

Animal transport and welfare: a global challenge

T. Harris

Harris Associates Limited, Animal Transportation Association, Crab Hill Farm, South Nutfield, P.O. Box 251, Redhill RH1 5FU, United Kingdom

Summary

Animal welfare has moved on from being a concern of a caring few to the stuff of international legislation. The author argues that more research is needed into animal welfare, especially since legislation should be based on sound science rather than emotion or anthropomorphism. The farming and animal handling community should consider the potential benefits of animal welfare rather than viewing the whole issue as a threat. The animal welfare community can assist both animals and themselves by stressing the economic advantages to be obtained from better animal welfare. Better welfare requires more than just being kind to animals, but a combination of skills, science and experience that need to be combined into one overall effective discipline.

Keywords

Animal welfare – Animal transportation – Legislation – Research.

Introduction

Man and animals have interacted since time immemorial. Animals serve man for hunting, work, research and recreation. In all of these roles, the animal becomes more or less dependent on its master or owner, who, in his turn has a reciprocal responsibility. The more the animal is confined, the greater the human responsibility. Whilst a domestic cat or dog may have some degree of liberty, all confined animals are entirely dependent on their keepers for food, water, comfort, space and environment. The primary tenets of animal welfare were examined in 1965 by a technical committee in the United Kingdom (UK) led by zoologist Professor F.W. Roger Brambell (the Brambell Committee). This committee was assigned by the UK government to look into the welfare of animals kept in intensive livestock husbandry systems; in its final report welfare was defined as follows (6): 'Welfare is a wide term that embraces both the physical and mental well-being of the animal. Any attempt to evaluate welfare therefore must take into account the feelings of animals that can be derived from their structures and function and also from their behaviour.'

One of Professor Brambell's recommendations was to establish a group devoted to the study of farm animal welfare, to advise ministers, and make recommendations for legislation and research. The resulting Farm Animal

Welfare Council (7) devised the 'five freedoms' of animal welfare in 1993, namely:

- a) freedom from thirst, hunger and malnutrition by ready access to fresh water and a diet to maintain full health and vigour
- b) freedom from discomfort by providing a suitable environment, including shelter and a comfortable resting area
- c) freedom from pain, injury, and disease by prevention or rapid diagnosis and treatment
- d) freedom to express normal behaviour by providing sufficient space, proper facilities, and company of the animal's own kind
- e) freedom from fear and distress by ensuring conditions that avoid mental suffering.

Whilst these 'freedoms' were primarily devised for farm animals, they have applications to any species in confinement or companionship and in fields other than farming.

An experienced stockman instinctively knows if his charges are comfortable and happy, without in the least being anthropomorphic. Experience and close contact teaches him to look after his companion to the best of his ability. This is particularly true where there is a one-to-one

relationship, or in the case of a nomadic herder living with his flock. Concerns for the welfare of animals have grown with the increasing intensification of livestock production, as was predicted by Ruth Harrison in her book *'Animal Machines'* (8). Poultry, pigs and cattle have been developed specifically for confinement systems, whereas in the best interests of welfare, it might be better the other way round. Simple examples of this are as follows:

- dairy cattle that will not accept being milked by machines are replaced by others that will, as this is easier than finding an alternative milking method
- pigs kept on concrete floors or slats without bedding suffer many and various injuries, but this is done to increase space efficiency in expensive buildings. Selection therefore tends towards those that best survive the system, rather than thinking how the system can be modified to best suit the animal
- poultry are confined in barren cages to save space and facilitate egg collection, but being natural 'peckers', once they are unable to peck out in the open, they peck each other to a most extreme degree.

In the late 1950s, the question on everyone's mind was how were we to produce enough food for the growing world population that was likely to double in the next 60 years? However, through the efforts of that generation of farmers, world food production has more than doubled in that time to meet the expected population increase. This has come about as a result of many new disciplines including greater intensification, which, in the case of animals, usually means larger groupings, greater stocking density, fewer stockmen and the use of more varied and subtle feed ingredients.

Farmed animals

Farmed animals pass through three distinct stages in their lives, namely, production, transport and slaughter. By applying the 'five freedoms' at each of these stages, those with concerns for animal welfare would probably determine the following brief list of general animal welfare issues that can arise:

- feed ingredients and feeding regimes, e.g. an iron-deficient diet for veal calves
- housing that prevents expression of normal behaviour, e.g. battery cages for poultry and close confinement of calves and other animals
- other housing problems such as stocking density, stall length, absence of bedding, inappropriate temperature and humidity
- leg problems associated with speed of growth and/or flooring systems

- artificial or inappropriate breeding taken to the extreme where natural mating or parturition is impossible
- an ever increasing workload for stockmen which can result in a lack of adequate supervision and insufficient time to apply stockmen's skills
- mixing of unsocial groups resulting in the establishment of a new 'pecking order'
- discomfort in transport, including loading and unloading
- methods of slaughter.

This list is far from complete, but illustrates some of the areas of concerns and potential failings in animal welfare that can result from greater intensification. This is not deliberate cruelty, such as someone beating a draft animal that cannot pull an overloaded cart. It is a kind of 'ill-fare' that has crept into farm management to a greater or lesser degree from seeking only one objective – greater productivity and profit. Whilst these are undeniably wholly justified aims, the end does not always justify the means, and the farming community needs to keep sight of these issues.

It has been the custom to castrate male piglets (and other animals) so that the sexes may be mixed with impunity in production units. Furthermore, entire males can often impart an unpleasant taint to the meat if killed after sexual maturity. Butchers would traditionally pay less money for uncastrated animals. Castrating piglets is a noisy and unedifying practice, so it was with some pleasure that the farming industry was eventually able to play the 'welfare' card and see an end to this practice in the UK. The reactions from butchers, for the reasons above, were almost as deafening as the operation itself. But time and science had moved on. When pigs were originally taking more than 200 days to reach market weight (about 95 kilos live weight), entire boars would by this time be well mature. Nutrition had improved so much, and it had become the practice to separate males and females anyway, that uncastrated boars could achieve their market weight in as little as 145 days, as well as being leaner with better food conversion figures. All this was a tremendous gain for the producers as well as a boost for the animals' welfare.

The Animal (Air) Transportation Association

The Animal (Air) Transportation Association (AATA) was originally organised in response to the concerns of industry leaders, airlines, government officials, and humane association representatives. The need for such a group was first expressed in October 1975 by some 100 participants

attending a two day Livestock Transport Seminar at Beltsville, Maryland, sponsored by three United States Department of Agriculture (USDA) agencies – the Foreign Agricultural Service, the Animal Plant and Health Inspection Service and the Agricultural Research Service. Formal organisation of the AATA was subsequently carried out from 1 May to 13 May 1976, at a Live Animal/Meat Transportation Seminar sponsored by the USDA's Foreign Agricultural Service and the Texas Department of Agriculture in Houston. In 1989, the name of the AATA was changed to 'The Animal Transportation Association' to emphasise that sea, air and land transport are of equal importance in the safe and humane transport of animals. In 1981, the European Office was officially established to address the needs of animal transportation in Europe.

Among its many activities, the AATA office publishes a Manual on the Transportation of Animals. The AATA is also under contract to the UK Government (via the National Proficiency Tests Council) to assess the competence of groomers and animal handlers in aircraft. Details can be found on the website (www.aata-animaltransport.org). The Association's Statement of Policies contains the following declarations (1): The AATA believes that all animals, birds, fish and other living creatures, domestic and wild, including biological materials, are a vital part of our world environment, to be preserved, humanely treated and utilised for the long-term well-being and benefit of the human race. The AATA understands the need for research, education and some public interest regulation of animal health and transportation and it is the policy of the association to develop and promote, in collaboration with the industry, the best means of accomplishing these objectives.

To that end, it is the continuing policy of the AATA to encourage research, education, improved service and increased international co-ordination in the shipment of live animals (including birds, fish and biological cargo), by:

- providing assistance and fully co-ordinating AATA activities worldwide with international and national organisations which have a common interest in welfare and the economics of transporting live animals
- encouraging all nations, for humane reasons, to use the quickest and most efficient routes during the international and internal transportation of animals, giving high priority to live animal shipments (e.g. implementing a 'load last – unload first' policy) and extending in-transit privileges that are consistent with the health requirements of the countries to, from, and through which the animals are being transported (e.g. allowing access to vehicle decks on ferries so that the animals can be attended to)
- encouraging the establishment of an animal protection office at principal ports and terminals where live animals

are handled to arrange for, and oversee, adequate protection of, and humane and efficient movement of, live animal shipments

- encouraging the publication of articles and research papers to educate the general public, carriers, handlers, dealers and public officials
- encouraging communications by serving as a clearing house for information on special problems or complaints of consignors, receivers, handlers, carriers or other involved parties, and by actively seeking information from the industry and researchers worldwide and making that information available. The AATA also should serve as the medium for gathering information on researchable problems and distributing it to all researchers
- encouraging research on all phases of animal transportation, scrutinising and recording information on the performance of various transport equipment and techniques
- encouraging, along with other interested organisations, the development of prescribed, 'standard regimens' by species for: the conditioning of animals prior to transport; loading; carrying; in-transit requirements; unloading; and post-transport care.

The AATA also recognises that the safe and humane transport of animals cannot be separated from animal health issues relating to export certification nor from the manner in which animals are cared for following transport. The association therefore supports continued discussions and negotiation between exporting and importing countries toward the establishment of practical export testing protocols as well as an increased emphasis on providing appropriate technical assistance to the importers to ensure proper care and treatment of animals following shipment.

Members of the AATA subscribe to the above policies and agree that their first consideration is the safe, humane and expeditious handling of any animals under their care.'

Legislation

Governments have often been slow to introduce animal welfare legislation, largely because they tend to be reactive rather than proactive, and because animal welfare is a concept that is difficult to measure. How unkind must you be to an animal before it is considered cruelty? Whilst concern for animal welfare has been in the mind of the caring public for well over a century, and some general welfare legislation was first introduced in several countries at the turn of the 19th to 20th Centuries (2), it was the creation of the European Economic Community that really brought animal welfare into focus in the developed West.

A significant point was reached in the 1970s when the eastern borders of the new Europe stretched only as far as Germany. One of the few products that the wealthy new Europe needed and that the East could supply, was meat. Since these Eastern countries had no suitable slaughterhouses approved to European Union (EU) standards, it was more expedient to ship the live animals to the destinations in Europe that required them and that had the necessary slaughter facilities. Border inspection posts (BIPs) were established to examine the huge numbers of live animals, especially horses, coming from the East for slaughter. Many of these unfortunate animals had been assembled over a vast area and over a lengthy period of time. By the time they arrived by truck or train at a German BIP they were frequently dehydrated, injured, overcrowded and sometimes, unacceptably, dead. In the interests of not impeding trade, only the very worst shipments were turned back, but thousands of animals passed through, only to face several more uncomfortable days of travel to their place of slaughter. This unsatisfactory state of affairs was exacerbated by the fact that some unfortunate animals were further transported by sea across the Mediterranean on journeys of unknown duration, in varying conditions, often to a dubious destination.

European sensibilities were rightly raised against the dreadful situation. Although the EU was dedicated to 'free trade' and 'freedom of movement of goods', there was little differentiation between a box of beef or a sentient animal. Provoked by public outcry, the EU eventually took note of the huge trade not just in horses, but also in other live farm animals, especially cattle, sheep, pigs and goats. Two landmark EU Directives were established in an attempt to control the excesses of the trade, namely, Directive 91/628 on the protection of animals during transport (3) and Directive 95/29 which amended the previous directive (4). Whilst this was a good initiative, and many new controls were established on paper, the reality was that these Directives were not interpreted in the same way by all Member States. Moreover, even if a blatant breach of regulations was established it was not always clear who should do what, for example, if a Dutch wagon, carrying farm animals for an excessive journey time, from Germany to Italy, stopped on a French road – who was to prosecute, who was to be prosecuted, in which Member State should the prosecution be made, and what might the sanctions be?

