"No shit Sherlock"! Canine DNA and policing public space.

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Introduction

In the theorising of surveillance, animals have been largely overlooked. Epidemiological studies proliferate, yet the role of animals in many aspects of everyday surveillance has been neglected. This paper considers a new initiative involving the collection of canine DNA, which illustrates how, like human animals, nonhuman animals (henceforth animals) are increasingly finding themselves the objects of routine, technologically mediated surveillance. Further, such surveillance situates animals as elements of the ‘surveillant assemblage’.

This paper highlights the importance of animals to surveillance studies by establishing the extent to which animals are a part of the surveillant assemblage in their own right. It also demonstrates how nonhuman animals extend the reach of the surveillant assemblage. There are many examples of how animals are caught up in our webs of surveillance such as the rigorous testing and monitoring of ‘food’ animals which are increasingly viewed as a ‘risk’. Other examples include social media, DNA testing, crime fighting, and in this instance, in the issuing of Public Space Protection Orders (PSPOs). As an example of contemporary routine biometric surveillance, this paper examines a pioneering DNA registration scheme launched in London in 2016: PooPrints. This uses a system devised by BioPet laboratories, Tennessee, and is flagged up “as a badge of considerate dog ownership” (Streetkleen.co.uk, 2018) designed to gather up samples of uncollected dog faeces and to identify dogs and therefore their owners, for action if by-laws are transgressed.
The paper argues that DNA surveillance, in conjunction with a PSPO, is susceptible to considerable ‘function creep’ where surveillance goes beyond its original purpose (Lyon, 2007a). This form of surveillance of animals may act as a conduit for more problematic surveillance of humans, which may result in social sorting and curtailment of freedom and enjoyment of both animals and their human animal companions. This paper considers the ramifications of animal surveillance via the PooPrints scheme and argues that, in addition to being seen as an attractive technological solution for a complex social problem, it has potential to be yet another form of information gathering about humans. It argues that by allowing animals companions, such as dogs, into systems of control we enable new forms of scrutiny resulting in the social sorting of people with unforeseen consequences.

This empirical study sources data from publicly available Cabinet\(^1\), Select Committee\(^2\) and Scrutiny Committee records from the London Borough of Barking and Dagenham (LBBD). It also draws on news media sources, publicity material from the company running the scheme and from this and other local authorities. Methods include analysis of documents, semiotic and discourse analysis. I chose to look at the scheme run by LBBD as it is the first of its kind in London.

**Surveillance, dogs and data**

There are difficulties in defining what is meant by ‘surveillance’ (Marx, 2004). A broad definition was conceived by the Surveillance Studies Network (SSN)\(^3\) in its report for the Information Commissioner:

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1. The directly elected Mayor’s Cabinet is the council’s primary decision-making body for matters which are not otherwise delegated. The Cabinet meets approximately every four weeks. It is allowed by law to meet in private, but all Cabinet decisions must be taken in public apart from the existing exceptions for things like personnel matters, commercially sensitive information or confidential legal advice. Officers are not able to put decisions into practice until the seven-day ‘call-in’ period has elapsed (except for decisions taken under emergency procedures). Members of the public can request the right to address the Cabinet on an issue on its agenda. https://www.lbld.gov.uk/meetings-agendas-and-minutes

2. Overview and Scrutiny committees ensure that the council is held accountable for the choices made and that the decision-making process is clear and accessible to the public. https://www.lbbd.gov.uk/meetings-agendas-and-minutes

3. The leading international research and information network about surveillance (https://www.surveillance-studies.net/?page_id=2)
Where we find purposeful, routine, systematic and focused attention paid to personal details, for the sake of control, entitlement, management, influence or protection, we are looking at surveillance (Ball et al., 2006, p.4).

What usually springs to mind are Big Brother and CCTV and it is true that surveillance is about ‘seeing things and, more particularly, about seeing people. But paradoxically people are not what most surveillance sees today’ (Lyon, 2007, p.1). What Lyon terms ‘The culture of surveillance’ is ubiquitous and every day (Lyon 2018), as we are increasingly connected via the Internet of Things, talking to Alexa and dazzled by the promise of smart cities. While surveillance of humans has always been with us ‘new’ surveillance is mediated by digital technologies, and that mediation sometimes renders it invisible. Furthermore, there is the ‘convergence of once discrete surveillance systems’ and ‘rhizomatic’ systems with hidden linkages that are hard to detect and once broken, spring up yet again in another place and space (Haggerty and Ericson, 2000, p618). The surveillant assemblage serves to extract individuals from their ‘territorial settings’ and reassembles them into discrete data flows. These ideas prompt Lyon to state:

It is mistaken to think of surveillance only in terms of centrally organised systems, as the Big Brother and Panopticon metaphors often do. Rather, fluid forces or ‘flows’ work with mutating ‘assemblages’ of items that come together simply to operate systems of power [...] Such information, as (Mark) Poster pointed out, becomes our data double which is how we are ‘known’ by marketing companies and government departments (Lyon, 2018, p120).

