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## Invisible paws in human affairs

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"Responsible pet ownership" is a paradigm that prescribes the Three Rs of control – registration, regulation and remonstrance – but does not address the complicated, subjective relationship we share with other animals in the urban environment. A naturalistic perspective helps to do so by seeing the urban environment as a shared, evolving ecosystem.

Native Australian wildlife is adapting to the built urban environment. Its management is a potentially rich opportunity for Animal Managers. However the invisible paws which give this paper its name, are those of the dog and cat.

### **Back scratching**

Adam Smith wrote the influential *An Inquiry into the Nature and Causes of the Wealth of Nations* in 1776. He argued that it is human nature to act in one's self-interest but, in doing so, each individual is led by an invisible hand to act for the greater good of the society. Thus the baker who bakes in his self-interest also acts in the interests of the consumer who, in turn also acts in the interests of the baker when buying bread to assuage his hunger selfishly. For Smith, the invisible hand explained inner-connectedness and bonding, and natural self-regulation in society.

This paper speculates similarly: Human natures, dog natures and cat natures, although each working out of self-interest, are led as though by the invisible hands and paws of co-evolution to promote the interests of the complex naturally.

### **Original din**

In 1994, at the Third Urban Animal Management Conference, I argued that the relationship between people and dogs is evolved; it was not just a recent human-mediated incident (Paxton 1994). I speculated that dogs and people co-evolved from some 130,000 years ago in a complex of animals that was biologically cooperative internally and successfully competitive externally.

The evolution of the anatomy for speaking words by quirky humans was possible because we learned to

depend on sentinels – dogs. Evolution of the equally quirky dog was possible within the protection of the human cave. The evolution of each species was blended from the beginning, such that each became part of the other's nature. They were extended phenotypes and, together, out-competed their own cousins, including the physically gifted Neanderthal.

In 2011 the idea was published in detail in my book *Why It's OK to Talk to Your Dog* (Paxton 2011). Over the years since the third conference, my idea arguably has been supported by DNA evidence; by the validation of 30,000+ years-old skulls of dogs in Belgium and Siberia; by the idea that *Homo* evolution may have been multi-regional *within* Africa (Christopher Stringer 2011); and by fresh thinking on the mechanisms of evolution, especially regarding mutualistic symbionts (see, for example, Frank Ryan 2009).

The social structures of animals evolve naturally. The ability to enunciate words enabled people to evolve very complex social structures, or cultures, based on myths, traditions, theories: that is, stories. These stories told us that we are God-like or uniquely self-determinant. Rudyard Kipling (1902) was an example of an influential story-teller whose ideas on our relations with animals persist in popular forms today.

### ***"I am the cat who walks by myself, and all places are alike to me"***

In his *Just So Stories*, Kipling portrayed the cat as aloof and self-contained, but susceptible to the comforts of the human cave. He saw people's caves attracting cats with lots of mice, warm fireplaces and bowls of milk. There was a sort of naturalism there, but anthropocentric wishful thinking also.

I suggest that our caves provided self-contained ecosystems in which domesticatable cats could have their kittens, with greater security and success of survival than in the wild outdoors. In our caves, the ancestral cat became the species we know.

According to Carlos Driscoll et al 2009a, using mitochondrial DNA analysis, an ancestral cat branched into *Felis silvestris lybica* and the



"domestic" *Felis catus* about 130,000 years ago in roughly the same area in which speciation of the ancestors of the dog occurred, that is, roughly the Middle East. Carlos Driscoll et al (2009b) reported that, although there are now almost 60 breeds of cat recognised, there is in fact only a slight genetic difference between them. The time frame may be as short as 100,000 years ago for people and the dog and cat if the DNA "clock" is re-calibrated (Groves 2012).

The dog and the cat co-evolved with our ancestors in an ecosystem which was increasingly better organized because of our improving ability to speak. The benefits were mutual and the relationship became subjective and intricate. Although that complex continues to co-evolve biologically in subtle ways, prehistoric cultural co-evolution is of much more obvious importance once major anatomical and physiological adaptations had occurred.

If we fast forward from then to say 60-40,000 years ago, we find modern looking hunters, fishers and gatherers still living in caves but also in crude huts (probably on an impermanent basis). They used blade tools, which were an improvement over flake tools, but their economic system could only progress up to a point. Then, according to mainstream speculation, a "revolution" occurred. People began to produce food. They selectively planted grain and raised animals and began the march (or trudge: see Shepard & McKinley 1967 for comment) towards a sedentary lifestyle in cities and towns.

