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Foucault on the Farm: Producing Swine and Subjects

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ABSTRACT In this paper, through a discussion of an ongoing conflict about regulation of industrial farming in Kentucky, I use Foucault's (1980a, 1980b, 1991) work on governmentality and power and knowledge to analyze how the power relations embedded within processes of governmentality and knowledge production act to marginalize certain groups while producing new regimes of truth and altering subjectivities. My approach differs from that of current academic research and American mass media reporting of the environmental and social impacts of industrial animal agriculture. Academic literature has largely focused upon either the structural changes resulting from the industrialization of agriculture or on the conflict between proponents and opponents of this agricultural form on the local level. Popular media have presented the subject in terms of grassroots struggles to keep industrial farming out of communities or to try to redress social and environmental impacts in communities. Although components of both academic research and mass media reporting are important to my analysis, consideration of the linkages between regimes of truth and the production of certain types of subjectivities provides the basis for an analysis that examines the nexus between macro and micro power relations and situates academic research in the midst of these power relations.

This research is situated within the larger context of an ongoing concentration and industrialization of agriculture. Social scientists (Buttel, Larson and Gillespie 1990; McMichael 1994) have located these changes in the engagement of industrial, financial, and service sectors with agricultural production. McMichael (1994:4) reports that these changes have been apparent in "regional reorganizations of livestock production in the United States." Factory-type livestock production has become increasingly important in the U.S. Midwest and South (Furusetth 1997; Hart and Mayda 1997; Thu and Durrenberger 1998).

Technological innovations loom large in this restructuring. Although technological change on American farms has been a fact since

World War II (Browne et al. 1992; Cochrane 1979), the rate of change has accelerated (Buttel et al. 1990). New technologies in animal agriculture have provided an opportunity for farmers to overcome many of the constraints of “natural processes which have resisted direct and uniform transformation by capitalist relations of production” (Whatmore 1995:41). For example, industrialized animal agriculture has provided the means to concentrate more animals on less land, avoid the vagaries of weather, and speed up the reproductive cycle, making the industry less of a financial risk for capital by giving the operator more control over the process. Capital is now able to further reduce risk, because unlike direct forms of agricultural industrialization, agribusiness is now involved indirectly “through networks of marketing contracts, technical services, and credit arrangements with independent farm businesses” (Whatmore 1995:43).

Some social scientists have examined the effects of structural change on the local level (Furuseth 1997; Goldschmidt 1998; Hart and Mayda 1997). Others are researching local resistance to industrialized farming (DeLind 1995, 1998; Hoag and Roka 1995; Thu and Durrenberger 1998), environmental impacts (Hoag and Roka 1995), public health impacts (Donham 1998; Schiffman et al. 1998), and the role of technology in this restructuring (Ufkes 1995). In this paper, after explaining why industrial hog farming has become a matter of academic and public concern, I briefly explain my larger project and methods of investigation. Using instances from the Kentucky debate about regulation, I indicate how a Foucauldian focus (Foucault 1980a, 1980b, 1991) upon the linkages between power and knowledge production and governmentality can provide a more nuanced understanding of such disputes by exploring the effects of power relationships upon the subject positions of both participants in the debate and researcher.

In confined animal feeding operations (CAFOs), chickens and hogs are kept in large buildings from which their waste is collected and piped into large open pits, called lagoons. Here solid waste decomposes and liquid waste is drawn off to be sprayed upon adjacent fields. Associated environmental problems include surface and groundwater contamination resulting from leaks or collapses of sewage lagoons and from disposal of dead animals. Soil degradation as a result of nitrogen and phosphorous buildup and odors are also problems.

Associated health impacts related to liquid manure systems include fatal inhalation of liquid manure gas (Ebert and Dennis 1993; National Institute of Occupational Safety and Health 1998). The Centers for Disease Control (1998) have warned of the dangers of leptospirosis, a bacterial disease associated with exposure to water contaminated with the urine of infected animals, and Gomez, Sandler and Seal (1995) have reported other gastrointestinal illnesses. Associated social impacts include increased stratification in farm communities (Whatmore 1995), the potential for public cynicism about government when government officials privilege the economic over other aspects of social life (DeLind 1995, 1998), and stresses placed on local governmental institutions as a result of changes in community demographics (Thu and Durrenberger 1998). The Sierra Club and Greenpeace have called for national regulation of CAFOs and the federal Environmental Protection Agency is currently developing national regulations.