As long ago as 2004, the then Information Commissioner, Richard Thomas, feared that the UK was sleepwalking into a surveillance society (Ford, 2004) Since that warning the methods and intensity of surveillance have increased and people have opted to give away even more information about themselves, for example, via social media and networked wearable fitness trackers. Thus ‘surveillance capitalism unilaterally claims human experience as free raw material for translation into behavioural data’ (Zuboff, p8, 2019). The surveillance of nonhuman animals has often been overlooked and Haggerty and Trottier have discussed the lack of attention paid to nonhuman phenomena when it comes to surveillance (2013). Most publications appear to be focusing on epidemiology, for example the transmission of parasites to human and non-human species, (Melhorn, 2016; Despommier and Campbell, 2013) and
this has come sharply into focus of late with the recent Covid-19 pandemic. Surveillance of
animals alone can be side-lined as being something on the periphery of human-animal
behaviour and is often looked at in relation to humans and their pets (Grandin and Johnson,
2009), hunting, (Carr, 1986) or how wild animals such as foxes (Baker et al, 2004), badgers
(Davison et al, 2008; Wallen, 2006) or animals such as feral cats (Griffiths et al, 2004) encroach
on our otherwise sanitised and orderly neighbourhoods. We are also very familiar with the
surveillance of animals as entertainment in documentaries and television programmes and
there has been writing on this form of surveillance by Mills (2017) and of the surveillance of
animals in zoos (Braverman. 2013).

In the case of PooPrints, details are kept and the gathering of data about the dog and its DNA
is necessary to enable it to enter protected spaces. In addition, the harvesting of data about
ownership details is an example of one of the means by which individuals are ‘known’, in this
case, to LBBD and that information is also available as an enabler to other services marketed,
mediated and managed by a commercial enterprise, in this case PooPrints.

Gary Downie, Managing Director of PooPrints UK, said: “We are very pleased to be
introducing PooPrints to the UK with Barking and Dagenham Council. In this age of
austerity local authorities are being encouraged to look towards innovation to help
deliver important services including ensuring that pavements, parks and open spaces
are kept clean”. (LBBD, 2016)

The PooPrints website offers us a handy illustration of Schumpeter’s theory of creative
destruction (Freeman, 1997, pp. 325-326), describing dog DNA database usage as ‘a disruptive
innovation to create new value’:

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<td>Localised Waste Conversion Units</td>
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<td>DNA Database Usage</td>
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<td>Dog Warden/Enforcement Teams</td>
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<td>Mobile Apps, Smartphones &amp; Geo</td>
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<td>Media Campaigns, Posters &amp; Communication</td>
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The implication here is that there would be no need for dog wardens and enforcement teams, media campaigns and posters as the technology, will be the solution and timeworn techniques swept away in the new world being created. This is typical of claims for new innovations where simplified, technologically determinist-led explanations are employed to ascribe positive characteristics to innovations and their claimed effects on society (Mackenzie and Wajcman, 1999). One of the most cited examples of this in terms of surveillance is the early introduction of CCTV into town centres (Norris, Moran and Armstrong, 1998, Ditton et al., 1999; Coleman and Sim, 2000).

The launch of the scheme gave rise to much mirth in the press prompted as a response to the location of the pilot, the LBBD itself unable to resist announcing that “we’ve taken a lead on dog mess” (LBBD, 2016a). Television news and the national press gleefully reported that there would be “Pugshots’ of the worst offenders’ (BBC News, 2016b) and ‘DNA-testing dog poo? You’d have to be Barking!’ (Cocozza, 2015). Yet, it is far from a laughing matter. Despite being promoted as a scheme to ‘improve civic pride and social responsibility in East London’ (Streetkleen.co.uk), the data could also be used to tie up with diverse income streams that may have repercussions for citizens (bbc.co.uk, 2016). When asked how much he thinks ‘the dog-mess industry is worth? Eric Mayer, director of business development at BioPet, replied that it was ‘limitless’ (Cocozza, 2015) and the owner, Tom Boyd is ‘pushing to get the program established across the UK, where he says, there are 9 million dogs providing a revenue stream “That has a value of $365 million, so that’s how big I think it is.”’ (Wells, 2019). In 2017, it was reported that this scheme was to be rolled out in more areas and was moving from being voluntary to being mandatory and used in tandem with the enforcement of Public Spaces Protection Orders (PSPO) potentially necessitating outlay from dog owners to be able to access protected ‘public’ spaces. The next section will consider why dog waste has become such a financial opportunity.