Not all people became sedentary. For example, the Australian Aborigines developed skills and rules for managing the land, and made *The Biggest Estate on Earth* (Bill Gamage 2011), but their culture was not defined by cities, nor by the storage of food. As William Stanner (2009) put it, "... people who lived by hunting and foraging had to be mobile to survive. But both water and food usually had a seasonal distribution too. Aboriginal life had to be rhythmical or patterned as well as mobile". Yet my friend John Auty tells me that there are remains of Aboriginal villages with stone-walled houses in the Western District of Victoria: this suggests a settled existence for some Aborigines, some of the year.

It is usually held that the dog (dingo) only appeared in Australia as recently as the past few thousand years. The goal posts have recently been moved on this, to allow arrival 18,300 years ago (Oskarrson et al 2011). It seems to me more likely that the dog accompanied the earliest seafarers who reached Australia some 60,000 years ago on their shaped bamboo rafts (Thorne & Raymond 1989). The dog would be the ideal shipboard companion because it could be fed fish and, if necessary, be eaten. When these two new predators reached *terra incognita*, they presumably out-competed many marsupial predators, which

became extinct. Under the novel circumstances of this new continent, perhaps the link between people and dogs fragmented, but was not lost: note the alacrity with which Aborigines (including Tasmanians who are held never to have had dogs) sought out and even stole the dogs of early British colonisers (Auty 2012).

Even in the ancient heartland of archaeological study, there is a great deal still to be learnt on the process of civilisation. For example, Mortimer Wheeler (1976) mentions that archaeological digs, at cities thought contemporaneous with Sumerian and Egyptian civilisations, may have reached down to only a third of the strata, the remainder having subsided below the water table and probably become lost to investigation. Finds such as massive stone pillars at Göbekli Tepe in Turkey, much older than the Egyptian ancient civilisation and hewn perhaps 12,000 years ago with stone tools, show how much there still is to discover.

Robert Braidwood (1964/67), a pioneer in modern archaeology, argued that the idea of a "revolution" in food production was simplistic. He speculated that the food producing revolution must have been predated by a food collecting stage. Braidwood thought that the shift from food gathering to food collecting occurred in nuclear areas where a variety of wild plants and animals which were domesticatable already existed and the climate at that time was suitable. On this basis, he thought suitable nuclear areas would be Western Asia, Middle America and the Andean Highlands, and somewhere in South East Asia. He was best able to cite archeological evidence about an area of Western Asia. This area consisted of the hilly flanks of the mountain ridges of Iran, Iraq, Turkey, Syria and Palestine, between altitudes of 1,000 to 5,000 feet.

It is in these hilly flank areas that the earliest evidence of domestication of plants and animals had been found. He assumed the dog to be already in a state of "domestication" because there is evidence that pre-agricultural Maglemosian hunter-gatherers around Denmark already had the dog by then (he does not mention the cat).

According to Braidwood, the early phase of the food collection era would have been "incipient" cultivation and animal domestication. He visualised this phase thus:

*Although we cannot really demonstrate it – and certainly not in the Near East – it would be very strange for food-collectors not to have known a great deal about the plants and animals most useful to them. We can imagine them remembering to go back, season after season, to a particular patch of ground where seeds or acorns or berries grew particularly well. Most human beings, unless they are extremely hungry, are attracted*

*to baby animals, and many wild pups or fawns or piglets must have been brought back alive by hunting parties.*

*In these above senses, man has probably always been an incipient cultivator and domesticator. (p 97, his emphasis).*

Braidwood and his colleague Richard Adams saw this early phase as part of a wave of experimentation, which included the invention of the new tools which appear in the archaeological record. There are also signs of a tendency to settle down in more permanent camp sites, but caves were still inhabited at the beginning of this era.

Surely, if the food collecting era is a logical preliminary to food producing, then the invention of food storing must be a corollary of food collecting? Inventing food storing might not have appeared as dramatically in the archaeological record as did the food producing revolution but it would have been a major breakthrough in the human struggle for survival.