This paper is part of a larger research project in which I augment a political economy approach with an analysis of how structural changes are articulated throughout existing social, cultural and spatial arrangements to affect identities in place. My research question is: Within parameters of participation established by the Kentucky Cabinet of Natural Resources and Environmental Protection¹, how have participants in the debate about industrial hog farming deployed notions of risk to mobilize politicized farming identities? From this, five subquestions arose: 1) who were the participants; 2) what types of risk did participants deploy; 3) how did farming identities become politicized; 4) how did one definition of risk come to be accepted; and 5) what are the effects of the debate and regulations on farming identities? Following Freudenburg and Gramling (1994), I locate assertions of risk within a complex network of historical, social, and environmental factors.

I am analyzing the discourses contained in six genres of texts that, although distinct, are connected intertextually. The genres

¹The Cabinet is charged with the protection and preservation of Kentucky's land, air, and water resources. Divisions within the Cabinet deal with water, air quality, waste management, forestry, conservation, energy and surface mining reclamation and enforcement.

include the Cabinet's regulations and statements of Cabinet employees, comments made at public hearings, correspondence to the Cabinet, publications of involved groups, newspaper coverage of the debate, and law suits filed by the Kentucky Farm Bureau and Sierra Club. Because each genre offers specific information about the types of knowledge that are considered valid and invalid by participants, analysis of multiple genres provides a basis from which to triangulate claims and to examine the privileging of certain knowledges over others. In this way, the role of power relations in determining what is included and excluded in legitimated knowledges can be located. Likewise, analysis of participants' representations of the effects of the regulations will allow examination of responses to governmentality. Additionally, I have been a participant observer at public hearings to witness how the participation process actually worked and how participants interacted, and have attended meetings of involved groups to identify areas where public statements and actual practices may differ.

Power/Knowledge and Governmentality

Rather than identifying and examining divergent risk discourses through analyses of subjects' awareness of risks, modes of perception, and forms of ideology, a Foucauldian approach studies how risk discourses are formed through the development of knowledges in terms of "tactics and strategies of power." Foucault (1980a) calls attention both to the role power plays in constructing knowledges and to the ways in which knowledges produce 'truths.' This differs from investigations of linkages between the land grant institutions and agribusinesses (Busch and Lacy 1983; Buttel 1985) in that it entails an investigation into the development of the epistemologies underlying the 'truths' produced by researchers in the land grants (e.g. agricultural economists, animal scientists, soil scientists, rural sociologists), examinations of their discourses, and the mapping of the ways in which these discourses intersect.

A Foucauldian analysis also differs from those that locate power solely in the economic realm. Foucault (1980a:222) argues that "power relations are rooted deep in the social nexus, not reconstituted 'above' society as a supplementary structure whose radical effacement one could perhaps dream of." Power is intimately con-

nected to Foucault's notions of governmentality. Foucault (1991) chronicles the shift in political rule from the absolute sovereign to the governmentality of the modern state that he sees as a 'referee' to which members of the social body appeal for reparations for injuries suffered. The state in Foucault's scheme of things distributes "the disciplines of a competitive world market" (Gordon 1991:43) throughout the social body. However, the state, in this rendering is not a monolithic entity; instead it consists of many, sometimes competing, regimes of truth that must be identified.

The modern or liberal state is oriented toward surveillance and control of its population through the operation of a multitude of institutions – penal, educational, employment, medical – engaged in developing rationalized knowledges. In *Discipline and Punish* (1995), Foucault argues that these new knowledges were developed from statistical procedures designed to study the totality of the population, to develop norms, which became regimes of truth, for every category measured. The norms were then used to measure individuals whose distances from the norm became the basis for their positions within hierarchies of difference. Foucault (1980b:107) calls this a "society of normalization" which is "tied to scientific knowledge" produced by a variety of institutionalized disciplines.

