Title
Farming of Non-human Animals for Food and Fibre

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Farming of Non-human Animals for Food and Fibre[1]

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Summary

This paper discusses the moral implications of raising non-human animals for food and fibre. The systematic privation to which these animals are subjected, the serious compromise to their welfare and the lack of necessity for an animal-based diet are documented. Although suggestions are offered for improvement in the manner in which these animals are raised, it is argued that discontinuing our dependence on animal-based products is the only way to prevent animal suffering. The core issue of human overpopulation as a driving force for an increasing destruction of animals and environmental degradation is briefly mentioned.

Keywords: animal behaviour, animal welfare, ethics, farmed animals, human diet, human overpopulation, morality, plant-based, veganism

When considering the issue of using non-human animals (animals[3]) for human food and fibre production, it should be kept in mind that the products made from the animals are not essential for sustaining human life, particularly in so-called developed countries. One can live quite well, perhaps even better, on a vegan or plant-based diet due to less risk of cancer and other health problems[4]. Synthetic materials can substitute adequately for those derived from animals. Contrary to popular belief, all essential nutrients are available without an animal-based diet, even the B vitamins[5]. In this context, the raising and killing of animals is unnecessary. Furthermore, it is unquestionable that a reliance on meat-based diet contributes to pollution of land, ground water and air[6].

Its lack of necessity, the pollution it causes or health concerns[7], however, are not necessarily the most important reasons to refrain from using animals for human food and fibre. Such use logically is immoral based on the human definition and principles of morality. This is discussed in more detail in the paper on moral concern in this series[8].

The conditions under which most animals currently are raised for food or fibre fall far short of meeting the animals' needs or interests other than very basic needs such as food, water and, sometimes, shelter[9]. In almost all cases, no attention is paid to meeting behavioural or psychological needs. Because of this, the animals merely exist; they do not necessarily experience a state of well-being. I am not referring to obvious abuse and neglect, such as starvation or the withholding of water, which lead to economic loss through poor production or death. I am referring to the quality of life the animals experience and the prevention of the pursuit of their species-

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1 The intent of this review is to demonstrate that using animals for food and fibre is generally inhumane and unnecessary. Although this document is not being regularly updated and some of the references may be considered 'dated', the arguments made are still valid for this issue. Strong moral arguments against subjecting non-consenting beings to harm and death are addressed in another manuscript (Buyukmihci 2022-12-01).

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This paper is part of a series on exploitation of non-human animals by humans. See the first paper (Buyukmihci 2022-12-01) for arguments on the moral value of non-human animals.

3 Purely for the sake of convenience, I may refer to animals other than humans as "animals", recognising that all are animals of one kind or another; there is no intention to imply that any, even a human, is morally superior or intrinsically more valuable than another.

4 Anderson et al 1995; Esselstyn 1991; Lee et al 1991; Weisburger 1991; Willett 1989

5 Albert et al 1980

6 Carrington 2018; Eshel et al 2014; Lal et al 1988; Poore & Nemecek 2018; Popp et al 2010

7 Although a particular animal product may not be healthy for humans, the industry simply modifies it to be more healthful, as witnessed, for example, by feeding omega-3 fatty acids to animals being raised for human consumption (Newmark 2014).

8 Buyukmihci 2022-12-01

9 Dellmeier et al 1985,1990; Friend et al 1987; Kiley-Worthington 1983; Rollin 1990; van Putten 1982-11-06; van Putten & Elshof 1982

specific interests[10].

Proponents of current methods, popularly known as ‘factory’ farming, point out that the system cannot be as bad as its opponents say it is, otherwise there would be loss of productivity. Productivity, however, is not a measure of well-being[11]. In most situations, the productivity being measured is based on the unit or group of animals rather than the individual animal. For example, in the typical chicken egg-laying operation, egg production is based on the entire flock and there is no direct information on what each individual chicken is doing[12]. When total egg production goes below a certain level, the entire flock is eliminated.

There are numerous simple situations which illustrate that productivity is not a measure of well-being. For example, hens kept under reduced lighting produce fewer eggs. It is difficult to imagine that this also would result in a reduction in well-being especially when you consider that reduced lighting naturally occurs during the winter season.

Cross-bred cattle produce more meat, however it is unlikely that they enjoy a higher degree of well-being than others. They may experience reduced well-being as a result of increased metabolic demands.

Finally, consider two bulls, one ranging freely with several cows and the other closely confined so that his semen can be collected for artificial insemination. The latter bull’s productivity with respect to reproduction unquestionably is better than the first bull’s. It takes little imagination, however, to conclude that the first bull, by virtue of being unconfined, enjoys a better life with respect to the freedom to pursue whatever interests and behaviours are important to bulls.