Dog waste – risks and regulation

Dog fouling is rightly written about as being both an unpleasant nuisance and a danger to public health. Apart from being messy, dog waste can contain e-coli, salmonella and
campylobacter bacteria and giardia parasites which can cause illness in humans; parasites such as hookworm and roundworm and their eggs and be a vector for toxocariasis (Halsby et al., 2016). In addition, dog waste can end up polluting waterways by promoting the growth of algae and finally, it can attract a variety of insects and rodents. Gross (2015) presents this as a significant social problem, for Western societies as

Every day some 55 tons dog excrement are deposited on the streets of Berlin alone (Kneiss 2011), while dogs in the US are said to produce 10 million tons of poop each year (Browdie 2012). For the year 2000...in Paris alone US$6 million have been absorbed for the removal of dog faeces as part of park maintenance. (Gross 2015, pp.38-47)

While dog waste is a health and wellbeing issue, the dog is the only pet that we deliberately encourage to defecate away from home (Gross, 2015). Gross writes about this phenomenon to ‘highlight the relational ties between dogs and humans that are manifested in strategies for dealing with a highly important ‘actant’ in the collective: poop’ (2015, pp.38-47). In doing so he identifies three main types of strategy in dealing with this ‘actant’ and bases his analysis on a complex Latourian network comprising humans and nonhumans (natural ‘things,’ technologies, or animal droppings) (2015, pp. 38-47). Gross concludes that fear of being judged makes us clear up after our dogs and therefore, if we are under cover of darkness or otherwise hidden, we will consider leaving the faeces in situ or leave them in ‘inappropriate’ places other than bins (2015, pp.38-47). Perhaps it is not surprising, then, that dog walkers are seen as requiring surveilling when in public space. The Dog Fouling Act (2016) makes ‘the person in charge of the dog at the time of the misdemeanour’ responsible for what it may do although there are some exceptions, for example, those who are registered blind or have mobility issues. Relatively recent legislation has changed the way dog waste is policed and local councils have an obligation to make sure that dog fouling does not take place:

Following the implementation of the Anti-social Behaviour, Crime and Policing Act 2014, local authorities in England and Wales can no longer make Dog Control Orders. Instead they can use new powers under the new Act to control dog fouling by issuing Public Space Protection Orders (PSPOs) to require owners to clean up after their dogs in specified public areas (2017)
Regulation also comes from the Clean Neighbourhoods and Environment Act 2005 which gave councils powers to control dogs in their public spaces. The Dog Control Orders prescribed powers in contained in Section 55(1) of the Act specifies five offences, one of which is failing to remove dog faeces (UK Government, n.d.). Various solutions have been proposed to encourage people to pick up their dog’s waste from low to high-tech such as signage and ‘panoptic’ glow in the dark ‘eye’ posters to talking lamp posts, and drones (Hyde, 2014). The increasing deployment of technologies intended for use in a theatre of war appearing on our streets to police us has been termed ‘new military urbanism’, fundamental to which is

[...]the paradigmatic shift that renders cities’ communal and private spaces, as well as their infrastructure - along with their civilian populations - a source of targets and threats (Graham, 2010, pp. 3-4).

Uncollected dog poo is already in decline (Lowe et al, 2014). It is gradually becoming socially unacceptable with peer pressure forcing a change in behaviour – education programmes and disapproving looks are often enough to prompt responsibility. There are many other solutions to these problems that do not involve privacy invading technologies, the Kennel Club has endorsed many (The Kennel Club, 2020). Methods have included spraying deposits in bright colours, sprinkling them in glitter or putting national flags on them; while in Madrid, the dirt was parcelled up and posted back to the owner in a box bearing the official town crest and another creative idea led to provision of:

Four dog-poop receptacles, each labelled with the country’s four main political parties, recently sprung up in a Madrid Park encouraging passers-by to cast their vote by depositing their pet’s shit (Anzilotti, 2016)

Some UK council’s awareness campaigns have used shock tactics to drive their message home:

Spelthorne Council’s 2013 stomach-churning anti-dog fouling message went worldwide after one of the Surrey district’s campaign posters was uploaded onto the image-sharing website Imgur - gaining nearly a million views since Sunday. The picture, which formed part of the borough council’s "No Messin" push to curb public dog fouling, shows a young boy feasting on some canine excrement (Huffington Post UK, 2014, see Figure 1)
A similarly graphic picture campaign led to protest in Middlesborough; an insulting one enquiring whether you have ‘Shit for brains’ (Figure 2) used by Hastings Borough Council with others proclaiming ‘We’re not taking your shit any more’ and ‘Sort your shit out!’ attracted criticism amongst others (Alleyne, 2010) and a ‘No shit Sherlock’ poster (Figure 3) for Sandwell Borough Council was deemed equally offensive (Murphy, 2016).
Figure 1. ‘No Messin’, Spelthorne Borough Council (Huffington Post 2014)
Figure 2. ‘Shit for brains?’ Hastings Borough Council (The Northern Echo, 2014)
‘Pooper Snooper’ schemes have been considered to clean up the City streets and parks of dog waste. Liverpool’s Elected Mayor wanted to offer a reward to anyone providing evidence leading to the criminal conviction of any dog owners that do not clean up after their dogs on the grounds that “we have got to try and restore some pride in our city. These people are not your neighbours, they are environmental criminals.” (Russell, 2017). In contrast, dog walkers have been found to be an asset to any community. Cudworth writes about ‘posthuman communities’ where ‘relationships between species can exist other than on the basis of domination, the foundation of the idea being based on a study of dog walking communities showing that

