New themes in improving animal welfare

David Fraser
Animal Welfare Program
University of British Columbia
• Animal welfare bench-marking
• The “human dimension” of animal welfare
• Professionalism
• “One Welfare”
• Broadening animal welfare/animal ethics
Two models of change
“Drowsy and exhausted, the poor creatures fall too often among the machinery, which is not in many instances sufficiently sheathed, when their muscles are lacerated, their bones broken, or their limbs torn off.”
“Factory Acts”
“Factory Acts”

- 1802 Ventilation & cleaning
- 1819 12-h day if <16 yrs
- 1844 Machinery fenced
- 1878 No children <10
- 1901 Dust and fumes
- 1901 7 m³ per person
Intensification = Modernization
Intensification = Industrialization
A “Factory Act for animals”
A “Factory Act for animals”

1988  UK hens: 450 cm\(^2\)
2003  EU hens: 550 cm\(^2\)
2012  EU hens: 750 cm\(^2\), perch, nest, litter
<table>
<thead>
<tr>
<th>Year</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>1988</td>
<td>UK hens: 450 cm²</td>
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<td>2010</td>
<td>EU broilers: ammonia &lt;20 ppm</td>
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A “Factory Act for animals”

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2003  EU hens: 550 cm\(^2\)
2012  EU hens: 750 cm\(^2\), perch, nest, litter
2010  EU broilers: ammonia <20 ppm
1988  Sweden: dairy cows not permanently indoors in summer
Is this approach working to safeguard animal welfare?
1. Animal welfare benchmarking
- Deaths
- Lameness
- Leg lesions
- Foot lesions
### Broiler chickens

<table>
<thead>
<tr>
<th>114 flocks</th>
<th>Deaths</th>
<th>1.4-14%</th>
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<th>Flocks</th>
<th>Lesion Type</th>
<th>Percentage</th>
<th>Source</th>
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<td>176 flocks</td>
<td>Lame</td>
<td>0-84%</td>
<td>Knowles et al. 2008</td>
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Piglet deaths
### Piglet deaths

<table>
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<tr>
<th>39 farms</th>
<th>Piglet deaths</th>
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<td>30</td>
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<td>Friendship et al. 1986</td>
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<tr>
<td>Farms Type</td>
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<tr>
<td>83 organic farms</td>
<td>Piglet deaths</td>
<td>0-50%</td>
<td>Sundrum 2011</td>
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## Dairy cow lameness

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<th>121 farms</th>
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<td>205</td>
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<td>0-79%</td>
<td>Barker et al. 2010</td>
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Very different welfare outcomes occur in the same type of environment.
Intensification ≠ Industrialization
2. The human dimension of animal welfare
The human dimension of animal welfare

- knowledge and dedication

= culture of care
- biosecurity
- parasite control
- nutrition
- litter quality
- dust
- ammonia
The human dimension of animal welfare

- knowledge and dedication
- consistency
Staff/flock: 1-5

Staff/flock: 1-5
Visits/day: 2-5

The human dimension of animal welfare

- knowledge and dedication
- consistency
- skillful handling
- of care
Human–Livestock Interactions

2nd Edition

Paul H. Hemsworth and Graeme J. Coleman

Paul Hemsworth
Negative handling of dairy cows: slaps, hits, pushes, tail-twists

<table>
<thead>
<tr>
<th>Variable</th>
<th>Correlation</th>
<th>P</th>
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<tr>
<td>Avoidance of handler</td>
<td>+0.33</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Cortisol in milk</td>
<td>+0.34</td>
<td>&lt;0.01</td>
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<td>Yearly milk yield</td>
<td>-0.36</td>
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Based on Hemsworth and Coleman, 2011

Negative handling

Chronic fear

Classic stress response

Reduced:
- Growth
- Immune competence
The human dimension of animal welfare

- knowledge and dedication
- consistency
- skillful handling
- positive attitude toward animals
Positive terms:

- stimulating
- entertaining
- intelligent
Positive terms:
• stimulating
• entertaining
• intelligent

Negative terms:
• noisy
• smelly
• ugly
Based on Hemsworth and Coleman, 2011
The human dimension of animal welfare

• knowledge and dedication
• consistency
• skillful handling
• positive attitude toward animals
• recognizing that animals are individuals

= culture of care
“On farms where cows were called by name, milk yield was 258 liters higher than on farms where this was not the case ($p < 0.001$)”

C Bertenshaw and P Rowlinson, 2009
The human dimension of animal welfare

- knowledge and dedication
- consistency
- skillful handling
- positive attitude toward animals
- treating animals as individuals
- \( \text{animals} + \text{environment} + \text{people} = \text{culture of care} \)
Burton et al. (2012) Building ‘cowshed cultures’…
“... the key importance of designing ... systems and structures that promote positive interactions between animals and humans...”