This is important because Foucault (1995) asserts that, at the same time, the coercive mechanisms used by previous governmental forms were supplanted by these institutionalized disciplinary techniques that were designed to alter actions, bodies, and minds. Because there are distinct regimes of truth and discourses associated with each discipline, a Foucauldian analysis must consider the genealogy of the relevant disciplines, the archive of information brought to bear in a given situation, the knowledges the disciplines generate, the connections between different discourses and the ways in which they represent their knowledges.

They [the disciplines] engender . . . apparatuses of knowledge (*savoir*) and a multiplicity of new domains of understanding. They are extraordinarily inventive participants in the order of these knowledge-producing apparatuses. (Foucault 1980b:106)

In Foucault's (1995) scheme of things, subjects are created through these disciplinary techniques or micropractices of power. This is not merely a relationship in which disciplinary authorities practice these techniques on others directly as in the case of disciplinary actions in penal institutions or schools; the goal is that individuals learn to discipline themselves. For example, in their discussion of the regulation of agricultural pollution in England, Ward et al. (1998:1165) note:

The techniques for the environmental governance of agriculture require that state agencies shape not only the context within which actors make decisions . . . but also the ways in which actors make sense of and respond to this context by means of their capacity for self-calculation and self-regulation. . . . In so doing, pollution regulation is reconfiguring farmers and farming from the social role of food producers to that of responsible environmental managers, and through regulation the state is seeking to reorder distant events from a centre by instrumentalising farmers' self-governing properties.

Foucault saw modern governmentality as the construction of techniques of power articulated through linkages between power and knowledge that are "designed to monitor, shape, and control the behavior of individuals situated within a range of social and economic institutions" (Gordon 1991:3-4). His theorization of governmentality provides the framework for analysis of the ways in which the Cabinet's parameters operated as constraints upon participants². To accomplish this, I will indicate the disciplinary discourses and rationalities that were inserted into the Kentucky debate, the distribution of power relations among participants, the physical and discursive borders drawn by participants, and the areas from which participants drew resources. This will allow analysis of the domains of knowledges that inform the practices of participants. In this way, it is possible to identify the ways in which existing knowledges were

²Although a discussion is beyond the scope of this paper, it is important to note that state employees are similarly constrained institutionally.

deployed both to sustain power relations and to create new knowledges, new regimes of truth, and new subjects.

Case study: the Kentucky debate

The structure of hog farming in Kentucky has changed over time. Since 1982, the number of swine produced in Kentucky has declined while simultaneously, eleven counties in the western part of the state experienced a 25 percent increase in the number of hogs produced and 45 percent decrease in the number of farms producing hogs (Commonwealth of Kentucky 1997, 1998a, 1998b, 1998c). The Cabinet identified four counties in western Kentucky – Allen, Butler, Graves and Nelson – as most likely to be affected by industrial hog farming. As of December 1, 1998, of the 120 counties in Kentucky, Allen ranked second, Butler eighth, Graves third, and Nelson fourth in the production of hogs and pigs. Larger trends toward concentration notwithstanding, the four counties have had very different agricultural experiences. While Allen and Nelson Counties experienced a loss of farms from 1992-1997, Graves and Butler saw gains. Additionally, farm sizes in Allen and Nelson Counties are smaller than those in Butler and Graves, and the counties differ in their reliance upon agriculture as occupation. Yet, despite these differences and the decline in hog production overall, preliminary investigation of reports in the four counties' newspapers³ indicates widespread resident opposition to the location of industrial hog farms in all four counties.

Cabinet spokesman Mark York reports there are roughly 250 CAFOs in Kentucky, 90 percent of which are located west of Interstate 65 (DeGrand 2000). According to York, "a CAFO with 2,500 hogs produces 1.25 million gallons of waste a year" (DeGrand 2000:12). Cabinet figures indicate that since 1993, "the Division of

³Each county has its own newspaper: Allen County, *Citizen Times*; Butler, the *Butler County Banner and Green River Republican*; Graves, *Mayfield Messenger*; and Nelson, *Kentucky Standard*. The *Kentucky Standard* is a semi-weekly; the others are weekly publications.

Water responded to 31 complaints of lagoon leaks, failures, or overflows, 69 complaints of off-site swine waste runoff, 45 complaints of direct discharge of swine waste to surface waters, and 10 fish kills attributed to swine waste” (Commonwealth of Kentucky 1998c:16).

