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FROM CRIME SCENES TO DIGITAL SPACES

A mundane object's journey through forensics

by Maja Vestad

Ordinary objects can assume exceptional significance when discovered at crime scenes, providing valuable information for investigations while also offering insights into the routines of daily life and human behaviour – aspects that may contrast with the extraordinary circumstance of the crime itself. In this article, I follow the forensic journey of one such mundane object – a sock – that does not fit the pattern of other evidence in an investigation. The article zooms in on the moments in which the sock transmutes from ordinary to forensically informative through technological interactions that capture, document, and encapsulate its meanings. I argue that in forensic contexts, meaningful information necessitates a transcendence from material to digital spaces, in which a singular object is represented as multiple entities. This shift presents a unique lens through which to observe and understand process of knowledge production in investigatory police work.

Keywords: Knowledge production, forensic evidence, crime scene investigation, materiality

Author: Maja Vestad, PhD Research Fellow,
Department of Criminology and Sociology of Law, University of Oslo

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Introduction

"Inanimate objects, do you have a soul?" (*Objets inanimés, avez-vous donc une âme?*), asks Violette Morin (1969, p. 131, in Hoskins, 1998, p. 8). The question pertains to the nature of existence and consciousness of that which lacks biological life. What do we make of the items that surround us as temporal witnesses to our actions, and especially those items that relate to crime? In a similar vein, Chris Gosden (2005) asks, "What do objects want?". The question of *wanting* can be interpreted several ways; as what the object (as an actant) wants from "us" (and whether *we* do, or can, provide that). It is also a question of how objects influence the actions and beliefs of others; can objects have preferences about how others act towards it? If so, how is that expressed? Objects are social in that they influence, shape, connect, and integrate with practices (see Mol 2002; see also Lundgaard 2023; Vestad, 2024), and an object can be "socially *powerful* [when it] lays down certain rules of use which influence the sensory and emotional impacts of the object" (Gosden, 2005, p. 193, emphasis added). Thinking of objects as socially apt and powerful actors raises questions about the implications for our relationship with the inanimate world, and of how we perceive and interact with the objects that surround us. In this article, I address how the crime scene investigators understand objects' evidential values, and how they work to create investigative knowledge from crime objects.

To explore how knowledge about forensic evidence is produced in practice, this article takes as its point of departure an evidence examination in which an object (a sock) appears as different from other objects collected at a crime scene. It is the task of investigators to explain the significance of this sock, effectively bringing to light what it 'wants'. Indeed, investigatory policing and forensic science are concerned with material objects due to the information they potentially carry; DNA traces recovered on clothes, fingerprints left on door handles, footprints imprinted into floorboards, fibres and hairs collected from vehicles, and other physical traces that can inform and lead to actionable knowledge for the police. The objects on which forensic traces rest hold the potential to inform complex narratives about crime (see Kruse, 2016; Lynch et al., 2008). In the aforementioned examples, the clothes, door handles, floorboards, and vehicles become entangled with the forensic realm, too, and are collected, moved, documented, analysed and stored as trace-carriers and crime objects. While forensic traces originate from spaces investigated as potential crime scenes, the trace-carriers, i.e. crime objects, have pre-existing histories. Beyond serving as mere carriers of traces belonging to their respective owners, they embody their own distinct historical accounts and genealogy (see Daston, 2000; Hoskins, 1998).

Mundane objects are items that "are familiar to us and they are our familiars, in the sense of belonging to our households" (Clark, 2013, p. 155). Following Clark, "[e]ven when they are representatives of violence, we regard objects with presumption because they are lodged in the most ordinary nooks and crannies of our lives" (ibid.). In becoming part of a legal chain as potential evidence, mundane objects carry dual representation of violence and normalcy and become objects of forensic interest (Kruse, 2016), or *forensic objects*, as they are described in the following. The process by which objects *transition* from mundane, everyday items into potential forensic evidence with a function in investigatory knowledge production has received limited scholarly attention (Kruse, 2010; 2015; Sutton-Vane, 2020). The present study therefore explores the intersection of the mundane, everyday nature of objects and their sudden significance in the forensic context.

