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ANIMAL INTERFACE: THE GENEROSITY OF DOMESTICATION

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It hardly needs to be said that this is not a good time to view the fate of animal domestication with great hope or satisfaction. While companion species may enjoy certain privileges, especially when their human handlers live amidst relative abundance, those animals which are valued for their flesh or other parts tend to be denied such creature comforts. Market-driven pressures to minimize inputs and maximize outputs of animal bodies have led to increasingly industrialized agricultural practices in which technologies of control and modification are applied to ever more intimate aspects of biological being. Factory farming, doses of growth hormones and antibiotics, genetic modification: this is the price animal domesticates pay for our savings at the supermarket checkout. As philosopher Jacques Derrida claims, 'no one can deny the unprecedented proportions of this subjection of the animal Everyone knows what the production, breeding, transport, and slaughter of these animals has become' (2002: 394).

If such forms of violence or violation are difficult to stomach when this processing of animal bodies proceeds according to plan, there is worse to behold when the system breaks down. With what appears to be growing regularity, diseases are breaking out amongst farmed animals. Foot and mouth disease in the UK, France, Brazil and much of East Asia, avian flu in numerous outbreaks over several continents: each new epidemic accompanied by the extermination of the infected or at-risk animal population. Ending in mass burnings and anonymous burials, these events are an unpleasant reminder how far 'domestication' has strayed from its association with the cosy hearth and sheltering enclosures of the domus.

What are we to make of this dark underbelly of our desire for frequent, affordable flesh? One way of looking at domestication is to see it as a shortening and tightening of nutrient cycles: an imposition of 'efficiency' that seeks to exclude links in the food chain that come between human consumers and those living things they wish to consume (De Landa, 1997: 08). Viewed in this way, domestication appears as an anticipation or prototype of the kind of 'economic' logic that is a definitive feature of the era we call 'modernity'. There are many ways of defining what it is to be 'modern', but to put it simply we might say that it is a way of thinking and doing that likes to know its goals, and sets out to attain them in the most efficient and speedy manner. To live in this way, as Michel Foucault put it, is to impose a 'grid of

intelligibility' on the world from which nothing is supposed to escape (1990: 93). It is to apply a calculus to life and labour such that the value of all things can be known and the costs or benefits of any action discerned - preferably in advance.

Over recent decades these contours of modernity have come into sharper focus, though more often from its failures than its successes. Much has been said about the way that the modern quest for order, clarity and mastery has undone itself; how it has generated new forms of mess, confusion and insecurity. It is becoming apparent that 'economies' that seek to cycle inputs into outputs with greater speed and tighter control often confound their own logic. Theorists of 'risk society' such as Ulrich Beck (1992, 1995) and Anthony Giddens (1994, 1999) have noted how industrial modernity's drive to extend its command over the physical world to ever new depths and degrees is revealing unintended consequences – in the form of 'runaway' events. Mishaps such as nuclear meltdowns, chemical spills and atmospheric carbon build-up are characterised by 'creeping, galloping and overlapping despoliation' which confer on our era a new and frightening profile of endangerment (Beck, 1995: 109). If such events are indicative that matter and energy has a tendency to escape from the pathways into which we have tried to confine it, so too do the recent misadventures of industrialized animal husbandry provide a reminder that life itself is a force which often refuses to stay in the grooves and grids we have laid out for it.

In the 'runaway' or 'undelimitable' event depicted by risk theorists the linear relationship of cause and effect is derailed: something enters the equation that was not accounted for, something leaves the circuit that was unanticipated. But the excess or exorbitance that has come to haunt the modern utilitarian calculus need not always be so tragic and fearful. Some philosophers and social theorists have found much to affirm amidst the goings-on that exceed the realms of calculativity and knowing. They find in the shadow of our projects other ways of being and doing that are not - cannot ever be - fully encompassed by the dominant 'economic' logic. And they seek to make something more of these moments.

If breakdowns or outbreaks ensure things don't always go according to plan, so too can breachings, ruptures or collisions help change us and our world, especially when we look further afield than the kinds of high-tech accidents that garner so much media and critical attention. As theorists have recently reminded us, it is the other people or things we meet 'accidentally', the unanticipated events we get caught up in, the pathways that unexpectedly cross our own which often change our lives most dramatically. It is when we cease to weigh up the consequences or take the usual measures, they add, that we are most likely to let others draw us out of our 'selves' and the circles we usually move in. Such transformative openings of one to another are referred to using a number of different concepts - 'giving', 'generosity', 'hospitality', 'care', 'affection', 'love'. So familiar as to seem trite, these are also amongst the most ancient of philosophical themes. Revitalised in

contemporary thought, they are returning as inescapable and often welcome dimensions of ethical, political, legal and economic life.

It is not simply that we are being called upon to crash through the closed circuits of knowledge production or capital accumulation with extravagant gestures of altruism. It is as much that we learn to see and acknowledge the relations of giving and taking, caring and being cared for, hosting and visiting that are always already at play in the more official economies we partake in. In particular, the renewed philosophical interest in generosity and generativity draws attention to the embodied nature of these openings between selves and others, to the inevitable 'debt' that any body owes the other bodies who come before and beside it. As feminist philosopher Rosalyn Diprose puts it: 'insofar as I am a self, the giving of corporeality is already in operation' (2002: 54). Whether it's a matter of picking up new skills, sexual pleasuring, or organ donation, Diprose claims, the possibilities of our own embodiment are realised through our exchanges with other bodies. Or in the words of Thomas Wall, arguing along similar lines, a 'self is borrowed, eaten, absorbed from others' (1999: 42).

The field of animal domestication, I want to suggest, offers fertile ground for exploring the give and take, the eating and absorption, that links different kinds of bodies. While Diprose's notion of 'corporeal generosity' focuses on the interplay between human bodies, other philosophers have broached the issue of interspecies exchanges: raising questions about the responses and responsibilities that might arise out of our engagement with other living beings. In this regard, the cross-disciplinary study of domestication is already rich in traces of 'generous' or mutually transformative relations between species. In particular, the willingness of researchers in the field of animal domestication to consider at once behavioural and somatic shifts, intended and unintentional transformations, and changes in humans as well as other animals promises much for a conversation with philosophers of 'corporeal generosity'.

As Diprose argues, what a body 'owes' to other bodies defies any final reckoning or settling of accounts (2002: 4). Any opening between bodies is always, to some degree, unpredictable, which can make it next to impossible separate out a risk from a potentiality. This means, as Derrida notes, that it may be difficult to distinguish giving from taking, or to tell a guest from a 'parasite' (2000: 59). Where the encounter is between different species, as we will see, such undecideables or uncertainties may be at their extreme. My excursion into the interspecies give and take of animal domestication, then, touches on generosity and affection as sources of creative and life-giving transformations. But it also delves into the realm of poisoned gifts: exchanges that may be damaging or deadly - including those which are 'parasitic' in the most literal sense. To move beyond 'restricted economies', I propose, is to give other forms of relationality their due - though it is not to imagine that the interface between species could ever fully escape violence or violation.

'The gift,' Derrida writes, '...should overrun the border, to be sure, toward the measureless and excessive' (1992a: 91). My bringing together of the theme of animal domestication with the concept of giving or generosity has its origins in an engagement with a certain kind of overrunning of borders, a specific form of excessiveness, which might at first glance seem a rather perverse point of departure. It stems from my encounters with the biological dimensions of European settlement in the temperate zones of the southern hemisphere, and in particular with the undoing of the domestication process that frequently occurred at Europe's 'antipodes'. The attempt to transform the biota and landscapes of the 'settler colonies' through the introduction of plant and animal species from other regions was a vital and momentous aspect of the colonisation process: it played an important part in the integration of these regions into an emerging global economy, and more generally it formed a cornerstone of the European project of enlightened and progressive improvement of previously 'uncivilised' lands.

Needless to say, this colonial project has been subjected to considerable scrutiny and critique over the intervening years. One of the ways of challenging the foundational narratives of colonialism, one that I have been drawn into, is to examine how the logic of 'enlightened' change displayed a distinct tendency to undercut its own principles or precepts. The fate of plant and animal introductions, and sometimes the very motivation for introducing species from other regions, is one of the more striking ways that that actual practices of exploration and colonisation contravened the whole idea of laying down a 'grid of intelligibility'. Aside from the fact that much of the transmission of 'alien' or 'exotic' life was entirely accidental, the impact of intentional introduction – or 'acclimatisation' – can hardly be said to have contributed to orderliness or intelligibility. Many acts of acclimatisation were doomed to failure through their abject inappropriateness, while others were destined for a catastrophically successful proliferation (Clark 2002, 2003).

The disorderliness, indeed contrariness, of the practice of species introduction appears especially pronounced in the event of domesticates which are released, or 'overrun the border' of containment of their own volition, and turn 'feral'. Formerly domesticated animals that established viable breeding populations independent of human influence opened themselves to the selective pressures of a novel environment, resulting in both behavioural and morphological changes. Feral pigs in Aotearoa New Zealand and Australia, for example, grew coarse-haired, sharp-snouted, long-legged, razor-tusked and disarmingly fierce, in what seems a surprisingly short span (Clark 2004). While an evolutionary biologist or zooarchaeologist might see such changes as the fairly predictable resurgence of repressed phenotypes, for a mainstream social scientist such rapid and visible mutability in the realm of the 'natural' world may offer more of provocation.

As a sociologist, the whole dynamic of species introduction - with all its shocks and surprises - was a trigger to questioning some of my 'inherited'

assumptions about the logic of modernity and modernization. It prompted me to be more sensitive towards moments of disorder, opacity and unpredictability, and it piqued my interest in forms of 'economy' other than the rational or 'restricted'. More than this, the active part played by animals in their own de-domestication and the transformations that resulted seemed to embody a degree of agency and creativity that was much more often attributed to human socio-cultural life, or indeed, was one of the characteristics that was supposed to distinguish human existence from an 'unmotivated' natural world.

In this way, my encounters with the unruliness of introduced animal life on the colonial periphery drew me into the longer and broader history of domestication, with an eye to the constitutive role played by deviations, accidents and irruptions. And it propelled me in the direction of disciplines and sub-disciplines that were comfortable and conversant with the idea that human and other-than-human forms of life shared important capacities for creative and generative interrelations with the world around them. Moreover, my sense that a 'restricted' economic vision fails to account significant aspects of the interface of humans with other animals – and between other animals themselves – has prompted an exploration of other ways of conceiving of 'transactions' between species.

Alongside what is often a rather crude and narrow expression of economic interest, tales of the biophysical transformation of the colonial periphery hint at alternative motivations or sensibilities. For a start, some early animal introductions seem to have been initially perceived as a kind of gift - whether to later settlers or to existing inhabitants. Captain James Cook's account of his release of breeding pairs of pigs around the coast of New Zealand, in this regard, clearly points to a wish to benefit both anticipated European colonists and the 'Natives' whom he and his crew had met on their voyages (Cook 1961). So too are there interesting stories of the 'generous' reception of previously unencountered species by New Zealand Maori and Australian Kooris or Aboriginals. Maori took to pig-hunting and pork with gusto, and soon afforded pigs a prominent place in their own inter-tribal gifting, while Aboriginals came up with new 'dreaming' stories that incorporated feral cats and other free-ranging introductions. In the case of European settlers, while they were frequently troubled by the excessive proliferation of introduced species, such disapproval was often tempered by affection, and a grudging admiration for the ability of introduced species to 'make a go of it' in their adopted home (Clark 1999).

But perhaps most intriguing of all are the accounts of the experiences of the animals themselves, and their behaviour under conditions of novelty and estrangement. Farmer and naturalist Herbert Guthrie-Smith, a keen-eyed observer of rural New Zealand under colonial transformation, recounts the first arrival of an introduced species to his part of the country.

The attraction of the stag to the spot chosen was doubtless the small herd of wild horses strayed from native villages deserted and never afterwards re-peopled. With them the lonely deer formed one of those curious animal

friendships that strayed creatures make, a companionship similar to that of another stag which, at a much later date, consorted with the Black Head stud bulls, or to that of the first rabbit seen north of Petane, which for several seasons accompanied a flock of wild turkeys on the Tangoio run (1999: 337). Such anecdotes might well be taken as an anthropomorphising of our fellow creatures. But other readings are possible, once we are prepared to accept that the dividing line between the 'human' and other animals is a blurry and contingent one. For me, strange little incidents like these, while they may not prove much, are suggestive of lines of inquiry: they hint that the kind of opening to other bodies that we might describe as generous or affective is not the sole prerogative of our own species. If such incidents are an example of exchanges that overrun any calculus of cost and benefits, so too do they invite us to think of alternative economies of give and take as a way of bridging between human and other-than human forms of association.

<A> Animals, Affection, and Otherness

The turbulent, messy conditions of the colonial periphery that I have been speaking about may offer clues to vital moments in the 'animal interface' that are harder to follow in regions of more established agricultural regimes. In this section, I want to pursue the idea, in a more general sense, of domestication as an unrestricted or other-than-rational economy. My intention is not so much to discredit the notion of more calculating economies, as to help loosen their hold on the western imagination. A belief in well-ordered and all-inclusive systems, the quest for a common measure to smooth the transactions between different kinds of people and different kinds of things, should not be made light of. These are, after all, the underpinnings of the political model of democracy, the economic principle of just rewards for labour, and the tenet of equality before the law: ideals which many of us probably take for granted and few of us would wish to dispense with (see Derrida 1992b).

It is one thing to appreciate the value of well-computed flows and fair exchanges, however, and another to see the rule of utility and necessity as all-pervading. The problem with viewing human interaction in this way, critics have noted, is not only that it has a tendency to subsume all the activities and processes present in the modern world into a singular logic, but also that it projects itself onto social worlds outside the sphere of western modernity. In this way, every conceivable social transaction begins to look like a precursor or proxy of 'the spirit of calculation' (Bourdieu 1997: 235; see also Derrida 1992a).

Even more tellingly, there has been frequent recourse to the model of a restricted economy to explain the workings of the biophysical world. Nature, too, comes to be construed as a realm of scarcity and limitation, where resources circulate without excess or remainder, every input is carefully recycled, and nothing is squandered. 'In the mirror of the economic', writes Jean Baudrillard, 'Nature looks at us with the eyes of necessity' (1975: 58). Again, we should be wary of too thoroughly

dismissing this idea, and re-erecting a boundary between the social and the natural. As ecologists or physicists would contend, certain kinds of circulation and reuse are a constant in physical systems. But this need not mean that all expenditure is useful or productive (Bataille 1991: 27-33). And neither does the fact that certain practices or processes appear to have uses or functions necessarily explain how or why they first emerged, as Friedrich Nietzsche pointed out long ago (1956: 209-211).

The study of animal and plant domestication is one amongst many fields in which questions of utility and need have been prominent. This is hardly surprising, given the extent to which famine and malnutrition have stalked our species, and the undeniable evidence that agriculture can support many more people per square mile than hunting and gathering. While it may be some time since scholars have espoused theories of the ascendance of a calculating and motivated 'rational man' (see Ingold, 2000: 27, 63), we might still discern the traces the restricted economic imagination in the theorisation of domesticatory practices. Both Sandor Bökönyi and Juliet Clutton-Brock's oft-cited definitions of animal domestication, for example, foreground human control or mastery of animals in the interests of profit (see Russell 2002: 287, Clutton-Brock 1994: 26). Further, the debate between theorists who stress human domination, and those who emphasize the symbiotic or commensal dimensions of domestication, seems to hinge on whether the benefits and costs of the relationships in question are equally or asymmetrically distributed (O'Connor 1997, cf Clutton-Brock 1994).

Alongside the question of how, and for whom domestication 'works', however, there is a growing willingness to acknowledge that significant moments in the wider field of domestication exceed such evaluations. Terry O'Connor, in this regard, affirmatively cites Michael Ryder's claim that domestication probably emerged from predator-prey relationships: "almost as an ecological accident. It was almost certainly not conscious or purposeful" (cited in O'Connor: 1997: 152). In a related sense, Stephen Budiansky notes that the human side of the domestication process is contingent on biological availability: "humans may select, but only from a set of options determined by forces beyond their control" (1999: 50). Offering the timely reminder that evolution, as Darwin outlined it, has no goal or plan, he further cautions that the motives behind relationships of co-evolution are often opaque or ambivalent (1999: 28, 58).

An alternative to necessity is likewise offered by Temple Grandin and Mark Deesing as they speculate about an originary moment in the taming of the wolf - an episode involving an encounter between a hunter and a litter of pups:

The pups are all frightened and huddle close together as he kneels in front of the den...all except one. The darkest pup shows no fear of the man's approach.... After a mutual bout of petting by the man and licking by the wolf, the man suddenly has an idea... (1998: 1).

Pondering the affective or non-utilitarian beginnings of the process of domestication in this way is by no means new. Writing in the 1860s, Francis Galton proposed that

animal domesticates were initially raised in the caring and protective manner that we now associate with pet-keeping (Anderson, 1998: 122). This view has recently been revisited by James Serpell. After considering some objections to Galton's hypothesis, Serpell affirms that it is "...likely that all our currently domestic species, as well as many which were never domesticated, began their association with humans in this essentially non-economic role" (1989: 18-19). Speaking more generally about a disposition toward animals that he believes can be found wherever humans associate closely with other species, Tim Ingold extends this sense of an affective relationship. "We might speak of a history of human concern with animals," he writes, "in so far as this notion conveys a caring, attentive regard, a 'being with'" (2000: 76).

The acknowledgement of the importance of emotive ties between humans and animal domesticates takes a leap forward in Donna Haraway's Companion Species Manifesto (2003). Exploring the contemporary and historical relationship between 'canid' and 'hominid', Haraway argues that the disciplinary imperative of training can be the basis of a close emotional bond between dogs and their human handlers (2003: 61-2). But the broader point she makes about the communion between different species extends beyond the dog-human attachment. The 'otherness' of species not our own, in this sense, is not taken to be a barrier to affective relations, but is seen as a foundation for ethical and emotional relating. Haraway delves into "the deep pleasure, even joy, of sharing life with a different being", and she has no hesitation about referring to the relationship between humans and their companion animals as one of love (2003: 37).

Considering the potential functions of pet keeping, Serpell observes that, "like any activity, the net benefits must be weighed against the costs" (1989: 17). While Haraway also points to the advantages and drawbacks of the association with 'significant other' animals, it is precisely her move away from the necessity of such accounting that seems most provocative. As she would have it, to enter into a close relationship with another species is to open a network of unknowable and immeasurable outcomes. The human-dog communion, Haraway suggests, is paradigmatic of the 'restless exuberance' of zoological encounters. It offers a case study of 'multi-directional flows of bodies and value' in a contingent history that includes play as well as labour, waste alongside loss and gain (2003: 9, 12).

Haraway's notion of an interspecies affiliation evokes 'corporeal generosity' in the sense that each participant allows themselves to be drawn into an open-ended circuit of affect and transformation. Though it is concerned with a different sort of relationship between species, this sense of multi-directionality and lack of closure has important continuities with what I was saying earlier about the unruly generativity of animal life on the colonial periphery. It also resonates profoundly with the claims Diprose makes about giving. "(I)f the gift opens possibilities for existence", she writes, "then its operation rests on not determining anything about who gives what to whom ahead of or during an encounter" (2002: 55). It is not simply that already constituted 'others' have the option of giving to one another, both Haraway and

Diprose suggest, but that our very identities as individuated or discernibly different beings arise out of exchanges with those who differ from us. Like it or not, every body relies on the generosity of other bodies, not only in the sense of what is corporeally bequeathed by parents and forebears, but also through that which is taken on by processes of imitation, or incorporated through the material transactions we have with others. We are what we ingest, absorb or appropriate, in other words.

<A>The Animal Interface

A social life that encompasses domesticated animals, in this light, can be seen to rest more primordially on a kind of mutual dispossession than on the possession of animals by human actors; a letting go of customary precautions and boundary maintenance on the part of each participating species. Whatever benefits and utilities might eventually emerge, any ongoing inter-species association, it might be argued, hinges on "a gift of the possibility of a common world" (Diprose, 2002: 141). This brings to mind the insights of the ethical philosopher Emmanuel Levinas on the primacy of a 'non-allergic' reaction - a response that renounces violence or hostility - in the forging of a relationship with the other (1969: 199). While Levinas reserved his concerns for the inter-human realm, his considerations on the significance of the 'caress', as opposed to the act of grasping or seizing, invite extension to the human encounter with animal others. The caress, he suggests, "does not know what it seeks", it expresses a desire provoked by otherness that lacks clear purpose or plan (Levinas 1987: 89).

John Llewelyn (1991) takes this 'other-than-human' reading of Levinas further - building on the significance of the face in the French philosopher's writings. For Levinas, the face - and in particular, the eyes - is the most immediate way we perceive vulnerability and need in the other: the face thus standing for the frailty inherent in embodied existence (Llewelyn 1991: 63). While he concedes that animals suffer, and that the ethical should extend to all living beings, Levinas is nevertheless circumspective. The significance of the suffering we witness on the face of the other invites a conversation: an opening he is reluctant to extend beyond the potential for dialogue of our own species: "The human face is completely different and only afterwards do we discover the face of an animal" (Levinas cited in Llewelyn 1991: 65). On this count, Llewelyn is not convinced. Downplaying Levinas's stress on speech, he argues that the face of an animal can appeal to us, even call us into question. And in this light he takes inspiration from the poet Rilke, who went so far as to claim that "What is outside, we know from the animal's face alone..." (cited in Llewelyn, 1991: 157). Taking his 'reanimation' of Levinas in the direction of political ecology, Llewleyn concludes by pointing to our responsibility to preserve the conditions for the flourishing of other beings - an obligation which for him encompasses both domesticated and free-ranging creatures (1991: 254-5).

It is one thing, however, to foreground human responsiveness to appealing and vulnerable fellow creatures. It is quite another to speculate about corresponding

sensibilities moving in the other direction. Osbjorn Pearson gives us serious grounds for doubt. "(H)umans are remarkable for the amount of co-operation, sharing, and reciprocal altruism that typifies our societies", he asserts. "A similar trend toward co-operation and sharing with conspecifics does not characterize domestic animals" (Pearson in Leach, 2003: 362). The philosopher Martin Heidegger, whose writings Levinas frequently engaged with, was equally forthright. For him, what distinguishes animals from humanity is not only their lack of a capacity for thought and language, it is also their inability to bestow gifts (Wyschogrod, 1990: 82).

But a lot rests on how we chose to define 'giving'. The sense in which Diprose and others constitute the gift - as a kind of excessive and often non-volitional flow between bodies - suggests a more inclusive reading of the offerings of other forms of life. Similarly playing on the notion of our susceptibility to be moved by otherness, Alphonso Lingis proposes that we humans acquire many of our gestures, postures and desires through communion with animals. And it is not simply, nor even primarily, our glimpses of charismatic free-living fauna that has such affect, so much as the ongoing and intimate exchanges we have with more familiar creatures. Lingis has us developing our sensual and emotional registers through such experiences as our infantile fondling of kittens or lambs, our childhood observations of hens defending their chicks, our memories of mounting the "smooth warm flanks of a horse" (2000: 36-7).

Such practices of mimesis and projection offer one way of approaching the question of how "the organization of the body (is) given to and by the corporeality of others" in the context of co-dwelling species (Diprose, 2002: 69). Along with Llewelyn's notion of the ethical appeal in the face of the animal, however, Lingis's unashamed eroticising of our encounters with other creatures may risk alienating those with a more scientific approach to the phenomenon of domestication. But there are alternative modes of engagement with the interface of humans and associate species that seem to substantiate the idea of the mutual affectivity of neighbouring bodies - inquiries that draw more on archaeological evidence than discourses of ethical philosophy. It is broadly agreed amongst scholars in anthropology and animal science that there is a set of characteristics found in domesticated mammals which helps distinguish them from free-ranging counterparts. Such changes include loss of skeletal robustness, shortening of the muzzle or facial region, and retention of juvenile behaviours into adulthood (Leach, 2003: 349). What has frequently been passed over in this context, as Helen Leach (2003) has recently noted, is that animal domesticates are not alone in such bodily modifications.

<A>Corporeal Generosities

"We turn into our partners, and even our dogs, just by dwelling with them", Diprose observes (2002: 70). Such mutual influence, however, may go well beyond mere traffic in gesture and expression. Leach directs our attention to the parallel between the somatic transformations observed in the archaeozoological record of animals

going through the early phases of domestication, and changes noted in human morphology over corresponding periods - pointing to the shared shift from robustness to gracility which is especially evident in the face and head. A key factor in this convergence, she suggests, is the cultural modification of the environment in ways which protect both humans and their livestock from many of the physical challenges - and thus the selective pressures - associated with a more free-ranging existence. "For the human, the combination of adoption of a built environment, change in diet consistency, and lowered mobility brought about morphological changes similar to those seen in domestic animals" (Leach 2003: 360).

Leach's thesis does not rule out other explanations for changes in bodily form of domesticates which imply greater human intentionality, such as the selection of smaller, more easily handled animals (Leach, 2003: 350). What it does do, though, is to grapple with the thorny and frequently bypassed issue of humankind unintentionally 'domesticating itself' along with its animal associates. From the perspective of an 'economy' of corporeal generosity this raises the prospect that by 'giving' shelter and protection to other animals humans precipitated bodily transformations shared with these other species, changes that could not have been intended or anticipated.

But there is an even more provocative sense in which we might draw a connection between convergent human-domesticate evolution and the generous, receptive attitude to others affirmed in the work of Levinas, Lingis, Diprose and fellow ethical philosophers. As Leach points out, a number of the transformations she investigates - including 'cranio-facial' reduction and general loss of robustness - have been linked to the phenomenon of neotony or paedomorphosis - which entails the retention into adulthood of certain features associated with juvenility (2003: 354). Evidence suggests that these morphological changes are related to non-aggressive and tolerant behaviour, which are likewise characteristic of immature animals. This conclusion is supported by Belyaev and Trut's account of a silver fox domestication project which aimed for docility and tolerance of humans but unexpectedly produced accompanying cranio-facial reductions (Leach 2003: 354-5).

While the connection between neotony and domestication remains uncertain, and indeed contentious (see Price 1998: 49), it raises intriguing possibilities for drawing together the question of animals 'lending' themselves to domestication and the issue of the openness of humans to closer bonds with other species. For as Konrad Lorenz proposes, humans too display some familiar neotonic characteristics:

I am convinced that man owes the life-long persistence of his constitutive curiosity and explorative playfulness to a partial neoteny which is indubitably a consequence of domestication (cited in Grandin and Deesing 1998: 20).

Stephen Budiansky (1999) agrees that significant features of neotony may be present in humans as well as their domesticates. But Budiansky makes the claim that the behavioural and somatic changes that characterise neotony are not simply an outcome of domestication but an important prerequisite. He argues that, prior to their

more structured association, humans and their livestock spent many millennia familiarising themselves with each other, driven together by the climatic upheavals of the Pleistocene era (1994: 4). Fluctuating environmental conditions, Budiansky reminds us, favour life forms that can vacate and colonize ecological niches rapidly: which is to say species that are adaptable and opportunistic (1999: 73-5). Such conditions, he notes, favour the evolutionary strategy of neotony, which brings with it the curiosity and rapid learning ability of the young, including "a non-discriminating willingness to associate and play with members of other species" (Budiansky 1999: 78). The retention into adulthood of these juvenile traits, Budiansky suggests, offers a platform for the emergence of the relationship of domestication. And this applies to humans no less than their potential domesticates: "The neotony that is part of our own evolutionary heritage may have likewise made us more willing to enter into relationships with animals other than the highly specialized one of predator to prey" (Budiansky, 1999: 80).

These observations might cast some light on those strange incidents of inter-specific association that Herbert Guthrie-Smith and others witnessed on the colonial periphery: expressions of tolerance or bonding that also occurred under conditions of environmental fluctuation and turbulence – this time induced by human activities. Having observed the behaviour of animals, both domestic and free-ranging, as they confronted unfamiliar objects or conditions, Guthrie-Smith concluded: 'Curiosity is by no means confined to humanity' (1999: 304). After a more systematic inquiry, Grandin and Deesing make the claim that there is genetically-based natural variation in many free-living animals with regard to responses to novel experience, such as encountering humans - with a minority displaying "a quiet exploratory reaction without either fear or aggression" (1998: 2). This is the scenario illustrated in their hypothetical hunter-meets-wolf cub tale, though it might be added that canid and hominid might best be seen as selecting each other - given that the individuals of both species seem endowed with exceptional fearlessness and inquisitiveness. Taken as a precondition of domestication, then, it is not so much the genetic predisposition for placidity and homeliness that appear pivotal, but an openness and receptivity to 'otherness'.

In this way, insights from the scientific study of evolution resonate with the 'non-allergic' response to the other privileged in the writings of ethical philosophers like Levinas, Derrida and Diprose - fleshing out the notion that a renunciation of hostility is the 'gift' from which the possibility of a shared world arises. And though it undoubtedly rests on a too literal reading of Levinas, it is tempting also to reflect on the primacy of the face, and the resultant accentuation of the eyes, in the morphological shifting linked to neotenic non-aggression. But what we might say, with more confidence, is that the give and take between heterogeneous species exceeds any sense of deliberation or planning: contributing to bodily and behavioural changes with a utility that can only ever be grasped in retrospect. Or as Haraway puts it in regard to the generative interchange between dogs and humans: "Flexibility

and opportunism are the name of the game for both species, who shape each other throughout the still ongoing story of co-evolution" (2003: 29).

<A>Poisoned Gifts: Domestication and Pathogen Exchange

I have been suggesting that a certain strand in western philosophy concerned with excessiveness and its expression in the act of giving might be brought into convergence with the archaeological and biological inquiry into the emergence of animal domestication. But there is a sense in which 'gifts' and 'generosity' are loaded terms, importing an everyday connotation of beneficence that does not always sit comfortably in this context. This is especially so when we consider the dangers faced by any organismic body which permits itself such intimacy with other bodies that mutual influence in behaviour or morphology becomes a possibility. "Corporeal generosity", as Diprose puts it, "is writing in blood that says this body carries a trace of the other" (2002: 195). And in this way she reminds us that giving is always risky, that the offering or receiving of a gift, by virtue of the potentiality it conveys, is inevitably a kind of rupture or violation. Or as Derrida proclaims: "Such violence may be considered the very condition of the gift, its constitutive impurity" (1992a: 147).

The word 'gift', Marcel Mauss noted, shares the meaning of poison in the Germanic languages, a reminder that the favoured present for the ancient Germans was alcoholic (1997: 30). In the annals of close human-animal association, however, it is not poisons but pathogens which manifest the dark underside of the generous encounter. As William McNeill points out: "Most and probably all of the distinctive infectious diseases of civilization transferred to human populations from animal herds" (1998: 69). These "deadly gifts from our animal friends" - otherwise known as zoonoses - include worms, protozoa, bacteria, fungi and viruses (Diamond, 1998: 207). Arguably, their traffic amongst and between species is no less intrinsic to the domestication process than is artificial selection or incidental morphological change.

Pathogens, we might say, play on the terrain of the exorbitant: they are the gift that keeps on giving. Where there is intimacy, there will be microscopic life to-ing and fro-ing between partners, and where the parties themselves happen not to be conspecifics there is an opportunity for micro-organisms to move permanently across species boundaries (see Garrett, 1995: 572-9). But what might be impartial and dispassionate survivalism at one level may well blossom out of warmth and tenderness at another. It is human "proximity to the animals we love", especially "cuddly species (like young lambs) with which we have much physical contact", Jared Diamond notes, which heighten our risk of pathogen transfer (1998: 207, 213).

In a more general sense, it is the agglomeration of human and animal populations that provides the conditions for contagious diseases to take hold. Such social animals as cows, sheep and pigs would already have been reservoirs of pathogens prior to domestication; settled agriculture providing the density of hosts - both human and domesticate - to evolve and sustain diseases (Diamond 1998: 205-6). By the same logic, this environment offers rich opportunities for pathogens to

jump between species. What Diamond says of measles, a virus likely to have come from cattle, might equally apply to other domestic or companion animals: "that transfer is not at all surprising, considering that many peasant farmers live and sleep close to cows and their feces, urine, breath, sores, and blood" (1998: 206-7). And the movement of these infections, as we might expect, is multilateral: from humans to livestock, amongst different domesticated species, and frequently overrunning the border between domesticates and their free-living relatives (MacNeill 1998: 71).

Across Eurasia, human populations gradually came to terms with the diseases they had exchanged with their livestock, an accommodation achieved through the costly selective pressure of successive plagues over thousands of years. The settling into endemicism of these infectious diseases was the prelude to their devastating introduction to the 'epidemiologically naive' populations of lands previously insulated by oceans (Crosby 1986: ch 9; McNeill 1998: ch 5). It has been estimated that 95% of the Indian population of the Americas perished in epidemics over the century or two following contact with Europeans, a scenario repeated to greater or lesser degree in all other of Europe's 'new worlds' (Diamond 1998: 211). As Diamond would have it, the European conquest of these lands and subsequent demographic take-overs "...might not have happened without Europe's sinister gift to other continents - the germs evolving from Eurasians' long intimacy with domestic animals" (1998: 214; see also MacNeill, 1998: 235).

As a descendent of European settlers in a southern hemisphere colony, this catastrophic history has a particular poignancy for me. It also drives home the point that the enlightening project of modernity not only 'overran' its own logic and principles as it spread across the earth's surface, its very extension was usually premised on its shadowy underside of excess and disorder. And as I suggested at the outset of this chapter, the age of poisoned gifts is far from over. Recent years have seen the emergence of a new strain of Creutzfeldt-Jakob disease - linked with Bovine Spongiform Encephalopathy or 'mad cow disease', the frightening but short-lived SARS epidemic, and numerous irruptions of Avian influenza.

Yet, for all their terrible toll, we might also acknowledge a kind of 'generosity' in the way that pathogens take advantage of the proximity and porosity of larger bodies. The 'trace of the other' that Diprose sees as constitutive of all bodily identity is nowhere more literally inscribed than in the bequest of successive micro-organismic invasions. Invading viruses have left their mark throughout the living world, with hundreds of retro-viruses becoming integrated in the human genome, many of which now perform vital defence functions against subsequent infection (Lederberg 2004: 55). Indeed, evolution - our own as much as that of any other species - is partially propelled by infectious micro-organisms. As Haraway reminds us:

Evolutionary biology posits that we only evolve with our illnesses, and that the difference and diversity that comes from infection and contagion is what actually allows us to continue to proliferate and survive in a variety of environmental conditions on the planet (2000: 22).

Just as a generous or hospitable relationship between animal others is premised on a withholding of violence, so too does a lasting host-pathogen association depend on the way bacteria, in the words of biologist Joshua Lederberg 'withhold their virulence' (2004: 55). For a pathogen to survive, it must avoid too rapidly destroying its host, and in this regard it is in the interests of both species to evolve towards mutual tolerance. "This is what disease as experienced by humans is all about", Lederberg claims " - the establishment of a foothold so the obliging host will provide warm food and shelter and be domesticated to the service of that parasite" (2004: 54). Whether we take this metaphorically or literally as a domesticatory relationship, it is a cogent reminder that the larger organisms who enter into the association we more typically call 'domestication' are always already the outcome of 'generous' encounters: exchanges at once generative and deadly.

<A>Conclusion

The idea of an embodied generosity hinging on the susceptibility of living beings to the 'affect' of other bodies helps turn our attention to the open-endedness of interspecies relations. It reminds us that the adaptability and creativity of living things is not simply an attribute of life in the 'wild', and neither is it a capacity that has been entirely appropriated and overwritten by human technological practices. Rather, it is an ongoing process that is found wherever species come into sustained and intimate relationships, whether these are intentional or incidental.

If taken literally, the idea of a generous and generative 'animal interface' - for all that it may implicate differentiated species - would seem to imply at least a modicum of shared physiological, neurological and limbic faculties. While a meaningful encounter between living beings need not necessarily involve volition or judgement, mutual recognition calls for a capacity to 'read' the other, to register and respond to each other's presence. In this regard, we should not 'focus' too strongly on sight or the eyes, recalling the extent to which some animals depend on acuteness of hearing or scent discrimination and perception of movement (Patton, 2003: 97). And neither should we prioritise 'language', at least in any sense that privileges the human experience of this faculty, especially since the linguistic turn in philosophy has reminded us that even amongst members of our own species, mistranslation and multiple interpretation is rife (see Derrida, 2003).

Then again, the rich mutual responsiveness of microbial life and larger organisms suggests that there are ways of communicating that do not depend on anything remotely approximating a common sensory system. The ability of a virus - barely even complex or sensate enough to qualify as 'living' - to 'read' a host's bodily makeup well enough to confound its immunological system and to appropriate its mechanisms of cellular reproduction - together with the host's ability to develop novel immunological defences to an uninvited microscopic visitor - hints at just how multilayered 'recognition' can be. In the words of digital media artist Melinda

Rackham, herself a Hepatitis C carrier: 'a virus penetrating your core is probably the most intimate relation you can have with another species' (2000: 22).

In our coexistence with disease, virologist Stephen Morse warns us to 'begin by expecting the unexpected' (1994: 325), while philosopher Jacques Derrida, addressing our contemporary condition more generally, advises us to 'open the calculation to the uncalculable' (2001: 259). Neither is telling us not predict, deliberate or otherwise weigh up our own interests, but both seem to be cautioning about the limits of this kind of 'economy', the limits of knowledge and mastery. The idea that our best laid plans for controlling the biophysical world have unpredictable and incalculable consequences is now a central concern in social theory, and as I noted earlier, theorists like Beck and Giddens see this 'manufacturing' of risk as one of the definitive features of the current phase of our modernity. 'Manufactured risk', as Giddens puts it, 'refers to risk situations which we have very little historical experience of confronting' (1999: 26).

Or have we? My references to the 'creeping, galloping and overlapping despoliation' that so often followed from species introductions on the colonial periphery, and my more general discussion of the unforeseeable consequences of animal domestication in were intended to show that altering the pattern of our associations with different forms of biological life has always been risky. Wherever bodies come close enough to be of benefit to other bodies, I have been suggesting, there will inevitably be a danger of other transmissions and transformations that are threatening or deleterious - for there can be no opening of one living being to another that is entirely predictable. And in this regard, our era is indeed characterised by the threat of the kind of unanticipatable and undelimitable accidents that Giddens, Beck and others have described. But so too have many other times and places given rise to similar scenarios of risk.

In this sense, a history or archaeology of domestication that is attuned to the inherent excessiveness of inter-species association at once meshes with and perturbs some of the central concerns of contemporary social theory. The expansive temporal and spatial scales that feature in studies of domestication, and the relatively rich tradition of merging social and biophysical variables, I would argue, helps put the more nascent social theoretic concern with the dangers of manipulating life and matter into a much broader context. An important part of this wider contextualisation is that it gives us time - historical time, evolutionary time - to register and account for the potentialities that also inhere in these fraught encounters. In this regard, then, the concept of an embodied generosity seems to offer a way of holding open, at once, danger and possibility, the threat of destruction and the chance of generativity. If the animal life we depend upon, not to mention our own 'animal lives', is the outcome of such generousities, then, along with our fears, we have a lot to be grateful for. How to express that gratitude while continuing to satisfy our appetites remains a challenge with an open and endless horizon.

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