When evaluating the effects of a particular housing system on animals, the measure of well-being might be whether the system allows the animal to behave in a normal manner[13]. Some people believe that selective breeding has created domestic animals who are genetically very different from their wild ancestors so that they no longer have similar behavioural needs. There is no evidence that this is true. Observation of the animals in question indicates that domestication has had relatively little effect on the animals’ behaviour when given the opportunity to be expressed[14].

The effects of depriving animals of their behavioural needs can sometimes easily be seen. The present housing systems for chickens and pigs, for example, lead to destructive pecking in chickens and tail biting in pigs, among other problems. Unfortunately, rather than address the underlying cause of these so-called vices or other 'problems', the industry’s response is to mutilate the animals to control the problems[15]. A major portion of the chicken’s beak is burned off and lambs' and pigs’ tails are docked. Surprisingly, the American Veterinary Medical Association (AVMA) is in support of these practices and considers mutilation an appropriate management practice[16] despite the fact that these procedures cause pain[17]. Not only is this approach inhumane, it is *mis*management in that it fosters this type of aberrant behaviour. From a purely management

10 De Koning 1984; Dellmeier 1989; Fox 1979,1984; Fraser 1990; Rollin 1990; Stolba & Wood-Gush 1984; Van Putten 1989
11 Faure 1986; Fox 1979; Kiley-Worthington 1983; Luescher et al 1989
12 North & Bell 1990
13 De Koning 1984; Dellmeier 1989; Dellmeier et al 1985; Kiley-Worthington 1983; Rollin 1990; van Putten 1982-11-06
14 Hughes 1980; Kiley-Worthington 1983; Price 1984; Tennessen 1989; van Rooijen 1983
15 Animal Industry Foundation undated; Baker et al 1981; North & Bell 1990
16 AVMA 2021a,2021b,2021d,2021e
17 Marini et al 2017

perspective, it would be far better to provide an environment which minimises this[18] as well as using for breeding only those individuals who do not retain or exhibit those traits[19].

In some cases, however, the effects of 'factory' farming are not easily measured[20] or the parameters used, such as serum cortisol, are not appropriate[21]. Lack of socialisation with conspecifics, lack of exercise, or prevention of expression of various behavioural traits, for example, have adverse effects on animals[22]. Sometimes these effects cannot be measured or the measurements do not give the total picture[23]. Although various parameters can be used to determine objective effects on behaviour, physiological factors and other aspects, the true effect on well-being cannot be determined because this is something which only can be assessed by direct conversation with the individual, something unlikely between human and other animals.

One must, therefore, have empathy to appreciate the degree of inhumanity of a particular situation. You may have to put yourself in the animals' place and ask yourself if the conditions would be acceptable to you, admittedly a most difficult task given that no human can truly know what it is like to be another human let alone an individual of another species. By this I do not mean to consider situations in which inappropriate questions are being asked or inappropriate comparisons are being made. Different species have different requirements or behavioural repertoire. It would be illogical, for example, to consider yourself in the place of a fish with respect to whether you would like to spend your entire life submerged in water, even with appropriate breathing equipment. Rather, I ask that you consider situations which have similar effects on us and other animals. Where evidence to the contrary is lacking, the animal should be given the benefit of the doubt. Bear in mind that the animals involved in this situation are not machines or mindless automatons. They are sentient beings who experience life and death in a manner similar to us. Differences relative to this discussion are largely in degree rather than in kind.

There is considerable hypocrisy in our attitude toward the animals humans use for food and fibre versus those we deem our family companions ('those you pet and those you eat'). Although a cow's capacity to feel pain and suffer appears to be similar to that of a dog's, our treatment of the cow is substantially different. No rational person would permit the castration of their dog without the benefit of anaesthesia nor would anti-cruelty statutes permit this. Likewise, it would be considered extreme cruelty if a hot iron was used to brand a non-anaesthetised dog. It is not only legal, however, but also standard operating procedure to castrate and brand cattle without using an anaesthetic. This dichotomy is biologically, morally and legally inconsistent.

I believe most people would agree that we need to provide adequate surroundings and social interaction for 'wild' animals confined in zoos (even though zoos cannot be condoned for moral reasons). There are data to show that more naturalistic environments or feeding practices lead to healthier animals who may be able to better adjust to their incarceration[24]. It seems irrational, at best, for people to object to extending what amounts to the same considerations for animals used for food and fibre. I find this very perplexing and saddening. There is no difference between these groups of animals which allows for such dichotomy of concern and treatment.