The article begins with an overview of the theme of object transmutation, and an introduction to the concept of absences and presences as discussed by Law and Singleton (2005). It then explores and unpacks how the presences and absences generated by (mundane) crime objects lead to investigatory knowledge. To do so, I draw on observation data that illustrates in detail the journey of a sock in a crime investigation. The sock is introduced into the investigation as mundane and of less relevance to the investigation than other objects. A discovery on the sock sparks its transition into the realm of meaning, which entails interaction with various investigatory techno-practices that seek to understand and capture it. The sock eventually transitions out of the realm of meaning when its digital counterparts replace it as active, living agents. In the final section, the making of meaningful mundane objects is discussed.

Object transmutation

In this section, I explore how mundane objects transmute into a forensic material culture, within which they inform about more than themselves. In forensics, items of evidence are *knowledge objects* (cf. Knorr Cetina, 2001). For objects to be informative, they must be interpreted through some form of lens, such as forensic expertise. Expertise, however, is in continued change given new scientific discoveries, technological developments, and changes to practice, which means that an object can signify different meanings across time. The recent development of highly sensitive and sophisticated forensic technologies, for instance, attests to the changing meanings and applicability of DNA evidence, which in turn contributes to new discoveries about objects in the forensic realm (Kaufmann and Vestad, 2023; RISEN Project, 2020; Toom, 2020; Wienroth and Granja, 2024). Due to such developments, the meaning of crime objects can continue to evolve also after a case has closed. A question emerging from this trend relates to

unlocking both the information that rests within crime objects, as well as the traces that the forensic process leaves upon objects in return.

In the museum of evidence from the case of Lindy Chamberlain, Biber (2018) notes how objects that were initially understood as "evidence of bad, sloppy science [later became] evidence of something else; the afterlife of the Chamberlain case, in which they prove that a miscarriage of justice rested upon these tiny contested fragments" (2018, p. 12).[1] Indeed, crime objects tend not to inform only about individual cases, but also about the cultures of knowledge that have defined them in the past. There are also objects that have been, if only briefly, knowledge objects in the realms of crime. Sutton-Vane (2020), for instance, posits that a trunk used for storing a body, which now sits at a criminal justice museum, wants "recognition that it was designed simply as a utilitarian object which had been misappropriated and redefined" (2020, p. 292). By suggesting that objects that have been part of criminal investigations want recognition, Sutton-Vane points to the significance of understanding the complex narratives and evolving meanings associated with these objects. Also perhaps more pressingly, that they are ordinary, innocent, and have been 'misappropriated' by becoming merged with the forensic process. The observation suggests too that there are clean and dirty states (see Douglas, 2002) – the utilitarian and the misappropriated – between which objects, like people, may move or be moved, and furthermore, that this process is made possible by forces external to the object, which convolute and change the meaning of it (see Alberti, 2011). Crime and the forensic process disrupts these objectual histories. By becoming associated with something unwanted, objects undergo a transformative process, transitioning from the realm of the ordinary into something much more speculative, possibly tainted by the circumstances of the crime (Biber, 2018; see also Black and Shera, 2017).

Numerous initiatives address the question of what to do with objects that are left behind after crimes, atrocities, natural disasters, and war. Many such objects become museum artifacts, made into visual displays for remembrance and educational purposes (see e.g., Biber, 2018; Fahre, 2023; Whitehead, 2015). Confiscated financial criminal assets can be redistributed back to local communities affected by organised crime (De Vita and Ragozino, 2015; Djordjevic, 2022). Similarly, there are debates about re-using confiscated properties and vehicles for specific local restoration projects in EU countries, with ideas such as "converting mafia-owned villas into socio-cultural arenas, holiday accommodation for disadvantaged people, rehabilitation centres for drug addicts and enabling law enforcement agencies to use confiscated luxury cars" (Vallini and Council of Europe, 2022, p. 2; see also Council of Europe, 2023). These objects are not only objects collected from crimes and crime scenes, but 'crime objects' in the sense that their misappropriation remains part of their social identity (Biber, 2018; Sutton-Vane, 2020; Vallini and Council of Europe, 2022; Whitehead, 2015). Here, the historical account and transmutation are key to the meaning and social power of these objects.