In 1997, at the request of residents who were alarmed by the announced intentions of two large-scale industrial hog farm operations to locate in western Kentucky, Governor Paul Patton ordered the Cabinet to develop emergency and permanent administrative regulations for industrial hog farms and to hold public hearings on the proposed regulations. The Cabinet established the parameters within which the debate took place by determining both what constituted ‘legitimate’ knowledge and rational environmental protection, as well as determining the criteria for participation. The hearings were well-attended: 556 people signed in at the Hopkinsville hearing in November 1997; 168 in Bowling Green, January 1998; 133 in Paducah, January 1998; 110 in Frankfort, June 1998; and 181 in Cadiz, September 1998. A total of 1,683 people attended one or more hearings and/or submitted correspondence to the Cabinet about the regulations. Of this total, 13.1 (112 people) percent argued that the regulations should be retained as is, 2.6 percent (23 people) wanted to weaken the regulations, 78.9 percent (705 people) wanted stronger regulations, and 5.5 percent (49 people) argued regulation was not necessary. Seven hundred and eighty-nine people who attended the hearings did not indicate their positions *vis-a-vis* the regulations (Commonwealth of Kentucky 1997, 1998a, 1998b, 1998c).

For the sake of brevity (and at the risk of oversimplification⁴), I will refer to the Farm Bureau group and the activist group. The Farm Bureau group included the Kentucky Farm Bureau, the Kentucky Soybean Association, Cattleman Association, Pork Producers Council, the Jackson Purchase Agricultural Credit Association, and agribusiness groups. The activist group included the Community Farm Alliance, Kentuckians for the Commonwealth,

⁴This strategic grouping runs the risk of erasing differences related to gender, age, religion, race, and ethnicity among members of the groups.

Democracy Resource Center⁵, Kentucky Resources Council, Kentucky Waterways Alliance, Sierra Club, American Cave Conservation Association, and the colorfully named CRAPP (Citizens Revolting Against Pigs and Poultry). Many people who attended hearings and/or wrote to the Cabinet did not refer to group membership. While the Farm Bureau group consistently called for weaker regulation, activist groups called for baseline testing, more stringent monitoring of soil, surface water, groundwater and air, as well as hydrogeologic studies, and attention to site-specific features, especially to the karst⁶ geology that underlies much of western Kentucky.

The debate about regulation is ongoing. Although the Farm Bureau group's attempts to pass bills to weaken the regulation in the 2000 legislative session were unsuccessful, another attempt is ongoing in the 2001 session. Additionally, in June 2000 the Kentucky Farm Bureau, along with eight commodity groups and two farms, filed a lawsuit challenging the regulations and, three months later, the Sierra Club filed a lawsuit charging that the regulations do not constitute sufficient protection. Because both livelihoods and identities are at stake, the debate has been heated.

I began to question my role as academic researcher in the early stages of my research. In the summer of 1998, I drove to Allen County to take part in a CFA-sponsored drive-by tour of industrial farms in that county. As I pulled into the driveway of the home where

⁵The Community Farm Alliance (CFA), Kentuckians for the Commonwealth (KFTC) and Democracy Resource Center (DRC) have broader social agendas than other members of the activist group who tend to focus almost exclusively upon environmental issues or were formed specifically to challenge industrial farming practices. I stress the breadth of their social platforms to indicate that the derogatory NIMBY (Not-In-My-Backyard) label so often applied to activist groups is not relevant to the CFA, KFTC and DRC and to note that there are important differences between participants in the activist group.

⁶Karst landscapes, which are formed by the dissolution of limestone bedrock by groundwater, are distinguished for rapid groundwater flow which would spread contamination across a large area quickly and for their proneness to subsidence which could present problems to the construction of large lagoon systems.

we were meeting, I was struck by the sudden cessation of conversation and tensing of the bodies of the people who were outside waiting for the tour to begin. I quickly realized that their reactions were a response to the University of Kentucky seal on the side of the car I had borrowed for the drive. Although no one mentioned my affiliation with the university, conversation was strained until I mentioned that I had a Master's Degree in environmental studies. This incident precipitated my questioning of whom academics working in publicly funded universities represent, how our research subjects' perceptions of who we represent affect our relationships with them, and how we might negotiate the inherently unequal relationship between researcher and research subjects. Because some of the inequalities seemed to be related to our differing positions within the milieu in which the debate took place, I turned to Foucault to consider the ways in which our subject positions were produced.