More than anything this state of affairs showed clearly that laws are meaningless unless they are properly policed. Furthermore, blame was often being attached to the wrong offender. When there was a huge trade in live sheep from the UK to France, television reports sometimes showed sheep carrying UK eartags being mishandled at an Italian port prior to loading on a Mediterranean ship for North Africa. The cry arose 'Prosecute the UK hauliers for animal cruelty'. The reality was rather different. These sheep were

loaded under Ministry supervision at Dover and carried a short distance to a place of delivery in northern France. All were delivered safely. The contract was completed. The route plans were returned to the Ministry and a good job was done. Twenty-four hours later the buyer of the sheep sold them on to a buyer in North Africa. They would then begin another journey with the unwelcome consequences described above. The UK hauliers were in no way responsible. The sheep were being mishandled by other transporters and those loading and unloading the animals onto ships.

The 2001 outbreak of foot and mouth disease (FMD) in the UK effectively put a stop to this trade; sheep were determined to be the greatest culprits in spreading the disease, so controls have been in place ever since that require animals entering an assembly centre to remain there for at least 20 days, thus making the trade rather more uneconomical. The ending of this trade was not, therefore, intentional, it was just a fortunate consequence of the controls brought in following the FMD outbreak. There remain several other weaknesses in basic European welfare legislation; amendments to the Directives mentioned previously are presently a subject of study by the European Commission and a new Regulation (Council Regulation No. 1/2005 on the protection of animals during transport and related operations [5]) has recently been introduced. Legislators have difficulty determining the difference between slaughter animals and breeding animals, but the solution is really very simple – all breeding animals should travel with their pedigree registration documents, in just the same way that 'registered horses' have to in the EU. It remains to be seen if the new proposals will be effective, be adequately policed, control abuses in the trade, but still allow the necessary long distance transport of breeding animals.

Legislators have rightly determined that their laws should be based on science rather than emotion. The farming community agrees and has welcomed the research that has been put into the studies of farm animals in transit. A huge amount of this type of research has been carried out by the specialist team at the Silsoe Research Institute in the UK, using a remarkable vehicle in which the environment can be controlled and which can be adapted for different needs by adding decking, switching from natural to artificial ventilation, etc. By the use of a geo-positioning system not only can the location of the truck be followed from its mission control, but even the temperatures within the vehicle can be read at a distance by satellite communication, as well as recorded during travel. This team has carried out research on roll-on/roll-off ferries (9) and has studied several different species, i.e. calves, poultry (10, 12, 13) and pigs (11). Results showed conclusively what stockmen had always believed, that loading and unloading were more stressful to the animal

than the journey. Only a few of the team's papers can be listed in the reference section, but it shows the breadth of its research. Undoubtedly much more needs to be done, and in different parts of the world.

At a simpler level, there has been much debate about the preparation of animals for transport. In particular, prior to transporting pigs to slaughter, up until what time before loading should they be fed? Opinions varied enormously. Some producers took the view that they would suffer motion sickness, and were being slaughtered anyway, so why fill their stomachs with food that would not be digested. Others argued that there was no motion sickness, simply because no vomit had ever been seen in the vehicles. Science produced the explanation (15). When the pigs were transported on a mesh floored vehicle, any vomit fell through, and a good deal was found at delivery. What really happened was that pigs did suffer motion sickness but then re-consumed the vomit, hence no visible signs remained. This has helped determine that eight hours is a suitable period to withhold food prior to slaughter, both for welfare and economic reasons.

Animal welfare has become a particular issue among the more affluent and better fed nations. Whilst 'welfarists' can be criticised for objecting 'with their mouths full', it is important that the animal production industry pays attention, or they will lose the very customers they seek to serve. Vegetarianism has become increasingly popular. The production of 'organic' or 'free range' meat is becoming more common and is indeed attracting higher prices in the market place. Although this may remain a rather specialist niche market, producers will do well to pay attention to it because it does command premium prices and added value.

The global challenge

Not only are wealthy countries importing larger quantities of food than ever before, and supplying any product whatever the season, they are also seeking to impose their perceived values of animal welfare on the places of supply, or at the very least questioning if the welfare of the animals produced, say, in Africa, matches the same standards set in the consuming country. It has long been a complaint of British farmers that confinement stalls for gestating sows have been prohibited in the United Kingdom long before legislation comes into force in other EU countries (gestation stalls will be phased out in all EU Member States by 2013). They are not objecting to the removal of the stalls *per se*, but the fact that all their competitors are still able to use them.

Supermarkets have been quick to identify animal welfare standards as a marketing tool. Many have drawn up

contractual arrangements with their producers that impose a multitude of detailed conditions on every aspect of production from stable to table. Typical details include use of antibiotics, types of farrowing quarters, gestation housing, light levels, provision of bedding and loading facilities. Again, many farmer producers in the UK, as well as customers buying meat products, objected that there were more stringent standards imposed upon home production than upon their competitors in other countries where costs of production were not only cheaper, but any kind of management practice could continue with impunity.

It is a well established tenet that one government cannot impose its will in another country in any way, least of all in methods of livestock production – but supermarkets can. It is not impossible for them to require similar conditions of production, enshrined in agreements, that are then policed in the producing countries by the supermarkets themselves. Any infringement results in the loss to the producer of his valuable outlet. Hence, we are beginning to see that the greater power in the world is not the superpower, but the supermarket. In many cases they have taken the lead in animal welfare where they perceive it can affect the sales of their meat products.

All this is strangely ignored by the World Trade Organization (WTO) who specifically excludes any reference to animal welfare in its trading agreements. This is presumably because making international agreements is difficult enough, without adding extra issues to consider. This is another complaint made by 'welfarists' in their objections to the WTO.

Another important aspect of animal welfare is disease. Illness equals poor welfare. Recent events have illustrated the worldwide importance of disease, especially with increased movement of animals and animal products. The UK, in spite of being an 'advanced' nation, has just experienced arguably the worst outbreak of FMD ever recorded. The movement of live sheep even conveyed the disease to the European mainland. The Netherlands have had a severe outbreak of Newcastle disease in poultry. Avian influenza in South-East Asia has not only spread to several countries but also caused the deaths of several humans. New variant Creutzfeldt-Jakob disease has killed several humans, supposedly from eating beef infected with bovine spongiform encephalopathy (BSE). Astonishingly, the mere importation of one cow from Canada into the United States of America (USA) that was found to be infected with BSE resulted in the loss of enormous export trade, much of which has still to be regained, in spite of the fact that the animal did not even originate in the USA. A little publicised aspect of disease events such as these is the effects on the living animals remaining. Trade is so disrupted for a time that production lines back up, animals

cannot be moved on their regular channels to slaughter, feed stocks can be restricted for a time, and there is considerable discomfort for man and animals alike.

Conclusion

The OIE (World Organisation for Animal Health) takes the lead in monitoring outbreaks of disease worldwide and the importance of the movement of animals in terms of disease risks has long been known. However, there are now increasing scientific data available on the impact of the transport of animals on animal welfare, so much so that

this important issue was discussed at the OIE Global Conference on Animal Welfare which was held in Paris in 2004 (14). This was a tremendous success and points the way towards further thought and research into animal welfare, training of stockmen, assessment of competence, raising of welfare standards worldwide, and understanding the importance of this issue to producers and consumers alike. Producers must understand that animal welfare can be entirely to their benefit rather than a perceived threat. Consumers need to understand the efforts that producers are putting into raising animal welfare standards throughout the production cycle. It is not just good welfare; it is good economics. ■

Transport et bien-être des animaux : un défi mondial

T. Harris

Résumé

Le bien-être animal, qui n'intéressait autrefois qu'un petit groupe de personnes concernées, est désormais soumis à la législation internationale. L'auteur affirme qu'il convient de poursuivre la recherche en matière de bien-être animal, puisque les dispositions législatives doivent être fondées sur des arguments scientifiques solides plutôt que sur l'émotion ou l'anthropomorphisme. Les éleveurs et les personnes appelées à manipuler les animaux doivent prendre en compte les avantages potentiels du bien-être animal au lieu de considérer l'ensemble de la question comme une menace. Les spécialistes du bien-être animal peuvent aider les animaux et servir leurs propres intérêts en mettant l'accent sur les avantages économiques qui découlent de l'amélioration du bien-être animal, lequel va bien au-delà de la simple bienveillance envers les animaux et requiert un ensemble de compétences, de connaissances scientifiques et d'expérience, conjuguées au sein d'une discipline globale performante.

Mots-clés

Bien-être animal – Législation – Recherche – Transport des animaux. ■

Transporte y bienestar de los animales, un tema de dimensión mundial

T. Harris

Resumen

Antaño preocupación de unos pocos, la cuestión del bienestar animal ha pasado a ser objeto de legislación internacional. El autor explica que hay que seguir investigando sobre el tema, especialmente porque los textos legislativos deben

basarse en sólidos datos científicos y no en sentimientos o consideraciones teñidas de antropomorfismo. Los profesionales de la ganadería y las personas cuyo oficio pone en contacto directo con los animales, en lugar de ver toda esta cuestión como una amenaza, deberían tener en cuenta los beneficios que de ella pueden seguirse. Quienes trabajan sobre el bienestar animal, por su parte, ayudarán a los animales y a su propia causa si ponen el acento en las ventajas económicas que pueden derivarse de un mejor nivel de bienestar animal, lo que exige no sólo tratar a los animales con la debida atención sino atesorar una suma de aptitudes, capacidad científica y experiencia que deben plasmarse en una sola disciplina general y eficaz.

Palabras clave

Bienestar animal – Investigación – Legislación – Transporte de animales.



References

1. Animal Transportation Association (AATA) (2005). – AATA Statement of Policies. Website: www.aata-animaltransport.org/policy.htm (accessed on 1 August 2005).
2. Anon. (1911). – Protection of Animals Act 1911, United Kingdom. [Now superseded by later legislation.] Her Majesty's Stationery Office, London.
3. Anon. (1991). – Council Directive 91/628/EEC of 19 November on the protection of animals during transport and amending Directives 90/425/EEC and 91/496/EEC. *Off. J. Eur. Communities*, **L 340**, 17-27.
4. Anon. (1995). – Council Directive 95/29/EC of 29 June amending Directive 91/628/EEC concerning the protection of animals during transport. *Off. J. Eur. Communities*, **L 148**, 52-63.
5. Anon. (2004). – Council Regulations (EC) No. 1/2005 of 22 December on the protection of animals during transport and related operations and amending Directives 64/432/EEC and 93/119/EC and Regulation (EC) No. 1255/97. *Off. J. Eur. Union*, **L 003**, 1-44.
6. Brambell Committee (1965). – Command Paper 2836. Report of the Technical Committee to enquire into the welfare of animals kept under intensive livestock husbandry systems. Her Majesty's Stationery Office, London.
7. Farm Animal Welfare Council (FAWC) (1993). – Second report on priorities for research and development in farm animal welfare. FAWC, Ministry of Agriculture, Fisheries and Food, Tolworth (Now DEFRA, London).
8. Harrison R. (1964). – Animal machines. Vincent Stuart Ltd, London.
9. Kettlewell P.J., Harper E.C., Mitchell M.A. & Earley B. (2003). – Ventilation of livestock vehicles carried on RO-RO ferries. *State vet. J.*, **13** (2), 9-14.
10. Kettlewell P.J. & Mitchell M.A. (2001). – Mechanical ventilation: improving the welfare of broiler chickens in transit. *J. roy. agric. Soc. Engl.*, **162**, 175-184.
11. Kettlewell P.J., Mitchell M.A., Hunter R.R., Harper E. & Villarroel-Robinson M. (2004). – Road transportation of pigs: specification of acceptable conditions for animals in transit. Should a single market mean a single standard? Proc. Animal (Air) Transport Association (AATA) 30th International Conference, 18-21 April, Vienna. AATA, Redhill.
12. Mitchell M.A. (2002). – Poultry transport – importance and control of the vehicle micro-environment. Proc. 11th European Poultry Conference, 6-10 September, Bremen. *Arch. Geflügelkde*, (special issue), 192.
13. Mitchell M.A. & Kettlewell P.J. (2003). – Transport systems and the welfare of broiler chickens [in Portuguese]. In Proc. APINCO Conference of Poultry Science and Technology, 7-9 May, Campinas. APINCO Foundation for Poultry Science and Technology, Campinas, 199-215.
14. OIE (World Organisation for Animal Health) (2004). – Global Conference on animal welfare: an OIE initiative, 23-25 February, Paris. Website: www.oie.int/eng/Welfare_2004/home.htm (accessed on 29 July 2005).
15. Randall J.M. & Bradshaw R.H. (1998). – Vehicle motion and motion sickness in pigs. *Anim. Sci.*, **66** (1), 239-245.