The practice of walking through a particular space, leads dog walkers to a knowledge of the places through which they walk and to the development of practices of care for those spaces and the creatures they encounter there (Cudworth, 2017, p4).

This study found that ‘responsible’ dog owners monitor and protect public spaces. As we saw above, the dog waste on the streets and in the parks of countries such as the UK is in decline. So, what might explain this political focus on the problem of dog waste?

It is interesting to reflect on the aversion to dog waste in the context of European civilizing processes wherein ‘faecal aversion’ appears a constant in Western civilisation. Evidence for
it has been appearing in writing for at least 2,500 years ‘(Praeger, 2007, p.208). Praeger goes on to say that this serves to ‘demonstrate power ascribed by the civilised to contamination’ (2007, p.186) and that

The Victorians actively denied their own poop even as they fretted about the pooping conditions of the masses. This wasn’t hypocritical because they believed that poop was something that only happened to other people. It was, in fact, what made other people, other people. This sort of categorisation enables the news media to report certain stories about poop without puns and without judgement...Judgmental contexts and techniques are not necessary because judgement is built in. (Praeger, 2007, pp.182-183).

This inbuilt judgement enables the press, or any organisation, to report on filth, such as dog excrement, in a way that does not require explanation, dressing up or editorialising: ‘Animal hoarder knee deep in faeces’ (Tait, 2015). In such cases, the presence of the matter says all that is required for us to make judgment about what we are dealing with; the places are filthy, these people are not like ‘us’. In this case study of the LBBD and Streetkleen, if you do not agree to share your dog’s DNA and your own biographical details with the local authority or landlord, you will be deemed as not ‘responsible’ or ‘considerate’ but ‘irresponsible’, ‘inconsiderate’ and ‘not playing by the rules’ (BBC News, 2016a).

Complaints about dog excrement cannot all be taken at face value as dissatisfaction with a local area can be complex and not explicitly expressed. The overwhelming prevalence of complaints about dog excreta expressed in local surveys prompted a study which found that these specific complaints [concerning dog excreta] were located among less easily defined or articulated experiences of social and environmental neglect, where neighbours were estranged from one another and local authorities seen as negligent. (Derges et al., 2012, pp. 419-425)

The study identified the need for research-grounded policies that consider the inter-relations between health, ‘wellbeing’ and experiences of marginalisation among urban populations (Derges et al., 2012, pp.419-425). Therefore, the articulation of problems with issues such as dog fouling were often indicative of more wide-ranging issues and require understanding and further investigation and holistic solutions to environmental and social problems.
Pemberton’s study of dog walking and fouling in the 1970-80s about the banning of dog walkers from parks in Burnley revealed far-reaching issues about belonging and exclusion in a town ravaged by large-scale industrialisation and ‘serves as a lens for exploring post-Industrial fractiousness along class lines’ (Pemberton, 2017, p239). However, such insight is not present in responses from local authorities to apparent public revulsion about the ‘problem’ of dog waste.

**Biometric surveillance**

Biometric surveillance relies on the gathering of data from physical characteristics or identifiable behaviour. Previous methods of biometric data collection for animals involve visual patterns such as markings, nose prints, iris patterns, retinal vascular patterns, facial recognition, ear vessel patterns, bite marks impressions and movement analysis (Bugge et al, 2011, pp. 2-6). Deoxyribonucleic acid (DNA) is the molecule that contains the genetic code of organisms; and some viruses as it contains unique identifiers it enables an even greater and more sophisticated form of biometric surveillance.

In terms of wildlife, DNA can be used for effective identification of animals without trapping, revealing species, markings, gender and other data. Canine DNA is most often used for identification purposes. It is used for determining parentage including finding ‘doggy deserters’ when the father is unknown; used in ownership disputes; used to determine which varieties mixed breed dogs are made up of and for hereditary disease testing and it is also used by dog breeders to screen undesirable genetic traits or encourage desirable ones. It is now being used where an animal is a victim, perpetrator or ‘witness’ to a crime, for example, animal cruelty cases an example of which led to the Canine Combined DNA Index System (Canine CODIS), a US multiagency database with samples collected from dogfighting sites (UC Davis, 2012). DNA may also be used in cases where a person or another animal has been attacked by a dog; a dog has caused damage to property or been accused of being in a road traffic accident (Schneider et al, 1999, pp.315-316). The earliest instance of animal DNA being used as evidence linking a perpetrator with a defendant was in a first-degree murder convicted by Snowball the cat’s hair in 1996 (Primorac and Shanfield, 2014, p.322). Thereafter, canine DNA has been taken from hair, blood, saliva, urine and used as forensic evidence for crimes including a triple homicide in Indiana resolved by using dog waste.
(Lindquist and Wictum, 2016, pp. 212-218); in 1999, a sexual assault case successfully prosecuted with dog urine (March, 2009) and a child abduction/murder solved with dog hair (Halverson and Basten, 2005, pp. 598-605). It is also a sad fact that the strong links between violence and animal abuse are well documented (Flynn, 2011, pp. 453-455) although there has been some debate as to whether there is evidence of a direct link (Arluke et al, 1999, pp. 963-975).

The uses of canine DNA by law enforcement agencies makes the collection of dog DNA on a database a potentially invaluable resource going far beyond finding rogue pet owners and dirty dogs. A recent phenomenon is consumer genetics. As Evans points out “the private sector is rushing to satisfy our drive to know ourselves in this new way with a variety of boutique genotyping services” (Evans, 2008, pp. 709-710). Such services promise knowing your ancestry, finding long lost family members, finding out which diseases you are prone to, looking for bespoke nutrition and treatments for various ailments and allergies. The marketplace for non-human animal information is proving no different; as with other surveillance technologies, it offers the potential of limitless lucrative business opportunities (Duhaime-Ross, 2016). Owners are having their animals tested for the same reasons as humans are, just curiosity, some are even having deceased dog DNA tests done as they still wonder about the breed characteristics of a favourite late pet. It is also possible to buy jewellery of your ‘Forever Pet’ with DNA encased within in it (Perpetua Life Jewels, 2018).

It is in the use of the DNA that the potential for ‘surveillance function creep’ is evident. Law enforcement agencies are starting to turn to human voluntary recreational databases to throw up familial ties and reveal the kinship of suspects. DNA-testing services like Ancestry.com and 23andMe do not voluntarily surrender their DNA information to police forces as forensic genealogy would have a detrimental effect on their business. However, companies can and have been compelled to do so by law enforcement agencies if there is good reason to suspect it will be helpful. It is not hard to imagine how pet databases can be used to in similar ways in the future with linkages to crime scenes and biographical information.
Dog DNA testing in LBBD

The biotech company Streetkleen is rolling out PooPrints UK (the product name for the pet forensic service) in the LBBD delivered in partnership with BioPet, a Knoxville, Tennessee based animal DNA firm. Its services have proved popular in the US: BioPet Vet Lab “matches the mess” for communities across 45 states and here and in Canada PooPrints has been introduced into many private housing schemes in order to control the behaviour of tenants with dogs and has been used to enforce eviction notices (Williams, 2015). It is used in trial programmes in Germany, Israel, Singapore and Spain, where dog fouling has seen to be a problem (Hall, 2009).

London is divided into 32 boroughs plus the City of London. The LBBD is situated nine miles east of Central London; it has a population of approximately 211,998. The Borough has substantial issues regarding deprivation, exacerbated by heavy cuts in central government funding as a result of ongoing austerity measures. According to the 2015 Index of Multiple Deprivation (IMD) LBBD is ranked the 12th most deprived local authority nationally and the 3rd most deprived in London (LBBD, 2015a). In terms of dog ownership, surveys by the Pet Food Manufacturing Association (PFMA, 2018) show that 45% of households in the UK own a ‘pet’; and there are approximately nine million dogs in the UK making 26% of households dog-owning and within that 9% of Londoners and 23% of the population of the South East (PFMA 2018). According to LBBD, 11% of its population own dogs – approximately 18,000 dogs - and LBBD spends 2.3 million GBP each year clearing up dog faeces (Turner, 2015).

This scheme was introduced as part of LBBD’s strategy to combat anti-social behaviour to facilitate a strong, cohesive community. There has been a gradual shift to entrepreneurialism ‘as the main motif of urban action’ and the introduction of surveillance technologies, such as CCTV are presented as being pivotal to this (McCahill, 2002, p.12). It is evident that this council is proactive in attracting businesses with opportunities for public private ventures (LBBD, 2015b). The introduction of the Streetkleen scheme was also prompted by resident surveys regarding street cleanliness and concerns regarding anti-social behaviour. Although fines are part of the scheme, and there is a focus on public housing tenants, the ostensible aim is to progress a civic pride agenda through a series of behavioural change campaigns (LBBD, 2017b).
LBBD committed itself to becoming the first council in the United Kingdom to introduce a scheme to identify those allowing their dogs to foul public spaces through a dog DNA scheme. The pilot scheme started on 21\textsuperscript{st} January 2016 in three areas of the borough and coincided with the introduction of Government legislation requiring owners to have their dog microchipped and that their details are kept up to date (Legislation.gov.uk, 2015). LBBD saw this as an opportunity to eventually work with local vets to collect dog DNA at the same time as dogs were brought in to be microchipped.