Foucault (1980a) proposes five categories to investigate processes of governmentality: 1) systems of differentiation, 2) types of objectives, 3) the ways through which power relations are brought into existence, 4) forms of institutionalization, and 5) degrees of rationalization. I will indicate briefly the relevance of these categories and how they operate as constraints upon both participants and researcher in the Kentucky debate.

A Foucauldian investigation pays close attention to the ways in which difference is produced. Foucault (1980a) points to differences established by systems of law, economics, production, culture, traditions of privilege, and expertise. The results of the changing structure of agriculture (Busch, Bonanno and Lacy 1989; Marsden 1995; McMichael 1994) and growing environmental concerns (Bailey 1989; Browne et al. 1992; Buttel et al. 1990; Buttel 1998; Ward et al. 1998) resulting from changes in farming techniques have exacerbated pre-existing differences between small and large farmers and between those who have adopted industrial practices and those who favor organic agriculture.

Because of its traditionally privileged position in the state, many Farm Bureau members argued against the emergency regulations in terms of the historic importance of revenues produced by farming. The following comment, made by a member of the Central Kentucky Hog Marketing Association at the Hopkinsville public hearing (Commonwealth of Kentucky 1997:121), is typical of this argument:

Based upon sales projections for 1997, 14 member families will sell a combined total of about \$3.4 million in market animals . . . Applying the multiplication factor of four that is used by many economists . . . these 14 families will generate approximately \$13 million moving through the Nelson, Marion, and Washington County areas in 1997. These farm businesses operate without any freedom from local and state taxes that are enjoyed by many of the small factories located in Kentucky.

This argument provided fodder for the activist group that now includes some Farm Bureau members. The following statement, made by an attorney, farmer and Farm Bureau member at the Bowling Green hearing (Commonwealth of Kentucky 1998a:16), highlighted the contradictions in the Farm Bureau's position:

The Farm Bureau states that agriculture today is a big business, requiring significant investment, but also states that a hog producer cannot build at least one anaerobic lagoon, cannot pay \$1,500 for an application fee which is good for five years, cannot wait six months for the application to be reviewed and studied, cannot pay for the publishing of the legal notice of the producer's intent to apply for a permit and cannot even afford to notify adjacent landowners by certified mail of the application. If a hog producer cannot meet these minor costs, then it [sic] cannot meet the tremendous costs of the environmental damages he may produce.

The concentration of industrial hog farms in western Kentucky has also fragmented the farming community along spatial lines. Those living near industrial farms saw an emergency; those living in areas without industrial farms did not (Porter 1997). Additionally, the threat of increasing concentration intensified pre-existing differences about farming practices. Some activists maintain a strict separation between 'traditional' and industrial farming practices. This asserted separation is not based solely upon a nostalgic vision of a Kentucky landscape studded by small family farms (although it is an important

component of the vision of the well-known spokesman for Kentucky's small family farms, Wendell Berry⁷); it is also a political tactic. A CFA member explained that it is crucial to classify CAFOs as industrial rather than agricultural to create the possibility of an anti-trust suit against the corporations that dominate industrial hog farming.

My status as an academic differentiates me from participants in the debate and from employees of the Cabinet. Both groups recognize that academics have the power to develop categories of analysis (Natter and Jones 1997) and to represent events and groups in ways that may differ from their own self-representations. They are equally aware that academic representations are privileged over those of non-academics. And, as previously mentioned, the activist group was suspicious of my ties to the university that they see working with the Farm Bureau group.

The university's ties to agribusiness became a public issue in 1997 when the *Louisville Courier-Journal* reported that a University of Kentucky swine expert had provided free technical and public relations advice to pork producers and lobbied the governor's office against the emergency regulations (Malone 1998). The journalist wrote, "The university's interest may be linked to a nearly \$2 million swine research center" for which it had applied for an \$870,000 matching grant from the U. S. Department of Agriculture (USDA). An associated story reported that the university had received \$43,450 from the national Pork Producers Council and \$114,000 from other agribusinesses during the same year. University officials quoted in the story maintained that the swine expert's activities were legal in light of the university's extension mission.

