From the editor—Farm animal welfare: a sticky situation

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Hardly a day goes by without something appearing in the news relative to farm animal welfare. And it is not always good news! Our capacity to address animal welfare issues is lagging behind the increasing rate at which concerns are being voiced. This creates a situation in which we, animal scientists and industry supporters, are left playing “catch up,” trying to find the time and people-power to address the next emerging issue in a suitable manner. The welfare of farm animals is an emotionally charged issue that becomes even more polarizing when people with opposing arguments exaggerate or selectively present information on the subject, and in so doing, increase distrust by our consumers (Croney et al., 2012). We as an industry need to reverse this situation and play a proactive role in establishing proper animal welfare expectations, when they happen to be less than appropriate, and being transparent about how animals are raised on our farms to show that their welfare is indeed good in most situations. Hiding behind a closed door only makes the industry suspect.

Experience shows us that when dealing with animal welfare challenges, we quickly find ourselves caught up in a web-like trap, in which, every turn appears to draw us further into ruin. In trying to address pain, we may want to give an analgesic but find that our now tainted product must be held from the market for an additional 14 days and the cost of the drug put our bottom line into the red. Or, we may want to give our chickens free range on pasture but find that they are being preyed upon and dying in a not-so-humane manner. Every choice we make is connected to another thread that may pose a problem; but to stay safely outside this dilemma is not an ethical choice we can make because problems exist that need to be solved.

Farm animal welfare is both yesterday’s and tomorrow’s issue. Carrying for the orphaned lamb and injured calf are things we grew up doing. But our industry has changed and continues to do so, on a grand scale, as we work to feed an ever-growing world population (Polletto and Hötzel, 2012). With these changes come new challenges as more and more animals must be produced. Just by increasing sheer numbers of animals, welfare concerns arise with respect to our capacity to observe them, identify problems, and provide enough space with environmental complexity to attain optimal levels of welfare. Yet, many producers can and do attempt to raise animals in new ways to meet changing public demands. For instance, some swine producers will sell pasture-raised pork and even fatten hogs on acorns (you try harvesting enough acorns to feed a hog!). And, some of Japan’s Waygu cattle receive oil massages and beer to produce their famous steaks (Longworth, 2004). Clearly, the consumer is king! However, one challenge in trying to meet consumer expectations while addressing farm animal welfare is similar to that seen with trying to address hunger in foreign countries. Yes we can produce the food needed to feed the hungry population, but a mechanism of payment and delivery is lacking. Further, there can be misunderstanding about what certain labels and terms convey to consumers. We have seen through market trends and surveys (Olynk, 2012) that consumers are increasingly purchasing what they perceive to be welfare-friendly products. Unfortunately many consumers interpret “organic” and “free-range” to mean “welfare friendly,” which is not necessarily the case and can be far from it.

I think for us to move forward in optimizing animal welfare, we need a clear, honest assessment of what we do well and what we need to improve. An outsider’s view can be crystal clear because what we are exposed to on a daily basis can become the new normal. For instance, due to a deteriorating concrete floor, cows at a dairy may start to experience an increasing rate of lameness. Because this happens over time, the higher lameness rate becomes normal. By bringing in outsiders, we will better identify the problem. Once issues are identified, we then need to determine their severity. Science can help here, particularly in identifying valid measures of welfare. Unfortunately, our science is only in the early stages of this sort of discovery. Much progress has been made (Veissier et al., 2012), especially in identifying negative aspects of welfare, but there has been less progress in pinpointing positive measures of welfare.

Sometimes the facts don’t matter! It is possible that what science tells us supports good animal welfare can directly conflict with public perception of what constitutes humane treatment of animals. For instance, the use of blunt-force trauma to euthanize piglets is clearly humane in that it instantly renders the piglet unconscious. However, people don’t like seeing it, and therefore, the swine industry is challenged with finding another humane method of euthanasia that is practical and more aesthetically pleasing. Clearly our animal industries need to be responsive in identifying scientifically grounded concerns about animal welfare; but they also must be mindful that our consuming public may have other desires and values in addition to simply being fed. This is particularly true in countries in which most human needs have been met; the concerned public will often quickly move on to ensure that their desires are also met (Neilsen and Zhao, 2012).

I often hear from producers that we just need to “educate the public.” Although I understand were this comes from, we aren’t doing unnecessary things to animals because we are cruel people; it carries an arrogant overtone and misses the point that people have diverse values and ethics, so education (even if it is needed) may not be the answer. This difference in ethical points of view on what constitutes good quality for animals underlies why we have debates about animal welfare in the first place. The bottom line is that if there was an easy scientific solution, the debate on farm animal welfare would have been settled long ago. Realizing there is no easy answer, one must grasp that the responsibility is on researchers,

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producers, and the public to come to the table with reasonable solutions, looking for the win–win–win, for producers, the public, and the animals in question.

In this issue of Animal Frontiers, scientists from around the world explore the many factors that contribute to addressing challenges to farm animal welfare that make it such a complicated issue to resolve. You will first read six review articles, which provide a big picture view of the complicated challenges that face animal agriculture, followed by five topical reviews that zero in on specific subjects that have proven particularly challenging to our industry. I’m sure you will enjoy these reviews as I have; the authors have been tremendous and provide some outstanding articles.

Review Articles

Isabelle Veissier, Alain Boissy, and Arnaud Aubert, all from France, tackle the difficult questions that welfare scientists grapple with daily: How do we assess welfare? What makes an animal happy? They make the point that welfare cannot be assessed simply using one measure since it is a multidimensional concept. In their article (Veissier et al., 2012), they explain that an animal’s welfare depends on how it feels, which is further dictated by the characteristics of its environment and past experiences. All of these factors work together to create a unique state of welfare for that individual. They remind us that good welfare should not be attained solely by decreasing negative aspects of one’s environment, but by also by increasing that which is positive.

Bas Rodenburg of The Netherlands and Simon Turner of the United Kingdom teamed up to discuss the great potential that genetic selection can have to increase animal welfare as well as its potential for disaster. These authors make an appeal (Rodenburg and Turner, 2012) that genetic selection programs should not focus on merely increasing productivity traits of animals. Selection in this manner can increase the occurrence of production related diseases. Instead, genetic selection should strive to select for both welfare and production traits. They note that in this era of increasingly useful genomic tools, selection for complex behavioral and welfare traits are possible. Although they caution that with the potential for great change in the positive direction the reverse is also true and we need to be careful not to inadvertently accelerate the selection of undesirable traits.

Rosangela Poletto and Maria Hötzel, both of Brazil, discuss the challenges to animal welfare as we go forward and discuss these in the light of opportunities for our future. They note that specifically, countries under-going unprecedented agricultural growth, such as Brazil (Poletto and Hötzel, 2012), have a unique opportunity to effect change as well as unique challenges to meet the growing demand for animal products while at the same time ensuring proper animal care. These pressures have helped the industry to adopt technologies that increase animal welfare; however, they impeded systems that require a greater financial commitment. They address the challenges and changes for countries such as Brazil that sell products to countries that may have more stringent welfare regulations. These authors also address the challenge of employee education and retention, relative to animal welfare, in an environment in which people, wanting to be a part of a growing economy, are moving to cities to make a better living. They suggest that advancement in technology systems to raise livestock may help to improve animal welfare.

Nicole Olynk of the United States presents research on assessing consumer preferences for specific products that are from animals raised to differing standards of welfare. She notes (Olynk, 2012) that although consumers are increasingly removed from raising livestock, they also have increased their level of concern about how animals are raised. She acknowledges the difficulties in getting producers and consumers into fruitful discussions on welfare due to the great gap in knowledge of production practices between the two. She points to people’s different decisions when consumers are asked to vote for a welfare attribute as opposed to when they actually purchase a product in the store. She notes that many variables can influence this choice, including labeling, advertisement, and influence from the media. Olynk raises an often ignored part of the equation as well, which is producers’ willingness to change their production practices, but notes this is largely influenced by farm-specific costs.

Lindsay Matthews from New Zealand and Paul Hemsworth from Australia provide insight and enlightenment on how international markets and policies, which may seem like a world away from you in your home, are influencing animal welfare in your own country. They identify change as originating in both the public and private domains (Matthews and Hemsworth, 2012). In the public domain, national and international agencies work to make decisions about animal welfare: these are slower to come to fruition but tend to be more solidly grounded in science and formal risk assessment. In contrast, private domains are able to move more quickly to produce changes to animal welfare practices but are more easily influenced by public opinion and with less regard for scientific facts. Interestingly, they note that the development of private standards of animal welfare can influence the development of national and international policies.

Birte Nielsen of Denmark and Ruqian Zhao of China teamed together to tackle the tough question of what the future of animal welfare holds, specifically for countries that have well-established welfare regulation as opposed to those that are rapidly developing and emerging onto the global food market. These authors remind us that conditions that create good animal welfare are independent of a country’s borders; however, each country’s approach to animal welfare may differ. They also caution against a common thought that because one country may have improved welfare through specific practices or standards, it does not follow that other countries can simply adopt those practices (Nielsen and Zhao, 2012). Often this type of approach creates a mismatch between the animal and its environment that does not improve its welfare. These authors suggest that a more prudent approach to enhancing animal welfare for countries embarking on this issue would be in small, widespread, and consistent improvements, as opposed to attempts at sweeping overhauls in production practices.