Not all objects related to crime are transmuted through restoration. Many crime objects are returned to their owners, destroyed, or retained by law enforcement. Some are stored by the police in case they need to be re-analysed and re-used in re-trials (McCartney and Shorter, 2019; Shorter and Madland, 2019). In being brought back to the forensic present, objects are re-identified – becoming evidence of something else than they initially were – and repurposed (see also Hoskins, 1989). Sutton-Vane's (2020) observation of the trunk "wanting recognition" further suggest to us that it is the human gaze that gives the object its identity, and that it is a necessary component to make the object social. As such, it is also the human gaze that re-identifies it. The gaze is, of course, "never innocent" (McCorristine, 2015) and crime objects "acquire new meanings as they pass through the hands of different practitioners, custodians, and collectors" (McCorristine, 2015, p. 2; see also Alberti, 2011a). It is through this exchange, the "post-mortem journey" (Alberti, 2011b, p. 4) that pieces of human biology can transmute into a forensic material culture. The confluence of both mundaneness and crime within these objects is what "makes them particularly difficult to interpret" (Sutton-Vane, 2020, p. 293).

In relation to crime, we tend to focus our attention on that which is remarkable because the mundane is not in itself captivating. However, there are "extended chains of causality … from the mundane to the dramatic" (Enloe, 2011, p. 448). It is common for ordinary objects become evidence of something else in the investigatory context (Clark, 2013). Mundane objects can be weaponised, politicised, and used to speculate about crime. As such, the mundane is not 'pre-political' but sites of power (Enloe, 2011). Studying the roles of mundane objects and phenomena in investigatory structures, systems, and dynamics, is such an entry point into understanding how they inform about more than themselves. The interpretations that mundane objects inspire when entering the forensic realm can be conceptualised as presences and absences, which is explored in more detail in the following section.

1 The Chamberlain case was a highly publicised 1980s Australian criminal investigation. Lindy Chamberlain was convicted in 1982 to life imprisonment for the murder of her newborn daughter, Azaria, whom she claimed was taken by a dingo, a wild dog, while they were camping. In 1986, Azaria's clothing was found near a dingo lair, leading to Lindy's 1988 exoneration. Biber (2018) examines the evolving interpretations of the forensic evidence from the case.

Presences and absences

This article sets out to explore how the concept of meaningful knowledge is constructed by key actors in the forensic realm. I approach this task by deploying the perspective of a singular entity (a mundane object) to describe a system (knowledge production in the crime sciences). This is also to say that the crime sciences pertain to parts – monads – that are networked to make up a whole. In order to comprehend a system or a whole, to whatever capacity, it can be useful to examine the part (see Latour et al., 2012) that for the purposes of this study is a mundane object in transmutation. Focusing on an individual object and describing gradually what it does to other actors and what it is subjected to, is useful to understand the systems and practices it is part of. Furthermore, by examining the interplay between the presences and absences that singular objects generate, we may gain better insights into meaningful knowledge production in the forensic realm. For example, the existence of a DNA trace without an established owner generates an absence of an identifiable person and face, giving rise to an unknown and imagined *other* (Jong and M'Charek, 2017). The absence of a known identity influences crime narratives and shapes practice: awareness that the unknown could be anyone, anywhere, and so on. Additional discoveries in turn generate new imaginaries and remove the possibility of others.

This perspective has a home in Law and Singleton's (2005) metaphor of presences and absences. They state, "to make things present is necessarily also, and at the same time, to make them absent" (Law and Singleton, 2005, p. 342). In other words, 'messy objects' appear like 'fires' (ibid.) that convolute the space they are in and that may signify different meanings depending on who interprets them, and how. Messy objects pollute ordered space (Douglas, 2002) and exploring the presences and absences they generate allow us to see clearer that they are indeed fire objects "that cannot be narrated smoothly from a single location" (Law and Singleton, 2005, p. 348). To exemplify, DNA on a door handle makes present the possibility of an interaction between the DNA owner and the door handle. A further possibility of the DNA owner opening and closing the door is also made present, and so forth. Although the action (opening or closing) is less material than the DNA trace, it is a possibility that has been made present, and remain as an 'absent present' that shapes how investigators work with: a) the object of a door handle, and b) the knowledge base that the investigation consists of. Further, Law and Singleton posit that "we cannot understand objects unless we also think of them as sets of present dynamics generated in, and generative of, realities that are necessarily absent" (2005, p. 343). Messy objects, about which various explanations and interpretations exist, are 'ontologically dirty knots' (Toom, 2020) that have transformative capabilities and are "never finished [but] constantly evolve through being associated with ever more objects and subjects" (Toom, 2020, p. 362; see also Holtrop, 2018).

The article examines how an object generates presences and absences that manifest into concrete practices. While the aim is to explore the construction of meaningful knowledge within an epistemic culture, it is not to ask '"who is *this* actor? Answer: *this* network"' (Latour et al., 2012, p. 593), but to explore how objects transmute throughout the forensic context. In other words, the focus is not on outlining a sequence of forensic processes, but to illustrate and discuss how mundane objects both influence and are influenced by the forensic process. Understanding the interconnectedness of present and absent realities underscores their transformative capabilities within forensic investigations. This theoretical perspective offers a framework to understand the dynamics of object transmutation in the production of meaningful forensic knowledge.

Methodology and access

The findings in this article draw on a fieldwork observation conducted at a Norwegian police station. The Norwegian Centre for Research Data (SIKT) approved of the data protection plan, while the police district approved the data collection plan and granted access to visiting, interviewing, and observing crime scene investigators at work. Access is key to conducting effective fieldwork and extends beyond bureaucratic processes, which I will discuss in the following.

Before I was allowed to observe, I was interviewed by the lead officer on the case about how the data would be used. They were careful to stress the importance of data protection because of case sensitivity. The aim of collecting observation data was not to discuss sensitive details of a case, such as parties involved, but to learn about the process of producing knowledge. The data that is presented in this article has therefore been thoroughly anonymised, and any potentially identifiable details about the case, the police district, and the investigators have been removed.

I spent several days at the police station, was present in the crime lab and was allowed to examine items up close. I wore the same protective gear as the investigating officers wore, was asked to assist in some procedures, and my name and title was entered into the lab report. Participatory observation data has offered a different impression of the work investigators do compared to interview data. Those impressions became relevant to my understanding of the various capacities of the investigating officers and the tools they use. Similarly, information about scents, sounds, textures, lights, and visuals, are factors that observation data offers to the overall impression of the procedure undertaken (Ingold, 2013;

Mason and Davies, 2009; Rhys-Taylor, 2013; Seremetakis, 1996). Consequently, incorporating observations of sensory details into the assessment was useful to understand the profession being studied and their navigation of objects and technologies in the forensic realm.

It is worth considering for a moment, however, the different ways in which officers understand their role as participants in scientific studies and what that entails (see Cram, 2018). The presence of observers, especially in places, institutions, or situations that are excluded from the public, is a peculiar situation, and can impact the behaviour and interactions of those present (ibid.). Fieldwork in the sphere of policing tends to reflect "what professionals [the police] consider important and thus what they do" (Souhami, 2018, p. 206). Uncovering the dynamics of how those factors influence the outcome requires mindful and careful critique. Consequently, access to the field also entails a continued critical engagement with the site under study as well as to the collected data afterwards, and a particular reflexivity by the observer. Epistemic boundaries (Gieryn, 1983) and the challenges of translating knowledge across and between epistemic cultures (*translation work*) need to be continually addressed by researchers entering epistemic cultures characterised by expertise (Knorr Cetina, 1999). Forensic expert Niamh Nic Daeid stresses the power of communication in addressing the problem of knowledge transfer between scientists of different fields, exemplified as "I'm not sure that you understood what I think it was that I just said" (EAFS, 2022). I approached this potential translation gap by relaying answers back to the participants in my wording and by persistently requesting elaborations.

Observation notes were taken by hand on a notebook during the examination. The observation notes captured descriptions of the processes conducted by the investigators, the tools utilised (descriptions of tools and technologies), visual and contextual aspects (descriptions of scents, sounds, textures, and lights), quotes and conversation topics (what they said and communicated to each other, and how they described the process to me), as well as analytical keywords (which I wrote down as preliminary analytical interpretations). The handwritten notes were extensively written out after the observation, adding to the notes that were written during the observation. Sensitive information regarding the case and the participants studied, such as their identities, were never registered in the notes. While the findings in this study are based on one examination, it illustrates aspects to be considered when exploring how knowledge is constructed for the police through forensic processes. The next section analyses how meaning is created through forensics, drawing on the written empirical material.

A journey through forensics

In the following, ethnographic vignettes are used to illustrate how forensic examination, interpretation, and communication about a sock leads to knowledge about both crime and everyday behaviour. The analysis is divided into the subsections "becoming", "being" and "after" forensics. When the object becomes forensic, it becomes a node through which to identify investigatory possibilities and problems. It prompts technological interaction that further establishes the object as forensically meaningful. Towards the end of the project, however, after documentation, the object itself is no longer meaningful, but is made redundant: lesser to its digital counterpart. The section shows how the physical entity of the object enters and leaves the realm of knowledge production, and how the digitally contingent meaningful transition influences that which becomes knowledge for the police.

Becoming forensic

> During an early morning laboratory session, I observe a team of crime scene investigators as they document forensic evidence collected from the scene of a violent crime. Their objective, as one investigator says, is to thoroughly examine and verify each minute detail on the items of clothing collected from the scene. The clothes from the upper body are the most crucial because they can relate the most information about the event. Their work for the day is described as a routine procedure, and they expect to be done in half a day. (Observation notes)

Routine procedures that are frequently undertaken may be experienced as mundane to the actors involved. It is described as a standard routine procedure. The officers appear relaxed, and they have an idea of the time it will take to conduct the examination. While appearing to be routine, relaxed, and mundane, these movement are in fact careful choices of materials, objects, movements, and tools that are entirely crucial to the procedure;

> A cardboard box of items is brought out from a storage room. One investigator notices that this box is marked with a reference number, [type of crime], and "crime scene". They carry the box back into the storage room, and enter again with a new box, marked with the same reference number, [type of crime], and "deceased". The box contains paper bags and smaller cardboard boxes. Printed photographs that physically contextualise each item are laid out on a table. The images reveal a square room and a person, both saturated with blood. There are footsteps in the blood surrounding the person. (Observation notes)

While the investigating officers make each of these practices appear regular, they are expressions of ideal practice in this age of forensics. An age in which both attention to contamination risks and which other items (tools, technologies, persons) are present and which are not, are crucial and embedded into the practices of an expert culture. Cardboard, for instance, may be kinder to

DNA than plastic is for long term storage (Waite, 2014), keeping it from moving around too much. If DNA moves (e.g., "slides" off an item), the cardboard collects it and is more likely to keep it in a non-destructed state that allows it to be examined later. These materials, and the practices of moving them, may appear unimportant outside of this context, but at the crime scene they are carefully considered decisions resting on bodies of epistemic experience, knowledge, and cultures that have found it critical to the performance of forensics. The investigators are taking the necessary precautions for all the steps to follow:

> In turn, the investigators lay items upon the table to measure and photograph them. These items have been hung to dry, are stiff, and partially torn. A bloody sweater, a pair of bloody pants. The lead investigator stops at a sock, puzzled, and says, *"there's very little blood on this sock"*. The team gather around for a closer look and indeed the sock is remarkably clean. They photograph both socks next to each other visualise their differences. One sock appears in its original grey colour while the other is of a darker brown shade. New questions seem to emerge, prompting discussions surrounding possibilities such as whether the deceased had one foot elevated while bleeding (*"would that be possible?"*) or whether the sock was put on them at a later stage (*"what could be the purpose?"*). (Observation notes)

The discovery of an item that does not match their expectations represents a key element in the construction of meaning – not only about the individual item, but about all of the objects that have been collected from the scene. When items appear decontextualised, they disrupt (Douglas, 2002). The physical appearance of the sock cannot be explained through the evidence it was collected alongside. It lacks correlation because the rest of the items are so distinctly recognisable as crime objects. One sock, however, has none of those traits. It is clean, dry, whole; ordinary. What is more: it contradicts with the perception of the extraordinary. It is precisely its cleanliness – lack of expected dirt – that makes it stand out in this context as 'matter out of place' (Douglas, 2002). From the data the investigators had prior to this examination, the sock was not of major relevance to the event. The discovery, however, lead to direction because it made present new possibilities.