Activists' suspicions were further intensified when, at the Cadiz hearing, a self-identified Western Kentucky University faculty member prefaced his critique of activists' representations of industrial hog farmers as polluters and defense of CAFOs by saying, "We're talking about *real* farming here⁸." His category of 'real' farming, which is

⁷Berry's vision of a less technologically-intensive form of farming can be found in books cited in the reference section (Berry 1975, 1981, 1995).

⁸Italics added.

shared by the Farm Bureau group, has material effects. Because other forms of farming, such as the sustainable practices advocated by the CFA, are not considered 'real' farming, they are often relegated to the margins or overlooked when research agendas are set (Busch et al. 1989). So, while I wish to investigate the processes through which some groups are marginalized in order to identify strategies to enable them to participate more fully in the formulation of decisions that affect them, my association with the university is an occasional source of tension. Part of this tension results from the differences in our objectives.

Foucault's focus upon the ways in which power relations produce knowledges with their own truths requires attention to the objectives of the truth-producing disciplines because the intended uses of knowledge will have an effect upon the types of knowledge produced. Foucault (1980a) points to the importance of such objectives as the maintenance of privileges, accumulation of profits, development of statutory authority, and exercise of a function or trade. To maintain the Farm Bureau's privilege, members repeatedly insisted that the Cabinet should have worked with agricultural groups only to develop the regulations. This strategy is designed to assure that truths produced by other disciplines – e.g., environmental scientists, medical personnel, geologists concerned about the karst system, and cultural geographers and rural sociologists concerned about social effects – are excluded from the debate. On the other hand, activists sought to extend the range of knowledges, arguing for the inclusion of reports of experiences of other states with industrial hog farming, geological reports, and academic research on the impacts of industrial farming to buttress their case for stronger regulation. Differences in objectives within government agencies surfaced in the state agriculture commissioner's call for less stringent regulation and the health cabinet assistant director's request for stronger regulation.

As an academic my objectives differ from that of other participants in the debate. Where the Farm Bureau and activist groups worked to influence the direction of regulation and the Cabinet attempted to mediate the often conflicting demands of environmental/public health protection and processes of accumulation which provide tax revenues, my goal is to produce a dissertation. These different objectives directly affect our audiences and the genres of texts we produce. Unlike participants in the debate whose audience

consists of the general public and Cabinet personnel, my audience consists of academics who, unlike other participants, are concerned with theory and methods and published in journals that are often not accessible to activists. Equally important, academic texts are legitimized as the production of knowledge.

Foucault (1980a) is concerned with knowledge production, the discourses that disseminate knowledges, and the practices that result from the application of those knowledges. He argues that analysis of the effects of discourses must entail consideration of economic inequalities, the archive used, systems of surveillance, and rules of compliance. He also focuses attention upon the technologies implicated in creating and maintaining economic inequalities, producing the archive, and monitoring compliance.

The economic inequalities that existed prior to the development of the regulations are reflected in differences in farm sizes and the varying abilities of participants to mobilize resources to bring to bear in the debate. There are, however, other such differences. For example, although the land grant system can seek funding from agribusiness, other governmental agencies are dependent solely upon funds provided by the state's General Assembly. Inadequate funding can result in constraints – inadequate staffing, poorly trained personnel – that adversely affect the ability of governmental agencies to perform their missions. Many activists cited this as the basis for requests that application fees be increased to cover the Cabinet's costs of administration.

Both the Farm Bureau and activist groups sought to determine the archive that the Cabinet used to develop the regulations. Although academic literature about divergent notions of risk (Brown 1991; Kroll-Smith and Couch 1991; Murphy 1994) has noted the technocratic tendency to privilege 'expert' over 'lay' information, the expert/lay divide has not been clear in this debate. Neither group could grasp what the Cabinet considered expert or relevant data.

During the hearings, the Cabinet made few additions to the minimal citations of work referenced in the regulations. This Cabinet response to a request to identify its archive is typical:

The Cabinet consulted with public health officials and performed computer modeling and risk analyses to evaluate the impact of swine feeding operations

on public health. The Cabinet evaluated extensive data and consulted with authorities within the Commonwealth of Kentucky and other pork-producing states concerning the environmental and economic impacts of swine feeding operations. The results of these analyses were used in the development of these regulations. (Commonwealth of Kentucky 1998b:24)

Some expert information, however, was apparently disregarded. This was the case with geologic reports about Western Kentucky's karst system that called the Cabinet's reliance upon monitoring wells into question and indicated that Cabinet personnel had underestimated potential for subsidence.