Burton et al. (2012) Building ‘cowshed cultures’....
The human dimension of animal welfare

- knowledge and dedication
- consistency
- skillful handling
- positive attitude toward animals
- treating animals as individuals
- animals + environment + people = culture of care
- attending to human well-being
The human dimension of animal welfare

- knowledge and dedication
- consistency
- skillful handling
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- treating animals as individuals
- animals + environment + people = culture of care
- attending to human well-being
3. Professionalism
Regulated industry
- Service
- Competence
- Self-regulation
• Service
Profession

- Service
- Competence
• Service
• Competence
• Self-regulation
An emerging self-regulatory system:
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- National codes developed by producers and others, based on science, expertise and public consultation
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• National codes developed by producers and others, based on science, expertise and public consultation
• Producer-led inspection programs
An emerging self-regulatory system:

- National codes developed by producers and others, based on science, expertise and public consultation
- Producer-led inspection programs
- Producer-led correction activities
• Service
• Competence
• Self-regulation
4. “One Welfare”
One Welfare: Neglect

Animal Cruelty Service Project
Farm animal neglect in Denmark

“... that animal neglect is embedded in a complex network of other problems in agriculture”

“severe financial difficulties, divorce and psychiatric problems”

“... that animal neglect is embedded in a complex network of other problems in agriculture”

“severe financial difficulties, divorce and psychiatric problems”

Farm animal neglect in Ireland

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## Farm animal neglect in Ireland

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<td>the farmer did not attach high priority to animal welfare</td>
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One Welfare: Hoarding

Photo: www.animalsheltering.org
• accumulate many animals that overwhelm their ability to provide care

• accumulate many animals that overwhelm their ability to provide care
• fail to acknowledge the deteriorating condition

• accumulate many animals that overwhelm their ability to provide care
• fail to acknowledge the deteriorating condition
• fail to recognize the harm to their own health and well-being

Co-morbidity of Hoarding Disorder

Major depression 57%
Social phobia 29%
Generalized Anxiety Disorder 28%
Obsessive-Compulsive Disorder 17%

One Welfare: Disaster Relief

PLEASE HELP US!

5 - PEOPLE
1 - DOG
1 - CAT
One Welfare

1. research to understand the many links between human and animal welfare
2. coordination of animal protection services with human social services
5. Broadening animal welfare/animal ethics
1700-1800s: Acts of cruelty

William Hogarth, Second Stage of Cruelty (detail), c. 1750
1900s: Institutionalized use
2000s: Indirect and unintended harms
Courtesy: Fatal Light Awareness Program
“Windows and other reflective and transparent surfaces likely kill a billion birds each year in the United States and billions worldwide.”

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<td>Crop production (plowing, harvesting)</td>
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Direct, unintended harms

- windows
- vehicles
- cats
- cropping operations
- ghost fishing
- pesticide drift
- communication towers
- oil spills
Indirect harms caused by disturbing the processes of nature
Pollution
R Diaz & R Rosenberg 2008 Spreading dead zones and consequences for marine ecosystems. Science 321: 926-929
“Dead zones have now been reported from more than 400 systems, affecting a total area of more than 245,000 square kilometers ... [and causing]... mass mortality”

R Diaz & R Rosenberg 2008 Spreading dead zones and consequences for marine ecosystems. Science 321: 926-929
Climate change

Photo: Kerstin Langenberger Photography
... we predict, on the basis of mid-range climate-warming scenarios for 2050, that 15–37% of species in our sample of regions and taxa will be ‘committed to extinction’...

The same human activities driving the current extinction crisis are also causing suffering, fear, physical injury, psychological trauma, and disease in wild animals.

Paul Paquet & Chris Darimont, 2010
Animal Welfare 19: 177-190
1. Animal welfare reforms have been modeled on worker welfare legislation that regulated the physical environment and exposure time in factories.
But benchmarking studies show that the same type of environment can produce very different welfare outcomes.
2. The Human Dimension:

- knowledge, dedication
- consistency
- skilful handling
- positive attitude
- animals as individuals
- a culture of animal care
- human well-being
3. Shifting to a professional model, focused on human competence, dedication and performance is a much-needed step in improving animal welfare.
4. We need to understand the many connections between human and animal welfare and coordinate relevant services.
5. We need to broaden the scope of animal welfare science and ethics to include the indirect and unintended harms to animals caused by human technology.
New connections among people:

• producers collectively creating and adhering to professional standards

• cooperation between human health and animal protection services

• conservationists and animal protectionists confronting their shared challenges
Further information:

