elements stand out from this statement. First, the surveillance officer indicates that he marginalizes himself in relation to police colleagues, which implies an informal hierarchical position between the surveillance unit and other police units. Second, the needs of the digital surveillance officers' colleagues are considered an important aspect of the accountability relationship. If a colleague requests to view footage for confirmation, even when the digital surveillance officer deems the footage unusable, this is still regarded as sufficient reason to provide access to the footage.

Such a sense of accountability is not extended to the AI violence detection system. The notifications from the AI system are often deprioritized by the surveillance officers. For example, one officer states that – unlike requests from colleagues – it is easy to ignore the AI notifications:

> Yes, although the control room also issues plenty reports that turn out to be nonsense. [Researcher: What makes it different?] They don't ask for it.… It is not a request, it is just an order. Disabling the bell [of the AI system] is very easy.… Saying "no" to a human is more difficult than to a machine. (Interview P26)

The primary motivation for digital surveillance officers to review AI alerts is also based on human relationships within their interpretation of algorithmic accountability. Digital surveillance officers state that they use the system primarily because it is required by the product owner within the police unit, but to a lesser extent because they themselves find the AI of added value in their work:

> I know that [name of product owner] is working on it and that's about it. And I get an email asking if we want to register what we see when the … violence detection alarm goes off. Well, I do all that. (Interview P18)

In summary, the AI system *itself* or its notifications do not become integrated into the felt accountability of digital police officers. Officers continue to prioritize assisting their colleagues, considering this to be their primary police accountability. There appears to be a lack of algorithmic accountability in terms of prompt responses and effective use of the AI system, as delayed or missed responses to AI notifications are normalized without a felt obligation to justify non-use.

3.2.2 Uncertainty of AI Alerts

Digital surveillance officers derive legitimacy in their work from direct feedback, either by assisting colleagues with a request or through the identification or resolution of a security incident. They feel particularly accountable to street police officers by assisting them as best as possible and informing them well and in a timely manner. The focus on gaining positive feedback in their work is described by a manager as an *experience of success* (Interview P9), feeling that their actions positively impact public safety. This is experienced to a lesser degree when responding to alerts from the AI violence detection system. A surveillance officer explains the difference as follows:

> Making a difference for a victim and that you give correct information at a specific moment. That firefighters are alarmed and they can then give the right aid. This is much more tangible, more concrete, and much more of an "experience of success". (Interview P9)

This statement illustrates that tangible results and direct support to colleagues are the surveillance officers' driving motivations –forming the core of their perceived police accountability. They feel accountable for achieving actual policing effects. This desire for tangible outcomes appears to be driven by the limitations that digital surveillance officers experience due to their physical distance from the incidents they are working on. The professionals themselves cannot intervene. A digital surveillance officer compared her current job to her former work as a local surveillance officer, concerned with urban patrol:

> You could go into the city centre … and have a chat with someone at the car garage. You get through the day because you have human contact no matter what. Here, you just sit inside all day. You don't get beyond this space, and only get out to go to the toilet or to take a walk. (Interview P16)

The abstract notification of the AI violence detection system appears to be difficult to reconcile with the focus on tangible results in police work. In an interview, the role of tangibility in police work was discussed as an explanation for the limited use of the AI violence detection system. A manager explained:

> Yes, an annoying notification bell pops up on your screen … It's too abstract and you still have to figure out if something is actually happening. So, there are actions attached to [the AI notification], and then you have to report it as well. Whilst meanwhile, you are working on something that is very tangible, a [police] colleague actually asking you to tail someone. (Interview P9)

Surveillance officers often give low priority to AI violence detection alerts due to uncertainty and lack of trust in the notifications. Interviews reveal that frequent false positives – such as alerts triggered by waving flags, playful children or dancing – far outweigh correct alerts. These negative experiences reduce the surveillance officers' trust in the system, leading them to pay less attention to its notifications. As explained by a surveillance officer during an interview:

> I think that also has to do with the fact that it's often nothing. And [with a new notification], I then also think it is likely to be nothing.… I think it's just a bit ingrained, because it goes off for nothing for over a long period of time. (Interview P22)

Digital surveillance officers find it challenging to evaluate the technical performance of the AI system. They cannot assess this separately from the social phenomenon (violence) for which the system is intended. An informal talk during an observation illustrates this:

> P3 tells me: "You have to consider it as a tool. Some colleagues don't think it's good because it doesn't always identify violence as something we actually see as violence, like children playing for example. In such cases, the system functions correctly, but does not classify something as what we see as violence". (Observation 240220)

In short, insufficient trust in the AI tool, combined with the prevailing importance of established human relationships as outlined previously, results in AI notifications being excluded from the digital surveillance officers' perceived accountability. Consequently, this contributes to a limited degree of algorithmic accountability regarding the use or non-use of the AI system.

3.2.3 Limited Knowledge About the AI Violence Detection System

A third reason why surveillance officers rarely consider the AI tool as part of their accountability framework is their limited understanding of how the AI violence detection system works. Fieldwork revealed that officers lack information about the system's accuracy, biases and camera coverage. At the start of the observational fieldwork, workplace discussions frequently focused on the cameras where the AI system had been installed:

> P7 says to P11: "put that new camera on". P11 opens the requested camera footage. P7 asks if the violence detection system is on this surveillance camera, but P11 says she does not know. P7 thinks that this is the case due to a red dot visible at the bottom of the screen. He points and says: "yes, there is a red dot at the bottom". P11 responds: "Indeed, but they all have that". P11 then tried to recall the camera numbers where the violence detection system was, using her fingers: "26, 05…". There was a lot of confusion about where the violence detection system is or is not installed. (Observation 240222)

This observation indicates there is a lack of clarity within the surveillance unit regarding which camera footage is monitored by the AI system. This may partly explain the reluctance of surveillance officers to respond quickly to – or feel accountable for – the AI system. In multiple interviews, surveillance officers stated that the presence of the AI system does not alter their working methods. During the interviews, they reported no change in their level of attention to camera footage based on their awareness of whether the AI system was installed.

The officers indicate they have little knowledge of the accuracy of the system. They are unsure whether, or how, the AI system is subject to ongoing development and improvement. They feel excluded from the development of the AI system, and therefore lack insight into its reliability. The following quote illustrates this:

> I have no insight on this. I also lack insight into the past ten notifications, what was registered, things like that…. Was it actually all birds or children playing the past fifteen times? No idea…. (Interview P24)

Surveillance officers lack knowledge and insight into the AI tool and do not feel involved in its development. As a result, they seem to develop no sense of responsibility for the AI system and do not incorporate it into their felt accountability. Thus, AI literacy is not only a legal prerequisite for algorithmic accountability (as stated in the Artificial Intelligence Act, 2024) but also a requirement for actually integrating it into an individual digital surveillance officer's felt accountability.

3.2.4 No Formal Managerial Oversight and Internal Accountability Surrounding the Use of the AI System

A fourth reason why the violence detection system is not part of the surveillance officers' felt accountability is the limited managerial oversight regarding the use of the AI tool. The AI violence detection system is not embedded within the primary governance structure or formal accountability framework of the digital surveillance unit. Instead, the AI tool operates in parallel with existing policing procedures. As a result, there is no direct control or oversight of the use of the AI system by digital surveillance officers, for example, by managers. There are no clear guidelines or expectations for how officers should engage with the AI violence detection system, implying that surveillance officers are not held responsible for delayed reactions to it:

> Intrinsic motivation is needed. If that bell rings, the motivation to respond must come from yourself. (Interview P26)

The lack of internal managerial oversight surrounding the use of the AI system, combined with the dominance of existing accountability relationships between the digital surveillance officers and other police units, suggests that the AI system is not integrated into their felt accountability.

In summary, based on the fieldwork, it can be argued that a combination of i) predominance of human relationships within the surveillance unit, ii) uncertainty and intangibility of the AI alerts, iii) limited knowledge about the AI system and iv) the lack of managerial oversight surrounding the use of the AI system leads to limited algorithmic accountability at the level of individual digital surveillance officers. Many notifications generated by the AI system are often disregarded or addressed only after delays, and there are no established procedures for clarifying or accounting for their use or non-use. This raises questions about whether academia's traditional views of police accountability are still sufficient in a "data-level bureaucracy" (Schuilenburg & Peeters, 2024), in which police organizations are increasingly using AI tools. This issue will be further explored in the conclusion and discussion section.

4 Conclusion and Discussion

This ethnographic study examined how digital surveillance officers of a regional Dutch police unit experience and interpret their accountability in relation to the

use of a real-time AI violence detection tool. Accountability is defined as how, for what and to whom digital surveillance officers feel accountable. This study aimed to uncover the surveillance officers' felt accountability surrounding the use of the AI tool, and how algorithmic accountability is shaped in practice. Observational research and semi-structured interviews have led to the following conclusions.

Implicit organizational norms within the surveillance unit offer digital surveillance officers considerable discretion to carry out the work as they deem appropriate. This allows many different interpretations of their felt accountability and facilitates different AI working styles. Three distinct working styles emerged, with the common denominator that the AI violence detection system plays a limited role for each working style. Surveillance officers with the "hunting" working style are most willing to respond quickly to the AI system. The other two working styles, the "investigator" and "system keeper", respond less or not at all to the notifications of the AI violence detection system. In their experience, AI adds little to no added value to their work.

The AI working styles illustrate that the AI violence detection system plays only a limited role within the police accountability framework as perceived by digital surveillance officers, highlighting a notable absence of algorithmic accountability. The ethnographic fieldwork offers four intertwined explanations. First, human relationships remain predominant for the surveillance officers' felt accountability. Requests and notifications from street colleagues always take precedence over AI system alerts. Second, uncertainty regarding the accuracy of AI alerts is not in line with the digital surveillance officers' focus on producing tangible outcomes. They prioritize demonstrable security results, which clash with the abstract nature, unpredictability and perceived lack of reliability associated with AI alerts. Third, surveillance officers have limited knowledge about the AI system, both about the technical accuracy and the technical iterations of the system. This makes it complex for them to develop a feeling of ownership of the AI system and results in little accountability surrounding their use of the tool. Finally, the AI system is not incorporated into the main accountability framework or governance structures associated with policing activities. Herein, surveillance officers are not required to justify their prioritization of AI-generated alerts within their workflow. As a result, human oversight is lacking, as digital surveillance officers tend to deprioritize the system in most of their practices.

Determining a definitive hierarchy among the four explanations for the lack of algorithmic accountability within the police unit remains complex. Nonetheless, the absence of explicit guidelines governing the use of the AI system, alongside the influence of established – primarily informal – police accountability norms, appears to play a significant role in shaping officers' perceptions of their responsibilities regarding the AI system.

The four explanations provide evidence that the deployment of the AI tool is not part of the digital surveillance officers' felt accountability. Instead, they seem to actively refute the AI system, giving it little attention, either ignoring the system or occasionally responding to its notifications. This AI use legally aligns with criteria outlined in legal accountability frameworks such as the Artificial Intelligence Act (2024) related to human control, oversight and autonomy in the deployment of

AI tools. However, it also raises questions about whether this ignorance can be considered sufficient algorithmic accountability. The following paragraphs examine this issue in more detail.

