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Public Participation in Intensive Livestock Production

If slaughterhouses had glass walls, everyone would be a vegetarian
-Paul & Linda McCartney

This paper addresses the effect of consumer behavior on the growth of ethical markets, and is thus concerned primarily with the role of deliberative methods in informing and changing consumer behavior. Although this work addresses only the ramifications of meat purchase and consumption, the study is intended as a template for market-oriented deliberative change more generally.

The intensive livestock industry is rife with information asymmetries. I contend that bounded rationality in the voting and consuming public leads to market failure by neglecting to internalize the externalities of environmental degradation, public health exacerbation, and animal abuse. Since the production of cheap meat involves a complex series of value trade-offs (VTO), the intensive livestock system is a ripe domain for deliberative intervention. The often incommensurable nature of the costs and benefits involved also begs informed public guidance.

The consuming public is in a state of deeply bounded rationality; the simulacra of farm idylls to which Western urban infants are exposed combine with livestock producers' incentives to withhold information symmetry to explain the logically pathetic ethical double standard which many people apply to pets and farm animals. Further

public scrutiny, whether via deliberative polling or a more diverse model of engagement, would help the public to see through the slaughterhouse walls.

Section I of this work addresses the range of externalities not incorporated into the cost of intensive livestock production. Section II outlines the actors involved in industrial agriculture, whether as producers, consumers, or other stakeholders. With the effects, actors, and values in place, section III examines which actors determine which value trade-offs, and which stakeholder parties would be likely to have a different VTO agenda. Part IV overviews the various asymmetries inherent in the intensive livestock industry and probes the potential utility of a deliberative consumers' forum to address longer term and non-economic issues and values. The concluding section V begins to address the potential for deliberative (or non-deliberative, as the case may be) methods to correct the existing asymmetries, a topic which will be addressed more thoroughly in the final paper.

I. Market Externalities of Industrial Meat Production

The externalities often not factored into the price of meat paid for by consumers fall under three broad categories: environmental harm, public health hazards, and animal suffering.

Environmental Harm.[1] The ambit of "environmental harm" is extraordinarily broad, ranging as it does from direct and immediate pollution of rural groundwater and air quality to the long-term carrying capacity of a more carnivorous versus a more

[1] Much of this subsection is drawn from a Fletcher School Fall 2006 term paper—titled "Intensive Livestock Production and the Environment: Global Lessons from U.S. Practice"—for William Moomaw's International Environmental Policy course.

vegetarian future Earth. Clearly, and as is addressed in sections II and III, different stakeholders will care differently about these diverse kinds of environmentalism.

Livestock's Long Shadow, a joint 2006 report of the Food and Agriculture Organization (FAO) and the Livestock, Environment and Development Initiative (LEAD), reveals that livestock production's environmental consequences range from climate change and land degradation to water depletion, air pollution and eutrophication. Ammonia from ruminant livestock—64% of the global total—contributes to acid deposition in the air. Additionally, agricultural wastes, antibiotics, hormones, fertilizers, and pesticides all contribute to water pollution and eutrophication.

Because feedlot livestock require, in addition to antibiotics, a constant source of food and various other external inputs, CAFOs are an integral part of industrial agriculture: 37% of the world's grain, and 66% of U.S. grain, is fed to livestock. (Harrington) To provide the soy protein and corn energy required, industrial agriculture requires: fossil fuel and water expenditure, topsoil degradation, chemical pesticides and fertilizers, and crop monocultures.

When manure from intensive hog farms and cattle feedlots is stored in open pits spills, the excessive nutrient exposure joins with nitrogen runoff to create algal blooms and, in some cases, lake and ocean dead zones. Similarly, precipitation can carry vaporized NH3 from manure pits to cause eutrophication in lakes and oceans and ecosystem disruption elsewhere. (Donham)

Public Health Hazards. The second category of unincorporated costs deals both with the immediate health hazards to CAFO workers and nearby communities and with

the long-term exacerbation of zoonotic disease transference and growing antibiotic resistance in pest and pathogen vectors.

CAFOs expose workers and nearby communities to a wide range of health risks. Workers in confined plants risk chronic respiratory infection. Animal pathogens such as cryptosporidia cause community outbreaks. (Donham) Airborne pollutants near CAFOs create foul odors and cause fatigue and respiratory problems, and the preventative antibiotics required by the animals' close mutual proximity grants resistance to transferable airborne bacteria. (Chapin)

Diseases that are transferable from animals to humans include, most prominently, Bovine Spongiform Encephalopathy, foot and mouth disease, and bird flu. Recent research revealing the avian origin of the 1918 Spanish Influenza—responsible for the death of twenty to forty million people—heightens the priority of controlling zoonotic externalities, especially in an age of rapid air transportation and resultant contagion expansion.