In nature, food is in abundance. This is by definition because, otherwise, there could be no food chain. There is more game on the Serengeti, more fruit in the trees, more grains on the grasses than animals can eat. Otherwise none of these things could exist. There is much evidence that our forebears luxuriated in natural excess: the piles of bones of mammoths and other herbivores attest to the wasteful practices of hunters in the distant past. Modern land-fills witness the situation today. Every gardener knows the chore of cleaning up fruit fallen from a tree. In Papua New Guinea I have seen crowds of boys satiated with mangoes make hardly a dent in the fruit piling under the tree. Modern day experiments have shown that food gatherers with primitive stone and bone sickles can quickly and easily harvest quantities of grain from wild grasses.

There is ample food for animals including people. The problem lies in its seasonality. The lion fattening royally on the Serengeti Plain in the wet season becomes a fly infested bag of bones in the dry season. Birthing cycles have evolved to fit with the seasons of plenty. The survival of an animal which can store food, even if for only a short period, is greatly advantaged. The storing of varieties of food is a necessary step from hunting and gathering towards collecting food.

The foods first stored in our ancestors' caves probably were dried fruits and berries, dried meats, grains, tubers and roots. The food stored must be ventilated, otherwise it will not keep or may become toxic due to fungus. The food therefore would be accessible to vermin. Our cave dwelling ancestors could not have stored food unless dogs and cats were already living in the caves and keeping vermin in check. The storage of food by people further benefited the dogs and cats in the evolving complex.

Therefore people, dogs and cats became part of each other's culture and, I argue, have remained so. Theirs were the paws that insensibly, but critically, shaped human affairs to allow the most important revolution to occur that our species had so far experienced: the move to food production and, eventually, urbanisation.

And this is why the life of an Animal Manager is complicated by the subjective relationship people have with their dogs and cats. It is human nature to associate with dogs and cats, because we co-evolved, just as it is human nature to groom each other because of our primate past.

## ***Tails of the city***

Does all this speculation amount to a hill of beans? I think so because the human world is becoming a city, and this presents a marvelous opportunity for creative Animal Managers.

Because you have your feet on the ground, you know what is going on. That knowledge is most productive if it is put in context. We all need to read outside the square. Reading gives us the confidence to influence public policy makers who persist in seeing dogs and cats as objects. If urban animal management can see beyond "responsible pet ownership" and instead encourage (for example) "careful keeping of animals", it may lose some of its adversarial image and instead appear positively normal. Animal Managers have to carry out policies which have a strong odour of prohibition. How do you prohibit a relationship which is part of our nature?

In *Welcome to the Urban Revolution*, Jeb Brugmann (2009) reminds us that half the world is now a city, with 3.5 billion people living in it. Soon there will be 5 billion city dwellers. If my naturalistic argument is correct, as we crowd together until our population plateaus at 9 billion, we must continue to associate with the dog and cat to maintain sane, healthy communities.

## ***Some ideas***

I have to thank my youngest daughter, Gillian Paxton (2012) for guiding me to some new discourses on cities: *Living Cities*, *Natureculture*, and *Cosmopolitics*. These are names you may hear a lot in the coming years. The ideas behind them are not new, but the names link the ideas to some very powerful discourses in the social sciences. I also thank Tina Bloom (2011), who helped me scan the current social discourse on companion animal keeping. Tina is a psychologist working in a maximum security prison and exploring the use of animal assisted rehabilitation of troubled individuals.

Her PhD examined whether people could read dogs' facial expressions. John Auty commented helpfully on successive drafts of this paper.

The "**living cities**" (Hinchliffe & Whatmore 2006) idea is that human and nonhuman animals share the ecology of the city. Their relationship can be dynamic and organic, if recognised politically. There need be no presumption of opposition between the city and nature. Nature is not a "thing" owned by one group or another. My proposition fits with the idea of living cities very well: we have co-evolved with the dog and the cat in a persistent, naturally selective ecosystem ever since we lived together in caves. Together, we became who we are today. This is a naturalistic perspective and matters because crowding together in cities can cause natural pathologies. Fifty years ago, John Calhoun demonstrated this in rats that had access to every amenity except space. As colonies multiplied and crowded, social pathologies developed such that the rats fell into a "behavioural sink", or what we might call Hell.

However, Calhoun (1971) argued, human beings can cope with crowding because we can, unlike the rats, conceptualise space and so live harmoniously. I think dogs and cats are very good at helping us conceptualise space and should have a natural place in cities. Wide access to dog and cat keeping infers green space and good urban design, health and psychological benefits, companionship and security, fairness and ethical consideration of other species. Lack of access to dog and cat keeping is a sign of an asocial, compromised human community. If a city is not fit to keep a dog or cat in, how can it be a fit place for human beings? In living cities, Animal Managers could become concerned with other animals and participate more broadly in urban governance.

