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Devices as Rituals

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"He would take my elbow and lead me, without saying anything. Sometimes we walked all the way across a field in total silence. Then he'd show me a nest with young birds in it. He loved the birds and animals and plants. He knew where they all were around the farm. He wanted me to be careful when working around the nest. He would do the same in the fields, if there was an unusual plant growing or something nesting I had to avoid those places when mowing the grass, and he would keep the cattle off them."[1]

The Problem

These words come from Vicky Singleton's field notes about cattle farming. Jack is talking about the 1930s when he was a lad and was starting to learn about farming from his grandfather. Jack died a few years ago. Those who knew him respected him as a strong, resourceful and practical man of great personal integrity. They also remember him as a man of few words, but here he is speaking in a way that comes close to lyricism. In this paper we seek to respect that lyricism by working *with* it. Our object is to understand the *craft* of farming better[2]. Where do its sensibilities – the kinds of sensibilities evinced by Jack – come from? How are they sustained? What do they do? These are our questions. And then, and as a part of this, we are interested in how we might *locate* these sensibilities in a farming world that is also, and necessarily and endlessly, about systems and efficiencies, and risk assessments and paperwork.

To do this we draw from ethnography about contemporary farming practices, and in particular beef cattle farming. Jack's son Michael now runs the farm. It isn't large, around 70 acres, with 60 beef cattle, and there isn't much of a living in it, so Michael also works in the family firm. But farming is a way of life for Michael. It is not a craft and an identity that he or his extended family would willingly lay down. So he works on the farm, and when he's there he's inserted into and participates in a complex world in which weather, sickness and health, the seasons and the grazing and the hay-making are woven into concerns about markets, prices, feeding, veterinary visits, health and safety, the tax authorities and the need to maintain detailed records for each animal.

Our concern with practices on the farm extends in particular to the last part of this context: the Cattle Tracing System (CTS) of the British Cattle Movement Service (BCMS)[3]. Why is the Cattle Tracing System interesting here? One answer is that it's important – nay financially crucial – to Michael as it is to everyone who farms cattle in Britain. Another is that the Cattle Tracing System looks and feels like a metaphorical *device*. First, as its name suggests, the CTS is *systematic*. In that regard at least it is machine-like. Second, it rests on an elaborate IT database, so it is literally also mechanical or electronic in parts; once again, then, it is machine-like. But does this mean that devices are necessarily machine-like? Our answer is that they don't have to look or be that way. A device, we're told by the Oxford English Dictionary, is 'something devised or contrived for bringing about some end or result'. It is also the product of contriving, and especially 'a mechanical contrivance (usually of a simple character) for some particular purpose.' This sounds machinic, but the Dictionary also tells us that devices may be purposeful plans or schemes that can also take the form of words ('as in rhetorical devices'), heraldic imagery, or indeed trickery. At which point we're

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[1] We have very slightly reworded the field notes.
[2] On the craftwork of farming see Gray (2000).
[3] For further discussion of the British Cattle Movement Service and its relation to farming practice see Singleton (2010).

being moved away from the mechanical and brushing up against the social as well. Then the dictionary also tells us that the modern word, 'device', comes via Middle English and Old French from the Latin root *dividere*, which means to divide or separate.

All of this – apart from the heraldry and the trickery – applies to the Cattle Tracing System. It's a farming device that divides, separates, and classifies; it's a contrivance that is purposeful. But what of Michael's work? What of the craft of farming? Should we talk of this as if it were a device? There is no right answer to this question. But in what follows we're going to say that Michael's farm work and how he cares for cattle can indeed be imagined as a device or (the argument works at different levels of scale) a set of devices. So in this expanded sense we will treat devices as *practices of purposive crafting* and our core question will be: *how is this achieved*?

The Cattle Tracing System[4]

The Cattle Tracing System enters farming in many ways.

> "One of the worst things about the system is the cost of the tags. I know the old fashioned tags were smaller and more difficult to read but the new ones get pulled out much easier, then we have the cost of replacing them. We have noticed how much more this is costing us."

So there is the cost of it all, for the Cattle Tracing System works because every cow has a tag. This is a unique identification number. "A tag", says a lecturer at an agricultural college, "is for life. It cannot be changed or taken out. It is the identity of the animal." Actually, every cow has two yellow tags made of plastic, one in each ear. You have to put them in with a hand-held gun. This punches a small hole in the ear.

> "He puts the ear tags in as soon as they are born, usually. It's easier. You can actually sit on the calf. He gets one of the lads to do it, or someone else; he can't easily do it, especially not on his own, he's not fit enough. It gets harder if the calf is older and the lads go mad because it's more difficult."

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[4] From 2007 to the present Singleton has carried out participant observation on two family farms and spoken to the farmers of five additional local family farms. The family farms vary in their size, land type (upland and lowland), livestock, crops, family membership and also in their relationships to larger businesses. The present paper draws largely on research on a lowland 70 acre beef cattle farm. It was farmed by a semi-retired farming couple whom we call here Jack and Mary, who have farmed all of their lives. Jack died recently. Two sons (including 'Michael') and two daughters live nearby and help with the farming but are all engaged in other professions. In addition to the participant observation Singleton has carried out textual analysis of relevant literature available to farmers such as the DEFRA web site and advice literature received on the farms and also the various elements involved in farm-based cattle identification and movement such as cattle passports. In addition, in 2007–2008, Singleton attended a taught course at a local agricultural college part of which offered guidance on cattle identification, registration and tracing – that is on implementing the UK Government Cattle Tracing System.

This is Mary speaking a few years ago of her husband Jack (who was semi-retired) and Michael ("one of the lads"). It tells us that the business of tagging isn't easy. Indeed it may be dangerous: farmers sometimes get injured tagging their cattle. But the tags go with passports. Here is Mary again.

> "Well … well, you're supposed to get the ear tag in quickly and the passport sent off, I think it's within 7 days."

So you tag within seven days of birth, but then you need to fill in its details in a passport. Every cow in the UK has its own passport, so when the cow is born you need to write in the calf's details which include its unique ear tag number, sex, breed, date of birth, the genetic dam, and the date the passport was issued. And then passport needs to be validated by the Cattle Tracing Service within 27 days of the birth of the calf.[5] Alongside the passports you also need to keep a herd register. The register records the information above. It includes the date of birth of each animal on the farm, its ear tag number, its breed, sex and the official identification number of the dam (if the calf was born on the farm). The herd register stays on the farm, and you need to keep it complete, up to date, and consistent with the information in the passports and, to be sure, the tags themselves. And then you also need to record movements, which again involves the passports. These have tear-out pages in the form of cards for mailing, and every time an animal moves on or off the farm you have to pull one of these out and fill it in. You need to tick the box that says whether the animal is moving onto the holding, or off it. And then you need to add the sticky farm barcode label (to use the CTS jargon, every 'holding' has its own unique number), countersign the tear-off slip, and post it off to the CTS within three days. You also need to send the passport itself back within three days.

Repetitions

These ethnographic moments tell us that Cattle Tracing System enters practice on the farm in many ways. They show that it leads to stress for farmers, and sometimes physical danger. They also, however, show that the Cattle Tracing System is being *enacted* in farming practices. Let's state the obvious. In the absence of those practices the system would be an aspiration or a dream rather than a reality. So what is it about the practices in question that turns dream into reality?

The point is elementary but crucial and it has to so with the character of practice. *Practices are repetitions*. The same patterns – or more precisely, patterns that are similar – recur, and they go on recurring[6]. In the absence of repetition nothing holds stable at all. Imagine these patterns, then, as recurring relations that spread through and order the elements that they hold together. Imagine, too, that those relations are *materially heterogeneous*. The result is something like an identity machine: while the patterning goes on it is generating identities and shapes for whatever falls within it. So, for instance, the CTS sits in repeating patterns that include and draw on passports, tags, calves, including need, at least at times, to sit on calves which risk the ire of their dams. It rests in continuing gestures and actions such as tearing slips out of books, filling them in, and putting them in the mail.[7]

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[5] The procedures are slightly different for dairy cattle.
[6] We tread on Deleuzian territory here (Deleuze: 1994). Deleuze meticulously distinguishes between generality and repetition. But though we do not use his vocabulary our general position is consistent with his metaphysics, for our analysis assumes that difference precedes identity.
[7] It is possible to complete the necessary 'paperwork' on line now but the farmers observed by Singleton preferred the paper system.

In saying this we are saying that we need to avoid the temptation of imagining that, for instance, a calf is a calf is a calf. Or a passport is a passport is a passport. That, in short, they have a stable character in and of themselves. The argument is that without the patterns things don't hold steady, whereas with those patternings they take a particular and practice-specific and no doubt malleable form. So, for instance, within the repetitions of the CTS a calf is a body that is tagged, thereby achieving a particular identity. In other practices it is something different. It has a different shape. And the same applies to passports, together with all the other elements patterned together and given form in the repetitions of practice – including the people such as Jack or Michael who get caught up in these repetitions.

