



Aristotle's Ethics and Farm Animal Welfare

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Abstract

Although *telos* has been important in farm animal ethics for several decades, clearer understanding of it may be gained from the close reading of Aristotle's primary texts on animals. Aristotle observed and classified animals informally in daily life and through planned evidence gathering and collection development. During this work he theorized his concept of *telos*, which includes species flourishing and a good life, and drew on extensive and detailed assessments of animal physiology, diet and behaviour. Aristotle believed that animals, like humans, have purpose, and that *telos* is natural and unchanging. Moreover, he greatly valued the economic, political and defence contributions of farmers to their communities. In his stockperson ethics, animals are ordered to rational human purposes through husbandry, and good practice is established and shared by experience, habituation and training. Aristotle provides a useful and demanding framework for farm animal ethics that goes well beyond negative theories of welfare as freedom from harms.

Keywords Aristotle · Ethics · Farm animal · Stockperson · *Telos*

Aristotle's concept of *telos* may be defined as the end or goal for which a being aims. It has a significant contribution to make to animal ethics and welfare. In summary, for an animal to have a *telos* means, for Aristotle, that there is a set of detailed behaviours and wider life goals that it naturally seeks to pursue. These are objective and specific to species (Hauskeller 2005). For example, poultry behaviours include dust bathing, foraging, nesting and nocturnal perching, while among the life goals of poultry are structured social living within a flock, and breeding. When an animal successfully pursues these ends, it enjoys the goods characteristic of its species

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and flourishes, and may justly be said to have a good life. Although behaviours and goals form a continuum of ends, rather than comprising two separate categories, it is useful to distinguish them to show the variety of ends that compose *telos* and how subsidiary ends contribute to overarching ends. For example, the behaviours of nesting and perching help to create the conditions for breeding. This does not mean, however, that nesting and perching have value only in so far as they make breeding possible. They are enjoyed for their own sake as well as making possible other activities.

The prominence of *telos* in current animal ethics is due in significant part to the philosopher and animal scientist Bernard E. Rollin, who traces his understanding of *telos* to Aristotle. From his earliest work almost four decades ago, Rollin has argued that, because animals have a *telos*, they deserve ethical consideration (Rollin 1981, 38–40, 54–7, 160–4). However, farming practices sometimes frustrate the pursuit of *telos*, such as when a breeding sow confined within a gestation crate is unable to turn around or groom herself (Rollin 1995, 73–80). Although Aristotle viewed *telos* as fixed, genetic engineering now allows the possibility of ethically-responsible modification of *telos* (Rollin 1998). *Telos* enables an understanding of animal motivations as more complex than simple pleasure seeking and pain avoidance, and may ultimately be a more important motivating factor than either of these (Rollin 2012). Rollin has recently reiterated these themes in a synoptic study (2016, 47–55, 97–129, 163–71).

Rollin's project has been constructive, and his publications do not include much detailed reading of Aristotle. Moreover, when he cites 'major discussions of *telos* in Aristotle', Rollin (1998, 156) lists abstract and speculative works¹ rather than those specifically on animals. These latter include the *Generation of Animals* (*De generatione animalium*), the *History of Animals* (*Historia animalium*), the *Movement of Animals* (*De motu animalium*), the *Parts of Animals* (*De partibus animalium*) and the *Progression of Animals* (*De incessu animalium*), which together comprise over one-sixth of Aristotle's extant work.

Rollin identifies the principal influence on his own interpretation of Aristotle as John Herman Randall and his 1965–68 lectures at Columbia University (Rollin 1998, 156). Randall interpreted *telos* as an end, but explicitly not as a purpose, which he defined as a 'consciously foreseen end' that was, as such, limited to humans (1960, 124–9). *Telos* thereby expands the scope of moral consideration beyond humans, who are the only beings who engage in conscious deliberation (ibid., 186–8). Randall rightly viewed teleology as natural rather than as the result of divine design (ibid., 225–34). An animal's *telos* is identified by observing its function within its wider ecosystem, rather than by appeal to a non-verifiable, God-given 'essence'.

In this article, my methodology will be to focus on the works listed above, in which Aristotle most directly and extensively discusses animals in general and farmed animals specifically. This will enable a richer practical understanding of his

¹ *Physics, Metaphysics, On the Soul, On the Heavens and Posterior Analytics.*

animal ethics, including its sources and development, than a presentation focused on his speculative works, which will be referred to only if they aid interpretation.