The archive also includes information about hog operations' plans to locate or expand in a community. Although the regulations mandate that such information be provided to the Cabinet, members of the Farm Bureau group hotly opposed the regulatory requirement that notices of intent to apply for permits be made public because publicity would open:

a farming operation to uninformed, emotional responses from citizens or groups anywhere in the state or out of state that will not be impacted and may have other agendas for opposing the operation. (Commonwealth of Kentucky 1997:54)

Although farmers have reason to fear that residents with romanticized notions of farming who move from non-farming areas into new developments near farms may try to curtail farming operations, the Farm Bureau group has extended its criticism of those who do not understand farming practices to include all who support regulation. The group represented activists as irrational outsiders, intentionally overlooking those farmers who favored regulation. By such a strategy, the Farm Bureau group represented itself and agricultural economists and scientists as the only rational sources of knowledge in the debate.

Academics are intimately engaged with knowledge production and have developed disciplinary discourses and practices in which

production and dissemination of knowledges takes place. All of us must work within those bounds. In Kentucky, however, there are additional challenges to producing knowledge. The state's policy of requiring researchers to file a Freedom of Information Act (FOIA) request to obtain information that other government agencies make easily accessible⁹ tends both to constrain both academic and activist research and set up an adversary relationship between researcher and agency. Because the compilation of a FOIA request is time consuming and requires extensive background and procedural knowledge, it can act as a barrier to those seeking information. Additionally, many activists who cannot take time from farms, other jobs, or families are hampered because, when a request is granted, the files must be viewed in the Cabinet office during office hours. The FOIA process is also an effective way to withhold information because, no matter how relevant a document may be, if it is not specifically requested in the proper format, the agency is under no obligation to advise the researcher of its existence.

Additionally, even a well-designed request (mine had been reviewed by a university attorney prior to submission) is no guarantee that the material requested will be forthcoming. The Cabinet's files contained scarce correspondence from other agencies, and the risk analysis and computer modeling referenced in the Cabinet statement quoted above and specified in my request was not in the files. Another request will be necessary.

Foucault (1980a) directs attention to operative predispositions, legal structures, existing hierarchies, and degrees of autonomy as important factors in an analysis of the ways in which institutionalization affects the types of knowledges produced. The Cabinet's failure to clearly specify the supporting data used to develop the regulations led to participants' suspicions that the Cabinet was predisposed to a specific form of regulation and thus would disregard information that challenged those predispositions. Additionally, although their objectives differed, both groups saw the Cabinet's

⁹For example, the Massachusetts Department of Environmental Protection sets aside one day each week to open all agency files to the public and the federal Environmental Protection Agency files are available for viewing on request. Neither agency requires a Freedom of Information Act (FOIA) request.

legal authority as working against their interests.

Different objectives resulting from jurisdictional divisions also became an issue. Cabinet employees cited lack of jurisdiction as the reason for not complying with activists' requests for proof of financial stability before permit issuances and for imposition of "strict and severe liability" for land application of waste (Commonwealth of Kentucky 1997:12). Both requests fell under the General Assembly's jurisdiction. In reply to requests for odor standards, Cabinet spokesmen said they incorporated an odor standard developed by the Division of Air Quality, a separate entity within the Cabinet. Changes would have to be made by that division. The activist group's concerns about the socioeconomic effects of industrial farming – changing social structures and decreased property values – are also outside of the scope of the Cabinet's authority¹⁰. The fragmented organization of state government requires a multi-pronged campaign. It is noteworthy that the Farm Bureau group, which has the financial wherewithal to hire professional advice and can call upon the expertise of land grant professionals and state and federal agriculture departments, would find it easier to conduct such a campaign than the activist group, which relies upon volunteer labor and revenues from membership dues.