So this is the bottom line. Realities or identities are generated in patterned and heterogeneous practices. And patterned practices themselves are repetitions. If the CTS is a device of purposive crafting, as indeed it is, then it rests in or upon *repetition*. This is what a device *is*.

Feeding and Caring

But, of course, there are other practices patterning and ordering on the farm too.

> "Michael walks down the public path and onto the farm. The path forks. The left hand fork leads to the field with the cattle, and the other to the farmhouse. He takes the right hand path towards the farmhouse and the outbuildings. He's looking for tools to repair a leaking oil tank. He has only just noticed that it's leaking and he seems preoccupied. He says he is worrying about the leaking oil, the cost, and the potential damage to the land.

> Beyond the farm there's a three acre field with 42 cattle. They're dotted about the field, but now they start to move. They're moving towards the gate that opens onto the lane where I've just been walking with Michael. They congregate at the gate, jostling one another and making a lot of noise. Bellowing loudly. Michael doesn't look at the cows. He carries on searching for tools. He is talking about the various ways he could empty and repair the oil tank. He finds the tools that he needs. He goes to look at the oil tank which is some distance off, while I go to visit Mary in the farmhouse. I notice a short time later that the cattle have gone quiet and they've dispersed."

This again comes from Singleton's field notes. Later she talks to Michael about the cows and how they behaved.

> "He explains that this is what usually happens when the cattle see him. They make a noise and they congregate at the field gate. I ask him why. He says it must be that they know him. They recognize him. He says that the cattle don't behave like this in response to anyone else going by, even though this is a public path with many passers-by. Mary agrees."

So why do the cows act in this way?

> "Michael says that he thinks the cattle recognize him because he feeds them. I also note that I have observed him feeding and caring for the cattle throughout the winter when the cattle have been kept in cattle housing. Michael delivers large bales to the cattle three times a week and monitors their water supply. During the extreme cold weather in December he delivered water to the cattle by hand. He attended to their bedding each day, spent

considerable time leant against the rails that divide the cattle housing quietly observing the cattle for signs of ill health and of immanent birthing. He has helped them to give birth to their calves. He has delivered medication to the cows when they needed it. That is, the cows and the farmer 'know' each other, have developed a relationship over time through aspects of living with one another. An important part of this relation is that the farmer provides feed."

Michael is doing what all good farmers do. He is caring for his animals.[8] And farmers care too for their fields. Indeed caring for cows and caring for fields may go together. So grazing is managed in various ways but Michael also watches the cattle carefully to see if they have "eaten up" in one field, and need to be moved to another. At the same time he is also thinking about which parts of the farm need to be held back from grazing for hay-making.

Knowing when the cattle have eaten up and must be moved to new grazing is not obvious. There is still grass in the field at these times, but there may not be enough of it, it may not be accessible, or it may be the wrong kind of grass. So how does he know? The answer is that Michael looks for signs that the cattle are restless. Perhaps the cows are bellowing more, or they are being fractious with one another. There may be damaged fences and hedges indicating that they have tried to push through into other fields to find more or better grass, or somewhere where it is more accessible. He also watches to see if they are losing weight, or failing to thrive, or getting noisy, especially if they see him – as indeed they did when he went to look for his tools in the outbuilding.

How are repetitions possible?

What we have just described has little or nothing to do with the Cattle Tracing System. It has to do with care, care for cattle, and care for the fields of the farm. That there are substantive differences between the two kinds of practice is clear. Here's a gesture. Caring is less articulate. Its patternings rest more on the *implicit*. Caring is more about experiment or iteration and less about pre-formatting. It is, in other words, a bit like *tinkering*, more or less experimental in form.[9] Again, and similarly, compared with the patternings enacted in the Cattle Tracing System, it is also relatively *fluid*. The identities or the realities that it enacts in its patterned relations *unfold* in the course of the tinkering. So the differences between the practices are real enough, but so too are the similarities. What we are looking at is two versions of productivity, two *styles of repetition*. But *how are repetitions possible*? *How do they work*?