Agribusiness groups are responsible for disseminating incorrect or misleading information concerning the manner in which animals are raised for food and fibre. For example, the American Egg Board approves of children's colouring books which depict chickens in idyllic barnyard

18 Fraser et al 1991; Green et al 2000
19 Craig & Lee 1990; McBride & Craig 1985; Webster & Hurnik 1990
20 Dellmeier et al 1990
21 Herd 1989
22 Dellmeier et al 1985; Friend et al 1987; Kiley-Worthington 1983
23 Barnett & Hemsworth 1990; Bradshaw 1990
24 Bond & Lindburg 1990

conditions with roomy and comfortable coops and family units such as a hen and her chicks. The true manner in which the majority of chickens are raised, however, is in no way similar to this misrepresentation.

The National Dairy Council and Milk Industry Foundation approve of colouring books depicting cattle in idyllic pastures, with calves at their sides. Again, the depiction is starkly at odds with the real situation.

Another issue in modern animal agriculture is the prevalence of drug use in feeds, as growth promoting agents and to prevent infection[25]. The use of these agents has been recommended to "*...combat the effects of stress caused by...crowded conditions*"[26]. Even the veterinary profession as a whole has appeared to be supportive of the practice of sub-therapeutic use of antibiotics[27], even though it goes against all we were taught about using such agents only in the face of an infection. Moreover, there are data indicating this type of use is associated with increased resistance to antibiotics by various bacteria and constitutes a serious health hazard to people[28]. Moreover, there also are data to show that such use is unnecessary for the promotion of growth[29]. Compounding this is the use of drugs as treatment for situations which could be controlled by better management practices, such as bovine respiratory disease which is the result of stressful living conditions[30].

Although there are exceptions, the descriptions in the following paragraphs are of standard husbandry practices at this time. Although this is slowly changing in some regions of the world, the majority of calves raised for 'gourmet' veal are kept in individual stalls in subdued or almost no light except at feeding time, many while chained at the neck[31]. They get no exercise, normal grooming is impossible and they cannot even turn around or make normal postural adjustments in the stalls as they get larger. They have nowhere to lie except on the slatted flooring of their crates which often is coated with their own excrement. Even if the crates were cleaned many times a day, this would only *reduce*, not eliminate, the calves' contact with faeces and urine. The faeces and urine can keep the skin constantly wet and provide an environment which is conducive to infection and inflammation. Ammonia from the urine is a powerful skin irritant. Combined with the lack of bedding, which results in pressure sores from skin rubbing the wooden crate, this sets up a potentially serious skin problem which can cause the calf considerable discomfort and pain.

No opportunity for meaningful social contact with their conspecifics is provided calves raised for veal in this manner. Although the calves normally would begin eating roughage soon after birth, they are fed only a diet which makes them anaemic[32] and which contains various drugs which can end up in human food. When taken to slaughter, their legs and musculature are so poorly developed that they walk with difficulty and sometimes sustain fractures.

As a result of all these factors, the calves experience *continual* stress and other problems[33]. It is well known that continuous stress can severely compromise the body's immune system, making

25 Aarestrup et al 2010; Anon 1985; Bevill 1984; Mason 1990; Roudaut & Moretain 1990
26 Anon 1985
27 Anon 1989
28 Cohen & Tauxe 1986; Harrison et al 2013; Holmberg et al 1984-08-24,1984-09-06; National Academy of Sciences 1980; Nikolich et al 1994; Rollo et al 2010; Shoemaker et al 1992; Smith et al 1999; Speer et al 1992; Trinh et al 2002
29 Aarestrup et al 2010
30 Weiss 2007
31 Anon 1989-01-01
32 Reece & Hotchkiss 1987; Welchman et al 1988
33 Dellmeier et al 1985,1990; Friend et al 1985,1987; Morisse et al 1999; Reece & Hotchkiss 1987; Saeed et al 1993

the individual more prone to disease[34].

There is no need to raise calves under conditions which involve privation and deprivation. The meat from animals who are raised in social groups is just as nourishing for those choosing this type of diet. No studies have shown that there is a discernible difference in the taste or texture compared with that from calves raised in extreme confinement, not that these factors could justify inappropriate housing conditions. Although there will be regional differences, in general, the cost of production in social groups is similar to that in extreme confinement[35].