Despite its resources, the Farm Bureau group protested a perceived erosion of its hegemony. Many activists, as indicated by this comment in a letter signed by 125 people, argued the opposite:

The Kentucky Farm Bureau Federation seems to be influencing the Division of Water. The Kentucky Farm Bureau is not the voice of the people. (Commonwealth of Kentucky 1998a:15)

Members of the activist group attributed the Farm Bureau group's hegemony to its linkages to the institutionalized and rationalized system of knowledge production from which activists were excluded.

¹⁰I do not mean to imply that the Cabinet is narrowing its jurisdictional areas unnecessarily. Its jurisdiction was defined by the General Assembly when the Cabinet was created. I am merely pointing to the difficulties created by fragmented jurisdictions.

The forms of institutionalization in academia also produce a number of constraints, including those that result from the disciplinary boundaries that fragment academic work. The incorporation of environmental studies across disciplines in U.S. universities has resulted in the production of knowledges that both critiques the human focus of established disciplines and calls for a more multidisciplinary approach. As Buttel (1985) has noted, academics who critically interrogate accepted academic practices tend to produce research that may create antagonistic relations with less critical segments of academia. For example, environmental concerns have challenged narrow forms of economic rationality that view environmental impacts as externalities only (Tietenberg 1992).

Foucault sees a multiplicity of co-existing rationalities operating on both the group and individual level. He directs attention to the effectiveness of the instruments through which power is exercised and to the certainty of the results. In the Kentucky debate, economic, bureaucratic, technocratic, environmental and social rationalities have been important. In its efforts to weaken both surveillance and rules of compliance, as indicated in this statement by the president of the Farm Bureau (Commonwealth of Kentucky 1998c: 15), the Farm Bureau group is struggling to maintain the privileging of economic over other forms of rationality.

Agricultural producers of Kentucky are very interested in working with the Cabinet to protect the environment, while allowing for the *responsible* and *proper* use of Kentucky's soil, water, and other natural resources . . . However, the Farm Bureau members are disappointed that the Cabinet remains inflexible on developing *sensible* regulations for swine operations.

Animal agriculture is changing rapidly. *Economic considerations* and *changing markets* make it necessary for swine operations to produce their animals in larger units. [italics added]

My italics draw attention to the speaker's assertion that agricultural producers should be the arbiter of what constitutes 'sensible regulations.' By implication, perspectives that are not based upon similar

expertise and responsibility are not worthy of inclusion. Importantly, the speaker asserts that the sole criterion of 'sensible' is economic and locates agency in a reified market devoid of all social context.

Members of the activist group also were critical of the Cabinet's idea of sensible regulations. Many activists pointed to the history of changes in the regulations as proof of their suspicions of Farm Bureau influence:

Apparently the only people the Cabinet considers to be creditable are spokespeople like the Farm Bureau Insurance Company. The changes [reducing the time to process an application, reducing the liner thickness from 18 to 12 inches, eliminating fees] were not what the citizens in Allen County and other environmental groups wanted. (Commonwealth of Kentucky 1998a:30)

Activist group members asserted social priorities and an economic rationality more inclusive than that of the Farm Bureau group:

What assurances can the Cabinet offer that a hog waste lagoon won't fail again as it did in 1990, when approximately four million gallons of manure dumped into the underground river system, ending up ultimately in the Green River upstream from Mammoth National Park? What are the social and economic consequences if the next failure results in water entering Echo River or Mammoth Cave National Park directly? (Commonwealth of Kentucky 1998a:79)

In addition to arguing for stronger regulation, the activist group fought to retain a provision that established joint liability for farmers and corporate contracts that, they argued, would benefit family farmers who could not afford to pay cleanup costs alone and keep potentially polluting corporations out of Kentucky. The Farm Bureau group called this provision "the most devastating" (Commonwealth of Kentucky 1998c:31) in the regulations, arguing it would have an adverse affect on market structure and small farmers would lose the option of contracting. Thus, although both groups used economic discourses, they deployed different forms of economic rationality: the

activist group's rationality included potential effects that were externalities in the Farm Bureau group's.

Conclusion

A Foucauldian analysis highlights the power relations embedded within existing social arrangements within which regimes of truth are developed and deployed. Because Foucault understands the subject as an effect of power relations, this type of analysis can begin to investigate the ways in which networks of power relations on all levels constitute subjects. In the case of Kentucky, the regulations directly affect subject positions. