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The Smell of Neglect : a Trans-Corporeal Feminism for Environmental Justice

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The smell of neglect

A transcorporeal feminism for environmental justice

Dayna Nadine Scott

Environmental justice struggles are increasingly contests waged over data and knowledge, involving claims of expertise and counter-expertise (Corburn 2003). A common observation is that a reliance on formal science elevates the data generated by accredited knowledge professionals to a prime political position, 'leaving little or no room for the layperson' (Fischer 2000: 51; Yearley 2000). This results in a growing tension between those who have 'knowledge' and those who do not, as well as the active re-negotiation of those categories (Wiebe 2013). Residents of pollution hotspots and their allies in the environmental justice movement make a normative claim for valuing the expertise of residents themselves in detecting and measuring pollution and its effects on environmental health (Brown 1992; Cole and Foster 2001; Di Chiro 1998; Shepard *et al.* 2002). But the institutions of formal law do little to resist the notion that the 'most legitimized forms of knowing the human body require the *instruments and institutions* of science and medicine' (Alaimo 2010: 27). In truth, of course, none of these is immune to culture or ideology, and none can escape their social origins. As Sargent and Wilke demonstrate in very different contexts in their chapters in this volume, the laws and institutions driving the collection of the 'data' and assigning it social meaning further manipulate it in ways that render it opaque to those most invested in the outcomes it produces.

In this chapter, I explore the significance of an emerging type of experiential knowledge based on the sense of smell. Environmental justice activists organizing the resistance of residents in pollution hotspots around the world now employ a citizen science tactic known as the 'bucket brigade' to collect data by taking advantage of residents' spatially ordered and place-based knowledge of the 'smellscape'. On the Aamjiwnaang First Nation reserve, downwind of Canada's Chemical Valley, a phrase in Ojibwe-*winaaptae* – has been employed historically to mean 'it is blowing dirty': a reference to the industrial effluents of the local petrochemical cluster (Jackson 2011: 610).¹ The bucket brigade strategy depends on a series of actions triggered by this initial olfactory observation grounded in residents' finely honed experiential knowledge of the place. But the strategy also

mobilizes a new set of tools, primarily oriented to the observation, measurement and sampling of pollution according to norms developed outside the community, under a foreign system of expertise and according to Western scientific standards. Still, I argue in this chapter that the knowledge that is crucial to the strategy's success is not only experiential knowledge, but is also held collectively. The possibility that I wish to open up here is that the validation of experiential knowledge – and the potent challenge it presents to positivist notions of science and evidence – may be bolstered with recourse to a transcorporeal feminism.

The chapter consists of three sections. The first section, 'The nose knows', explains the phenomenon of the 'bucket brigades', a resistance strategy undertaken by environmental justice activists on the fencelines of pollution hotspots that is gaining ground around the world. The second section, 'Transcorporeality and the significance of the "sniffer"', introduces the notion of 'transcorporeality' emanating from feminist theory of the body and reads it with and against studies in the cultural anthropology of smell. Finally, the third section, 'Honing a somatic mode of attention', presents the argument that the bucket brigade evidence is experiential knowledge that emerges from an intersubjective milieu that re-positions the knower in her natural, social and political surroundings.

The claim I put forward in this chapter is that to support the resistance of environmental justice activists, we need to push back against the denigration of experiential knowledge rampant in legal and scientific institutions. We need to counter the 'epistemologies of mastery' (Code 2006) grounded in the idea of a universally translatable truth to be found by individual, interchangeable, autonomous subjects working alone. Exposing the way that all knowledge is situated, partial and generated according to shared norms and local customs, gives rise to a call for a 'negotiated empiricism', following Lorraine Code. In this negotiation, we observe a fluid merger of conventional scientific practices with experiential knowledge gained by a collective (see Howes, this volume).² The fluidity sought here draws energy from the notion of transcorporeality and the practice of a somatic mode of attention. The merger of scientific and experiential knowledge is both uncomfortable and productive: both science and experience are strategically deployed, a technique exhibited by the contemporary work of bucket brigades.

The nose knows³

Communities on the fringes – the 'fencelines' – of major industrial complexes around the world are fighting back with their senses (Global Community Monitor (GCM) 2006). Launching 'bucket brigades' is now an established strategy of resistance within the environmental justice movement.⁴ Residents of these 'sacrifice zones' actively participate in environmental monitoring

and regulation (Lerner 2010): they are trained and equipped to sample the ambient air in their communities at times and locations of their own choosing. The strategy is motivated by the belief that the current government monitoring systems in place are wholly (and possibly deliberately) inadequate and that they in fact perpetuate an environment in which polluters routinely exceed safe levels with little prospect of punishment.

It is taken as a given by activists in the environmental justice movement that the location, range and focus of government-controlled ambient environmental monitors are determined through an inherently political process (Lockridge 2013; Scott 2008).⁵ As O'Rourke and Macey (2003) explain, the bucket team typically consists of 'sniffers' and 'samplers' in a coordinated network using low-cost tools assembled with components from the local hardware store. Essentially, the sniffer, with a

finely honed sense of the 'smellscape', decides when and where to take the sample. [She] then alerts the samplers, who show up with a 5-gallon paint can fitted with a special valve and a small bag. If they do it right, the bucket will be able to store a sample of ambient air that can be subject to sophisticated analysis with proven accuracy. The pollution, just like that, is real.

Scott 2015: 266

Residents of these communities 'often live with the suspicion that neighboring industry deliberately releases high volumes of the most dangerous pollutants in short spurts – so that the emissions may show up as blips or anomalies in state monitoring reports (if at all)' (Scott 2015: 266). In the case of Aamjiwnaang First Nation, located downwind of Canada's biggest petrochemical complex known as 'Chemical Valley', for example, residents explain that this is the reason they close their windows at night – they 'know from years of experience that this is when industry feels least likely to be caught' (Lockridge 2008, personal communication).⁶ Without access to reliable data from state monitoring systems, or the capacity to do its own monitoring, the community faces this very typical scenario: 'Industry reports an "incident" or accidental chemical release; government officials arrive too late to inspect or evaluate the release; and industry announces that there is no risk to the community (or "no offsite impact")' (O'Rourke and Macey 2003: 391). As Vicki Ware, a former Band councillor in Aamjiwnaang states, '[b]y the time you get someone to come out to the community to test the air, you're not going to get an accurate sample' (Poirier 2007). The motivation that drives the bucket brigades is to 'alter the essential power relations inherent in this scenario by providing the community with an indispensable tool to deploy: information that it controls' (Scott 2008: 337).

Global Community Monitor (GCM), a California-based non-governmental organization, works with fenceline communities to assist with the very

expensive certified laboratory analysis of the samples collected by the bucket brigades.⁷ GCM also provides the community with a report, the technical support of its people in interpreting it and assistance in developing a media strategy. ‘With just a few air samples’, Denny Larson of GCM explains, ‘the community can collapse the house of cards built by the government and industry that pollution doesn’t cross the industry’s fence line’ (Scandrett *et al.* 2003: 54–5). This expectation is reflected in the remark by Ada Lockridge, Chair of Aamjiwnaang’s Health and Environment Committee, after the test results came in: ‘The Ministry of the Environment has to move on this. We have the proof’ (Scott 2008: 47). In the literature, it is claimed that for fenceline communities trying to come out from under a cloud of toxic emissions, the mobilization of a bucket brigade can signal the ‘transition from victims to agents of change’ (O’Rourke and Macey 2003: 398).

It is the sniffer that triggers the alarm, drawing on a detailed experiential knowledge of the smellscape. Accordingly, the scarce resources of the community can be put to best use towards the costly analysis of the bucket brigade results (Breech 2013, personal communication). In Aamjiwnaang, the bucket brigade only mobilizes to take a sample if the smell rates at least a six on a ‘stink scale’ of 1–10 (Lockridge 2013).

Residents of Aamjiwnaang First Nation claim a specialized appreciation of ‘who-emits-what’ based on olfactory evidence gathered on repeated trips through the Valley and the surrounding landscapes. They say that ‘different areas of the reserve . . . have their own distinctive smells – some are like rotten eggs; others like gasoline; others like dental freeze’ (Cormier 2006). Residents claim the ability to discriminate subtle differences in smell, even as they are all mixed with others:

It is said that even children on the reserve recognize specific smells and can correlate them with their industrial sources . . . Ada Lockridge, a prominent environmental activist from Aamjiwnaang, tells a story about taking her family to Tobermory, at the tip of the Bruce Peninsula jutting into Lake Huron for some ‘fresh air’ – and upon returning home, driving through Chemical Valley, her daughter opened the car window and remarked, ‘Ah. It smells like home.’ . . . Another community member recalls, ‘There’s a smell that comes off the styrene plant . . . and it reminds me of being little, when I was there. It puts me right back’.

Scott 2015: 267

The ‘smellscape’, conceived in this way, is spatially ordered and place-related.

A common way of understanding our senses is to think of them as *interfaces* between our bodies and our environments. ‘What we “know” about our environments, we learn through our senses’ (Scott 2015: 271). But according to ‘risk society’ theorist Ulrich Beck, the problem is that many contemporary

'risks' are virtually undetectable to us without further scientific investigation (Beck 1992). Take carbon monoxide as the most lethal example of a chemical culprit not detectable by the human nose. Following Beck, risks exist in the social world only so far as there is scientific translation, and that translation requires 'the "sensory organs" of *science* – theories, experiments, measuring instruments' (Beck 1992: 27). There is an obvious tension with the normative claim put forward by environmental justice activists: that experiential knowledge is real, it is robust and that it counts. In the next section, I consider how the theory of transcorporeality can be marshalled to support this claim.

Transcorporeality and the significance of the 'sniffer'

The material, or 'corporeal', feminists venture into the territory between biological reductionism and social constructionism, seeking to test Kidner's claim (2000) that reducing all to a social construction inevitably 'colludes with commercialism in the long-term industrialist project of replacing the natural by the artifactual, defining a form of human existence which claims independence from natural processes and rhythms' (Kidner 2000, cited in Alaimo 2010: 352). According to these theorists, 'there is a material basis to life: an immediate, potent materiality that challenges all that the apparently autonomous, bounded, monadic liberal legal subject would like to disavow' (Alaimo 2010: 263 cited in Scott 2015: 4). As Elizabeth Grosz says, 'nature' exerts some resistance to our constructions of it (1994: 190).

Stacy Alaimo's (2010) notion of 'transcorporeality' depends on the porosity and permeability of bodily boundaries. It is intended to describe movement and exchange between and across human bodies and nonhuman nature. It focuses attention on the 'fleshy realities of socio-ecological interdependence' (Di Chiro 2008: 279). As such, it 'counters and critiques the obdurate, though postmodern, humanisms that seek transcendence or protection from the material world' (Alaimo 2010: 4), and in so doing, marks a 'profound shift in subjectivity':

As the material self cannot be disentangled from networks that are simultaneously economic, political, cultural, scientific, and substantial, what was once the ostensibly bounded human subject finds herself in a swirling landscape of uncertainty where practices and actions that were once not even remotely ethical or political matters suddenly become the very stuff of the crises at hand.

Alaimo 2010: 20

In the example employed in this paper, the human subject is an Indigenous woman on a reserve downwind of Canada's Chemical Valley in southwestern

Ontario. The landscape is her ancestral lands, surrounded by refineries and petrochemical plants that are now tied directly to the expansion of Canada's controversial tar sands region.⁸ And that action, perhaps not naturally thought of as ethical or political, is *breathing* . . . or more precisely, smelling. In the transcorporeal frame, even something as basic as 'smelling' is cast as political. It is the witnessing of pollution, and it is a profoundly social act. As I will argue, it is actually the practice of *inhaling together* and the truth claims that flow from it that issues a compelling challenge to conventional ways of knowing the world grounded in liberal political theory (see also Buhler, this volume).

Knowing the smellscape

There are competing conceptions of smell. On the one hand, it is described as 'intensely visceral' (Drobnick 2006: 1). It is 'often delimited as a mere "biological" sense . . .', in that we have a 'tendency to regard smells purely on the level of phenomenological immediacy' (2006: 1). The olfactory receptors have been conceived as 'plugged directly into the limbic brain' (Porteous 1996: 36). But in fact, precisely how smell works remains a mystery: it has 'defied scientific understanding for centuries' – although in 2004, the Nobel Prize in Physiology was awarded to two scientists said to be on the verge of cracking the basic code by which scents are perceived and cognitively processed (Porteous 1996: 2). As Scott (2015: 270) explains:

The mystery is furthered by the notion that there is something unique about the way we interact with our environments through the sense of smell – the way that odors are inhaled, incorporated into our bodies and transformed through the act of perception. There is a boundary transgression inherent in the act of smelling: to become aware of a scent is to have already inhaled it.

Perhaps the cultural anthropologists are right that because in relation to smelling you can interact with the 'essences or interiors of things' rather than with just the surfaces, smell actually offers a more direct path to 'truth' than the other senses.⁹

In any case it seems clear that we have to understand smell as a social and not only a biological phenomenon. 'No act of perception is a pure or unmediated event' (Drobnick 2006: 1–2). The perception of a smell must therefore consist not only of the inhalation of the molecules that make up odours themselves, but it must also inevitably engage our experiences and emotions associated with them (Classen *et al.* 1994: 2). This prompts Porteous to label smells as 'information-poor and emotion-rich' (1996: 36). Smells are also elusive. They are not named: any names for smells are actually drawn from the limited selection of taste terms (such as sweet, pungent, bitter),

or they are drawn from the things from which the smells emanate (such as coffee, paint, grass, curry). Nor can smells be recorded: ‘there is no effective way of either capturing scents or storing them over time’ (Classen *et al.* 1994: 3). As the cultural anthropologists lament, ‘we must make do with descriptions and recollections’ (Classen *et al.* 1994: 3).

As evidence of legally relevant facts, recordings of sounds and sights (such as photographs, audio and video) have seen much more action in the courtroom than smells. But we should also recognize that eye-witness testimony, which is often treated as highly significant (Dahl *et al.* 2006; Loftus 1979: 54–5) (despite its shaky foundations),¹⁰ also invariably depends on ‘descriptions and recollections’. It is also sometimes argued that smell has largely been dismissed in modernist thought, and presumably as courtroom evidence, because it is seen as too ‘subjective’ (Levine 1994: 1037).¹¹ Smells are far more difficult to *measure* than sounds, for example: ‘[a] sound of a certain number of decibels is known to be harmful to the human ear, but smell of a certain concentration may not affect all people in the same way’ (Classen *et al.* 1994: 170).

In some of the earliest cases involving public nuisance claims related to smell, we find the notion of smell’s ‘subjectivity’.¹² In particular, it is noted that ‘conflicts of interest’ tend to colour these disputes. A ‘smell is tolerable for those who are accustomed to it and have a profit to make out of these malodourous businesses. For those who are not and do not, however, it can be unbearable’ (Classen *et al.* 1994: 171). As an example, in *Aldred v Benton* in 1610, the defendant stated: ‘The building of the house for hogs was necessary for the sustenance of man: and one *ought not to have so delicate a nose*, that he cannot bear the smell of hogs’ (77, emphasis added). The accepted wisdom, therefore, is that there exists considerable variation in people’s tolerances or ‘odor annoyance levels’, and that one’s tolerances can be correlated with one’s material interests (Levine 1994: 1037; Buhler, this volume). This notion seems to also jive with contemporary everyday experience. Elsewhere I (2015: 270) describe how ‘unionized workers in pulp-and-paper mill towns in northern Ontario were known in better times to respond to tourists’ queries about the sulphurous stench with the line, “It’s the smell of money”’.¹³

Honing a somatic mode of attention

‘What *is* smell anyway, if it is not just a bunch of molecules in the air, rearranged and reconfigured inside ourselves, and delivered as messages to the brain? Can it be anything before that moment of cognition?’ (Scott 2015: 271). The central claim of environmental justice activists in deploying the bucket brigades is that possessing the data constitutes a source of power for the community. But the data, of course, is not the air samples or the ‘smells’ themselves; data emerges in the translation of these samples and smells into

numbers on a page. For the activists at GCM, the odours are just indicators – what they really want to document are the chemical exposures (Breech 2013, personal communication). By this point in the process, the smells have come to be expressed as chemical concentrations, and complex codes based on technical formulae are applied to determine the significance of those concentrations across time and space.

There is evidence that the data *does* shift the power relations. In South Africa, Ardiel Soeker of the environmental group groundWork, which trains bucket brigades in Cape Town, has stated ‘[t]he most significant aspect of the . . . bucket sampling is the power it gives communities’ (Nijhuis 2003). Similarly, Anne Rolfes, director of the Louisiana bucket brigade known as LABB, remembers when a ‘sampler’ confronted a manager at a local refinery, saying: ‘That was one of the great moments of my life. [The manager] was so smug and rude, insisting that there wasn’t a problem, and [the resident] just slammed her air sample results down on the table and said, “Then why did you violate the state benzene standard?”’ (Nijhuis 2003). Benzene is a known carcinogen, linked to the incidence of leukaemia (Canadian Council of Ministers of the Environment (CCME) 2012). Rolfes argues that the bucket brigade transforms ‘a very vague complaint, like “It smelled bad last week,” to “You violated . . . [a] standard.” That’s the beauty of it’ (Strickland 2004). In Aamjiwnaang, within a few months of the Band releasing bucket brigade results, which also showed ‘off the charts’ levels of benzene, the Ministry installed an air monitor on the reserve – achieving what had been a central demand of residents over at least a four-year period (Scott 2008; Wiebe 2013). It is as if regulatory agencies suddenly find themselves in the position where the only way to refute the bucket brigade data is to actually take a test themselves.

The terms ‘citizen science’ and ‘popular epidemiology’ are applied to describe this kind of ‘knowledge production by, and for, non-scientists’ (Ottinger 2010: 245). In Aamjiwnaang, residents have conducted community health surveys and engaged in biomonitoring and participatory body-mapping exercises (Lockridge 2013; Scott 2008). The literature almost uniformly predicts that the incorporation of ‘citizen science’ will make environmental knowledge and policy more robust and democratic (Fischer 2000; Ottinger 2010). In fact, Ruth Breech of GCM says that the message they want to give to residents is that:

You *do* have the power to observe. You *do* have the power to repeat. And what you are doing is valid . . . sure, you are not trained and we are not saying that you are taking the place of a toxicologist or an epidemiologist; they have a skill that they bring to the table. But what they are not listening to is that the people are the experts at living in their community . . . they know the way the wind blows.

Breech 2013, personal communication

In the case of the bucket brigades, this democratization of science could influence policy ‘to be responsive to broad social concerns rather than the specific interests of elites’ (Ottinger 2010: 245), or by stimulating research into the health effects of repeated spikes in pollution, for example. In this sense, the bucket brigades are expected to not only contribute ‘information’ about local air quality, but also to contribute knowledge that supports alternative modes of air pollution regulation.

Although it is tempting to accept this simple framing – that ‘knowledge equals power’ – the mechanisms through which knowledge is incorporated into legal and political structures are in fact tightly controlled and highly resistant to sudden shifts in power (McGarity and Wagner 2012; Michaels 2008; Wagner 2004). Most critical are the scientific ‘standards’ that ‘structure judgements about the value of data produced by non-scientists’ and ‘influence the ability of those citizens to be accepted as legitimate participants in knowledge and policy-making processes’ (Ottinger 2010: 247). These standards typically emerge out of quiet collaborations between environmental regulators and chemical industry experts. They are grounded in their shared training and overlapping professional networks. But although the regulators and the industry representatives have much in common, they share almost nothing with the residents who are trying to gain access to the inner circle. Even when those residents can determine when and where these standards are developed, they would have to overcome ‘extreme disparities of wealth, education’, and political power in order to penetrate those venues (Ottinger 2010: 248).

In the environmental justice context, activists confront standards for methods of air sample collection and analysis; for the detection of health effects in populations; for statistical significance in epidemiological studies; for allowable ambient air quality criteria, etc. As well as providing the basis for experts to make judgements about what is relevant and irrelevant, what is reliable and unreliable, these standards also embody certain value judgements about the political, social and economic considerations linked to the data. But these standards, as mentioned, are developed in backrooms filled with epistemic communities of experts with shared values, which makes them extremely vulnerable to corporate influence (Castleman and Ziem 1988; Salter and Salter 1997: 79–81; Wagner *et al.* 2011; Wood and Johansson 2008: 367–8). Finally, they are given ‘political and material force as they are incorporated, often wholesale, into regulations and formal law’ (Scott 2015: 275).

Nevertheless, according to Gwen Ottinger of the Chemical Heritage Foundation, standards not only constitute a resource for regulators, industry and their experts seeking to *dismiss* residents’ claims, but they also can become a resource for activists. ‘[C]ombined with collective action and other strategies for overcoming power disparities, standards offer opportunities for citizens to render their challenges recognizable to experts’ (Ottinger 2010: 251). As an example, in 2000 LABB issued a press release stating that

its bucket results had turned up benzene at 3.5 times the Louisiana state standard. It did so without noting that the state standard is an 8-hour average and LABB took a sample over a period of 3–6 minutes. The residents, according to Ottinger, are ‘not ignorant of the incommensurability of the standards’ – they mobilize them strategically (2010: 262). Furthermore, the bucket brigades are intended to hold an implicit critique of the way those standards treat *peaks* in pollution levels. In other words, the fundamental challenge presented by the buckets is that ‘the experts’ monitoring practices could *never* yield data that would adequately represent the health risks faced by communities’ (Ottinger 2010: 262). Accordingly, in Aamjiwnaang, the bucket brigade data is deployed in combination with other tactics in popular epidemiology in order to demonstrate that neither the monitoring nor the standards themselves are adequate to protect the health of residents.

The social bond built into the data

Let me turn now to consider the bucket brigade data as *evidence*. Denny Larson says that the data has been used in hundreds of court cases: ‘[h]owever, in every single case the company has settled prior to going to trial, which is evidence of the power of the bucket’ (Larson 2010).¹⁴ Larson emphasizes the credibility and legitimacy of the data, but he inevitably does so through recourse to scientific standards, exposing a tension in the normative basis of the bucket brigade and its characterization as citizen science. It is therefore reasonable to question the extent to which the bucket brigade is actually based on experiential knowledge. The ‘sniffer’ employs detailed experiential knowledge of the smellscape in order to come to the decision to collect a sample. But once the sniffer sounds the alarm, the ‘sampler’ mobilizes a new set of tools – and these tools are ‘primarily oriented to the observation, measurement, and sampling of pollution according to norms developed *outside* the community, under a foreign system of expertise and following accepted western scientific standards’ (Scott 2015: 276).

On the other hand, in the broader context of the bucket brigade strategy as a whole, the instruments and methodologies of science play a very small part in the social bond legitimizing the narratives. The resident sniffers and samplers are ‘fighting to become participants in a regulatory process that makes judgements about whether the air in their community is safe to breathe’ (Scott 2015: 276). Another phrase in Ojibwe, *anishnawbe bimadziwin*, can be roughly translated as ‘to live well . . . as Anishnaabe’ (Jackson 2011: 613). An elder in Aamjiwnaang expresses it this way: ‘Environment . . . is *bimadziwin* . . . Way of life. It is our life. It is all of Creation’s life’ (Mike cited in Wiebe 2013: note 24). It is commonly translated as ‘to live in a good way . . . the good life’.¹⁵ A practice integral to achieving *bimadziwin* involves the use of tobacco, cedar, sage or sweetgrass in a smudging ceremony.¹⁶ The act of inhaling, together, is what is believed to bring the

benefits. Similarly, the bucket brigade strategy is legitimized through a social bond forged through the common experience of living on a day-to-day basis with these risks (see parallels to Buhler's discussion of 'an ethic of shared breath' in this volume). In Aamjiwnaang, the detection of benzene is given force by the experience of living in a small, tightly knit community that has lost too many young people over too short a period to leukaemia, a rare cancer (Lockridge 2013; Wiebe 2013: 87). A social bond is forged through the act of inhaling together.¹⁷ Its significance lies in the unexpected exercise of agency in the context of a material world that is otherwise tightly structured by forces external to the community. Residents are 'choosing to resist even as they have no choice but to inhale, despite what they know about the air they breathe' (Scott 2015: 277).

In fact, Ruth Breech of GCM emphasizes the collective nature of the bucket brigade evidence (Breech 2013, personal communication). The decision to take a sample is not made by an individual acting alone: it is always 'verified', formally or informally, by at least one other person in the community who also detects a smell, and agrees that it is either particularly acute or in some way unusual (Breech 2013, personal communication).

'When Ada Lockridge recounts her actions as both dramatic and routine pollution incidents unfold, it is always a story involving others.¹⁸ Either her daughter calls her to say "her nose is burning up" on Hwy 40, or her sister calls her frantically, saying, "What the hell is out there, Ada? The smell is all through my house"' (Scott 2015: 276). Furthermore, the collection of data by bucket brigades is almost always accompanied by, follows or stimulates further practices of popular epidemiology in the community. This was certainly the case in Aamjiwnaang, where the community's health issues have been extensively documented by volunteer teams of residents through detailed door-to-door surveys, body mapping and biomonitoring projects (Macdonald and Rang 2007; Lockridge 2008, 2013; Mackenzie *et al.* 2005; Wiebe 2013).

Ada Lockridge keeps a pollution log on her calendar. She records what she smells and feels from day to day and keeps the calendars from year to year in case she needs to photocopy them to send to her lawyers (Lockridge 2013). On 26 April 2013 there is an entry in Ada's calendar. This time, there was a chemical release from Shell Sarnia during a 'turn around' (Wright 2013), and three men working at the facility 'went down'; they 'immediately passed out' (Lockridge 2013).

Ada's daughter reported that 'it was really bad out there', prompting Ada to take an air sample as she watched her neighbours' kids gather at the school bus stop across the street. The release turned out to be hydrogen sulphide. GCM analysis revealed that the bucket detected levels of the chemical that exceeded both the provincial 24-hour health-based standard and the 10-minute odour-based standard. The local

newspaper reported that, '[a]ccording to the US Agency for Toxic Substances and Disease Registry, exposure to even low concentrations of the chemical can cause irritation to the eyes, nose and throat and may make it hard for people with asthma to breathe'.

Scott 2015

Ada emphasizes that no sirens sounded in Aamjiwnaang on 26 April. She was left wondering: 'Do we need to go out and sniff the air every morning before the kids go out to wait for the school bus? Is that what our normal should be?' (Lockridge 2013).

Focusing on the actions specifically of the sniffers, we can therefore see that the data actually *is* the smell. The smellscape is built of data points gathered by a collective according to a well-honed experiential knowledge held in common. The data points are ordered and assigned significance 'not by individuals acting alone, but collectively, through a system of constant feedback and affirmation in which individuals make judgements in relation also to the reactions of others to the external stimuli in their shared environment' (Scott 2015: 277). As in Geertz's classic definition of local knowledge, it is a way of knowing that is 'practical, collective and strongly rooted in a particular place'; it constitutes an 'organized body of thought based on immediacy of experience' (1983: 75).

Somatic modes of attention

As a way of validating experiential knowledge of the smellscape, we could turn to a methodological orientation known in cultural anthropology as 'somatic modes of attention' (Csordas 1993). These 'are culturally elaborated ways of attending to and with one's body in surroundings that include the embodied presence of others' (1993: 138). 'Because "attention", here, implies both sensory engagement and an object' (1993: 138), a somatic mode of attention must mean both attending 'with' and attending 'to' the body:

To attend to a bodily sensation is not to attend to the body as an isolated object, but to attend to the body's situation in the world . . . it is thus a mode of attending to the intersubjective milieu that gives rise to that sensation.

Csordas 1993: 138

A somatic mode of attention 'broadens the field in which we can look for phenomena of perception – and suggests that attending to one's body can tell us something about the world *and* others who surround us' (1993: 138, emphasis added).

For those living in a toxic hotspot, paying attention to and with the body means becoming cognizant of the way that we learn from our senses, not in

a controlled environment one at a time, but from many of them at once. As Ruth Breech puts it, ‘we tell people to pay attention not just to what they are smelling, but what they are feeling’ (2013, personal communication). As Pezzullo (2004: 248) notes, coming into these places often causes ‘eyes to water and throats to tighten . . . a reminder of the physical risk toxics pose’. Residents are encouraged to record these sensations – not just smells, but also any associated headaches, nosebleeds and dizziness. In this way, the pollution logs, like Ada’s calendar, become evidence alongside the air samples. GCM says it has been most successful at forcing industry action when it can show up with multiple log notes from different community residents all taken contemporaneously that demonstrate that people experienced similar physical symptoms, or sensations, at the same time (Pezzullo 2004: 248).

There are obvious parallels between the notion of a somatic mode of attention and a Deleuzian conception of the body (see Quéma, this volume). This conception challenges accepted notions of the individuated subject and instead calls for, in Anne Bottomley’s words, a ‘morphing of the body into a site of patterns, flows and intensities in which the emphasis is continually on movement’ (2002: 140). This, as I have argued elsewhere, provides a powerful ‘antidote to the individualised ideal of the liberal, monadic legal subject’ (Scott 2009: 257, 2012). The body, as Grosz says, is ‘not as an organism or entity in itself, but as a system, or a series of open-ended systems, functioning within other huge systems it cannot control’ (2004: 3). Conceptually, this is a useful move because it places the residents of fenceline communities as subjects immersed in a social, historical and political context. In Aamjiwnaang, this is a context that both accentuates their vulnerabilities to the pollution and demands a collective response.

If we accept the somewhat intuitive claim that we can conceptualize our senses as our ‘interface’ with the environment, the act of smelling is conceived as a simple, biological chain of events. Molecules in the air are picked up by sensors in the nose and transmitted as signals to the brain.

But the notion of transcorporeality issues a potent challenge to this orthodoxy. ‘Our senses might go some distance in tracing the mostly invisible, but still material, flows of substances between economic actors, bodies, and ecosystems but much of that flow also passes right “under our noses”, so to speak’ (Scott 2015: 278). A model in which smells enter through our nostrils, to be perceived and cognitively processed (‘plugged directly into the limbic brain’), maintains a solid boundary for the body, whereas on a transcorporeal frame, the body’s boundary dissolves. Instead, smells must be conceived as running ‘right through us, in endless waves’ (Fromm 2009: 95). Nancy Tuana (2008) uses the term ‘viscous porosity’ to describe this: in other words, it is not that the flow is unconstrained. ‘The key point is that the mediating membranes may be biological – and they may also be social or political’ (Alaimo 2010 cited in Scott 2015: 278). On a transcorporeal frame, chemicals are constantly within and around us, making the

notion of a somatic mode of attention – turning attention to and with our bodies – all the more urgent.

I have made the argument here that experiential knowledge is local and situated, collectively generated and held, and emanating from place. This is not intended to undermine its credibility or authority. On the contrary, what I hope to make clear is that ‘scientific’ knowledge about pollution is *no less situated* – it also emerges from a particular social context and set of shared norms (Jasanoff and Martello 2004). Laboratories that turn smells into numbers on a page are made up of people implementing a specific set of norms and applying a shared code. Their code is as difficult to ‘communicate beyond the particular setting where it is generated and held’ as any other (Iles 2004: 291). These far-off laboratory technicians working with the bucket brigade samples draw conclusions

on the basis of the application of a set of conventions, collectively held and locally situated, in the same way the residents draw conclusions about the pollution on the basis of their pollution logs, their rich knowledge of each resident’s health problems, and their detailed knowledge of the smellscape.

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This recognition brings to mind Code’s notion of ecological thinking: ‘an empirically-based, evidence-respecting position that takes empirical evidence seriously while contending that evidence rarely speaks for itself either in its claims to count as evidence or in its meanings and implications’ (2006: 23). Code urges us to hold respect for a plurality of careful empiricisms. In other words, the claims of positivist science ‘may not indeed be rendered false’ through ecological thinking, but their limitations, according to Code, are likely to be exposed and their pretence to ‘the one true story’ is likely to be challenged (2006: 30). Under this theoretical frame, with a somatic mode of attention attenuated by transcorporeality, ‘experiential knowledge acquires an enhanced status – not an uncontested credibility or authority – but a basic validity’ (Scott 2015: 278–9).

Conclusion

The sniffers and samplers of the bucket brigades are becoming ‘ordinary experts’ (Di Chiro 1998). They are engaging in everyday social practices that activate a fluid merger between experiential ways of knowing and scientific ways of understanding the material reality of their world. Their project is driven by ‘recognition of the limited capacities of experts, the flawed logic of their systems, and the partial or incomplete nature of all forms of knowledge’ (Scott 2015: 279). They are acting in and reacting to a regulatory dynamic created by a chronic lack of pollution enforcement

(Amos *et al.* 2011; Collins 2007). The situation both ‘forces residents to fall back on their senses, and demands that they transcribe that knowledge into new, and foreign, forms’ (Scott 2015: 279).

The notion of transcorporeality is productive here because it directs us not only towards the

permeability of the bodily boundary, but also the science/experience boundary. It leads us to consider a way forward that refuses such a sharp distinction between the knowledge gathered by residents ‘sensing’ their environments, and the knowledge that is generated about their environments through the application of foreign instruments, protocols, standards and codes.

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These forms of merger have been called ‘hybridized’ (Jasanoff and Wynne 1998) or ‘fused’ (Corburn 2003). For residents of pollution hotspots like Aamjiwnaang, the most intuitive ways of knowing their environment may not be instrument-dependent, but activists are willing to engage in the strategic deployment of the bucket, ‘with all its trappings’, in order to try to shift the terms of a debate that affects something as fundamental as the air they breathe.

To validate their experiential knowledge, in its fluid merger with science, we need to find a way to counter the ‘epistemologies of mastery’ that pervade legal, rule-making institutions (Scott 2015). Those institutions continue to focus on precise measurement and strict causation and to apply evidentiary rules that implicitly draw on the ideal of a universally translatable truth to be found by individual, interchangeable autonomous subjects working alone. A negotiated empiricism, a recognition of a somatic mode of attention attenuated by transcorporeality, instead insists that ‘experiential knowledge is robust *because* of its inter-subjectivity, not in spite of it’ (Scott 2015: 280).

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Notes

- 1 Ojibwe, or *Anishinaabemowin*, the language of Anishinaabe peoples is not widely spoken in Aamjiwnaang, although several residents have in recent years begun initiatives to reclaim and restore knowledge and use of the language in the community.

- 2 The author credits editor Diana Majury for the language ‘fluid merger’ to describe the required reformulation of the relationship between science and experiential knowledge.
- 3 This chapter presents a condensed version of ideas that were further developed in relation to a case study of resistance by residents of Peace River Alberta, downwind of the tar sands. The full article is published as: Dayna Nadine Scott, ‘“We are the monitors now”: experiential knowledge, transcorporeality and environmental justice’ (2015), *Social and Legal Studies*, Online First, doi:10.1177/0964663915601166.
- 4 The bucket brigades emerged in California in the mid-1990s according to the history provided by Overdeest and Mayer (2008). Unsurprisingly, they came about in a context of litigation. Ed Masry was leading a civil suit against Unocal after a two-week leak at a local refinery. The residents were asked to monitor leaks during the period leading up to trial. A multi-million dollar settlement with residents was eventually reached. Denny Larson, at the time, was with Communities for a Better Environment and later founded Global Community Monitor. Bucket brigades now operate in over a hundred different communities in at least 27 countries.
- 5 When I took my first ‘toxic tour’ of Sarnia in 2007, there was only one state-controlled air monitoring station. It was ‘upwind’ of Chemical Valley.
- 6 For a stirring account of the way that pollution incidents colour everyday life in Aamjiwnaang, see Sarah Marie Wiebe: ‘In Canada’s Chemical Valley, individuals are encouraged to prepare for hazardous incidents at any given time. As sirens wail, some local residents scramble to find shelter-in-place; others barely flinch’. (2013: 5).
- 7 The laboratory that they trust is located near Los Angeles, California. Once a sample is collected, it is immediately brought to a shipper and sent away, along with a certified ‘chain of custody’ sheet, to the experts in the lab coats far away (Breech 2013, personal communication).
- 8 For a discussion of the movement of tar sands crude east, and its significance for the Aamjiwnaang First Nation, see Scott (2013a).
- 9 For a review of recent research on the topic, see Leung (2012) and Blodgett (2010).
- 10 In the criminal law context, several Canadian commissions into wrongful convictions have put eye-witness testimony into doubt, including the *Kaufman Commission on Proceedings Involving Guy Paul Morin* (1989), the *Royal Commission on the Donald Marshall Junior Prosecution* (1989), the *Inquiry Regarding Thomas Sophonow* (2001) and the *Report of the Commission of Inquiry into the Wrongful Conviction of David Milgaard* (2008).
- 11 In other words, it is considered a matter of ‘olfactory tastes’, according to Levine (1994).
- 12 See, for example, *John M. Tyler et al. Petitioners v. John P. Squire et al. Respondents*, Cambridge, MA, 1873, Testimony of Petitioners, 1 December 1873, reproduced in *The Making of Modern Law: Trials, 1600–1926*.
- 13 I encountered this phrase in Espanola, Ontario in 1999. Ruth Breech says she has ‘heard so many variations on this . . . expressed in many different languages’ over the decade she has been working on these issues (Breech 2013, personal communication).
- 14 An available alternative explanation, of course, is that it is evidence of the impotence of the bucket: settlements are not convictions, after all, even though they may in many cases be the preferred outcome for communities and industry locked in long-term relationships. Nonetheless, the list of accomplishments that GCM can claim over the past decade is impressive: ‘cleaner air, new laws and regulations, families relocated to safer neighborhoods, children moved to a

- healthier school, the closure of a noxious toxic facility, and companies investing in improving their operations to reduce pollution' (GCM 2011: 6).
- 15 Nicole Bell explains that *Anishinaabe bimadiziwin* is 'living spiritually with respect, relationship, reciprocity and responsibility' (2013: 89).
- 16 In a compelling contradiction, however, there is evidence now that contamination is affecting both traditional practices with, and knowledge of, plants and medicines historically used by Indigenous peoples in Aamjiwnaang, Akwesasne and elsewhere (see, for example, Hoover *et al.* (2012); Wiebe (2013: 101)).
- 17 This is not to say that the 'pollution problem' in Aamjiwnaang is universally acknowledged, nor that the community is united in terms of what should be done about it; it is simply to note that those who do participate in the bucket brigades and other strategies for addressing concerns about environmental health do so in a way that reflects a bond forged through their shared everyday experiences.
- 18 This is true even though Ada Lockridge is recognized as the most dogged pursuer of a basic level of corporate responsibility in her community, at least with respect to spills and releases.