LBBD stated that the pilot proved to be successful with a 52\% reduction of uncollected dog faeces in the three locations trialled. However, the Council considered that long-term intervention was required to maintain and improve behavioural change in dog owners. As such the Council went to public consultation between 13\textsuperscript{th} February 2017 and 31\textsuperscript{st} March 2017 on whether to make the areas in the pilot subject to a Public Spaces Protection Order (PSPO) (LBBD, 2017a). At Cabinet in March 2016 it was also recommended to approve and roll out the requirement for dog registration into council tenancy agreements. LBBD found 66.6\% of respondents agreed with the recommendations, yet LBBDs own records show that there were in fact only three responses in total for the consultation, two from residents and one from the Kennel Club.

At Cabinet on 15\textsuperscript{th} November 2016, the reasons for the implementation of PSPOs as set out in the Anti-Social Behaviour, Crime and Policing Act 2014 for the restrictions on specific activities that were deemed as having a detrimental effect on the quality of life of those in the locality (in terms of public health and children’s safety) were recommended and agreed upon (Community Safety Partnership 12\textsuperscript{th} June 2017). It is worth noting that Toxocariasis is described by the NHS as a ‘rare infection’ (NHS, 2018) but

[...]gains a disproportionately high amount of press coverage [...] We believe this is because a number of stakeholders seek to use toxocariasis as a route to either justify clamping down on where dogs can go, or exaggerate the prominence of it to gain funding for their work or increase product sales (Kennel Club, 2015a)
While the Club is possibly one-sided in its conclusions, some of its assertions can be borne out by examining this scheme and others; wherein invasive solutions have been implemented in the context of alarmist public rhetoric.

Collecting canine DNA

The PooPrints scheme relies on a two-pronged approach. Firstly, dog owners are asked to register their pets; this is encouraged by it offering additional benefits such as theft protection and a personalised health and wellness program for your dog. The program enables owners to create a personalised, interactive life management plan within our database. It offers the opportunity for owners to purchase additional genetic screenings for disease and health and can be used to improve communications with vets and other care providers. (Anigene 2019)

Secondly, employees of LBBD Environmental Enforcement Team and the Park Rangers Service carry out patrols to collect samples of any dog faeces which are then sent to PooPrints to be analysed for genetic markers which can be checked for a match to any dog registered on their database. If there is a match, the owner will receive an advisory note warning of future enforcement activity.

In addition to the benefits outlined above by PooPrints, LBBD state that dog DNA registration helps create better, cleaner, safer places by promoting considerate dog ownership leading to reduced incidences of uncollected waste. LBBD also reiterates that dog owners gain access to a secure online database of useful pet information (DNA profile, breed overviews, a place to store medical records, kennel information and so on) (LBBD, 2016b) Such services would be at extra cost and potentially provide an opportunity for marketing services to pet owners. LBBD has not stated that it intends to share this data, it will be safeguarded by Streetkleen and Biopet. There are also other ways that organisations can benefit from the selling of data and companies advise on alternative income streams for cash-strapped councils, as it states in its advice paper to local governments:

Council commerciality is on the rise. The pressure on public finance means that alternative sources of revenue – or profit are increasingly being sought. More and
more councils have trading companies while some have recruited ‘commercial directors’ (Capita, 2013)

There can be a thin line between entrepreneurialism and pressure to exploit all avenues for commercial gain and DNA surveillance is peculiarly susceptible to function creep as it has so many applications.

The use of PSPOs

From the outset, this scheme was always intended to run in tandem with new PSPO for non-compliance. PSPOs have been described as ‘geographically defined version of ASBOs’, distinct in that ASBOs were aimed at individuals, (Garrett, 2015) that have come into force under the Anti-social Behaviour and Policing Act (2014); which often work to criminalise activities that were not previously considered illegal. PSPOs are wider ranging than any previous restrictions and now allow councils to ban any activity they believe to have a “detrimental effect on the quality of life in any locality”. A single order in any one space such as a park can be used to cover numerous activities and furthermore, can include activities that have yet to take place or “are likely to have” an effect introducing a ‘categorical suspicion’ where places or people are under surveillance simply because they fall within certain categories (Lyon, 2007, p. 106).

