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Dirty Work? Policing Online Indecency in Digital Forensics

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More than 80 per cent of the work undertaken by digital forensics examiners deals with images of sexual abuse of children. While a growing body of literature analyses the emotional dimensions of coping with such material and the need to minimize exposure to it, less attention has been given to the day-to-day organizational arrangements in which such images are processed. Using ethnographic observations and interviews with practitioners, police officers and senior managers in four constabularies in England, this article examines the tension-ridden place for managing extensive contact with indecent images of children and argues that despite handling of transgressive material, digital forensic examiners distance themselves from imputations of being ‘dirty’ workers.

Key Words: digital forensics, police, indecent images of children, virtual dirt

INTRODUCTION

The advent of the internet has amplified the manner and speed at which Indecent Images of Children¹ (IIOC) are created, accessed and exchanged ([Lee et al. 2020](#)). This article considers the tensions surrounding the processing of IIOC and examines how digital forensic examiners (DFE) deal with this material and manage their own sense of occupational identity. As these examiners routinely sift through vast amounts of digital information for incriminating evidence involving under-age, vulnerable victims unable to give consent ([Jewkes and Wykes 2012](#)), understanding how they undertake their work and perceive their professional standing is key. Since duties involving the identification of transgressive content in online materials are increasingly commonplace, the case of DFE can also speak to wider demands today.

While psychological and social work studies have examined the mental health of practitioners ([Perez et al. 2010](#); [Harms 2011](#)) and the role of individual coping mechanisms ([Powell et al. 2014](#); [Hurrell et al. 2017](#)), comparatively little attention has been paid to the working environ-

1 Various terms are employed to describe online child sexual abuse material ([Lee et al. 2020](#)). We use IIOC as the prevalent expression in the criminal justice system in England and Wales to reflect the harmfulness and illegality of this material.

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oments mediating the exposure of DFE to IIOC. To address this gap, we draw on ethnographic observations of digital forensic units (DFUs) in four police forces in England and interviews on the occupational experiences of police staff tasked with the identification, extraction and analysis of IIOC.

Sex crimes, particularly those against children, have long been the topic of public opprobrium and criminal justice retribution (Lynch 2002). Hence, we approach the handling of IIOC as a form of 'dirty work' (Hughes 1962) to explore how notions of 'dirty' are constituted in relation to the DFE role. Our findings show that although IIOC were considered transgressive by all those involved in their identification and classification, DFUs had to negotiate many questions about how to manage them in practice. This management led to tensions stemming from differences in how dirt was understood. We argue that while the processing of IIOC is regarded as dirty, and formal and informal strategies exist to alleviate workers' exposure to this type of material, the DFE interviewed did not regard themselves as belonging to a tainted occupation. We seek to explain why this is the case and highlight how occupational cultures, organizational seclusion and a lack of public recognition serve to shield examiners from self-perceptions of taint. The contribution of our analysis is two-fold: the ethnographic focus on the handling of virtual dirt adds a significant dimension to scholarship on dirty work in policing and expands its scope. Secondly, by illuminating the activities of DFE working in forensic support services, our findings enhance debates on the occupational dynamics and tensions experienced by civilian workers in policing.

The article is organized as follows: Section Background examines the rise of IIOC-related offences and the challenges they pose for law enforcement agencies. Section Dirty Work, Policing and Trauma reviews themes related to dirty work, policing and trauma. Section Research Design outlines our empirical research design. Section Managing Indecency presents our findings on the collective arrangements and individual strategies associated with the processing of IIOC in the forces examined and the tensions therein, in relation to the umbrella notions of visibility, sorting and care. Section Dirty Images Not Tainted Occupations then elaborates how while routinely handling transgressive images, DFE distance themselves from imputations of being 'dirty workers'. We conclude by considering the limitations of this study and reflecting on the implications of our analysis for other occupational groups that provide vital but socially unrecognized roles monitoring digital transgressions.

BACKGROUND

Sexual abuse offences against children are widely perceived as 'the most heinous of crimes' (Hurrell *et al.* 2017: 637). Significantly influenced by the development of and access to online image sharing platforms, their number is escalating worldwide, together with the demand on law enforcement agencies (Kloess *et al.* 2019; Lee *et al.* 2020). While existing figures are unlikely to reflect all related illegal activity, in the United Kingdom alone there were more than 5,400 connected arrests and 7,600 children safeguarded or protected in the year ending September 2019, which represented a tenfold growth over the previous 3.5 years (ONS 2020).

In the decentralized policing system of England and Wales, 'policing the filth' (Jewkes and Andrews 2005) is a pluralistic endeavour combining various governmental and non-governmental agencies working simultaneously at national, regional and local levels. Established in 2001, the National High-Tech Crime Unit was the first attempt to coordinate responses to computer-based crimes. At that time, an estimated 25 per cent of its investigations concerned computer-mediated child sexual abuse (Jewkes and Andrews 2005). Today, most constabularies have DFUs providing technical assistance with the extraction and analysis of seized digital devices for all types of crime. IIOC-related offences represent over 80 per cent of DFU case-work in England and Wales, an estimation reflected in figures for other national jurisdictions

(Irvine 2010). Inadequate IT infrastructures and funding have led to backlogs also due to the size, diversity and complexity of devices examined (Cheshire 2018).

Most DFE are civilians with specialist technical expertise to reconstruct digital evidential trails (NPCC 2020). Some are retired officers supplementing their police pension in a civilian role. Occasionally, police officers work as DFE, although in the four forces studied their numbers were low (less than 10 per cent of the workforce). Occupationally, DFE belong to the ‘extended policing family’ (Crawford and Lister 2004), like Civilian Investigators (Rice 2019) or Police Community Support Officers (O’Neill 2017). Similar to fingerprint examiners and crime scene investigators, DFE are formally aligned to in-house forensic support services. While nationally their numbers are unknown, the DFUs observed had between 8 and 12 members each in 2017, with capacity increasing around 30 per cent following internal restructuring in 2020. Currently, there is no standard national competency framework for digital forensic skills, no consistency of roles across forces or support for career progression. Given existing demand and the competition from the private sector, the recruitment and retention of DFE remain challenging (NPCC 2020).

DIRTY WORK, POLICING AND TRAUMA

Dirty work (Hughes 1962) provides a valuable lens for exploring how contamination from and the containment of taint bear on occupational identities. The expression refers to tasks that are necessary for the effective functioning of society and perceived as tainted by workers themselves, clients and/or the public at large (Huey and Broll 2015). The ‘dirt’ in question can be physical (handling grime, blood or effluence), social (working with stigmatized individuals), moral (working in sinful, intrusive and deceptive circumstances) or emotional (dealing with threatening, burdensome or shameful emotions—McMurray and Ward 2014). Analyses have also started to acknowledge the “brutal ‘dirt and waste’” of digital traces (Ruckenstein and Turunen 2020: 1027) in relation to child sexual abuse investigators (Powell *et al.* 2014) and online content moderators (Roberts 2016; Gillespie 2018), making virtual dirt an increasingly present, yet underexplored category.

Against the perceptions of taint and its negative effects, studies have examined the strategies whereby workers and managers attempt to reconfigure how a line of work is understood (Grandy and Mavin 2012). For instance, organizational literature shows how workers develop strong occupational cultures to (1) *reframe* the meaning attached to an activity, (2) *recalibrate* perceptual and evaluative standards to amplify its merits and (3) *refocus* their work by diverting attention from its stigmatized features towards more positive aspects (Ashforth and Kreiner 1999).

Analyses of dirty work in policing have considered how occupations negotiate forms of social and physical taint in relation to the varying levels of professional and public prestige (Dick 2005). In homicide investigations, for instance, proximity to physical dirt impacts on investigators’ perceptions of their work (Innes 2002; Huey and Broll 2015), with detectives using fictional media representations of their occupation to strengthen their professional identities and lessen taint (Heinsler *et al.* 1990). In the case of vice-squad work (Schneider *et al.* 2020) its vicinity to carnality underpins its characterization as ‘dirty’. Relatedly, officers in sex crime units neutralize the resulting moral taint through operational and organizational cynicism (Spencer *et al.* 2019). Similar to sex offender managers (Nash 2016), their work is less respected and seen as distant from the core police mission.²

2 In her analysis of Swedish crime scene technicians, Kruse (2015) shows how the handling of repulsive items (e.g. body fluids, human remains), tests expectations they can deal with disgust. However, Kruse does not link their work to occupational taint.

A central task of this article is to understand how dirt is defined and managed in relation to the IIOC-related work of DFE. In their identification and classification of horrific materials depicting child sexual abuse, these specialists engage in practices that help maintain social order and bring perpetrators to justice. However, they also risk being tainted and stigmatized by their association with these duties and materials. Most analyses of those working with IIOC employ quantitative methodologies (Hurrell *et al.* 2017; Kloess *et al.* 2019) and similar to topical qualitative research, they tend to centre on vicarious trauma, the well-being of investigators and individual coping mechanisms (Powell *et al.* 2014). Empirical analyses offering a grounded view of the challenges of working with virtual dirt in policing are scarce (Spencer *et al.* 2019). Existing practitioner accounts, such as Cheshire's (2018) study of personnel responsible for the categorization of IIOC in an East Midland force, show how role demands change over time, indicating that the impact of IIOC is fluctuating.

While the experiences of police officers and law enforcement personnel having to take on the onerous task of categorizing images have been discussed in policing literature (Burns *et al.* 2008; Perez *et al.* 2010), DFE as a distinct occupational group has not been explored in studies on the diversity of police cultures (Loftus 2009, Reiner 2010) and civilianization of various tasks (Rice 2019). This omission is significant as the identification, extraction and analysis of IIOC do not always fall within the remit of police officers. As discussed below, in England and Wales, such tasks are usually assigned to DFE, who select these materials for officers' viewing. Thus, conflating roles and remits can obscure occupational groups rarely scrutinized and the intricate dynamics between the different policing arenas of operational and service support.

RESEARCH DESIGN

Guided by the 'ethnographic imperative' (Marks 2004) to understand organizational transformation and structural change *in situ*, our methodology aimed to capture the complexity of dealing with IIOC to produce an empirically informed perspective on organizational arrangements and experiences. Characterized by a 'committed localism' (Marcus 1995), it sought to illuminate the backstage of an occupation embedded in police forces, but like other forensic service support in England and Wales, typically subaltern to investigations (Williams 2001).

The empirical data was collected over two research projects³ that examined how digital forensics is applied in policing in England and Wales. Our analysis draws on 270 hours of ethnographic observation undertaken between 2017 and 2020 at four DFUs that provide contractual services to four constabularies in England, and 67 semi-structured face-to-face interviews with practitioners, government representatives and independent expert witnesses. Relevant national policy and internal guidance documents (Service Level Agreements, Standard Operating Procedures) supplemented the data. The first author also completed an induction session for new DFE designed to introduce them to the range of IIOC they were likely to encounter, thereby serving as a form of 'stigma preview' (Ashforth *et al.* 2017) to their duties.

Site access was provided through a forensic collaboration that supplied services to the four forces and whose activities were the focus of both projects. Institutional gatekeepers helped identify key contacts across the forces. Once fieldwork commenced, participants were recruited through a snowballing method. Forty-one of interviewees (referenced below as DFE), worked in DFUs as technicians, investigators and team leaders. They were predominantly civilians aged between 22 and 57, and on average had been working in DFUs for five years. About a third, typically younger DFE were qualified to degree level, with the remaining having a range of vocational qualifications. Around 20 per cent were female, with numbers growing slowly over five years.

3 See funding information.

Fieldwork covered technical processes and exchanges between DFE, police officers (PO), and senior managers (SM). The interviews supplemented the observations and explored the impact of digital forensics development on investigations through participants' narratives on organizational change. Each interview lasted typically 90 minutes and was audio-recorded, transcribed, coded and thematically analysed (Braun and Clarke 2006). Anonymized interviews and fieldnotes were coded independently by the first and third authors, with codes subsequently compared for accuracy and revised. Once code agreement was reached, information held in each code was checked and collated into themes. Constant comparison between the interview and observational data was undertaken to confirm that the overarching themes reflected participants' views. The discussion below builds on these themes.

Geographically, the four forces covered overall a large rural area, a metropolitan zone and several cathedral cities in the South of England. The two bigger forces each served populations of about 1.5 million and had around 3,000 officers. The two smaller forces each served around 700,000 people and employed about 1,000 officers. The DFUs focused on 'dead-box forensics', which involves the retrospective analysis of seized devices, rather than live network analysis. Cases were prioritized through risk assessment tools and placed in a queue for analysis. At any one time, each DFE had between six and fifteen cases at different levels of completion in their workload, with several new 'jobs' waiting in the queue. Work demands were comparable to those reported nationwide and characterized by additional accreditation requirements, a constant fight for organizational resources, fatigue from organizational change and frequent staff turnover, with the added difficulty of streamlining procedures across the four collaborating forces.

Process-wise, once a case was accepted and devices reached the DFUs, the first step was making an exact copy of their contents for analysis. This copy was then allocated to an examiner who, when ready, started the identification and analysis of IIOC, followed by liaising with the investigating officer to categorize them. Afterwards, examiners double-checked the officer's categorization and completed the investigation with a report. In practice, various delays affected this flow, e.g. expecting devices to be delivered, clarifying with officers the investigative strategy (which could change as new information emerged), or waiting for officers to complete the categorization. Digital forensics work involves functioning in heightened risk situations, under constant pressure, while at the same time dealing with task fragmentation and administrative burden. The technical processes behind the extraction of images generate periods of inactivity while waiting for software results. DFE filled these gaps by responding to queries, liaising with officers, writing statements and reports, preparing for court appearances, training, team meetings and carrying out software updates and asset inventories. As part of the forensic service collaboration, the four DFUs shared examination procedures and well-being services, such as mandatory counselling support. However, not all had comparable office arrangements or enacted protocols in similar ways, which impacted, *inter alia*, the extent to which examiners felt supported their forces and part of a wider policing community.

MANAGING INDECENCY

While recounting administrative procedures provides one way of characterizing how IIOC are processed within DFUs (Rappert *et al.* 2021), in this article, we examine the handling of IIOC as a process of managing contamination from and the containment of 'dirt'. The status of IIOC as a threat to moral order (in other words, dirt) is formally established in the law. In the United Kingdom, Section 1 of the Protection of Children Act 1978 and Section 160 of the Criminal Justice Act 1988 stipulate penalties for knowingly possessing, making and distributing IIOC.

The status of IIOC as dirt is also evident in existing studies, in the way such images are regarded by police officers and personnel as highly affective (Burns *et al.* 2008), detrimental to

well-being (Perez *et al.* 2010), and likened to physical dirt (Harms 2011).⁴ During fieldwork, examiners' moral distancing from the users and producers of IIOC was commonplace. Echoing other analyses (Spencer *et al.* 2019), DFE collectively appraised the material scrutinized as disturbing and debasing, and offenders as 'deranged', 'evil' and 'the lowest human denominator'. While in some lines of dirty work managers seek to normalize tainted materials, actions and individuals, for instance, by taking the perspective of consumers (Ashforth *et al.* 2017) or minimize their significance through an attitude of 'tempered indifference' (Gunby and Carline 2020), we did not observe such practices.

As we elaborate below, the legal and moral status of IIOC led to various strategies to sequester them. However, the sheer volume of these materials and the need to process them as part of multi-agency criminal investigations mitigated this prospect. While IIOC are dirt, they are not dirt that can be eliminated or cleansed, regardless of criminal justice retribution. Consequently, managing their handling is problematic. Below we examine the tension-ridden practices of dealing with IIOC in relation to three core dynamics, namely visibility, sorting and care.

Visibility

One instance of how IIOC are sequestered relates to the spatial arrangements within which processing work is undertaken. The DFUs studied were physically housed in various police buildings. Access to them was password and lock protected and movement within them controlled through security and surveillance systems. Meeting outsiders (typically other police personnel) occurred away from the examination areas.

Operationally, the DFUs were usually co-located with the Police Online Investigation Teams or their equivalents, giving these officers access to digital forensics advice from the earliest stages of an investigation and allowing on-site support at critical times. Spatial arrangements facilitated order in the workflow, with different parts of the room dedicated to specific tasks. For instance, acquisition quarters where technicians extracted data from seized devices for future analysis, were typically confined to adjacent rooms or the corner of open plan offices. While two DFUs had separate rooms for the mobile phone examiners, in the other two their desks were positioned close to the entrance, as these specialists had more contact with officers. All examiners carried out IIOC work at their desks.

Seeing others and the potential to be seen were multifaceted constitutive organizing processes and presented as a key to the staff's well-being. For instance, one DFU was spread across three rooms in an old police headquarters building, a setting regarded by managers and examiners alike as detrimental to mental health:

...environment is not great ... office set up is not healthy... so we're trying [for] an open plan office bringing all the staff together 'cos they're segregated between the mobile phones and the computer forensic staff... people examining the phones are seeing just as horrific stuff as ... the computers but it's creating that atmosphere where people can talk about that material and not feel embarrassed saying these particular words or these descriptions and that because they need to discharge or... need to unwind... (DFE3.F1⁵)

Across the DFUs, open plan arrangements were perceived as instrumental to being able to identify and address the emotional implications of exposure to IIOC. Working in isolation was 'risky', in comparison being capable to 'check in' on each other was portrayed as essential to maintaining the well-being of the team. In practice, such cognisance depended on the examiners' ability to signal distress and on their colleagues' capacity to recognize it.

4 Mobile phone examiners often handle devices using disposable gloves: many devices come from inmates, being hidden through unsanitary means and carrying a Hepatitis B risk, traces of illegal substances or blood.

5 In the following analysis the attribution of quotes indicates the participant's role, interview number and its force.

Although open plan spaces enable collective monitoring and surveillance for the DFE, they hazard individual exposure and traumatization, especially for outsiders. Response to such concerns was through the supervision of those who asked to enter the unit. Viewing facilities for officers to categorize IIOC were housed outside DFUs and provided a quiet and private space for review. Their self-contained character contrasted with the open space of examination areas routinely processing IIOC. This arrangement also illustrated the widespread view among DFE that those with a limited experience of categorization need to familiarize themselves with IIOC, maintain their focus uninterrupted and avoid distraction. The officers' well-being was monitored by examiners who periodically checked on their progress and well-being and regularly debriefed them.

When outsiders were allowed into the main examination areas, their presence was taken by examiners as indicating they could be exposed to IIOC, unless this was known to be otherwise. At the start of the fieldwork, the first author's initial visit to the first unit was accompanied by pre-entry discussions with managers about the nature of the material that may be sighted, followed by the team leader's request to the staff to momentarily mask their screens' content as the researcher was introduced. While subsequent visits did not result in similar elaborate protocols, a level of care was always observed in relation to visits to the DFUs from those outside the force and on occasions screens were blanked.

Outside the DFUs, the movement of IIOC created additional complexities related to their visibility in court, where images and footage are rarely shown because of concerns about the re-victimization of children and the traumatization of the jury, judge and legal counsel. Thus, while most of the examiners' working time is spent processing IIOC, the material is treated by the courts as potentially too distressing for viewing. Evidence is usually presented in a written format that describes the act and the emotional state of the victim/s according to what is known as the *Thompson Schedule*. Importantly, in relation to the dirt status of IIOC, the inability to display these images was *not* generally regarded as problematic by those interviewed. Instead, describing the graphic materials for the court was occasionally considered *more* upsetting than seeing them:

We write a schedule of the actual images that are going to be charged on... a written description... quite a unique format... the first half... is just a straight, no holds barred description... and then the last sentence... gives it a character and a tone... it might just say... there's a young girl standing fronting an adult male and whatever it might be but at the end it says... that the young girl is crying or appears in distress and it gives an emotional tone... I've written a few of those, they are more impactful I find than the actual images themselves... (DFE7.F2)

This statement captures the examiner's recognition of the contaminating effects of such material and his understanding of the impact made by providing an emotional context to the written descriptions of physical activities. As such, the affective impact for other criminal justice actors is detached from direct access to the visual and audio details of IIOC. Instead, what is recounted in the examiners' descriptions provides the evaluation of the examined material as transgressive of the legal and moral order.

Sorting

Once devices are ready for analysis, examiners extract IIOC and categorize them with the officer in charge of a case. The severity of IIOC is assessed in the UK legislation according to a three-part classification ([Sentencing Guidelines Council 2013: 76](#)):

- Category A: Images involving sadism, penetrative sexual activity or sexual activity with an animal,
- Category B: Images involving non-penetrative sexual activity,
- Category C: Other indecent images not falling within the categories A or B.

The DFUs studied have various technological systems to assist with image identification and categorization, thereby speeding-up investigations and reducing exposure (Rappert *et al.* 2021). These include pre-analysis software to identify the items with the most probative value through technical triage (Wilson-Kovacs 2019), software packages to detect IIOC, and a national repository of images (CAID), which is used in 39 of the 43 forces in England and Wales by forces for the identification of victims and prosecution of offenders. Coordinated by the Child Exploitation and Online Protection, a government agency linked to the National Crime Agency, CAID helps to classify each image according to its severity.⁶ Images are included in CAID following a multi-tiered deliberative process. At the force level, a minimum of two investigators must agree on the categorization of each image. Once investigators from at least three different police forces also confirm its classification independently, the hash-value of the image can then be stored on CAID, enabling its automated identification in any subsequent searches nationwide.

Although CAID notionally serves to reduce the examiners' exposure to IIOC, the need to process vast amounts of data means the overall sum effect can be minimal given the time taken to identify the images, verify officers' categorization and upload new entries to CAID. Our participants highlighted the need for specific case-by-case searches when using triage software, and having to find a balance between the comprehensiveness of each search and the speed with which the evidence was produced:

If you've got... two terabyte hard drives or multiple terabyte drives and you're running a raw keyword search against effectively every bit of data... it can take... potentially weeks... to extract pictures and movies because it's so inefficient and it's not multi-threaded... (DFE6.F4)

The push for automation raised its own concerns. Additional measures were required to make CAID work for investigations, for instance by tailoring searches during triage:

Historically we've had our own hash database of child abuse images. Obviously CAID is built on... a bigger database... so nationally everybody sort of feeds into it. The problem with triage is that because we're using it on a particular subset... trying to get it through as quick as possible... we have to really cut down the number of hashes we include in triage so it's not... even our own full hash set and it's definitely not the full national CAID hash set... triage also hits on key words... and images... a lot of the time if it's not child abuse material... it will still ping up the top ten percent of images likely to be child abuse which is invariably porn or something like that... with a lot of skin tones... (DFE2.F3)

Moreover, interviewees presented CAID as a guiding tool prone to error. Like analyses of online content moderation that emphasize how AI systems require operator-led adjustment (Roberts 2016; Gillespie 2018; Ruckenstein and Turunen 2020), considerable examiner input was needed to manually double-check the accuracy of the entry data in the repository for false positives and perceived borderline cases (for instance, in relation to the age of victim). As such, automation addresses concerns about exposure to IIOC only partially and does so by trading off other considerations.

The need to sort through images also raised questions about the appropriateness of specialization. Once IIOC were identified by examiners, investigating officers usually undertook their categorization at DFUs, which created further difficulties. Concerned by the possibility of vicarious trauma, some officers refused to classify the images. In these instances, examiners carried out the categorization tasks instead:

6 CAID assigns each image a hash-value, represented by a fixed-length string of characters.

We...occasionally get officers... [with] a child abuse job [who]...can't look at the images...I might be quite comfortable with this day in and day out but not everybody is and the whole process is designed to protect people from having to see the images and then those people protected who are in the images as well. (DFE1.F1)

At one of the DFUs, the constabulary's policies associated with specialization went through a series of shifts: first, the force's former chief decided the risks associated with IIOC were so significant that classification needed to be undertaken by both examiners and officers. Then, the force reverted to the previous practice of handling IIOC classification within specialized units, which was favoured by most examiners, as one examiner explained:

...I am doing it all the time, so cases don't have that impact on me, whereas eight years ago when I was doing one every three months, I remembered that case for the next three months until...the next job because it was rarer and I remembered every detail of it...I know I can cope with it, I can recognise when things are not right, I have got that occupational health support if I need it, we work together in a team and we look after one another. Whereas if you get an officer that has never dealt with it before and they come in, you end up almost having to babysit them and talk through it and it's almost therapy sometimes because they don't know how to deal with it. (DFE3.F2)

Adding here to the prospect of managing virtual dirt for officers, DFE also face emotional matter-out-of-place (McMurray and Ward 2014) when dealing with the impact IIOC have on officers. In doing so, they engage in forms of support that remain largely unacknowledged.

Care

The recognition that exposure to IIOC can induce vicarious trauma resulted in the adoption of several formal mental health measures across the DFUs studied, including bi-annual counselling sessions, a peer-to-peer 'buddy' system, regular one-to-one meetings between examiners and team leaders, workload and well-being reviews and quarterly welfare resilience questionnaires. A senior manager explained how these measures sought to make the reprehensible dirt of IIOC a topic for explicit discussion:

Three months one-to-ones, so the team leaders are actually told to sit down with a member of staff and say 'can you tell me about the worst job you've dealt with in the last three months?' So, it's not 'are you all right yeah ok, well, crack on'...if you ask me well what was the worst job you've done in the last three months, 'well actually there was this one job and...' you know, just that open discussion, again, it's encouraging that environment where it's actually all right to feel that way.

Team leaders also used formal measures to keep track of the number of consecutive IIOC 'jobs' each examiner processed, and (when possible) alternate case assignments to provide some variety. Similar to Harms' (2011) findings, team leaders were instrumental in monitoring well-being. In one instance, the welfare questionnaire scores indicated the distress experienced by a mobile phone examiner. The team leader's prompt intervention led to the examiner disclose how during processing evidence for the prosecution of rape of an infant, she realized she knew the baby's family, which amplified her anguish and remorse for not being able to identify the footage sooner. Despite the support offered, she left the unit soon afterwards to take a non-examining role in the force.

The range of formal support was complexly positioned in examiners' narratives in ambivalent terms. Counselling, e.g. was notionally regarded as positive for helping staff to deal with the emotional aspects of categorization, but its provision was patchy:

I've been here nine years and had two counselling sessions... they stopped it for about two or three years with the finances ... because ... everything got stopped ... (DFE2.F1)

Personal experiences of counselling were reported as largely negative, partly due to the ambiguity surrounding booking arrangements and partly because of what was perceived as an unfocused service:

... I booked one and ... went once and I don't know if she'd done any others before that, but I was chatting to her and the parting comment was, 'shall we make another appointment for next week?' [laughs] 'Nah, you're alright thanks! I don't know how that works with funding so let's leave it!' And I haven't been back since. (DFE4.F3)

Inconsistencies in the counselling service offered little opportunity to build the examiners' trust, with many reluctant to explain themselves to counsellors. Examiners repeatedly referred to formal support mechanisms as an occupational responsibility rather than a personal aid and portrayed both counselling and one-to-ones as either non-specific or as focused solely on their ability to carry IIOC-related tasks in relation to their job performance.

The ineffectiveness of counselling was often linked to the importance placed on examiners' self-understanding about whether they could 'handle' their role. What was demanded in working with tainted materials was variedly portrayed:

I think you can either handle the material or not, and one case... can be more distressing than the other so, I think if you were fed cases containing the material that particularly upset you continuously, then you wouldn't want to be doing it for very long ... it's about other stresses ... work-life balance and everything else that's going on [in] your life that can contribute ... It could be all sorts of things. (DFE2.F4)

This statement illustrates how examination demands are connected both to IIOC content and wider considerations beyond the transgressive material. Relatedly and echoing [Cheshire's \(2018\)](#) findings, when terms such as 'stress' and 'pressure' were used to describe occupational demands, examiners often associated them to workloads and performance targets rather than exposure to IIOC.

Given the varied characterizations of their responsibilities, being able to foresee what may 'trigger' an emotional response was considered as something that could never be fully accomplished:

We get counselling, I've only been once, we're supposed to have it every six months... we're really being made to have it ... I just think it's a really difficult one because you should know yourself whether you can do it or not ... it's really, really difficult and I don't know if there's ever a trigger. So, am I going to see too many vaginas that one morning and go 'that's it, can't cope' ... and go mad? A big don't know. I don't think so, but who knows. (PO1.F1)

Similarly, other participants frequently argued that regardless of the pre-preparation training offered to new DFE to familiarize themselves with the type of material they were likely to encounter, how any individual would fare was something that could only become clear in time.

With the difficulty of knowing one's own reactions, the assessment offered by workplace colleagues mattered when dealing with the emotional demands of examining IIOC. The need to recognize individualized forms of distress was also presented as an essential quality of team leaders:

...one examiner is going to start effing and blinding when he starts getting really stressed. Another will go really quiet and just go like off colour. A third will vocally say 'oh my God I can't believe this person, fucking hell'...and all that sort of stuff. So...you build up that knowledge of your staff... It's all about supporting each other and the team, trying to keep that healthy balance. (Senior Manager)

As such, rather than individual expressions of disgust serving as emotional dirt that threatened the order of the DFUs, managers spoke about their role as creating the conditions for such expressions to strengthen group solidarity.

Recognizing individualized forms of distress was tied to individualized forms of coping. Different distraction techniques were deployed by examiners, such as the use of fidget spinners. Some units collectively listened to music while they worked. This appeared to help DFE disconnect from the task undertaken, with examiners present in their duties, yet sensorially removed from IIOC content. The three seconds rule (spending a delimited amount of time to assign an image to a category), five seconds fast-forwarding through videos and muting the sound were sometimes used by examiners to cope with processing footage of sexual abuse. However, it was not always possible to resort to these strategies, especially when DFE had to write court reports or encountered difficulties with classification.

Given the importance placed on self-understanding, it is perhaps unsurprising that informal mechanisms to deal with IIOC exposure were preferred by examiners. This included activities such as socializing with colleagues, typically outside work:

counselling it's just having a chat about you ... I'm obviously not an expert on counselling so maybe that's the way it should have been and she's just skilled in appraising people but you know I could have the same type of chat down the pub with my mates over a beer or two. (DFE3.F2)

Walks with peers were also seen as a meaningful way to mitigate feelings of isolation. These approaches sustained examiners' 'community of coping' (Korczyński 2003) as they engaged in reciprocal forms of emotional support. *Prima facie*, there are overlaps here between the occupational cultures of DFE and frontline officers where similar sentiments of solidarity that bond frontline officers assist DFE by helping them to cope with dirty work and navigate harrowing material. However, while social support among co-workers is a commonplace means for dealing with dirty work (Ashforth *et al.* 2017), informal frontline subcultures exclude individuals that do not fit within dominant cultures (Waddington 1999, Reiner 2010).

'In' and 'out' distinctions were recurrently offered as strategies to mitigate the effects of IIOC exposure. The drive home, for instance, was portrayed by many as vital in physically and emotionally separating work from family life (Burns *et al.* 2008; Harms 2011). 'Being in all this together' was often quoted during interviews and heard in workplace observations as a way of reinforcing a community spirit and excluding other professionals, such as counsellors. Additionally, handling IIOC was rarely, if ever, mentioned during informal social situations. Several noted how they placated strangers' questions about their occupation by stating they provided 'police training'. Others reported being 'managed' by partners in interactions with friends: one examiner recalled his wife's comment that 'no one wants to hear about this' (i.e. his work)

when socializing, and the need to keep conversations within the confines of ‘normal’ and ‘casual’ talk. Similar to [Cheshire’s \(2018\)](#) findings, examiners rarely talked about IIOC with loved ones to spare them any upsetting details. While suggesting unease, these practices were never explained explicitly in terms of stigma or indirectly in ways we as researchers, regarded as stigmatizing.

A final aspect of the ‘in’ and ‘out’ distinctions relates to the use of humour. Dirty work literature highlights ‘dark’ or ‘gallows’ humour as helping workers to deal with the affective stresses of taint, secure a sense of self-esteem and professional identity, and gain some moral distance from their role ([Ashforth et al. 2017](#)). In policing literature, such humour has been portrayed as ambivalent, maintaining and subverting social order and mitigating organizational conflict ([Holdaway 1988](#)). It has also been noted to facilitate emotion management and enable the normalization of the work undertaken ([Innes 2002](#)). Our interviewees regarded joking exchanges as vital to maintaining mutual support, and explicitly referenced other high-status occupations with a similar level of emotional exposure to justify the acceptability and extremity of their humour:

It is a particular type of humour and ... it’s ten times worse ... seasoned officers or detectives coming into our unit are somewhat shocked ... I know everything about [colleague’s] penis and the problems he’s had with it ... and people know the amusing things that happened when I had my vasectomy ... the strangest things that you would probably never share with anyone are in our office completely normal ... I think the humour ... the sort of banter ... the ... mutual support we’ve got in there is vital. (DF5.F3)

Thus, humour provided another informal way to achieve distance from the IIOC material processed, release pressure and provide ‘a front for managing emotions’ ([Gunby and Carline 2020: 357](#)). Similar to other analyses ([Drew 2007](#)), its use did not distract from the professionalism of examiners’ work and their respect for the victims.

Altogether, these insights into the dynamics of visibility, sorting and care suggest a complex understanding of IIOC as dirt. While the acts and offenders are regarded as morally reprehensible, this overall standing does not resolve the tensions related to handling vast amounts of IIOC. Whether DFE are likely to be affected by IIOC, how responsibilities for processing these materials should be distributed, how the stress associated with IIOC compares to other workplace demands, and how humorous reactions to transgressive images provide the grounds for forms of mutual support, illustrate how the dirt status of IIOC is subject to multifaceted negotiation.

DIRTY IMAGES NOT TAINTED OCCUPATIONS

The previous section described how DFE approach IIOC-related works as an intense activity of handling dirty material. The problematic status of IIOC is also evident in how exposure to them for those outside DFUs is carefully managed. Despite efforts to mediate and minimize such exposure, the workspaces of DFUs entail direct and prolonged contact with voluminous records of exploitation. Thus, digital forensics hazards forms of physical taint in handling IIOC, moral taint in their proximity to widely condemned crimes, and emotional taint in viewing, listening to and describing violations against children.

Nonetheless, despite the continuous presence of dirt in their day-to-day activities, the DFE interviewed did not perceive themselves as occupationally tainted. Stated differently, they worked with dirt, but they did not take this to mean their occupation was dirty. Below we suggest why that could be the case. Showing how those delegated to insulate society from dirt main-

tain the boundaries between purity and impurity (Ashforth and Kreiner 1999), social science analyses have mainly focused on occupations recognized by their practitioners as stigmatized. In contrast, this section offers three reasons (i.e. occupational culture, organizational seclusion and a lack of public recognition) to explain why the tainted status of IIOC did *not* blight the perceived occupational standing of DFE. We argue that while each reason helps explain how examiners can disassociate themselves from concerns about taint, each also entails a complex dynamic regarding how contamination from and the containment of dirt are managed.

Occupational culture

DFE demonstrated a strong sense of duty and mission to safeguard collective values, similar to those of the police officers they worked with (Burns *et al.* 2008; Dick 2005; Perez *et al.* 2010). Aligned to forms of justification used in private detective work (Shulman 2007), examiners presented their work as aiding the principled aims of criminal justice. Ashforth and Kreiner's strategies to 'foster ennobling ideologies' (1999: 428) were evident in their narratives: for instance, DFE *recalibrated* the standards for judging their work by highlighting the need for specialist knowledge and technical skills in analysing phones and computers. They justified their contribution in the context of providing the best technical expertise to complement the investigation and attain justice for victims:

The main thing for me ... in terms of forensics, is ... doing a good job for the victim ... that's always been the ... main focus. (DFE4.F1)

Despite the virtual distance from the crime, examiners were acutely aware of the temporal gap between the unearthing of evidence and the possibility of on-going offences. Acknowledging that not all victims can be identified, DFE often highlighted the focus on the victim as their *raison d'être* for joining policing in a civilian capacity.

Rather than 'locking-up bad people' (DFE2.F2), which DFE saw as the officers' primary motivation, examiners positively *reframed* their work as more than helping to prosecute offenders. Seeking to help both the victims of child sexual abuse and the wrongly accused, examiners' understanding of the discourses surrounding allegations of sexual abuse was complex and nuanced, as was their awareness of the power and responsibility they held through their access to the victims and suspects' devices. Furthermore, their open-minded, *refocused* approach to investigations emphasized the rigorousness of their analysis and their mission to educate other criminal justice actors about what digital forensics can (or cannot achieve):

Sometimes we need to educate them what is peer to peer sharing they don't understand it so we have to sort of spend some time with them and often you will be called to court ultimately to just explain that stuff ... to educate the jury at the end of the day. (DFE6.F3)

However, while DFE took pride in their work and demonstrated commitment to securing IIOC-related convictions, they were rarely informed of case outcomes.⁷ In one of the forces studied, DFE could (if they proactively decided to do so against other demands on their time) follow cases through the police management systems, whereas in the other three forces, access to these systems was restricted. DFE typically learnt about case outcomes through external sources, such as media coverage. Officers rarely updated examiners informally, which was routinely justified by the latter as having 'little time and massive workloads' (DFE3.F4). Thus, while

7 Like fingerprint experts, crime scene personnel and forensic scientists working in external laboratories (Williams 2001).

examiners often presented themselves as supporting law enforcement through technical skills, they had little sense of how well their work served this aim.

Organizational seclusion

Most studies on dirty work explain the need to manage notions of personal and occupational identity as deriving from the perceptions of others, including the public, clients and associated occupations. Attribution of dirty work is established through language use (Dick 2005) in interactions with others (Grandy and Mavin 2012). Like other in-house forensic service personnel in England and Wales (Williams 2001), although DFE provides a necessary service to law enforcement agencies, they are seldom regarded as integral partners to investigations. Instead, they are seen as offering specialist technical knowledge according to set contractual expectations, by providing the extraction and analysis of digital trace and assisting officers and courts with the evaluation of related evidence. While as an occupational group DFE are in a similar subaltern position to that of other civilian police personnel (Skinns 2011; Rice 2019), the input they give to an investigation is presented as the key to its outcome. In practice, regardless of the nature of the offence, DFE work closely with officers in charge, who depend on these specialists for analysis and the interpretation of results. Consequently, any officers' perception of the 'tainted' status of the examiners were never reportedly expressed. Furthermore, while court appearances could serve as a basis for DFE to engage directly with police and prosecutors, individual examiners are rarely called in to testify in court each year. Thus, DFE operate in relative isolation from other criminal justice occupations, avoiding stigmatization 'for personifying the dirt that threatens well-ordered lives' (Gunby and Carline 2020: 350).

Additionally, there was little formal appreciation of examiners' work, with police commendations given to officers, even when digital forensics was instrumental to solving a case. Like crime scene investigators (Wilson-Kovacs 2014), DFE noted matter-of-factly that their role in an investigation is rarely recognized. This lack of acknowledgement underpinned impressions of occupational inconspicuousness. Instead of monetary remuneration, professional accolades or prestige serving as forms of reward, many interviewees reported feeling gratified based on their knowledge of having done their work well.

My satisfaction, my validation, my pat on the back comes from not others, it comes from what I feel is the job properly and doing the right thing. (DFE1.F2)

This was so even as examiners typically were routinely unable to substantiate how and when their work mattered because of the lack of information about the progression of criminal cases.

In relation to notions of stigma and taint, occupational isolation had the benefit that DFE rarely had to account for their handling of IIOC outside their peer group. The limited extent of their inter-personal encounters with officers meant their assistant relation to mainstream police culture had little opportunity to become relevant. Thus, the examiners' need to manage their organizational identity in relation to their routine exposure to IIOC was not seen as a pressing demand, despite the unease and tensions reported above. This was also mitigated by the fact that the examiners' duties extended to non-IIOC cases.

Public recognition

The organizational invisibility of digital forensics work in policing aligns with that of other forensic support personnel in England and Wales. However, unlike crime scene investigators (Heinsler *et al.* 1990; Kruse 2015), DFE have no embellished fictional representations of their role to draw upon in their identity construction processes. Partly for this reason, DFE did not encounter negative or problematic stereotypes about what examining IIOC entailed.

Consequently, 'social buffering,' as practised by other criminal justice occupations to counter their stigmatized identity (Gunby and Carline 2020) were not evident in DFUs. Moreover, the deprecation of other occupations, the condemnation of critics, and the undertaking of public relations coaching (Ashforth *et al.* 2017) were not practised in the DFUs because there was little need to offset public perceptions. As previously mentioned, one reason for the absence of negative reactions was also the reluctance of DFE to discuss their work with outsiders. The lack of public recognition regarding the work of DFE furthered the importance of peer recognition and validation.

The examiners' situation represents an extreme form of dirty work because of both the morally reprehensible standing of IIOC and the inconspicuousness of the work performed, which is sequestered within and beyond policing. This also sets the basis for a *recognition bind*: on the one hand, the more the work of DFE becomes recognized, the greater the potential for forms of occupational validation. Given the demands of working with IIOC, the authors take such validation to be highly appropriate. Greater recognition might enable recruitment and retention into the DFUs to respond to recurrent policing demands. Equally, an organizational downside of this could be that individuals are attracted to the role out of misplaced or unscrupulous motivations. Greater recognition could also require that examiners respond to preconceptions equating the handling of IIOC with a stigmatized occupation. These are some of the hazards and fragilities present in the management of virtual dirt.

POLICING THE DIGITAL FILTH

There has been little criminological scrutiny of how organizational practices and occupational identities in policing are negotiated in relation to the handling of virtual dirt. Drawing on the accounts of those tasked with the extraction and analysis of IIOC in four police forces in England, this article has outlined some of the current arrangements for processing these materials. Our analysis illustrates how, while seeking to mitigate exposure to traumatic events, these provisions are subject to various tensions in relation to what is made visible, how images are sorted and how care is enacted. Our ethnographic stance provides a sociological perspective to complement the technical, psychological, and policy-oriented literature that addresses the trauma generated by exposure to IIOC. The findings add to studies of civilian cultures (O'Neill 2017; Rice 2019) and dirty work in policing (Spencer *et al.* 2019), a key instance of a hitherto underexplored occupational group. There are notable differences between DFE and other civilian support in policing. Compositionally, DFE are a heterogeneous group, including graduate and non-graduate civilians, as well as retired and active officers. Unlike others, DFE have both job security and more lucrative employment opportunities outside law enforcement. Arguably closer to 'crime-fighting', they also approach it differently, emphasizing the need to support victims, exonerate the falsely accused and educate other criminal justice actors.

Our analysis has some limitations. First, while we have been able to marshal extensive empirical data collected over two research projects, this relates to four out of 43 forces in England and Wales. Even within this jurisdiction, little is known about how the unease surrounding IIOC-related offences translates into organizational practices. Evidence suggests that different variables (such as risk assessments, addressing backlogs and the availability of digital forensics expertise) shape existing arrangements. Discussions with team managers from forces outside the forensic collaboration studied, indicate their DFUs have different arrangements for the classification of IIOC. A Northern DFU, for instance, alternated three-hour blocks of categorization duties per case with designated breaks followed by the re-evaluation of further information needed for a charge. This unit also reorganized its DFE into three sub-teams that were monthly re-assigned to different types of offences to ensure that examiners worked on non-IIOC cases

and that backlogs were addressed more efficiently. In a second example, another force delegated all categorization to officers in charge of cases, because officers would invariably be those who may be asked to present evidence in court, so it was argued that they needed to do the sorting themselves. Digital forensics managers also highlighted how constant categorization work was de-skilling examiners, whose technical expertise could be better employed to specialist tasks that officers could not perform. The efficacy and well-being implications of such diverse arrangements deserve consideration outside the scope of this article. Nonetheless, our focus provides an important starting point for understanding the occupational experiences and organizational dynamics of handling virtual dirt in policing and brings original insights to traditional distinctions between warranted/non-warranted police personnel.

Second, our analysis is based on the accounts given primarily by DFE about their experiences of formal counselling, the impact of descriptions of images on jurors and counsel, and so on. We focused on this occupational group because of the invisibility and the lack of acknowledgement of the difficulties associated with their work. Thus, the perspectives of other occupational groups exposed to IIOC as part of their criminal justice service duties (e.g. police officers, defence barristers or sex offender managers) are not covered here. As this and other analyses illustrate, dirty work in policing is far from homogenous and the diversity of its forms must be acknowledged and accounted for (Dick 2005, Gunby and Carline 2020). Given that the extent of possession, distribution and creation of IIOC is difficult to gauge, a more systematic and comprehensive picture of the amount of digital trace encountered and processed by law enforcement agencies in relation to IIOC-related offences, and the impact on various occupational groups involved are urgently needed to complement our qualitative analysis. Third, the occupational isolation of DFE means that our analysis has necessarily included speculation regarding how their work might be received if their day-to-day routines were more widely acknowledged by other occupational groups in policing, senior police managers and outsiders.

Our findings help make the ordinary invisibility of DFE work visible and provide the basis from which to explore the relationship between occupational taint and the processing of virtual dirt more widely. With the growth of online communications, DFE providing in-house support to police forces are not the only ones tasked with sieving through vast amounts of data to police digital filth. Online platforms such as Facebook, TikTok and others, have staff dedicated to identifying images related to the sexual abuse of children and other forms of transgressive, abusive and disturbing speech and action. Understanding how organizations manage the tensions, dilemmas and emotional costs associated with sifting through such material, and how such arrangements shape the occupational identities of those who do the processing, will be of increasing importance for criminology into the future.

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