Introduction: Aristotle and Animal Farming

A country boy, Aristotle was born in 384 BCE in the village of Stagira on the Chalcidice peninsula in northern Greece. Aged eighteen he moved to the metropolis of Athens to study at Plato's Academy, where he remained for 20 years, before tutoring the famed Macedonian conqueror King Alexander the Great. On completing this duty Aristotle stayed in Macedonia until the death of Alexander's father, Philip of Macedon, in 335, either at his court or back home in Stagira. He then returned to Athens, founding a school under Alexander's benefaction at the temple of the Lyceum, which included collections of fauna and flora, and an extensive library. Following Alexander's death, the Macedonians fell out of favour in Athens. Fearing for his welfare and possibly his life, Aristotle retired to his mother's family estate at Chalcis, where he died a year later in 322.

During his lifetime, Aristotle had three obvious opportunities to develop his understanding of farmed animals. First, it is highly likely that he observed and helped to care for farmed animals in childhood. Second, while he was tutoring Alexander (347–40) and following this (340–35), before his return to Athens, Aristotle had ample time to undertake systematic empirical research into a wider range of species (Shields 2014, 18–23; Natali 2013, 41–2). Pliny the Elder (8.17; 1940, 34–5) suggests that his zoological research benefitted from Alexander's active support, and a mandate to contact fishermen, fowlers, hunters, herders and other stockpersons² for any information he required. Third, when founding and developing his school at the Lyceum (335–23), Aristotle included animal collections, which reputedly extended to exotic species sent back by Alexander from his distant conquests. Some commentators (Lloyd 1979; Solmsen 1978) have regarded this as the most likely source of his animal knowledge, which locates it in the linked contexts of collaborative research, collection building and book learning. Aristotle sometimes questions oral reports, but also queries written sources previously accepted as reliable.

The animals studied by Aristotle include native wildlife, exotic species and farmed animals. However, among those few commentators who have examined Aristotle's work on animals, none has focused on farmed animals. In this article I shall demonstrate that his primary methodology was observation, both unstructured and systematic, and shall examine his understanding of the needs, behaviours and goods of species. I shall then show how he regards humans and animals as similar in ethically significant ways, including that they both have an internal governing principle (a 'soul') and a sense of purpose. Indeed, farmed animals will be seen to occupy a higher position in the natural order than wild animals because their lives

² Being a farmer entailed owning property, which was possible only for men. Stockpersons were not, however, all men. Excepting direct quotation, whenever referring to farming activity that did not entail property ownership by the person undertaking it I therefore employ gender-neutral language.

are regulated by rational human principles. This order and regulation will be shown to inform an understanding of the idea of a ‘good life’ for animals. Finally, I shall explain the reasons for Aristotle’s high valuation of farmers and farming, and reflect on the role and education of the stockperson. This discussion will draw on his virtue ethics.

Observing and Theorizing

Fundamental to Aristotle’s methodology is the direct observation of the natural world. He laments that, during the time of Socrates and, by implication, of Plato, ‘research into the natural world ceased, and philosophers turned instead to practical virtue and politics’ (*Parts* 1.1, 642a29–31³). Although he was, of course, himself greatly interested in politics and virtue, Aristotle wished to correct what was, in his time, a novel neglect of the natural world by setting these within their proper context. In the words of his translators, Aristotle’s was the ‘first attempt in Europe to observe and describe in a scientific way the individual living object’ (Aristotle 1961, 11). Aristotle could therefore be regarded as anticipating modern evidence-based ethics, adopting a practical approach not just to human virtue and politics, for which he is well known, but to the non-human world too. However, he does not regard observation as simple data gathering. Rather, observation permits an observer to construct theories about nature and its operations by means of concepts such as perception, reason, cause, habit, generation and relation. For Aristotle, there is no contradiction between observation and philosophical theorizing. This is because the role of philosophy is to understand and interpret the world as humans observe it. Philosophers must therefore either themselves employ observation or engage with the observations of others. Aristotle states that ‘first one should get hold of the phenomena concerning each kind, then state their causes’ (*Parts* 1.1, 640a14). This methodology enables him to address species characteristics and welfare, especially regarding animal diet.