Animal Suffering. Industrial meat production in the United States can be roughly subdivided into hog, poultry (broiler and layer), and cattle (beef and dairy) production.

The husbandry practices to which poultry are subjected include: debeaking, forced moulting (forced starvation to speed up the laying cycle), live disposal of male chicks, and intensive stocking. (Bennett *et al*) Indicators of pain and stress in cage eggs include: injury caused by pecking, space constraints on preening, bone and muscle weakness, abnormal repeated behavior, abnormal behavior due to impaired access to litter for dust-bathing and to nest sites for laying, and feather loss.

Regarding swine and cattle,

> Pigs are castrated and have their tails removed without anaesthetic. Moreover, gestating (pregnant) sows and farrowing (birthing) sows are housed in stalls where they are unable to turn around. Such intensive farming practices result in health problems, including lameness or high death rates, which are aggravated by uncontrolled genetic selection for production traits such as rapid growth . . . day-old baby calves are transported from the dairy farm before they are able to walk, resulting in calves being thrown, dragged, or trampled. This practice is becoming increasingly accepted . . . Veal calves are housed in stalls where they are unable to turn around. The calves are fed a liquid diet that does not allow the normal function of the calf's rumen. In addition, cattle are dehorned, castrated and hot-iron branded without anaesthetic. (Wolfson, 134)

Unless one completely dismisses the moral status of food animals (see *infra*, section III), the nature of these practices combined with the fact that the United States alone produces roughly ten billion food animals per year makes animal interests demand consideration.

II. Stakeholder Parties in the Intensive Livestock Sector

Stakeholder parties with an interest in CAFO concerns include the producers themselves, input suppliers, consumers, and advocacy organizations. The types of interest can be grouped broadly into economic (producers and input suppliers, including trade organizations) and non-economic (non-industry advocacy groups) categories, with consumers straddling the divide.

Before explaining the various groups' interests, there is an important caveat to emphasize: among the most interested stakeholders, the meat animals themselves, are categorically excluded from the domain of the rational citizen-deliberator. However, animal advocacy organizations provide an interest placeholder to speak for the non-human animals that are incapable of speaking for themselves.

Producers. Livestock producers have strong economic incentives to locate CAFO facilities where land and labor prices are cheapest, often in states using lenient

regulatory standards as a means of enticing industry presence. Following models of vertical integration and vertical and horizontal coordination, producers are also incentivized to cluster groups of CAFOs in close proximity to each other. (Carpentier *et al*) This results in the concentration of hazard potentials in the form of noxious air and water contamination.

Even though human and environmental hazards are compounded by the concentration of production, the primacy of market concerns has led U.S. producers to increase CAFO size while decreasing the total number of farms. Thus, between 1967 and 1997, the number of swine farms plummeted from over a million to 157,000, the top 3% of which produce 60% of U.S. hogs. (Horrigan *et al*) In 2000, operations with 5,000 or more hogs comprise 50% of U.S. production. (Speir *et al*) The poultry and beef industries show similar intensification.

Input suppliers. In many respects, the suppliers of CAFO machinery, animal antibiotics, pesticides, and soy and corn feeds share many of the livestock producers' interests because CAFO operators are among the largest markets for grain and antibiotic inputs; whereas consumers have a divided interest between food safety and long-term public health in the application of preventive antibiotics, for example, antibiotics suppliers have an incentive to sell as much product as possible.

Consumers. The category "consumers," like the categories "public" and "citizens," may be too broad for proper deliberative analysis and resolution.[2] Consumers' interests can be looked at 1) from the purely self-interested rational choice perspective, or 2) from a blend of self-interest with the growth of conscientious consumerism and ethical markets.

[2] And, in fact, the broad purview of this study is precisely to effect changes in consumer behavior.

Consumer 1's concerns relative to meat production focus primarily on cost, food safety, and local environmental harm. I posit that consumer 2, on the other hand, would be more open to longer-term effects like distant environmental harm, animal welfare, and long-term public health protection.

The category of the consuming public deserves another important caveat. Whereas very few people would question the *basic* validity of the empirical evidence regarding environmental and public health harm, the question of animal suffering raises a host of normative questions to which different deliberators will respond differently. For many people, the moral status of animals raised for food production is categorically different from that of companion animals, although the justifications for such ethical bifurcation tend to have little in the way of solid behavioral or physiological support.

Advocacy Organizations. The final stakeholder party of major concern groups together a diverse umbrella of differently minded organizations. Following Theodore Lowi's concept of interest-group liberalism, advocacy organizations in this sector prioritize specific values and interests against the competing values and interests preferenced by other groups.

Thus, whereas the Humane Society of the United States (HSUS) and Compassion in World Farming (CIWF) prioritize animal welfare, the Center for Science in the Public Interest (CSPI) and other such public interest groups focus more on the health effects of an industrial diet.