In the pig industry, the general theme also is one of severe confinement[36]. Pregnant sows are confined continuously in individual stalls. Their movement sometimes is restricted further by the use of chains or other type of tether[37]. No exercise or nesting is possible even though the urge for such behaviour is strong[38] and provision of nesting materials can improve productivity[39]. The offspring of the sows sometimes are placed into cages, so-called nurseries. These may be stacked as many as three high. Moderate to severe crowding, to get the most production using the least space, is standard.

These conditions lead to aberrant behaviour such as bar-biting and other stereotypies[40]. There is little doubt that such behaviour is an indication of stress and an effort to cope with conditions adverse to well-being[41].

Although proponents of intensive confinement systems point out that the systems are economical and result in less death of piglets or disease in the pigs, there are numerous data showing these types of statements are not necessarily true[42]. The capabilities of the individual people involved in the husbandry of the pigs may be a reason for improved production in the face of a poor animal environment[43]. More naturalistic systems have been successful, profitable and better for pig welfare[44]. Systems involving tethering have been shown to have adverse effects not only on sow welfare, but also on productivity[45] and health[46].

Pigs are castrated as well as having their tails docked without the use of any anaesthesia or even sedation. Although these procedures are done at a young age, there is no evidence that this minimises the pain and suffering they experience[47]. Furthermore, also contrary to common perception in the industry, the pain from castration, for example, lasts for many days beyond the procedure itself[48]. One of the reasons for castration is to reduce 'boar taint'. Although this is not an issue in many cultures, it can be controlled without physical castration through modification of the pigs' immune system[49].

There are numerous problems surrounding the raising of cattle. As mentioned, cattle routinely

34 Bogden 1974; Gross & Siegel 1982
35 MacFadyen 1986; Mosner 1982
36 Tubbs 1995; Van Putten 1989
37 Barnett et al 1985; Cariolet & Dantzer 1984
38 Arey et al 1991; Blackshaw 1983; Hutson & Haskell 1990; Jensen 1989,1993; Tuyttens 2005
39 Yun et al 2013
40 Cronin & Wiepkema 1984; Vestergaard & Hansen 1984
41 Broom 1988; Cronin & Wiepkema 1984; Cronin et al 1986; Zhang et al 2017
42 Anil et al 2002; Anon 1985-09-01a; Blackshaw & Hagelso 1990; Clanton 1986; Nowland et al 2019
43 Gnatzig 1983; Gonyou et al 1986; Seabrook 1984
44 Anon 1985-09-01a,1989-09-01; Clanton 1986; Stolba & Wood-Gush 1984; Vance 2012; Vansickle 1987
45 Hansen & Vestergaard 1984
46 Cariolet & Dantzer 1984
47 Taylor et al 2001
48 Hay et al 2003
49 Muirhead 2013

are castrated and branded without the use of an anaesthetic. They also are de-horned at various ages and at various stages of horn development without the benefit of anaesthesia, even though there is no question that local anaesthesia and the use of non-steroidal anti-inflammatory medication can reduce pain[50]. Particularly in the western states, dairy cattle are housed so that they frequently are forced to be in mud, and they often are provided no shade or shelter from weather.

Cattle raised for beef often spend the first part of their lives under range conditions, often on public lands which are leased to the ranchers for grazing at extraordinarily cheap rates[51]. Moreover, the cattle compete intensely with indigenous free-living animals who often are poisoned, trapped or shot to death because they are viewed as predators or pests[52]. These cattle often spend their last few months in feedlots. These enclosures generally are extremely crowded and dirty, and provide no shade or shelter. During this period, the cattle receive female reproductive hormones, feed medicated with antibiotics, and a concentrated grain diet to 'finish' them. As a result, harmful chemicals may end up in the meat eaten by people[53]. The feeding methods lead to many, often painful, gastrointestinal problems in the cattle[54]. It has been shown that cattle prefer pasture over feedlot conditions[55].

Drug residues also are a serious problem in cattle used for milk production and who end up being slaughtered for human food[56]. Diseases such as mastitis, a condition which can be extremely painful, can be a complication of the push to develop cows with larger and more productive udders. Other problems can be anticipated with the use of genetically engineered compounds designed to increase productivity[57].

Many well-intentioned people believe that the eating of dairy products cannot be a problem for the animals because you do not have to kill the cow in order to obtain milk. The premise is not true. In order for a cow to lactate normally, she must have been pregnant and have given birth to a calf. Because about 50% of the calves are male and are of no use to the dairy industry, they are killed outright, put into veal production or raised as 'feeder' calves to be killed later. Moreover, the dairy cows are not allowed to lead a normal life and die naturally. Instead, they generally are killed after a few reproductive cycles (at around six years of age, which is less than half their natural life span) because the expense of keeping them alive far exceeds the monetary value of the milk produced. Eating dairy products, therefore, is fundamentally no different from eating the flesh of cattle.