Aristotle possesses a detailed understanding of rumination, derived from both written texts and dissection (Gothelf 1987, 178–85). Cattle, he observes, consume grain and herbage.⁴ They fatten on bitter vetch, bruised beans, bean stalks, barley, figs, raisins, wine and elm leaves (*Hist.* 7.7, 595b6–13). The best means of fattening, however, are heat from the sun and wallowing in warm water. Aristotle’s observations for sheep and goats are similar. These, he notes, feed on herbage and are fattened by olive twigs, vetch and bran (*Hist.* 7.10, 596a14–30; 6.19, 574a9–11). However, he explains that the best way to fatten sheep is to get them to drink. For this reason, he says, during summer flocks are fed salt every 5 days. Salt is also added to their bran and sprinkled onto the cucumbers that they are fed in autumn. As well as

³ The standard format of citing Aristotle refers to the 1831 Bekker edition, which is reproduced in modern parallel editions and translations.

⁴ This term encompasses grass and other herbaceous plants on which herds and flocks may graze.

causing the sheep to drink more, salt improves their health, expands their udders at the start of lambing and increases milk yield.

The wide variety of foods recommended for feeding and finishing is striking. For pigs, the advantages of a varied intake are clearly stated. Aristotle notes their exceptional diet, especially their avoidance of grass and fruit, and their love of roots (*Hist.* 7.6, 595a15-b1). The pig, he continues, is the 'animal that takes most easily to food', fattening in as little as 60 days, which is quicker than any other animal. The foods on which it fattens are barley, millet, figs, acorns, wild pears, cucumbers and chickpeas, with a varied diet likely to produce optimal results (also *Hist.* 7.21, 603b25-27). Pig fattening is also promoted by wallowing in mud.

Aristotle presents a small-scale agricultural economy in which products and by-products that humans would not normally choose to consume, such as bruised beans, bean stalks and wine-press residue, are important in animal diets, along with inferior grains such as barley. For fattening, the non-dietary measures that he prescribes draw on the natural resources and possibilities that are easily and freely available: sunlight, warmth, water and sleep. These dietary and other prescriptions are grounded in the belief, previously discussed, that everything in nature is ordered to its end, thereby contributing to the functioning of the whole. This belief predisposes Aristotle to identify solutions within nature rather than, for instance, to invent new feeds or finishing technologies. His holistic and harmonious view of the natural world, and of the place of farmed animals within it, suggests a symbiotic relationship between humans and farmed animals, with farmers making use of what is naturally available. For example, Aristotle reports that ewe's milk is important for cheesemaking because ewes may be milked for 8 months a year (*Hist.* 3.21, 523a5-7). Although modern dairy ewes may lactate for 9 or 10 months, his point clearly addresses what is naturally available at the time.

At least three of Aristotle's examples suggest that the results of these natural regimens matched and even exceeded modern expectations. The large dairy cows of Epeirus—a region now straddling Greece and Albania—are reported to produce a daily yield of up to nine gallons (72 pints), with the milker needing to adopt a crouched standing position because the teats are too high to reach when seated (*Hist.* 3.21, 522b16-19). This yield, high even by modern standards, is attributed to the abundant pasture suited to the different seasons, particularly vetch and (non-flowering) cytisis (*ibid.*, 522b26-8). Milk expression was induced by feeding with beans and other plants that cause flatulence. A second example of high-level production is pig litter size, which Aristotle states can be as high as twenty, along with the strikingly modern observation that 'if the litter is very large they cannot rear them all' (*Hist.* 6.18, 573a32-34). Later in the same work, he observes the frequency with which domesticated hens lay: up to twice daily (*Hist.* 6.1, 558b20). Even by modern standards this is high frequency. Incubation was no doubt aided by a warm climate, with the heat from the air or the ground sometimes sufficient to trigger incubation (*Gen.* 3.2, 752b29-35, 753a17-20).

A final species that Aristotle discusses is the partridge. His treatment of the bird is noteworthy because of his moralization of its behaviour. The partridge, he asserts, has a 'bad character' and performs 'wicked tricks' (*Hist.* 8.8, 613b23-4). Aristotle describes male partridges smashing any eggs that they find, attributing this

behaviour to their lecherous nature. His implication is that the smashing of eggs provides the males with justification for another round of mating, so that new eggs may be fertilized. In consequence, the hen lays her eggs in obscure locations and avoids visiting them (*Hist.* 8.8, 613b25-14a31).