On the other end of the spectrum, a wide array of trade organizations represent the beef, dairy, pork, and poultry industries and their various interests; unlike the "non-economic" advocacy organizations cited above, these groups prioritize market access and

the creation of a consumer demand. It should be noted that while industry trade groups and non-economic advocacy organizations have categorically different motives, both are advocacy organizations in the sense of pushing a desired agenda.

III. Value Trade-Off and Stakeholder Preference Hierarchies

Debates over CAFO practices run quickly up against the dual barriers of incommensurability and indeterminacy. Whereas the incommensurability of different kinds of value has long bemused policymakers, actual indeterminacy—or "the lack of clear, distinct, and rationally persuasive knowledge" (Gregg 2003, 1)—only arises if the moral status of animals and the empirical data on environmental degradation and zoonotic risks are unclear. A deliberative value trade-off model addresses both the dilemma of ordinal rights valuation and the information asymmetries inherent in CAFO production systems.

Of the above-mentioned stakeholders and externalities, different groups prioritize their preferences according to their distinct and often discrete interests and values. The following list is not necessarily exhaustive—deliberation could yield hitherto unconsidered values, which could then be incorporated into the task of ordinal valuation—but it is a starting point from which to gauge and incorporate stakeholders' interests. The interests and values to be considered include: economic growth, export markets, food security, food safety, disease prevention, local environmental concerns, global environmental concerns, sustainability and global carrying capacity concerns, and epidemiological concerns (including, but not limited to, zoonotic disease transference and antibiotic resistance).

As is mentioned above, single-issue advocacy organizations prioritize one interest at the expense of all others. This is not necessarily because members and employees of such organizations believe that "their" issue truly trumps all other issues all of the time, but rather because position advocates for, say, the HSUS, tend to believe that their value set is categorically underserved in the policy arena. HSUS and CIWF thus place animal welfare at the top of their interest hierarchy and the price of meat near the bottom, again not because of an indifference to consumer access to complex proteins but rather to correct for what they perceive as a skewed and imbalanced market position.

Generally, producers and input suppliers prioritize economic concerns, including economies of scale, supply chain integration (*e.g.,* vertical integration), market access, and business growth. Advocacy organizations and consumers, on the other hand, run the gamut of economic and non-economic concerns.

IV. Power Asymmetries and Deliberative Fora: a Prognosis and a Remedy?

The asymmetries to be addressed deliberatively are economic, racial, geographic, and informational in scope. Different deliberative methods—and, in some cases, traditional minimalist or aggregative methods—will work better depending both on which issues and values are being addressed and on which asymmetries are being targeted.

When addressing the various power asymmetries at play in the CAFO sector, two categories arise:

- The economic, racial, and geographic asymmetries link generally to the immediate issues of cost, local environmental harm, and local public health harm.

- The information asymmetries link generally to the broader issues of animal welfare, transboundary environmental harm (*i.e.*, eutrophication and acid deposition), global public health, and global carrying capacity.

Although the four asymmetries mentioned are not exhaustive, grouping them by local/economic and global/non-economic helps to flesh out the various issues at play.

Local, Economic Asymmetries. Particularly in the case of industrial hog production,[3] researchers have documented various forms of environmental injustice (Wing) accruing from the placement of hog CAFOs in rural areas populated predominantly by lower-class minority groups. (Wilson *et al*) This constitutes a triptych asymmetry composed by the three panels of geographic, economic, and racial inequality.

Global, Non-Economic Asymmetries. Although the split between local and global, economic and non-economic asymmetries may appear facile, the complex nature of transboundary harm and intersubjective valuation calls for a systems approach that values accurate and comprehensive information. The opacity of industrial agriculture obscures the free flow of information that is necessary for consumers, publics, and governments to make informed policy choices about CAFO-related issues and values.[4]

V. The Way Forward

Thus, an Arnstein-style approach prioritizing citizen control may or may not benefit the values of animal welfare and long-term health, environment, and global

[3] Although the workers in broiler facilities are subject to high levels of ammonia and other toxicants, poultry facilities are generally more self-contained than hog and beef facilities. The quantity of waste produced by hog CAFOs and cattle feedlots renders them a danger to local water supplies and air quality.

[4] A paraphrase of Michael Pollan's definition of "industrial food"—any food the provenance of which is so complex it requires expert advice to ascertain—is a telling case in point. (Pollan)

carrying capacity. Conversely, a command and control approach may underemphasize the local effects of air and water contamination on rural poor minority communities.

It follows that local environmental and health concerns should be addressed by local fora and long-term environmental, health, and animal welfare concerns should be addressed by deliberative polling or another such method of stratified sampling from the population at large. Clearly, the local forum and the stratified forum would have issue overlaps, even issue conflicts (to be addressed in the final paper): the mutual incompatibility of low cost meat and externality-incorporating pricing is probably the most difficult conflict to square.

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