These are questions with many responses. For instance, there are literatures that insist on the importance of *craftwork and its skills*. Obviously these are crucial here. It is, for instance, clear that Michael simply *knows* his cattle. He knows how to interpret their behaviour, and as a part of this he sees things about them both collectively and individually that an untutored observer simply wouldn't notice. He also knows what needs to be done as events unfold or things go wrong. As a part of this, he is in daily contact with them. And that daily contact is crucial. Thus the time he spent caring for

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[8] Lest this gives the impression that Michael is living a rural idyll, the work of caring that he does is sometimes difficult, painful and very messy. For example, carrying buckets of water down a lengthy, uneven, poorly lit path in the freezing winter because the water supply to the cattle housing is frozen is essential work that involves getting wet and very cold. The work of caring for cattle is relentless.
[9] For care as tinkering see Mol (2008).

them day after day through the winter months is all about repetition, not in the formatted Cattle Tracing System version, but in the looser and fluid way that we have just argued characterises the patternings of care.[10]

So skilled craftwork lies at the heart of the repetitions of farming, but practices also pick up, pattern, and are patterned by other parts of the farming environment. As we've seen, it isn't simply that Michael knows his cattle, but they know him too. But other materials are important too: the cattle housing, the railings in the barn, the bedding, the water, the feed and all the rest – all of these are important in holding the pattern of repetition. So, alongside human craftwork, other materials are caught up in, shaping, and being shaped in the repetitions of practice. To use the jargon, practices are *materially heterogeneous*[11]. The argument is that since some materials tend to hold their shape better than others (think of the physical structure of the housing with its partitions, or the tags and the passports) their relative durability tends to render repetition easier.[12]

So craftwork and material heterogeneity are both crucial, but it is also possible to attend to specific mechanisms of repetition such as *rituals and refrains*. Consider, for instance, refrains. These are just that – chanted repetitions. They come back, and they come back again, for instance in singing. They enact periodicities and cycles and they mark beginnings, transitions and ends. And as they do this they help to generate identities that hold them in place. Isabelle Stengers, writing about the resistance of the anti-globalisation movement to the World Trade Organisation, catches the logic of the refrain when she writes that: 'What is needed is … a refrain, like children in the dark, who hum under their breath in order to summon the courage to walk.'[13]

So refrains – or refrain-like moments – are techniques for holding steady, or summoning up the courage to hold steady. And so too are *rituals*. Like refrains, these are structured mechanisms of repetition that work by resonating with, and reproducing patterned – and patterning – relations. A long tradition of work in anthropology[14] tells us that ritual practices stand for, symbolise, and reassert larger relations: that the macrocosm is located within and stabilised by the microcosmic practices of ritual. It adds that those relations may extend beyond the social to include divinities, animals and materials. And then we need to note that rituals may be but are not necessarily religious. Coronations or state openings of parliaments would count.[15] And then we would add that the idea of ritual and its forms can be extended into mundane practices. Small and seemingly trivial practices also carry macrocosmic fates if we choose to think of them that way[16]. So if the practice of filling in the passport structures and helps to steady the world of the Cattle Tracing System, or the

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[10] There is extensive writing on the importance of craftwork. For two classic references in the quite different context of scientific practice, see Polanyi (1958) and Kuhn (1970).

[11] There is also extensive writing on the material heterogeneity of practices. It is implied in the work of Foucault (1979) and actor-network theory (Latour: 1987; Law: 1986), but see in particular the work on ontological choreography by Cussins (1996).

[12] Though durability is always relative. Cattle may break down fences and hedges.

[13] Stengers (2008, 43). We will return to the important distinction that she makes between those refrains that challenge, open, and work to resist capture, and those that eradicate alternatives.

[14] Anthropological concern with ritual reaches back to the work of Émile Durkheim (1915) , Marcel Mauss (1991), and moves forward to include the writing of Claude Lévi-Strauss (1968), Mary Douglas (1973) and Victor Turner (1995).

[15] Shils and Young (1953).

[16] See, for instance, Ferguson and Gupta (2002).

quiet attention in the cowshed re-enacts the world of care in its repetitions, then it may be helpful to think of these as rituals.

We will come back to this thought, but let's return to the empirical.

CTS inspections

Here's another part of the Cattle Tracing System: the inspection. We use Mary's words to tell the story.

> "They don't give you much notice. We've had two. The first one was useless. She just went into the field. Well the cattle were out when she came. She walked around with them, counted them and said everything is fine. But the second visit, two came, with a printout with all our numbers on. They were matching their paper with the ear tag numbers with our records…. Then they found a problem…. She said, 'I have to put it down, nothing will happen, there's only this one, I just have to mark it down.'"

What had happened? What had gone wrong?

> "… It was that there was a discrepancy between my husband's book and their records and the ear tag. The ear tag and their records said one number, Jack's book said another…. Now I always double check, I say, 'what's the number of the mother?' And then we go from that and check the number of the calf… This time, he looked in his book, and he always writes in pencil, and it had smudged, it looked like a different number, not a nought, with the pencil smudge."

Inspections may be sprung on a farmer at any time. DEFRA (the UK's Department for Environment, Food and Rural Affairs) gives only forty-eight hours' notice. And inspections are extremely stressful. If you fail – if the passports, the herd register and the tags don't all coincide – then you may lose real money. This nearly happened to Jack:

> "We got a letter from DEFRA a few weeks after, telling us we had had a discrepancy and that others could affect our single payment. It frightened … Jack. He said we could have lost money. You get penalties on your single payment, you lose percentages. We were alright, this one didn't matter, just a mistake."

Jack was very anxious about the inspection. Most farmers are. If you don't get it just right you get into trouble and it can be costly. But it is also difficult to get it just right. The process demands a kind of seemingly arbitrary precision:

> "We get sent 100 passports at a time and then I order the matching ear tags. … Now, our last calf was number 700109, what do you think the number of the next one will be? Well, it's 100110, and the one after that is 200111. It doesn't make much sense."

That's Jack speaking, and Mary adds:

> "He puts in an extra nought, it's confusing, it doesn't follow on and if you get a pencil smudge or an extra nought, well!... But now we are very careful."

Generalising

So refrains and rituals are mechanisms of repetition. To state the obvious, some are punitive. At any rate, if the Cattle Tracing System is a set of rituals and refrains, then for the farmer at least, these are more or less disciplinary[17]. You suffer if you don't conform. Indeed, you also suffer if you do conform.[18] But as a part of this something else is going on too. To see this, consider two excerpts from the Department for Environment, Food and Rural Affairs (DEFRA) website.

> "What keepers have to do
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> - all cattle born on their holdings are tagged within set time limits
> - cattle passport applications are received by the British Cattle Movement Service (BCMS) within 27 days of birth
> - farm holding registers are kept up to date
> - all movement documentation is completed and welfare rules are observed when movements are undertaken
> - movements comply with the conditions of the General Licence for the Movement of Cattle
> - day standstill periods are adhered to and movements are reported within 3 days
> - deaths of cattle are reported within 7 days
> - they co-operate with cattle inspections as and when required. (5% of cattle holdings are inspected on a yearly basis. This will fall to 3% from June 2011)"[19]

Here's the second extract from the same website.

> - "Disease outbreaks and the measures to control them can carry wide and costly consequences for public health, the economy and the environment. Vigilance and good stockmanship are vital in the fight against animal disease. Monitoring animals for signs of disease, and following good farming practices are essential ways of reducing the risk of disease and preventing the spread of disease. …
> - As a livestock keeper there are things you must do. For example, you must register as a keeper and correctly identify your livestock. There are also rules about the movements of livestock. These help to prevent the spread or outbreak of animal diseases."[20]

First notice this. Both excerpts move between the *descriptive* ("[d]isease outbreaks and the measures to control them can carry wide and costly consequences for public health"), and the *normative* ("there are things you must do"). They tell us first that the real world *is* a particular way, and then they observe that certain normative consequences follow from the reality that they have just described. But then, note that this coupling is not unusual. "[I]f there was an unusual plant growing or something nesting I had to avoid those places when mowing the grass, and he would keep the cattle off them." We quoted this already. It was Jack's memory of his grandfather back in the 1930s, and it also combines the normative with the descriptive. And we quoted this too. "During the extreme cold weather in December he delivered water to the cattle by hand." This was Michael at work. Here the descriptive-normative link is implicit (cold weather implied the need to bring water) but it is there again even so.

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[17] The character of this is explored in greater detail in Singleton (2010).
[18] Singleton (2010; 2012).
[19] Department for Environment Food and Rural Affairs (2011a).
[20] Department for Environment Food and Rural Affairs (2011b).

So descriptions and prescriptions often go together. But the excerpts also suggest that sometimes this coupling is local and specific, and sometimes it is not. Here's what's important. *The normative and descriptive reach of the story told by Jack extended only as far as Jack and his grandfather*. Actually, it extended only as far as Jack, his grandfather, and a particular place in a field in a particular season. "[H]e'd show me a nest with young birds in it. He loved the birds and animals and plants." Now compare and contrast this with the DEFRA quote that we've already cited twice above: "[d]isease outbreaks and the measures to control them can carry wide and costly consequences for public health, the economy and the environment." The difference in tone is striking. The latter sets itself up as a *general descriptive claim*. It is an overall assertion about the nature of the world in general. And this general description is coupled with a set of equally general prescriptions: "[Y]ou must register as a keeper and correctly identify your livestock."

In talking of devices earlier we said that realities are generated in the patterned and repeating practices of purposive crafting. Now it becomes clear that some realities and their normativities are practised as *local* whereas others are enacted as being *general* or even universal. This implies that some are *permissive of other realities* and the practices that carry these, whereas others are *intolerant* of those realities. More strongly, we might say that some recognise that other places – other farms, other farmers – are *different* and work differently, whereas others don't even recognise that as a possibility. So, for instance, there is almost no place – perhaps no place at all – in the DEFRA world of the CTS for the realities of care practised by people such as Michael. Difference is ignored, it isn't relevant, or (where it might be significant) it is reduced to delinquency. No tag? The number noted down wrongly? These are errors. That's all.

What to make of this distinction between devices that are tolerant and those that are not? Work in STS suggests that it is possible to tell a rather striking story about this. "Here", writes Stengers in the different context of globalisation and anti-capitalist protests, "we are in modern territory, with the territorial "great divide" refrain – they believe, we know."[21] Let's repeat that last phrase. *They believe, we know*. This is the asymmetry in which we are interested. Perhaps it is a little too dramatic in the present context, but Stengers' suggestion catches something about the style of the advice from DEFRA. *They, the farmers, may believe whatever it is that they believe. That is up to them. But we know about infectious diseases in cattle and how to control these. We've got a grip on reality. And that grip is generally applicable.* So the logic is something like this: it is mere belief versus real knowledge; or local ideas versus reality.

More on Caring

This is a large asymmetry. But there is more to be said about repetition and how it works. So let's return to the farm

> "Michael is leaning on one of the partitions in the cattle housing and surveying the cattle. We have been stood here for twenty minutes. I have previously watched Michael's father doing exactly the same kind of 'farm work'. Watching, waiting, steadily and quietly observing the cattle, over a period of time. Just as his father did, occasionally Michael talks to me about one of the cattle. He tells me about any animal that he is worried about because it has

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[21] Stengers (2008, 41).

been unwell. He identifies cattle that he expects to calf soon and looks for signs that the birth is beginning. He also points out the cattle that he especially admires or finds humorous. He then tells me that he never understood how much work there is in just watching. He explains that the family used to joke that his father was 'doing nothing' or trying to 'escape from work' when he 'went missing' from other farm jobs or from the farm house and he would be discovered leaning against the field gate or in the cattle housing watching the cattle. Michael says he now understands that his father was doing essential cattle care. Michael also says that he finds this aspect of cattle care demanding. He has to ensure that the cattle are looked at regularly, several times each day when they are in the housing and calving. And he says this work can't be rushed. It takes time."

Disconnection

Earlier we cited Stengers on the courage that children find in the dark by singing or chanting. She was making several points, but one of them has to do with *separation*. She is interested in how it is that *outsides* are made and kept at a distance. Commenting on Deleuze and Guattari she writes that

> "… the outside of the territory and the definition of this outside as ''dangerous'' … [are] produced together with the territorial refrain (ritournelle), shaping both the inside and what is kept outside."[22]

We've argued above that practices enact identities, and we've suggested that those identities – the realities they are doing – are relational effects that only hold as long as the patterns of repetition of the practice in question themselves hold. Here Stengers is making a similar relational point with respect to outsides. She's telling us that *refrains – we'd want to add rituals – are ways of making enough space to enact local realities*; that refrains are ways of disconnecting sufficiently from other worlds to create breathing spaces within practices. She's telling us, in short, that rituals of disconnection are central to practices and the identities that they enact.

Her argument works for both practices that are tolerant and those that are not. For instance, the intolerant CTS can be understood as a set of disconnecting rituals. There is simply no space in the repetitions of CTS for the calf whose dam is particularly protective and tries to prevent the farmer tagging her calf, or for a semi-retired farmer without his full physical strength. Neither is there room for the propensity of cattle to get themselves entangled in hedges and fences and lose their tags. Realities such as these are ignored. Instead the CTS insulates itself in repeating rituals such as tagging, filling in passports, and submitting movement records. There's no space in the passport for difficulties in tagging. The closest the CTS edges towards this is in its fear – expressed in the form of inspections – of delinquency.

But tolerant practices also work by disconnecting. Michael spends hours with their cattle, just watching the cows and their calves (we've seen samples of this above). This, as we have noted, is part of the repetitive craft of caring as a farmer. But while this generates and sustains the local identities of people and cattle it also works to disconnect. It may be that Michael thinks about passports, herd registers and common payments when he is in the housing with his cattle, but in the practice these are being set aside. Indeed, in practice almost everything else is being set aside. The

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[22] Stengers (2008, 42).

housing is being disconnected. So Mary says of Michael's father, Jack, that he would disappear for hours on end from the farmhouse. She would send people to look for him in the cattle housing. It was figuratively – and in practical terms – a world apart. So, this is our point, caring practices work by disconnecting too. They make their space and enact the realities that they give form to in part by shaping what is to be kept outside; by removing it; by ignoring it; or by rendering it small.

Bull hire

Farmers have a choice. They can opt for artificial insemination (AI), or they can service their cows with a bull. Official advice favours AI. It makes for better biosecurity since there is less risk of cross-infection than with a bull. But there are other reasons for worrying about bulls too. They are large, strong, sometimes dangerous, and they eat a great deal for little return. On the other hand, Jack and Michael have both kept bulls to run with their herd, and some farmers like to see a bull in the field. It is "a magnificent animal when they look their best". Having a bull also solves a practical problem with AI. You need to ensure that your cows are in calf within a particular time following the birth of their previous calf, but cows are fertile for just one day. At the same time the signs of fertility are ambiguous. It is easy to call in the AI service on the wrong day. All in all, pregnancy is more likely if you keep a bull.

One way of off-setting the cost of a bull is to let neighbouring farmers borrow the animal. Singleton's ethnography records an occasion in which a bull was walked along a bridleway to service the cows at the neighbouring farm. This was a social as well as a business occasion. Along the way the farmers met, they talked, they discussed farming practice, and they updated one another on family news. So it was simultaneously a social activity, an informal favour to a friend, and a moment in a continuing exchange of skills and resources. More subtly it reflected well on the farmer lending the bull, and counted as a tacit demonstration of mutual respect and validation of farming skills and care practices. Interestingly, on this occasion at least, the CTS never learned anything about this.

Resisting Capture

We have said that practices enact realities in part by disconnecting themselves from alternative practices and attributions of identity; that in order to create the space to enact particular realities they generate outsides that are held apart. But, and alongside this, we have also distinguished between *permissive practices* and those that are *intolerant*. We have suggested that the CTS is an intolerant set of practices because it enacts realities in ways that assume these to be generally, even universally, applicable whereas the caring practices in farming are much more permissive. In the latter there are local realities, but nothing general, let alone universal, is being claimed.

What to make of this asymmetry? There are various possibilities, and some of these are post-colonial. For instance, Helen Verran explores practices that undo the universal in the context of Aboriginal-pastoralist land rights negotiations in Australia[23], and Marisol de la Cadena describes the realisation of a powerful earth-being in the context of struggles over mining in Peru.[24] Stengers, in part following Latour, talks of the mechanisms of *capture*. Perhaps it is something like this. Intolerance may indeed be locally intolerable, but it doesn't matter so much until it starts to occupy

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[23] See, for instance, Verran (2002).
[24] de la Cadena (2010).

and colonise other territories. Then it becomes seriously consequential. Again following Latour, Stengers puts the argument in the context of a large story:

> "... this ability [to capture] depends on modernity having not one definition, but rather referring to a web of conflicting definitions, each one able to capture the outside and mobilize it in the denunciation of others."[25]

In this view it is the *multiplicity* of the universal definitions of the outside that is the secret weapon of what Latour is calling the modern. The argument is that when one universal collapses there is always another that steps forward to take its place.[26] And perhaps this is what is happening with the CTS. It makes general claims of the kind we have noted about infectious diseases. Then and alongside these it mobilises the universal language of money. Under closely related but ultimately different circumstances it rests, too, upon general claims about what is legal and what is not (for instance, not tagging cattle). And *in extremis* it sends in the forces of administration, the civil servants with their commitments to due process, to walk over the fields and check the ear tags. The consequence of this multiplicity is that farmers can't resist. In one way or another they are *captured* by the CTS's conflicting universalities. If one of these fails then the others are wheeled into place.

With this thought as a backdrop, Stengers' particular concern is to find ways of resisting this 'modern' capture in the context of the anti-capitalist movement. Her object is to recover realities, histories and subjectivities that are alternative to or outside the logics of capitalist globalisation. She wants, with the anti-globalisation protesters, to say that *another world is possible* and her particular concern is to find ways of securing that possibility. This is why she is so insistent upon the importance of territorial refrains. These might, as she says, give figurative children (for those who resist reality are said to be like children) courage. As we have seen, she argues that such refrains help to make an outside to a child-like but entirely serious reality and hold that outside at arm's length. They may help keep the terror of universalisms at bay.[27]

In making her argument she draws in part on the neo-pagan writing of Starhawk[28]. She notes that neo-pagan rituals work in part through chants and refrains that work by drawing sharp boundaries between inside and outside. Indeed neo-pagan rituals start with practices for sharply distinguishing between the two. The effect is to create for a moment a protected circle, so to speak a breathing space, within which alternative realities may be enacted. The rituals or refrains practised within the space may repeat themselves in ways that bring to light other histories, histories that have been obscured in the capture by intolerant practices[29]. As she notes (and she's quoting Starhawk), if this is achieved then "[t]he smoke of the burned witches still hangs in our nostrils"[30]. The point she is

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[25] Stengers (2008, 39).
[26] For this argument see Latour (1993).
[27] Interestingly, the idea that refrains help children to walk in the dark (which we earlier cited and are touching on again here) fits awkwardly with the neo-pagan tradition from which she is centrally drawing. In the latter darkness is not – indeed *precisely* not – a threat.
[28] She cites Starhawk (1982), but see also Starhawk (1989).
[29] "I will experiment", she writes, "with a refrain crafted by the contemporary neo-pagan witch Starhawk, a refrain that challenges us to connect with the burning times, when witches were burnt in Europe." Stengers (2008, 40).
[30] Stengers (2008, 48).

making is that another reality, that of witchcraft, was repressed in early modern European practices of capture.

Related arguments have been made about other forms of religious experience, and also in the very different context of experimental physics[31]. For the latter the argument is that laboratory practices – like those of worship – may be understood as repetitive rituals for disconnecting themselves from all manner of capturing interferences. Physicists – though perhaps social scientists too – need to achieve this state of separation if they are to stand any chance of detecting and amplifying unusual realities which are usually drowned out in the colonising practices of intolerant practices. They need, that is, to craft what we have described above as breathing spaces or protective circles. So the argument may be made in several idioms, but in this paper we have drawn in particular from Stengers because of her insistence on the importance of repetitions and rituals in the craftwork of disconnecting. As we have said, her argument is that realities and their practices always depend on refrains. Devices work because they are able to separate themselves from most of what is going on round about them. Devices of resistance work because they are able to practise differently: because, somehow or other they have found modes of repetition that allow them to resist the reality work of generalising practices that seek to capture by insisting that there is no alternative.

At the same time we depart from Stengers' vision in one specific way. So yes, it is clear enough that the CTS – if we wanted to tell a large story then we might say modernity – is practised at many sites and structures many cattle farming realities. The ethnographic moments that we have described above reveal this to be an intolerant and colonising device that seeks to capture other practices by insisting that its own version of reality is general. At the same time and whatever its imperialising ambitions, one of the reasons we have juxtaposed accounts of the CTS with stories about farming care is that this allows us to say that the former *co-exists* with other quite different practices on the farm. Our argument, then, is that despite the presence of the CTS on every cattle farm in the UK *there are also many alternative breathing spaces on those farms*.

And this is the point of our last story about bull hire. This is a practice that enacts heterogeneous relations and realities that have little or nothing to do with the CTS. That much is obvious. But there is more. This is because while moving bulls around is a practice that is supposed to fall within the remit of the CTS, sometimes at least it does not. The movements simply don't get reported. As one of the farmers put it, "the bull goes on his holidays" to the neighbouring farm, but the CTS may be none the wiser. In short, there is practical resistance of the kind described by Stengers. So our conclusion is this. The reality-enacting practices of capture are powerful, but often enough their reach exceeds their grasp. And this is why we would like to nuance Stengers' argument. It is not simply that other farming worlds are possible, though this is certainly true. It is also the case that multiple farming worlds exist – and are endlessly coming into existence too. Our argument is thus that alongside the rituals of the CTS there are many quietly permissive and local devices enacting equally many more or less different local realities. And then we want to add that some of these realities – indeed many of them – need more nurturing and more crafting. Indeed, perhaps this is precisely what we should be learning from Jack and Michael. As Stengers observes, if we want to

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[31] Law (2004, 104ff).

change the world we need to think, to feel and to imagine differently.[32] So the politics here is partly about saying that there is otherness *within*, and it is partly about *attending* to that otherness. Our suggestion, then, is that the lyricism of the words of Jack with which we started this piece gives nothing whatsoever away to the devices of intolerance. Instead it precisely works to challenge the generalising captures of abstraction.

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[32] "[T]his means reclaiming an ecology that gives the situations we confront the power to have us thinking feeling, imagining, and not theorizing about them." Stengers (2008, 57).

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