In this section it has been shown that observation provides the foundations for Aristotle's ethical understanding of animals. What is morally right is what harmonizes with the provisions and rhythms of nature. Farmed animals and farmers live in a symbiotic relationship with each other, with small animal groups cared for by individual farmers who know their needs and behaviours.

Animals Souls and Purposes

From a biological standpoint, Aristotle does not regard humans as straightforwardly superior to other animals, recognizing the whole animal kingdom as worthy of examination. Marvels and beauty are identifiable in every natural realm. Aristotle notes, for instance, that among farmed animals, pigs are unrivalled in producing 'numerous offspring that are perfectly formed' (*Gen.* 4.6, 774b16-17). He is alive to the sophistication of many species. Indeed, the most noteworthy features of sentient life are unlikely to be found in the human species. Aristotle avers: 'it is impossible to look at that from which humankind has been constituted—blood, flesh, bones, blood vessels, and other such parts—without considerable disgust' (*Parts* 1.5, 645a27-30). He nevertheless deigns to examine human biology alongside that of the animal kingdom. In a survey of generative capacity he discusses the human between the cow and the ass (*Hist.* 5.14, 545b27-30).

Linked with the close kinship that Aristotle perceives between humans and other animals is his view that both humans and animals have souls. His conception of the soul differs from Plato's. For Aristotle, the soul is not a distinct spiritual entity that may contemplate a higher realm of transcendent truth or be abstracted from the body so as ascend and enter such a realm. Rather, the soul is the animating form of a living being (*Parts* 1.1, 641a18), or its internal governing principle. When an animal dies, its soul may be said to depart from its body, because none of the parts of what previously composed the animal remain in living form. For Aristotle, the soul provides an animal's living, coordinating, moving and generating principle, and is therefore an appropriate object of scientific investigation. He strikingly asserts: 'It will be up to the natural philosopher [i.e. scientist] to speak and know about the soul; and if not all of it, about that very part in virtue of which the animal is such as it is.' (*Parts* 1.1, 641a21-22) An animal's soul, Aristotle continues, constitutes its nature as final cause, guiding the animal to the ends that it seeks in its life. For this reason, the soul is a more significant indicator of an animal's nature than the matter composing its body: the soul enables matter to constitute the animal nature, rather than matter enabling the soul (Lear and Jonathan 1988, 45–9). In another text, Aristotle pictures an animal's soul as governing the harmonious operation of its different bodily parts. Comparing the animal organism with a well-governed commonwealth, he writes that the soul is 'situated in a central origin of authority over the body', with the other parts each living by 'structural attachment' to it and performing their

own functions (*Mov.* 703a36-b2). In his understanding of the soul, Aristotle therefore perceives considerable similarity between animals and humans.

The same is true of his understanding of human and animal actions. Intentional human acts are governed by ends: for example, I might decide to walk to the shop to buy a piece of cheese. However, Aristotle strikingly suggests that, in animals, the link between intention and action is *more* evident than in humans. He thus understands animal actions as surprisingly similar to human actions, contradicting Randall (1960, 124–9), who opposes the idea that animals act purposively. Aristotle recognizes that animals ‘neither enquire nor deliberate’ (*Phys.* 2.8, 199a20–22). They do not reflectively investigate nor consider different options before acting, even though they might evince simple learned avoidance behaviours. Rather, animals act without mediating rational processes, which can obscure both intention and action. Animals are moved not by thought but rather by desire, which may include elements of intellect (*dianoia*), imagination, purpose (*proairesis*), wish and appetite (*Mov.* 6, 700b17–19). In humans, the stated reason for doing something can itself become the intention, and the action is then likely to become delimited by the possibilities that reason constructs. When eating, for example, my choices might be overdetermined by the tenets of a fashionable diet to the extent that I am unwilling to consume anything incompatible with it. In contrast, when animals act, Aristotle argues, they act ‘by nature and also for a purpose’ (*Phys.* 2.8, 199a26). He robustly defends this view of nature as purposive. Directly refuting his critics, Aristotle contends: ‘When the desirable result is effected invariably or normally, it is not an incidental or chance occurrence.... It is absurd to suppose that there is no purpose [*heneka*] because in nature we can never detect the moving power in the act of deliberation.’ (*Phys.* 2.8, 199b24–27) So whereas animal *telos* is intensely purposive, human *telos* is deliberative. This indicates a qualitative difference between human *teloi* and animal *teloi*, although, as has been just shown, the corollary of the qualitative gain that reason brings to humans is a quantitative loss in purposiveness.

Aristotle’s notion that all animals exist for the sake of humans suggests that farmed animals fulfil their *telos* more fully than wild animals. A wild animal may be hunted by humans and be captured or killed, but a farmed animal has its whole life humanly ordered, from birth to death. Just as the soul governs the body and reason governs passion, so animals, Aristotle argues, should be governed by humans. He writes that ‘tame animals are superior in their nature to wild animals’ (*Pol.* 1.2, 1254b10–13). Aristotle does not advocate the despotic rule of humans over animals. Rather, he sees farming as in the best interests of the animals being farmed or otherwise tamed by humans. Aristotle thus lends strong support to the notion that animal farming is a legitimate and even desirable human activity. Indeed, his reasoning would appear to endorse the maximum level of animal farming compatible with the promotion of natural behaviours and *teloi* according to rational principles.

An implication of Aristotle’s harmonious vision of human–animal relations is the convergence of ‘natural’ behaviours, which an animal might exhibit when unfarmed, with ‘normal’ behaviours, into which farming systems might habituate it. Aristotle calls into question the notion that animals could or should live free from humans, indicating that this would not be in their best interests. He thus construes the ‘normal’ as part of the ‘natural’. Yet the normal is not coextensive with the natural. For

Aristotle, farming systems are functional only if they promote natural animal behaviours, and this principle significantly delimits the range of acceptable systems.

Aristotle's theory of *telos* theoretically justifies the belief that animals exist for the sake of humans, and that plants exist for the sake of animals (Connell 2015, 240–5; Johnson 2005, 229–37; Kullmann 1979, 8–9). Nature, he believes, acts 'for the sake of' something, even though natural ends, unlike human ends, are not pursued as the result of deliberation or intention (Johnson 2005, 204–10). Natural processes are not produced by mere chance or spontaneity: teeth, for example, grow predictably, while rain and heat are seasonal (*Phys.* 2.8, 198b17-199a8). Aristotle does not here claim complete regularity or predictability, recognizing exceptions and a degree of uncertainty. Nevertheless, the notions of exception and uncertainty themselves assume a background norm of non-random events. Organic growth, Aristotle states, is for the sake of an end, which also governs the nature of a thing. For instance, a chick embryo in an egg (*Gen.* 3.1-2, 749a10-754a20) will, over time, grow into a chicken that is able to enjoy freedoms and express preferences for food, habitat and company. Another example of organic growth is the snout of a pig, which is 'naturally well constituted' to dig up the roots that a pig likes to eat (*Hist.* 7.6, 595a17-18).

Because Aristotle views animal natures and goods as fixed, his framework is inhospitable to genetic modification. Some commentators, including Rollin (2014), have suggested that this is not necessarily the case, and that *teloi* may be altered to reduce suffering and make animals better fitted to their environment. This is a clear development of Aristotle's own view, which did not allow for changeable or improvable natures, and so at the least suggests that genetic modification should be approached with caution. In any case, in the present article this debate is simply noted as it cannot be addressed in detail.

In current animal welfare discourse, when an animal's needs, wants and desires are met to a high degree, it may be said to enjoy a good life. Aristotle himself defines the good of a thing as that at which it aims (*Nic. eth.* 1.1, 1094a1-3). This aim, and its associated good, is a result of function, which in the case of cattle and other farmed species is, in its most general terms, sentient life (*Nic. eth.* 1.7, 1098a2-4). This life is governed by the soul's nutritive, or vegetative, faculty, through which an animal's body is nourished and grows and which thereby contributes to the excellence with which it fulfils its function (*Nic. eth.* 1.13, 1102a34-b12). Aristotle states that to say that a living being has enjoyed a good life requires a perspective extending across its whole lifespan (*Nic. eth.* 1.7, 1098a18-19). From this it follows that only at the end of its life, whether this is a result of slaughter or humane killing, may an animal be said to have lived a good life. Aristotle develops a rich understanding of goodness, including animal purpose and the value added by husbandry, that has the potential to inform the concept of a good life currently used in animal welfare.

Farmers and Stockpersons

Although Aristotle presents animals as possessing souls, it has been seen that he understands the soul as simply an internal governing principle. Humans, in contrast, because they possess deliberative rationality, establish complex communities

grounded in family, social, economic and political relationships. Within such communities, Aristotle recognizes farming to be one of life's primary occupations, supplying a household's basic needs. Farming is grounded in property, that is, in the land, animals and equipment required to meet the needs of a household and of the urban populations that also depend on rural agriculture. Aristotle (or one of his students) views the household as the primary constituent of a political community, requiring the economic foundation just described for its survival. Importantly, the establishment of the household precedes any form of political association (*Ec.* 1.1, 1343a10-14). It is out of households, sustained by farming, that a society is composed, whereas politicians cannot themselves meet the basic human needs that farming satisfies. Indeed, politicians do not produce anything. Comparing farming with commerce, with war, and with mining and other forms of extraction, Aristotle contends that farming surpasses them all. He enthuses:

Agriculture is the most honest of all such occupations; seeing that the wealth it brings is not derived from others. Herein it is distinguished from trade and the wage-earning employments, which acquire wealth from others by their consent; and from war, which wrings it from them perforce. It is also a natural occupation; since by nature's appointment all creatures receive sustenance from their mother, and humankind like the rest from their common mother of the earth.

And besides all this, agriculture contributes notably to the making of courage (*andreia*); because, unlike the mechanical arts, it does not cripple and weaken the bodies of those engaged in it, but inures them to exposure and toil and invigorates them to face the perils of war. For the farmer's possessions, unlike those of other men, lie outside the city's defences. (*Ec.* 1343a25-b6)

Farming, Aristotle believes, is a fair and honest living. The farmer gives to his fellow citizens rather than taking from them, meeting real needs. Agricultural products bring people together into sustainable communities with deep bonds of attachment. This is illustrated by Aristotle's use of the striking term *homogalaktes*, which means 'sharers of the same milk', to describe people living together in a settled small-scale community (Derks 1995).

The farmer whom Aristotle holds up for praise is neither the subsistence farmer, nor the absentee landowner, but the mid-level householder-farmer (Hanson 1999, 111–17; Thompson 2018, 58). By his ongoing productive work and land management, such a person promotes the stability of the rural community (Hanson 1999, 188–93). This perspective provides an important corrective to the standard view of Aristotle as idealizing the urban political community. In fact, what he terms a *polis* may be either a built-up city or a connected rural community. Moreover, a rural *polis* may well be more stable than an urban polis, where politics is more likely to be pursued for its own sake by a salaried class of professional politicians than by citizens alongside their day-to-day work.

In view of his rural upbringing, Aristotle's high respect for farming is unsurprising. His association of farming with bravery is maybe less expected. This is not because the connection is false: farming sometimes requires bravery in dealing with unpredictable or potentially hazardous physical situations. Nevertheless,

bravery is not a principal character trait for farmers. The bravery that farmers might acquire is, however, significant for Aristotle because of the political context in which he writes. City states, both urban and rural, were in ongoing competition for military alliances and advantage, and citizens might be called upon to fight in a military campaign for their state's continued independence. The martial virtues were thus fundamental to maintaining a strong and stable state. Indeed, when enumerating the virtues Aristotle lists courage first (*Nic. eth.* 2.7, 3.6-9, 1107a32-b1, 1115a3-1117b23). Without courage the state would not exist, nor therefore would any opportunity to practice other virtues.

There is a second reason to associate farming with bravery. Aristotle's teacher Plato had already recognized that farming might require the military conquest of a neighbour's land to provide sufficient pasture and ploughland to sustain a large and well-fed city, especially if the citizens wished to consume large quantities of beef (*Republic* 9.9, 373b2-e3). Aristotle further explores this association of war with meat-eating by linking the latter with arable farming. He notes that, after animals are born, they exist for the sake of humans, but that plants exist for the sake of the animals. The acquisition of land on which to grow the crops that farmed animals will eat is therefore a natural part of household management, whether practiced on a small scale by individual farmers or on a much larger scale by statesmen (*Pol.* 1.3, 1256b15-39).

A stockperson's primary role is to promote the good of the animals in their care, ensuring that their needs, wants and desires are satisfied. The stockperson possesses accumulated practical wisdom about how to care for farmed species. Aristotle reminds us of the premodern intimacy between the stockperson and their flock. For example, he advises that, to keep warm, the shepherd should sleep among the goats rather than among the sheep. This is because goats are less tolerant of cold than sheep (*Hist.* 8.3, 610b32-4).

Drawing on past observation, the stockperson recognizes their animals' natural behaviours and works with these in ways that are sometimes counterintuitive. In winter, Aristotle recounts, shepherds can identify the strong ewes. The weakly, he explains, shake the frost off their bodies, whereas the strong are unperturbed by the frost and allow it to remain (*Hist.* 7.10, 596a31-b2). This suggests that the shepherd, rather than brushing the frost off the sheep on which it remains, should attend to the sheep that are frost-free. In a snowstorm, a ewe may remain still even to the point of perishing, unless moved on by the shepherd (*Hist.* 8.3, 610b25-29). However, the shepherd trains a flock to close in by clapping their hands, imitating a storm (*ibid.*, 610b34-11a1). Also, Aristotle says that the shepherds always 'train one of the rams to be bell-wether' (*Hist.* 6.19, 573b25-27). This ram, probably wearing a bell around its neck, is taught from an early age to lead the flock. When tending cattle at pasture, the stockperson knows that a single animal must not be permitted to stray, because if they do so the rest will follow (*Hist.* 8.4, 611a7-9). The stockperson's knowledge frequently extends to veterinary-type skills in the diagnosis and treatment of illness. Aristotle recognizes that pigs are highly prone to disease, attributing to pig-keepers the knowledge of how to cure *branchos* (swine fever), identifiable by the symptoms of swelling around

the windpipe and jaws (*Hist.* 7.21, 603a1-b7, 603b29-30). Other farm animal diseases and possible cures are discussed at length (*Hist.* 7.21-5, 603b8-605a22).

This consideration of stockperson ethics draws us into wider human ethics. The stockperson, like all human agents, develops his or her capabilities by cultivating virtues. Some of these are moral whereas others are intellectual. As previously described, the moral virtue with which Aristotle primarily associates farming is courage (*andreia*). This is especially true for the shepherd protecting a flock in an isolated location beset with predators or thieves. The stockperson will also require a measured attitude to pain, exercising self-control (*sophrosune*) when caring for animals and treating them, and taking full account of their pain and pleasure (*Nic. eth.* 3.10, 1117b24-1118b8). The stockperson, or their employing farmer, will require an appropriate willingness to spend money (*eleutheriotes*, *Nic. eth.* 4.1, 1119b22-1122a17) in order that animals' welfare needs are met.

Aristotle discusses at length how these and other moral virtues are acquired through training and habituation. The stockperson will require practice in exercising and developing these virtues. They will need opportunities for self-observation and self-reflection so that they may correct, over time, the excesses or deficiencies in their acquisition and exercise of specific virtues. For example, a stockperson might either be insufficiently sensible to animal suffering, or so concerned with it that a flock ceases to be productive. In either case, by consciously resisting the vice to which they are more prone, the stockperson is likely gradually to develop a virtuous character from which appropriate attitudes to animals and behaviours towards them will follow.

Conclusion: A Good Life for Farmed Animals

Aristotle's general theory of *telos*, as outlined in his philosophical writings, may be applied to animals and thus used to support animal ethics. However, this examination of the texts in which he discusses animals directly shows that, rather than being first a theory that may subsequently be applied to practice, the idea of *telos* is developed via the practical observation of animals and specifically farmed animals, and only then becomes a theory. Aristotle provides a useful framework for understanding the ends and flourishing of farmed animals, which he developed and tested through early informal observation of animals and stockpersons, and later in a context of collaborative research funded by patrons. Recognizing farmed animals to be purposeful beings, his framework goes well beyond negative theories of welfare as freedom from harms. Aristotle also shows that stockpersons have a key role in identifying and promoting positive welfare states.

Aristotle regards goods as objective rather than as just whatever an animal seeks at a specified moment. Animal perceptions of the good may, like human perceptions, become distorted by habituated abnormal behaviours. Farmers and other stockpersons may be able to correct this by drawing on their own and others' experience. For this reason, it is useful that Aristotle focuses on 'natural' behaviour. Because he views humans as part of nature, and focuses on small-scale production, Aristotle does not himself see much difference between 'natural' and 'normal' behaviours.

However, in the present day, unnatural behaviours may become normalized in sub-optimal production systems, and Aristotle's theory of *telos* calls this into question.

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