This part of the forensic examination exemplifies how something gains interest and *becomes* forensic because of how the question of what "becomes present in its absence" (Law and Singleton, 2005, p. 346) unfolds into concrete practices. The absence of correlation through the appearance of the sock gives the investigation pause, and new questions emerge that need further forensic examination. I argue that this is how the mundane, ordinary object becomes meaningful. The methods, tools, and interactions that make up the forensic experience are discussed in the next section.

Being forensic

The core aim of the investigators is to explain the traces that emerge from crime objects. When something stands out from a collective group of objects that seemingly belong together, each such object prompts or generates absences and presences in the form of alternative pasts and futures. Alternative pasts appear as suggestions for explanations (a foot is elevated), each of which are discussed ("would that be possible?"). Alternative futures appear in the investigators' practical relationship to the crime objects present in the room. These discussions both direct and lead to decisions about resource utilisation and management. The mundane object is at this point a forensic object with a distinct history that has to be accounted for. A broad range of tools are available for those practices:

> First, a mannequin is brought out from the corner of the room. The investigators dress the mannequin in a white forensic cover-all suit of the same type as they are wearing. Loose paper is tucked into the suit to replicate the body type of the deceased. The clothes from the crime scene are then put carefully onto the mannequin. White paper sheets are tucked underneath the dark jacket so that the holes in it appear more visible to the camera. An investigator explains that they will upload the photos to their shared computer folders. (Observation notes)

Items in a cardboard box, a paper bag, or on a table are de-contextualised and examined individually to bring to light information about the events, persons, bodies, and subjectivities it represents. Items have been removed from their original context (a person, a place, a time), and are used for other purposes than they were initially intended to. Dressing a mannequin in the clothes of the deceased is a way to bring their original function to light. Moreover, the above exemplifies a forensically material culture in which "very personal things [are] frozen very publicly in time" (Sutton-Vane, 2020, p. 283), namely for the purposes of digital documentation and archiving:

> The investigators decide to re-examine some of the other pieces of clothing with additional tools. A tablet is gathered from the cupboards. It is wired and connected to camera lenses. Its screen indicates through black and white tones if the camera captures the presence of blood. A scan of the pair of pants brightens up the screen and there is no doubt that what looks like blood is indeed blood; it has been confirmed by the device. When pointed to the dark brown sock, the screen is bright. When pointed to the grey sock, the screen is *less* bright. The scanner captures photographs that are added to a digital folder. Thumbnails are visible at the bottom of the screen. (...)
>
> A human blood rapid detection test kit is then used to liquify and test some fibres from the sock. Liquid is dropped onto a yellow square on a thin piece of cardboard paper. The colour blue confirms the result, which the investigators make note of on a notepad. (Observation notes)

These additional tools make information available about crime objects in various formats. For example, the singular node of *blood*

comes to to be represented in multiple forms. Narratives about the blood present as dry flakes on the tabletop that can be collected with tweezers; a blue spot on a small piece of cardboard; as the visual separation of socks documented by multiple cameras; and as bright light on a tablet screen. These information formats each become proof of the presence of blood, which is no longer a singular, binary possibility, but knowledge that is amassed and reconfirmed. At the same time, the presence of blood is interconnected with and dependent on the capacities of tools. Investigators may therefore use various tools to reconfirm results as a way to check the accuracies of the technologies they have chosen to use (see Vestad, 2024). Forensic investigatory technologies also work to make absences, for instance the imaginaries of an elevated foot or the narrative of putting the sock on the foot after the event, which was later ruled out via validating technologies. Through technologically mediated interaction, knowledge about the object is captured and made explainable. It fits with the other objects and is made meaningful.

After forensics

An examination is an attempt to make an object function alongside other evidence. In that space, the object is also a nexus for various resources such as technologies, time, staff, expertise, and digital platforms (Kruse, 2016). The object is meaningful because it provides knowledge when mediated through technologies, human interaction, and communication. While this occurs, duplicates of the information are created that in turn are digitised either manually by the investigators, for instance as words written into a report, or directly through the capacities of the technology, such as a camera. When traces are collected from the object, the digital information becomes the active agent, and the material object itself recedes to the background:

> The objects are packed carefully back into cardboard boxes when the investigators are satisfied with their examination and documentation. The paper covering the laboratory table is crumpled and thrown in a bin bag. Many pairs of plastic gloves are disposed of, as are the white suits. The cardboard boxes are carried into a storage room a few doors down and the door is locked. (Observation notes)

Once a material object has been secured, examined, documented, and preserved as evidence in a crime scene investigation, it is carefully placed in a sealed or closed room to protect its integrity and prevent potential future contamination. As material objects are put away, they have transitioned from active players in the investigation to becoming witnesses of past practices. They join a collection of similar items, where their significance and potential future usage within the realm of forensic archives and potential re-evaluation in the face of new information or advancements in forensic techniques, is uncertain.

We see here "the problem of when an object ceases being human" (Fonseca and Garrido, 2019, p. 5), that is: the blurred "distinction between human remains and trash" (ibid., p. 3). There is a social type of contrast between clothes on a mannequin and clothes in shelved cardboard boxes. The former brings to light the functions these clothes have had, along with imaginaries of their role in and witnessing of the event under examination. The latter treats the clothes as residue. This blurred distinction is particularly visible when human biological material is no longer treated solely as so, but is discarded, becoming irrelevant, no longer handled, treated, or seen. I suggest here that this constitutes a reductionist turn in the transmutation of the object in two ways. First, the object no longer carries the everyday, familiar nature of mundaneness. As a forensic object, it was touched by various liquids, photographed by special cameras, and in other ways subjected to the tools and practices that constitute investigatory forensics. The characteristics that identified it as mundane are no longer dominant to its identity.

Secondly, the object is no longer itself meaningful because digital doubles (Haggerty and Ericson, 2000) exist. The object later takes space in a shadow-world of the forensic where it awaits other, unspecified usage, redistribution, final disposal, or archive. While the physical object remains confined within a restricted environment, the information extracted from it takes on a new trajectory and continues to evolve. The documents (e.g., photographs, reports, notes, recordings) replace the object, which has been made absent. These actual objects "were simply, briefly, drawn into a parallel narrative" (Sutton-Vane, 2020, p. 285) that is later told through documents that are categorizable, searchable, amendable, and can be duplicated and shared. The digitised information diverges from the material object itself and is integrated into the broader body of investigation materials. The course of the investigation then continues by referring to this digital documentation, which is added to digital folders, appears in court, and is described in the verdict for the public and in the media. The digital documents are processed further and shared with others who establish meaning and narratives for it to be a part of, which entails a contingency on relations to the digital and to other digitised objects for meaning to exist, that in turn are equally as contingent on it.

Concluding discussion: from mundane to meaningful

In its everyday context, the mundane is background, blurry, unremarkable, something "(more or less) taken-for-granted" (Olsen, 2010, p. 8). It does not stand out as noticeable. Instead, other objects and phenomena stand out from that which is mundane. The mundane easily goes unnoticed when it sits next to something flashier – such as the torn, bloody objects that at first appeared more valuable in the investigation discussed above. That does not, however, mean that the mundane is less influential in this context – nor that 'flashier'

objects are more relevant to explain the case, although that may be an assumption, as was the case in the investigation described here. Nevertheless, the observations above challenge the perception of the mundane as unremarkable and demonstrates its influential role in providing insights about crime, events, and behaviour. Mundane objects are often overlooked in their everyday context because they appear 'pre-political' and unimportant, but that is a simplification of their transformative power (Enloe, 2011). In a forensic context, mundane objects are 'memorial devices' (Clark, 2013) that carry dual representations of violence and normalcy, providing insight into broader social conditions and human behaviour as well as highly temporal complexities of crime. As these objects enter the forensic realm, I suggest, their mundaneness becomes meaningful because they bring complexities to light, which is discussed in the following.

In any forensic setting, ordinary becomes extraordinary, precisely because of the forensic setting. When mundane, material objects are entered into the forensic realm, they do so as potential bearers of information. This information takes the form of hypothetical presences and absences (Law and Singleton, 2005) that, when discovered, shape the course of the investigation. This only occurs, however, when objects *break* from what is expected, either "by disturbance or interruption, causing them to 'light up' and become noticeable in ways that they were not before" (Lowe, 2018, p. 7; see also Olsen, 2010, p. 23). Objects that appear as 'matter out of place' (Douglas, 2002) demand attention given the logics of the forensic context, which requires that the presence of traces on objects are explained. In the analysis above, the break occurred when investigators placed a pair of socks on a table, under bright lights, and saw differences between them. Their subsequent examinations of the out-of-place sock were attempts to make it matter-in-place.

What is particular about mundane objects, as opposed to dramatic objects, is that they bring along contextual information related to their mundaneness. Objects entering the forensic realm not only re-present through their presence forensic facts, evidence, and knowledge for the police, but also fragments of daily life not directly related to the crime (Farrell, 2022). This duality of representation introduces an inherent complexity to the analysis of such objects (Sutton-Vane, 2020). They generate both presences of violence and of normalcy. Moreover, they signify an interference with the domestic space (Farrell, 2022). In the example above, a sock is both a signifier of violence that occurred in its presence, and of everyday life: socks were worn and used to walk on a floor that existed in a home in which someone lived. Forensic examination of mundane objects thus not only reveals information about the crime but provide insight into the broader social conditions in which it occurred. Indeed, crime objects make present information beyond the crime itself.

Absent, in the case studied here, are events, persons, bodies, and subjectivities of crime. At the police lab, only singular objects removed from the crime context are studied (at first). Present are rulers, cameras, bright lights, forensic procedures, and expert knowledge. Nevertheless, the event, the person, their body, and their rationales are what the analysis of the object is intended to inform about. The discovery of a seemingly bloodless sock transformed the case, albeit momentarily. Amongst items that fit one another due to their visible appearance, the sock did not fit, and had to be made to fit before the investigation could continue. The way that traces are interpreted generates other absences (e.g., narratives that are excluded) and other presences (e.g., leads to new discoveries). These possibilities, in following Law and Singleton, "appear from the point of view of the [trace], as othered realities that both do and do not belong" (2005, p. 345).

Crime scene materials gain scientific status and value once they enter the context of an investigation. As scientific objects, they are briefly ontological entities (see Daston, 2000). By conducting various tests, such as DNA analysis, fibre testing, scanning, and photography, these objects become intertwined with the production of forensic facts and knowledge. They are entangled in practices that can appear as mundane routines to outside observers but are rooted in expert knowledges. What is more: following the view of Knorr Cetina (2001), when crime objects are the focus of the investigators, their use and utilisation of tools merges with the experts to make a practice. The performance of forensics makes obsolete the otherwise clear separation between the individuals performing the practice, their technologies, and the crime object. What is particular about contemporary forensic investigations is the role of digital technologies as part of practice, not only in the moment of examination, but as a means to archive knowledge and turn that knowledge actionable. As illustrated above, material objects recede into the background after they have been digitally documented. The digital counterparts enter into other complex networks, systems, and processes, and come to represent the meaning of the object in relation to those other entities. The transformation from a material object to a digital representation allows for a different form of integrated interaction with other crime objects. Digital forensic technologies therefore encompass a key role in the making and maintenance of meaningful forensic knowledge. The object – having transmuted into an evolving digital entity that can later be revisited, reanalysed, and inform – is an object that "appear[s] to have the capacity to unfold indefinitely" (Knorr Cetina, 2001, p. 190).

Mundane objects link the unknown to the well-known, the incident to everyday existence, and highlight through their presences the complexities of scientific knowledge, crime, human behaviour, and epistemic practices. Mundane objects transmute under the forensic lens, after which they are objects with scientific biographies (Daston, 2000). Transmutation occurs when removed from their normal, everyday context and entered into a sterile, bright, clean forensic environment, in which they become highly visible. Their significance and meaning begins to transform due to the capacities

of forensic technologies and practices and within the narratives and interpretations generated by investigatory expertise. By making other entities present or absent, they become meaningful. A transcendence into digital realms, where systematisation, maintenance, archive, analysis, and relations to other entities is possible, is necessary for meaning to become actionable knowledge.

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Author description

Maja Vestad is a PhD Research Fellow at the Department of Criminology and Sociology of Law, University of Oslo. Her current work focuses on evidence and knowledge production at crime scenes, in labs, and after trial. She also studies the relationships between state actors and the rule of law in domains such as policing strategies, crisis management, evidence preservation, and collective memory construction after crime.

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