Transportation of cattle[58], and other farmed animals[59], also creates tremendous problems in terms of animal welfare as well as economics. Losses due to injury and death are estimated to be about $1 billion annually. There are essentially no humane standards or laws applicable to the highway transportation of these animals which accounts for 95% of the animals shipped.

Life for a newly hatched chick begins at the sorting station. Here, unwanted chicks, generally males because they produce no eggs (if egg layers are being hatched), or deformed ones, are often thrown into plastic bags as if they were inanimate objects[60]. Those on the bottom are

50 Huber et al 2013
51 Clifton 1991
52 Satchell & Schrof 1990
53 Bevill 1984; Schell 1984
54 Fox 1979
55 Lee et al 2013
56 Marteniuk et al 1988
57 Cole & Hansen 1993
58 Cole et al 1988; Grandin 1980
59 Freeman 1984; Grandin 1980; Mills & Nicol 1990; Thomas et al 1990; van Putten 1982-01-01; Warriss et al 1993
60 Jaksch 1981

suffocated or crushed to death by those on top. When the bag is full, it is sealed and discarded, containing chicks who are still alive. Drowning also is used by some companies, even though it does not lead to rapid death[61]. Some places have machines which crush or grind the chicks to death, however a chick may first suffer a crushed wing, face or leg before finally being killed. Fortunately, the industry is exploring alternatives that may lead to removal of eggs containing male chicks before they are incubated[62].

Chicks 'lucky' enough to get past the sorting station alive end up as 'broilers' or egg producers. So-called broilers have been genetically selected to grow as quickly as possible in order to reach 'market' weight in the minimum amount of time. As a result, they have substantial musculoskeletal problems with lameness being a major issue. These are major welfare issues and the chicks have been demonstrated to seek relief[63].

The 'broilers' are also kept under extremely crowded conditions. Because the birds are overcrowded, stress levels and mortality are high[64]. The overcrowding prevents the birds from establishing a pecking order and prevents subordinate birds the opportunity to escape from dominant birds. This leads to destructive pecking and cannibalism. One means by which the industry has tried to minimise this is by inserting red contact lenses to alter the wavelength of light impinging on the retina in an effort to create a more subdued environment. In the process, the birds suffered considerable damage to their corneas[65]. In a group of individuals I examined, I found the damage to be so severe that there was corneal rupture and other severe damage to the eye.

The standard way to deal with aggression caused by the overcrowding, however, is to cut off a substantial portion of the chickens' beaks while they are chicks. This procedure, known as debeaking or beak trimming, is claimed to be non-painful or only a "mild stress" by industry representatives or supporters[66]. The beak, however, is a complex sensory organ which contains an extensive nerve supply including numerous mechanoreceptors, thermoreceptors and nociceptors[67]. Partial beak amputation results in loss of weight, reduced growth, delay in sexual maturity, reduction in egg production rates and possibly a reduction in egg size[68]. A small percentage of the chicks die directly as a result of the procedure due to its distressful nature. Painful neuromas may occur which result in chronic pain and depression which may last for many weeks to over a year[69], and the mutilated beak may be subject to the phenomenon of phantom pain[70]. Moreover, the tongue sometimes is cut at the same time, leading to inability to eat and starvation. The procedure, therefore, *is* painful and, under the best of conditions, results in birds who have a difficult time feeding and preening compared with normal birds[71]. Regardless of whether the procedure is called debeaking or beak trimming, it is an inhumane thing to do to birds of any age. With respect to tissue damage, it is not unlike cutting off the tip of your finger while trying to trim the nail. By allowing a more natural housing system with reduced densities of birds, and by genetic selection[72], one could eliminate the need for this type of mutilation.

Chickens, as well as turkeys, are subjected to other types of mutilation such as toe amputation,

61 Jaksch 1981
62 Brulliard 2016
63 Danbury et al 2000
64 Newberry & Hall 1990
65 Gvaryahu et al 1997
66 Baker et al 1981
67 Gentle et al 1990
68 Christmas 1993; North & Bell 1990
69 Breward & Gentle 1985; Gentle et al 1990
70 Gentle et al 1990
71 Workman & Rogers 1990
72 Craig & Lee 1990

dubbing, de-snooding and wing clipping, all without anaesthesia[73]. Research has shown that not only is the initial procedure painful, negative consequences continue for some time[74]. The response of birds such as chickens to noxious stimuli is similar to that seen in mammals[75].