These actions may be disproportionate instances of taking a ‘hammer to crack a nut’. Post 9/11 covert surveillance powers such as the Regulation of Investigatory Powers Act (2000) were never intended to be used for petty misdemeanours. The circumstances under which the PSPO restrictions can be imposed are if the activity “is, or is likely to be, persistent or continuing in nature” and “is, or is likely to be unreasonable” (LGO 2018). Yet PSPOs are now being dubbed by some as a “Busybodies Charter” (Appleton, 2016). It has been found that explicitly or by careless drafting, PSPOs have been used to outlaw or curtail a wide range of harmless activities now deemed as anti-social such as busking, feeding birds, lying down, carrying a golf bag or spending the night in a public toilet (Bowcott, 2016).

Some of these rules are designed to combat serious problems in certain areas but controls are also serving to render day-to-day legal activities into criminal offences and are clearly driven more generally by society’s aversion to risk (Ericson and Haggerty, 1997; Beck, 1992).
Demonstrating the desire to pre-empt certain behaviours, these actions exhibit a hitherto unimagined response to risk and can also often form part of a Neoliberal strategy involving the sanitisation of urban space to attract inward investment and technological development (Coleman and McCahill 2011). A continuation of this trend is what the Kennel Club terms as a ‘War on dogs’ which is now seeing dog walking banned in parks, beaches and other public spaces. The Kennel Club is currently against compulsory testing for dog walkers, citing cost and lack of fairness (Kennel Club, 2019). Its report Out of Order: The impact of access restrictions on dogs and their owners (2015b) points out that:

Since the introduction of the Animal Welfare Act 2006 there is a legal requirement for those responsible for dogs to provide them with ‘suitable exercise’, which means regular opportunities to walk and run off lead (Bingham, 2016)

UK dog rescue and rehoming charity the Dogs Trust, has also recognised this as an issue and is featuring information about access to recreational spaces for dogs stating that:

all dogs should have fair access to public spaces and have plenty of opportunity to exercise on and off lead. We also believe that the vast majority of dog owners are responsible, and that most dogs are well behaved (Dog’s Trust, n.d)

The Trust reports that it seeks to

Ensure that all dog owners are well represented when a local authority plans a consultation to introduce PSPO or Dog Control Orders (DCO)... many local authorities do not properly inform the public about them. This means that many PSPOs and DCOs are being passed without a fair representation of dog owners who simply didn’t know about the up-coming consultation! (Dog’s Trust. n.d)

Concerns about PSPOs are also connected to the rise in towns of pseudo public spaces otherwise known as Privately Owned Public Spaces (POPS), which are places that appear as public spaces but are, in fact, privately owned and subject to by-laws that do not even have to be revealed to the public. They are part of ‘a new culture of secrecy and control, where private security guards can remove you for protesting, taking photos [...] or just looking scruffy’ (Shenker, 2017). These places can be land that, for example, has been turned over by an impoverished council that can no longer afford the upkeep.
There appears to be early evidence of surveillance ‘function creep’ in relation to the curtailment of activities with dogs in public spaces; privacy infringements with what start as voluntary schemes becoming mandatory and essential for access to parks and leasing agreements. As Lyon (2003b) reminds us, in the surveillance society, social sorting is endemic and unforeseen consequences can result in discrimination. As such, DNA not only identifies an individual dog but can also reveal links to other family members resulting in the targeting of non-participating animals or owners of those dogs. There is clear evidence of function creep in DNA gathering solutions to dog waste. In LBBD this has gone from being a voluntary scheme to encourage responsible dog ownership to one that discourages those that are not part of the scheme from accessing public land and even gone so far as to criminalise failure to carry a bag intended for dog-waste (LBBDd, 2017). Pugshots, dog e-fits supposedly compiled from a DNA samples, similar to China’s ‘Face of litter’ campaign’ (Sharp, 2015) were released in an advertising campaign (alpacacommunications.com/pugshots, n.d.) to publicise the scheme and encourage or shame owners into signing up and picking up after their dog. Local, international press and TV reported that images of the "suspects" (Figure 4) would be part of a campaign of posters in parks and newsletters sent to the LBBD’s residents reinforcing the panoptic effect of the scheme (Rasiah, 2016; Webster, 2016). The generic pictures trended worldwide reinforcing the panoptic effects of the scheme.
The scheme is heavily promoted as being ‘fool proof’ and in addition, the foundation of the scheme is underpinned by the knowledge that the subject is already a ‘deviant’ and it is not just suspects that are targeted. Like so many surveillance schemes, by including everybody, everyone is framed as a suspect; the argument being ‘if you have nothing to hide you have nothing to fear’. In this instance anybody not in favour of the scheme is framed as a grubby advocate of untrammelled dog defecation!

