

Speaker Abstracts

Developing an abatement cost curve for animal welfare

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This paper considers the development of an abatement cost schedule for improved animal welfare. At any given time the prevalence of a sub optimal or poor welfare provides a baseline against which alternative scenarios of welfare improvement can be implemented at varying cost. In developing a cost curve the stages are:

- to use scientific expertise and consensus to identify the variety of welfare improving measures for livestock groups;
- to determine the extent (ie over how many animals) of their applicability (full technical potential and feasible policy potential) and by when;
- to consider the relative cost of implementing these and the quantity of the welfare improving potential associated with each measure in isolation and interacted with other measures.

The resulting cost curve offers a basis for policy on cost-effective interventions. The use of an economic framework also provokes social questions related to willing to pay for welfare improvements and other co-benefits can be delivered from welfare interventions.

Testing the animal welfare Kuznets Curve hypothesis: methodological and data availability issues

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Using Finnish data, we explore the theoretical foundations and testability of the Animal Welfare Kuznets Curve hypothesis. According to this hypothesis, animal welfare first deteriorates as per capita GDP increases and then, after per capita GDP has reached a critical level, improves with further economic growth. In this paper, we focus on the welfare of farm animals, with the exclusion of farmed fish.

Our preliminary exploration of Finnish data suggests that per capita income growth in the last 30 years has been most

likely associated with a deterioration of the animal welfare of farm animals in Finland. This deterioration is partly driven by dietary changes. Finnish consumption of foods from animal origin, especially meat and dairy products, has grown. Moreover, the partial substitution of beef by poultry meat has increased the number of animals slaughtered. Our preliminary result holds regardless of whether consumption data or production data are examined.

As our analysis shows that the Animal Welfare Kuznets Curve hypothesis suffers from the same kind of shortcomings of the Environmental Kuznets Curve hypothesis, we examine how and whether these shortcomings can be overcome and discuss the choice of appropriate data sets to explore the evolution of animal welfare over time. The possible correlation between the Animal Welfare Kuznets Curve and the Environmental Kuznets Curve is also examined.

We conclude by discussing whether we might expect a mitigation of farm animal welfare deterioration in the future and what the sources of such mitigation may be.

Ethics of lamb meat supply chain: a chain is as strong as its weakest link

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The meat supply chain consists of an aggregate of individuals and autonomous businesses that connects primary producers at one end of the chain to consumers at the other. Traditionally, the performance and the behaviour of participants at each step of the meat supply chain have been driven mainly by economic imperatives and more recently by animal welfare. However, the ethics of meat production, considered within the utilitarian ethical framework, depends on other values, such as sustainability, and is limited to the lowest ethical standard encountered along the supply chain. In the present study we undertake a case analysis of the Australian lamb meat supply chain in order to investigate methods to assess and improve the ethics of meat supply chain.

The ethical standing of the different stakeholders in the meat supply chain (ie producers, transporters, processors, distributors, retailers, stock agents and consumers) was evaluated by conducting in-depth interviews with participants and analysing published materials, such as industry websites, factsheets and code of practices. Along the lamb

meat supply chain, ethical conduct was encouraged mainly through food safety, product quality and sustainability requirements. Traceability was perceived to be a key component of achieving these objectives but not yet achievable at individual animal level. Animal welfare at the farm level, during transport and at slaughter was mentioned at all levels of the supply chain but deficiencies in its evaluation and marketing were mentioned consistently. Each group of supply chain participants had limited interactions with others participants in the chain to whom they were not directly transacting with. The fragmentation of the lamb meat supply chain may be attributed to a lack of information sharing, limited knowledge of stakeholder practices along the supply chain and lack of trust between stakeholders. Trust issues seem particularly pertinent for consumers. Interviewed consumers, producers and small retailers largely perceived the increased power of large retailers, distributors and processors as a potential threat to ethical behaviours and standards along the supply chain. The findings from our case study suggest that an integrated strategy is required to improve the ethics of the lamb meat supply chain. Such a strategy will rely on the development of: i) a clear labelling system that reflects the level of ethical standards of each stakeholder; ii) tools to evaluate adherence to ethical standards along the supply chain; iii) ethics education targeted at stakeholders in the supply chain and; iv) the establishment of an independent body to develop, implement and evaluate of the ethical standards across meat and other animal product supply chains.

When money is not the matter: attitudes to and application of animal welfare measures in biomedical research

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Economical considerations are often a major limiting factor in promoting good animal welfare, but in biomedical research it is typically the scientific use of animals that presents the most challenging hurdles. Even under present extensive regulation and supervision, in most countries severely distressful experiments can be legally approved if scientifically justified. Therefore, researchers' individual attitude and knowledge is decisive for implementing measures to improve animal welfare. Here we report a combination of literature review, bibliometrics and surveys providing data on how researchers exercise this responsibility.

In two case studies of published research we show that scientists fail to report measures to minimise animal welfare problems even in severe studies where animals reach moribund stages. In mouse studies of a neurodegenerative disease, out of a total of 51 references in peer-reviewed

international journals 2003–2004 to experiments in which animals were expected to develop so severe motor deficits that they would have difficulties in eating and drinking normally, only three references were found to housing adaptation to facilitate food and water intake. In 14 references to experiments including end stages of disease, only six referred to the euthanasia (humane endpoints). In studies of lethal experimental tuberculosis in mice, between 68% (2007) and 87.5% (1997) of papers made no reference to humane endpoints. Over the time period 1997–2007, the percentage of murine tuberculosis papers reporting legal approval/compliance increased from 5.9 to 59.6%. However, this is not reflected in the severity of the procedures, which remained unchanged with between 40 and 50% of papers reporting experiments in which animals reach moribund or otherwise severe stages.

In contrast, when surveyed about their attitudes to the 3Rs, 65% of researchers (previous participants in laboratory animal science training courses in Portugal) reported to apply such measures in their own research. When undergoing actual training, researchers are also highly critical of published research with insufficient implementation of the 3Rs.

Development of minimal impact tags for tracking rehabilitated seabirds

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Enormous economic and ecological damages result from oil spills. Among the costly actions taken in order to minimise the impact of oil spills is the rescue and rehabilitation of wildlife. A huge controversy surrounds wildlife rehabilitation measures mostly because of the fact that very little is known about the efficacy of these actions. This is paramount for assessing the viability of rehabilitation methods and can only be done by following the fate of rehabilitated animals. In the case of seabirds, the post-release survival rate of the rehabilitated birds has been declared to be low in such an extent that no actions should be taken. Determination of the fate and movements of rehabilitated oiled seabirds is therefore one of the most pressing issues facing oiled wildlife care organisations. Although satellite tracking technology would make this technically possible, potential tag-induced deleterious effects make this approach equivocal. Indeed, despite an apparent wealth of disparate information on device effects on seabirds, there has been no systematic study of how best to attach and deploy such tags. Our project, builds on recent successful work using innovative attachment methods and new accelerometer-based loggers, is aimed to lead to the development of a suitable method of tracking of rehabilitated oiled seabirds.

Making animal welfare improvements: economic and other incentives and constraints: the ‘stick’, the ‘carrot’ or the ‘licence’?

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In recent years there have been changes to legislation relating to animal welfare, including how it is monitored, enforced and reported. This presentation attempts to explain whether improvements can be made and measured, even in the current economic climate.

For farmed animals there has been a shift to risk-based inspections, a focus on outcome-based animal measures, compulsory training and the arrival of payment reductions to subsidy claims for farmers who are not complying with basic minimum welfare standards. Meanwhile, there has been greater emphasis for major retailers to take more responsibility and accountability on provenance and assurance, whilst independent welfare groups such as the Farm Animal Welfare Council are seeking to take farm animals one step further from a ‘life worth living’ to a ‘good life’.

One example is the shift in demand and consumption of free-range eggs, which has been reflected in the increased numbers of free-range laying hens, in a number of countries. It has been heralded as a ‘win’ for the welfare of the laying hen and certainly it can be argued that freedom of movement and access to an enriched environment has improved aspects of a laying hen’s behavioural needs. But have we really improved welfare or has a change in rearing system only resulted in a public perception of improved animal welfare, whilst shifting the welfare compromise to factors that are less obvious to the concerned observer?

It is not just in the farmed animal sector that changes have been made, in the UK there is now a requirement not just to

prevent suffering, but a duty of care to meet the basic needs of all animals for which we have responsibility. It has been recognised that ‘pets as prizes’ do not encourage responsible ownership and that the ‘dangerous dog’ is not a genetically selected monster but is a victim of poor welfare through misguided rearing practices. Education is now a key factor in attempting to influence attitudes, at farm level, at consumer level and at pet ownership level.

Public research funding has thus been more recently directed to look at how we can try to improve animal welfare through education, through exposure to positive experiences from before birth and throughout life, and to question current practices which have been accepted as ‘the norm’. We can continue to try and improve welfare, however whether we will have the resources to measure change and improvement is another matter.

The other 3Rs: research, responsibility and regulation (or how we got to where we are, and why we must continue to make progress)

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This paper will provide an overview of the impact of animal welfare science during the past half century, taking account of the political, economic and social context. It will argue that, in the face of our growing understanding of the capacities and needs of other species and the impact of human treatment upon them, society has a moral duty to have regard to animal welfare, which must be reflected in public regulation. The paper will conclude with consideration of the threats to the status quo and problems confronting reformers in the face of globalisation and recession.