Imagine a piece of cardboard with dimensions of about 12 inches by 18 inches. This represents the floor space of an average wire cage used for housing egg-producing hens[76]. *Four or five* hens spend their entire foreshortened lives within the confines of such a cage. In a typical 'battery' operation there are numerous rows of cages, with as many as four tiers. The faeces from hens above fall upon those below in cases where there is no apparatus for removing the waste below each tier of cages.

Because of the crowding, not all the hens can eat at the same time and movement by one necessitates a major disturbance to all in a cage. Because the hens cannot exercise, there is a high prevalence of broken bones due to osteoporosis and a syndrome known as cage-layer fatigue[77]. Although modification of the diet may have some effect on these conditions, simply allowing exercise usually will eliminate them[78]. The constant contact with bare wire results in considerable damage to the chickens' feet, which in itself is painful. The crowding in these cages, as with the 'broilers,' results in destructive pecking, so the birds are 'de-beaked'. There is a high mortality rate in the battery cage system. I have been told this may be as much as one per cent per week.

There is little doubt that the situation in battery cages leads to serious animal welfare and well-being problems[79]. These deplorable conditions, however, are the 'standards' under which essentially all eggs in the US and some other countries are produced. Public pressure has caused at least one major user of eggs to switch to cage-free sources[80].

Chickens normally go through periodic moults during which they replace their feathers. During moult, the chickens do not lay eggs. If they were allowed to moult naturally, it is alleged that this would be problematical for the producer because it would be erratic resulting in erratic egg laying. After about a year of production, therefore, the hens are *forced* to moult simultaneously. This is often done by withholding water for up to three days and food for up to ten days[81]. This leads to severe physiologic shock resulting in rapid loss of feathers. It also increases the shedding of the *Salmonella enteritidis* bacterium[82]. Although the AVMA does not support withholding food and water, they do support 'forcing' a moult through other means[83] despite opposition by experts in poultry husbandry[84]. Generally, after one or two periods of laying, the birds are roughly pulled from their cages and taken to slaughter, or they may be killed by asphyxiation with inert gas such as argon, or by the particularly barbaric means of increasing ambient heat while shutting down ventilation so that the birds die of heat exhaustion, something unconscionably recommended by the AVMA[85]. There are no laws governing how these birds are handled or transported nor how they

73 Baker et al 1981
74 Gentle & Hunter 1988
75 Woolley & Gentle 1987
76 North & Bell 1990
77 Anon 1988-01-01; Dawkins & Nicol 1989; Hughes & Appleby 1989; King 1965; Knowles & Broom 1990
78 Simonsen 1983
79 Blokhuis 1986; Brantas 1980; Dawkins 1980,1989; Dawkins & Nicol 1989; Hughes 1980; Nicol 1989; Taylor & Hurnik 1994; Van Liere et al 1990
80 Shaw 2015; Strom 2015
81 North & Bell 1990; Wolford 1984
82 Holt & Porter 1992,1993; Kogut et al 1999
83 AVMA 2021-01-01c
84 Duncan 2002
85 Bolotnikova 2023

are slaughtered[86]. They are overcrowded in crates, exposed to adverse weather and have to endure the trauma of transportation. At the slaughter facility, they are shackled upside down by the legs, which is painful[87]. When they are finally slaughtered, they are likely to be conscious to some degree[88].

The things I have mentioned are obvious or measurable problems associated with the caged hen. There also is the issue of extreme privation. Hens have very strong behavioural traits, much of which is internally driven, which essentially are totally prevented from being expressed under the standard conditions I mentioned. Wing flapping and stretching, flying, scratching, dust bathing, perching, meaningful socialisation, preening and the use of a nest for laying are virtually impossible under these conditions. Most of these behaviours are considered important with respect to the well-being of the hens or chickens in general[89].

There have been many observations indicating that the hens, as well as other so-called food animals, would prefer a different system of housing. It has been shown that hens would choose unconfined systems over cages[90]. Prior experience was a modifying factor in that hens raised all their lives in cages initially tended to choose cages over loose housing. After a short period, however, even those hens chose unconfined systems over the cages.

My own experience also indicates that hens will seek a system different from cages. I conducted a modest experiment in which I removed about 20 hens from a research lab, with the investigator's permission. These hens had been raised under the conditions I mentioned previously and had never seen perches, soil or other natural things. By the time I had unloaded them onto the land which was to be their new home, every hen was dust bathing, something none had done before. That evening, every hen was roosting in trees or on perches, again, something none had seen or done before. It is clear that these behavioural traits have not been bred out of chickens and, more importantly, they easily were elicited indicating they remain very strong urges.

Ducks and geese are also 'factory' farmed and under similar conditions of crowding and lack of any meaningful enrichment. A practice that is particularly problematic from a welfare and well-being perspective is the manipulation of the animals in order to produce foie gras[91]. For the convenience of the producers, the birds in question are kept in crowded, unnatural conditions which unquestionably deter from their well-being, regardless of their outward appearance. In addition, in the case of ducks, the intense crowding leads to aberrant behaviour. As a result, a portion of their bill is removed with scissors and without anaesthesia[92]. Like in chickens, the bill of the duck is rich in nerve endings so that the "trimming" results in acute and chronic pain, as well as preventing normal feeding and preening. The ducks are housed without adequate water in which to submerge themselves and in which to clean their entire body. This is an important well-being issue for aquatic birds[93]. Whether ducks or geese, the birds suffer during the "feeding" process. A stomach tube is forcibly inserted into the oesophagus and a large amount of food is forced into the bird. This is done with great haste, leading to injury to some birds, including tearing of the oesophagus, crop or stomach. The overfeeding of the birds leads to liver enlargement and malfunction. As a result, the birds have chronic metabolic dysfunction and are chronically ill.

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86 In 1992, a law was passed in California mandating the "humane slaughter" of poultry in certain state controlled facilities.
87 Gentle & Tilston 2000
88 Gregory & Wotton 1987; Woolley et al 1986
89 Baxter et al 2018; Nicol 1989; van Liere 1992
90 Dawkins 1980; Dawkins & Nicol 1989; Hughes 1980
91 Raud & Faure 1994; Rodenburg et al 2005
92 Raud & Faure 1994
93 van der Sluis 2012; Waitt et al 2009

Rabbits traditionally have been overlooked as a major source of food and fibre and thus have not been subjected to the type of privation other animals used for food have endured. Now, however, there is a big push to ‘factory’ farm rabbits in cages. The does will be kept continually pregnant to produce as many offspring as possible. It is my understanding that there is a push to have cages 4 feet by 20 feet which will each hold 160 rabbits. Each rabbit would have about ½ square foot of floor space.

As wildlife numbers plunge due to unrelenting hunting and fishing, various species are being 'farmed' as a source of food for humans, particularly aquatic species[94]. This has created serious welfare and well-being problems for the captive animals who are 'housed' under severe confinement with no meaningful enrichment. Genetically altered individuals or those not native to a region have escaped, with the potential for a devastating negative effect on free-living wildlife, their ecosystem and the environment in general[95].

Why be concerned about so-called food animals who are being raised simply to be killed? The fact that an animal is being raised just to be killed has no relevance. We all are going to die sometime, too. That is not, however, the basis on which we would like to be treated. The key issue is quality of life. Moreover, we are considering a tremendous number of lives when we are dealing with ‘food’ animals. To put the situation into perspective, consider the types and annual toll of animals about whom humane societies have traditionally been concerned: 200,000 harp seals, eight million horses, 7-19 million ‘excess’ cats and dogs, and 22-60 million animals used in laboratories. By contrast, the number of animals killed for food and fibre in the United States alone is in excess of *nine billion every year*.

Do all these animals end up being eaten, and is the available protein efficiently used? The answer clearly is no. Best estimates indicate that a minimum of one-third to one-half of the protein is not consumed due to carcass damage, spoilage and other problems. That means that up to 4.5 billion animals are needlessly killed after experiencing unnecessary and crushing privation under our present husbandry methods. This waste is compounded by the fact that we eat far more protein than is necessary to sustain life. Simply improving the efficiency of utilisation of this protein source would result in a major reduction in the number of animals used for food. The economic loss to the producer also is substantial[96].

There are other serious concerns about depending upon an animal-based source of food. It is extremely inefficient in terms of conversion of plant protein to animal protein. The conversion ratio is considerably greater than 1:1, perhaps as high as 20:1 in the worst case[97]. Because in the US and some other countries a majority of the plant material fed to the animals is from arable land – land which could be used to produce human food – it makes little sense to continue this.

There are other problems of resource use or waste involving animal agriculture. The production of animal products is extremely wasteful of water, topsoil, land and energy[98]. For example, most of the US land used for crops is planted with livestock feed and more than half of all water consumed in the US goes to livestock; a pound of steak from steers in feedlots costs 2,500 gallons of water, a gallon of gasoline in energy and 35 pounds of eroded topsoil[99].

I often am challenged with the argument that plants may feel pain and suffer, therefore I am being cruel by eating them. This is nonsensical for several reasons. Plants do not appear to have

94 FAO 2021
95 Johnson 2017
96 Grandin 1980
97 Anon 1988-03-05
98 Anon 1988-03-05; Eshel et al 2014; Reid & White 1978
99 Anon 1988-03-05

an anatomy which would subserve pain or suffering. Furthermore, plants often reproduce by the very act of being eaten (for example, seed-bearing fruits and vegetables), or can have parts of them eaten without being killed (fruits, nuts, others), so it appears to be in their interest to be eaten, something which *cannot* be said for animals. Even if plants did suffer, however, those who eat animals must necessarily be responsible for the death and suffering of more plants by eating the inefficient protein-converting animal.

If one still wants to eat animals, there are numerous, economical methods of raising them for food and fibre which do not require the extreme confinement, deprivation and privation of the present industry standard. The trite argument that we must do it in the present fashion in order to get food at a reasonable price simply is not true, nor is it morally defensible. It has been shown that what you gain in labour cost savings from 'factory' farming is offset by the cost of equipment and other factors[100]. Practical application of less intense housing systems has shown that these can be just as productive, safe for the animals and financially sound as 'factory' farming[101]. In the case of pigs, a pasture system has been shown by workers at the University of Tennessee to be substantially more efficient and financially cheaper than a confinement system[102]. There were less post-weaning losses and disease as well as better consistency in sow and pig performance.

The issue of providing food to sustain humans is compounded by the alarming, in my view, continued increase in the human population worldwide. It is clear that the population has long since passed the point of sustainability if one considers the dire consequences to other animals and the environment due to what has been and is continuing to be done with respect to feeding humans. We have the capacity to understand the consequences of population growth and the ability to proactively control this for our species. We are the only species that does not permit natural pressures to control our numbers. As a result, we have a moral obligation to make sure that providing for our needs does not put others in peril as is currently the case. We can and should strive to reduce our numbers by instituting measures that will result in negative growth until we reach a population that can be sustained without, or at least minimally, harming others. What that means in terms of the number of humans is not clear, but surely it has to be substantially less than the over eight *billion* individuals present as of 2022[103].

Whether you eat animals or wear products made from them is a personal choice. Bear in mind, however, that the animals you eat have lives and interests of their own. They suffer pain, frustration and boredom in a manner similar to you. When humans raise them for food and fibre production, the animals should be allowed a reasonable life before being killed. Certainly, their life should be as close to a natural existence as is feasible. It is not important that they are going to die anyway. Rather, it is the quality of life they experience which matters. We should not be the only ones to enjoy freedom of movement and freedom of expression. Customs, convenience, economics and sheer utility are not morally valid reasons for preventing these animals from living a decent life.

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...it is apparent that cholelithiasis is part of the price of achieving the Western way of life.

Nations that consume greater amounts of dietary fat per person have the highest mortality rates from breast cancer...When persons migrate from a nation of low incidence of breast cancer to a nation of higher frequency, these immigrants will have the same high rate of breast cancer as their new nation by the second and third generation...

...carcinoma of the prostate gland, which closely correlates with the epidemiologic factors of

breast cancer in terms of fat consumption...

...association of fat with an increased incidence of carcinoma of the colon. ... Women who consume red meat daily had a 2.5 times risk of colon cancer compared to those who ate red meat less than once a month. No associated increased risk was noted with vegetable fat. ... Possible mechanisms include the observation that diets high in fat increase the excretion of bile acids... which have been noted in persons with higher rates of colon cancer and polyps...Bile acids act as a tumor promoter... ...bile acid modification by intestinal flora is decreased in vegetarians and those who reduce their beef fat intake...

...osteoporosis, a disease of protein excess. ... The women of Bantu who are over 60 years of age do not have osteoporosis. They have a huge calcium drain, having an average of 10 children and nursing each child for 14 months. Their diet includes 440 mg of calcium per day, half of our recommended daily allowance... They are protected because they eat only 50 gm of protein daily. When they move to civilization their protein intake increases and they develop osteoporosis... The Eskimo consumes a diet that is high in protein (250 to 400 gm per day) and a diet high in calcium (2000 mg per day); yet, despite much physical activity, they have one of the highest rates of osteoporosis... Millions of Americans have osteoporosis, accounting for 190,000 hip fractures annually... Fifteen thousand women die each year as a result of hip fractures. Despite such data, osteoporosis is unknown in many countries around the world except in Western civilization, which consumes two to three times more protein than required."

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