In the surveillance assemblage, digital technologies enable subjects to be “abstracted from their territorial settings” transforming the “purposes and hierarchies of surveillance” (Haggerty and Ericson, 2000). The selling of data is big business - data can be shared many times, sold, misunderstood and lost. Animals are nodes of the surveillance assemblage and as such they provide information for attractive income streams for the marketing of goods and services. More conventional personal information is also still a valuable commodity and the

Figure 4. ‘We can put a face to dog waste’ Pooprints poster (Rasiah, 2016)
sharing of databases to the sellers of dog-related goods and services may prove to be
understandably tempting to any cash strapped organisation but not least it is already
promoting the additional services of a private company. Mintel, the World’s leading
marketing intelligence agency offers its UK Pet Market Report to vendors ‘The undeniable
feel-good factor linked to pet ownership can be harnessed in very compelling marketing
messages’ and says that ‘Brands can partner with health, fitness and weight loss initiatives
for pets and their owners’ (Mintel, 2017). Building on the idea of ‘categorical suspicion’
Lyon has coined the phrase ‘categorical seduction’ to explain how marketing companies
target us for goods and services based on what we have shown ourselves to buy or even just
expressed a liking for, which is why databases are so valuable in the 21st century as they
offer unparalleled access to those who have clear affiliations with particular ‘things’, such as
dogs (Bauman and Lyon, 2012, p.16).

**Implications for research and public policy**

Schemes such as these need to be assessed in a number of ways. First, in terms of its
effectiveness. For surveillance to be successful, its panopticism has to be widely advertised so
to become a commonly held belief; you should believe that you are being monitored all of the
time – here the emphasis is on 100% success in terms of identifying owners of dogs that
transgress. Technologically deterministic claims often rely on being exaggerated in terms of
claims of success; in this case, it is claimed that this technology will sweep away any ‘old
fashioned’ way of doing things. Yet LBBD itself stated that in conjunction with the scheme,
there was an increase in park warden patrols, signage and awareness raising campaigns, for
example, in the press but the emphasis was on the technological fix. Technological
determinism will prompt a reliance on technological solutions to complex social problems;
just because something is technologically possible it is not always reason enough to go ahead
and do it. Second therefore, possible alternatives need to be properly considered. It is
possible that there could be room here for a more community-based response or even simple
ones such as better lighting, more bins and free bags tied to lamp posts.

For LBBD the scheme is about health and well-being issues, promoting civic pride, changing
behaviour and curbing anti-social behaviour. A third consideration however, is the unintended
consequences of such schemes in terms of the use and potential use of data. For the private
companies involved these schemes provide a gateway for marketing to dog owners through the access of people’s personal information that is harvested as part of participation in the scheme. Data captured is easily shared and a valuable commodity, this is especially true in the rapidly emerging pet goods and services market, from cloning, genotyping, tracking, webcams, clothing, jewellery to shampoos, conditioners and deodorants. There is also a burgeoning market for services such as grooming and training and veterinary services that are underpinned by insurance companies. The scheme is already geared up to harvest more data by offering ‘additional amenities’ such as the Biopet Lifeplan, a DNA and computer-based health and wellness management plan.

Conclusion

Clearly, dogs are not considered to have rights in their own in the respect of privacy, however their human animal companions do. Human rights law requires that any interference with privacy is legitimate, necessary in a democratic society, and proportionate. The issue of proportionality is key when looking at this scheme and others like it. It is also necessary to examine who is included in the scheme, any sanctions for non-participation and also consider who is not directly involved in it yet may be adversely affected by it such as the casual park user, the homeless and tourists. It also relies on the conscientious dog owners to underpin the scheme. There are better and more inclusive ways of managing public spaces, ones that draw on the unique qualities of dog walkers and the communities that they engender. The neoliberal push to attract business into deprived areas in order to gentrify them can sometimes result in ill-conceived joint public private ventures and in this instance a disproportionate response to a problem. This is an area of considerable deprivation; if the cost of the scheme must be eventually be borne by the dog owners in the Borough it will be unfair. As we have also seen, residents in areas with problems can complain about issues such as dog waste whereas they find it difficult to articulate wider issues that ought to be addressed.

Technology-led surveillance systems are prone to function creep due to their rigidity and ease of use and like many automated large systems, can be prone to failures in data protection. These schemes have gone from being voluntary to being mandatory and now being a feature of tenancy agreements in some places. It is only a matter of time before this is used for
criminal investigations far more serious than environmental nuisance ones. This scheme is pervasive and has sufficient and frequent enough points of contact to be a surveillance of control. As with any surveillance technology, it is also instructive to see it in its wider context and therefore be able to imagine where such schemes might lead. This scheme involves a 'dog register' but this is a misnomer. It should be called what it is: a register of dog owners. Similarly, the Kennel Club should reframe its 'War on dogs' campaign against such initiatives as a 'War on people' campaign, and consider that the negative implications will be borne by some, more than others. It would be interesting to carry this study on further to see how this scheme has fared and whether it lived up to its early promises.
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