Topical Reviews

We have analgesics to relieve pain, so what is the problem? Karen Schwartzkopf-Genswein, Erin Fierheller, Nigel Caulkett, Eugene Janzen, Ed Pajor, and Diego Moya, all from Canada, along with Luciano Gonzalez of Australia teamed up to address what may appear to many to be an easy issue: pain management. But if you haven’t already considered the many difficulties of pain management in farm animals, this review clearly lays them out. What appears to be simple is really quite complicated. We have been and continue to be very good at managing pain for humans, but as these authors point out, behavioral and physiological pain assessment tools are lacking that are appropriate for farm animals (Schwartzkopf-
Genswein et al., 2012). This situation is further complicated by 1) the lack of government-approved analgesics for livestock, 2) the lack of methods of administration that would work for the very large group sizes found in our production systems, 3) the lack of drugs with appropriate withdrawal times to prevent tainted animal products from entering the market, and 4) the fact that small profit margins realized by producers don’t allow for this “extra” investment. As you will read, these and other concerns make this “simple problem” a monster of a problem.

How to manage the unmanageable? Sebastian Heath from the United States helps us understand the many facets of managing the chaos of disasters, including disease outbreaks, to ensure that optimum animal welfare is maintained. He emphasizes that to ensure animal welfare when disaster strikes, it is important to understand that systemic weaknesses before the event will likely become problems during an event. Common shortfalls include the demand for personnel to collect data and provide care for both sick and healthy animals and for diagnostic resources. He notes that because the major factors responsible for the spread of disease are often not known until many years into the future, to ensure optimal animal welfare, the response to epidemics should be nimble and based on specific actions that prioritize issues and lead to sound decision-making. He also notes that the response to disasters, including epidemics, is most effective when it is managed using proven principles of emergency response (Health, 2012).

How fast is fast enough when it comes to humane slaughter in a religious context? Haluk Anil from the United Kingdom presents a comprehensive and enlightening review on specific religious slaughter methods that raise a significant amount of concern in regard to animal welfare. He notes that, based on religious beliefs, a substantial number of people demand meat products that are derived using specific methods of harvest. The main welfare concern of these methods is how the animals are handled and the time it takes for them to become unconscious (Anil, 2012). He emphasizes that species differences, accuracy, sharpness of the knife, and method of restraint all factor into the time that it will take the animal to become unconscious. And anatomical effects, including carotid occlusion in cattle, will delay time to unconsciousness.

What are the real welfare issues when it comes to horse slaughter? I asked Carolyn Stull and Des Leadon to write companion papers to review the issue of horse slaughter from a North American and European perspective. As you will read, there are several similarities between the continents. One major factor affecting slaughter horse welfare is the distance and duration of travel to the slaughter house, both of which have increased dramatically on both continents (Leaon, 2012; Stull, 2012). Interestingly, in North America, the distance has increased because the slaughter houses have moved out of the country, while in Europe, the distance has increased as slaughter houses have had to deal with dwindling supply of horses by seeking animals from further away. Both authors point to issues with the types of vehicles used for transport as well as handling methods. The increasing number of unwanted horses is common to both countries, but the societal cultures and the availability of slaughter facilities may offer different resolution options. In the U.S., given the current situation, the unwanted horses pose real welfare challenges because it doesn’t have the capacity to cope in regards to facilities or funding. In contrast, Europe can cope with unwanted horses because it does have access to slaughter facilities. I’m confident that these reviews will challenge your thoughts on ways to resolve this issue when trying to do the right thing!

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**About the Author**

Don was raised in central Virginia, on a traditional family farm, consisting of cattle, swine, and horses. Currently he lives in Indiana on a small acreage with a large menagerie of pets. He received a B.S. degree in animal science from Virginia Tech in 1985 and M.S. and Ph.D. degrees in animal science from Texas A&M in 1990 and 1995, respectively. Upon graduation, he accepted a position at Iowa State University as assistant professor specializing in behavioral physiology. In 2000, Lay moved to West Lafayette, IN to serve as a research scientist and research leader of the USDA-ARS Livestock Behavior Research Unit. This research unit is paired with members of Purdue University’s Animal Science Department, affectively creating the largest and most significant team of scientists in the U.S. focused on animal welfare. Lay leads his team of scientists responsible for developing scientific measures of stress and well-being in swine, cattle, and poultry using the multiple disciplines of stress physiology, immunology, neurophysiology, bacteriology, and ethology. Lay has authored and co-authored one textbook, two book chapters, and more than 90 articles of which more than 50 are peer reviewed. He has been invited to give more than 40 presentations nationally and internationally and presented more than 90 abstracts at scientific meetings and workshops. He has been a PI or Co-PI on more than 23 externally funded grant proposals totaling more than $2 million dollars. The ultimate goal of his research program is to discover information that will allow for both optimum animal welfare and animal production.

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