**Natureculture** rejects the concept of nature as fixed and separate from human culture. Rather, it sees both as fluid, inter-connected and difficult to define. Humans and non-humans adapt, change and evolve seamlessly although sharing a built environment.

One of the proponents of this view is Donna Haraway (2003). Among many things, she describes the flow of street dogs into North America from Puerto Rico. These dogs are nicknamed Satos. There is a Save-a-Sato Foundation which has exported 10,000 Satos to carefully screened homes since 1996. Puerto Rican members of the Foundation rescue at least 5 Satos every month, socialise them and give primary health care, all at their own cost. The North American receivers of the Satos are especially happy that the dogs are non-pedigreed. Even if the rescued Satos are neutered, when one thinks of the ethologists Rudolph and Rudophina Menzels' (1948) concern 60 years ago that the street dog genotype might become endangered, one must also think that the Menzels can relax in their graves: there is a continuing

perception that street dogs are valuable, so the invisible paw in human affairs is alive and well.

**Cosmopolitics** tries to weave the dispassionate scientific assessment of nature and the passionate political allocation of resources into a kind of natural justice which allows for likelihood, instead of demanding scientific certainty (Hinchliffe et al 2005). I argue that the warp and the weft of cosmopolitics should include companion animals. We now accept that the socialisation of a puppy at Puppy School is more likely to result in a Good Citizen Dog, and we accept that the socialisation of a child at pre-school is good for the child. In a cosmopolitical world there is no great leap in suggesting that companion animals and children might socialise each other also. Tina Bloom (2011) draws our attention to how thirty years ago the Hare Indian tribe in Northwest Canada employed dogs and children to socialise one another. Presumably they still do, because it is, I think, a long-lived, if informal, practice in our own culture. As Wardlaw Kennedy (1899) wrote, every well-constituted Victorian household in England had its dog and cat, and one can be sure that the paws of the  $n^{\text{th}}$  generation of Royal Corgis continue to have an effect on human affairs, in this Diamond Jubilee Year. And should First Dog Bo, the Obama family's Portuguese Water Dog be mentioned as well? In Australia, research (MacCallum Research & Mackay 1992) has recorded that dogs and cats, in particular, can teach children respect, compassion and traditional values, as well as about the birds and the bees.

In a cosmopolitical world it is not only possible to argue that all socio-economic groups should have access to companion animals, but also that lack of access may be detrimental for individuals and society at large. There are very many references in Western academic literature to the correlations of dog and cat keeping with socialising children and with social empathy in young adults. For those with an empirical bent, an example of a good source of such literature is *Anthrozoös* (Berg Publishers, London) where researchers seek to validate their findings by various means, for example, with score cards, or measuring levels of oxytocin in the blood of people and dogs, or using positron emission tomography scans of cerebral activity (Sugawara et al 2012).

Cosmopolitics would allow a more relaxed appreciation that *Yes, keeping a dog or cat does indeed socialise people for the general good of society*. Cosmopolitics appreciates the likelihood of connections, rather than demanding 95+ per cent levels of confidence. In a crowding world, socialisation may be increasingly important. It is not possible to overlook chronic bad behavior in our own cities; nor the widespread and apparently inexplicable youth violence in the United Kingdom in

2011; nor the overt racism in the Ukraine depicted on our television screens in 2012. Perhaps living conditions in cities already are impacting negatively on access to keeping animals and consequently on the positive social and conceptual effects of animal companionship.

## Conclusion

This paper is an argument for nurturing access to dog and cat keeping, for the benefit of the whole community. Animal management should not be only about regulations and the negotiation of control, but also about promoting access to our co-evolved partners. Local government in burgeoning cities should thus be cosmopolitical. Obviously scientific rigour has its place but, if one accepts that people, dogs and cats are animals, animal management cannot be done as though in controlled a laboratory experiment because, not only is there the inevitable effect of the observer in the landscape, the observer also *is* the landscape.

My own profession could also take heed of cosmopolitics and living cities when considering "best practice". I think poorer people, as well as the rich, should have access to dog and cat keeping, in a good and fair society. The decisions of the Veterinary Surgeons' Boards, which set the standards upon which litigation relies, can influence cost of access to the public good of dog and cat keeping, and it is important that the influence be naturally just.

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