The findings reveal three significant issues concerning current perspectives on algorithmic accountability. Firstly, the ethnographic data indicate that the "human in the loop" model warrants reassessment to ensure robust algorithmic accountability within police organizations deploying AI technologies. In the examined case, police professionals exercise considerable discretion regarding the integration of AI systems into their workflows. However, the absence of comprehensive formal and informal guidelines creates ambiguity about the specific role and influence of AI tools in the overall policing process. This finding is comparable to the results of other empirical studies on the use of AI within police organizations (Brayne, 2020; Fest et al., 2023; Meijer et al., 2021; Soares et al., 2024). Earlier work already points out that police accountability is an ambiguous, multifaceted and implicit concept (Feys et al., 2018; Walker & Archbold, 2020). Consequently, a human in the loop within the existing police accountability frameworks and approaches does not sufficiently resolve algorithmic accountability issues at the operational level of police organizations. Accountability should not be understood solely in situations where an AI notification is followed up, but also in terms of why and when this is *not* done. This is often under-reported, making critical evaluation of the efficacy of the AI tool difficult. The current dichotomous view of whether or not to give police professionals discretion in the use of an AI system (see e.g. the curtailment and enablement thesis of Buffat, 2015) is therefore insufficient for proper managerial oversight and algorithmic accountability. Instead, a more refined balance between freedom and control is required around the use of an AI tool for effective algorithmic accountability. Based on this case study, academic attention should focus more explicitly on *throughput* legitimacy when using AI; a thorough and transparent governance process that sufficiently oversees the deployment of AI (Grimmelikhuijsen & Meijer, 2022; Schmidt & Wood, 2019).

Secondly, the findings indicate that the integration of AI applications introduces new layers to the existing police accountability framework and should be evaluated within this wider context. Traditional bureaucratic checks and balances designed to guarantee accountability of police organizations may no longer suffice to govern the application of AI tools within policing. A suggestion for future research is to direct attention to the role and interests of the people involved in AI tooling – both within and beyond police organizations – and how they influence formal and informal police accountability frameworks. To understand the effects of AI on the perceived accountability of police professionals, it is therefore necessary to look not only at the interaction between people and the tool (as often assumed within a *sociotechnical system* approach), but also at the interaction with the professionals who design AI tools; the "coding elite" (Schuilenburg, 2024).

Thirdly, the introduction of an AI tool creates a new complexity within existing police accountability frameworks: "trust". Trust between police professionals is undisputed within the current police culture. Digital surveillance officers feel

accountable to follow up on any requests of colleagues, regardless of the enquiry. However, due to the inherent uncertainty of AI alerts, digital surveillance officers must continuously assess how much they can make themselves dependent on an AI application as a reporter of potential incidents (Küper & Krämer, 2024). A complicating factor in this context is that AI systems are continuously evolving and developing, which increases the need for continuous calibration of trust in the system (Kox et al., 2021; Mehrotra et al., 2024). With the introduction of AI systems, police professionals need to continuously assess the credibility of the reporter's source – in this case, the AI violence detection system – to determine whether it should be prioritized. The current accountability structures within police organizations are ill equipped to accommodate these new uncertainties in policing decisions. Hence, algorithmic accountability cannot be considered as an additional relation within the overall police accountability framework, but rather constitutes a distinct and novel form of accountability.

This ethnographic study demonstrates that scientific research on algorithmic accountability should consider sociotechnical challenges to police accountability beyond technical "black box" issues. Considerable attention is currently devoted to technical explainability and transparency of AI applications to increase accountability. Moreover, existing legal algorithmic accountability frameworks impose various technical requirements on AI systems (Artificial Intelligence Act, 2024). However, this ethnographic study shows the importance of acquiring more social, psychological and cultural knowledge to meaningfully assess algorithmic accountability with regard to the algorithmization of police work (cf. Donatz-Fest, 2024; Jørgensen & Schou, 2020; Kitchin, 2017). It requires scrutiny of how AI tools are used in daily practice and in which organizational contexts, how norms and standards are established and how they become part of a larger police accountability framework (Busuioc, 2021; Johnson, 2021; Sartori & Theodorou, 2022).

This research offers insights for practitioners aiming to develop robust internal algorithmic accountability frameworks within police organizations. It first highlights the necessity of proactively defining AI tools' intended purposes and mechanisms for human oversight prior to implementation. The development of explicit guidelines is critical, as current, often informal, internal accountability processes are inadequate to ensure effective algorithmic governance. Furthermore, the study reveals varying levels of AI literacy among digital surveillance officers, resulting in differing perceptions and operational approaches regarding AI systems. Accordingly, police organizations are advised to establish training programmes and ongoing professional development opportunities throughout all stages of AI implementation and deployment.

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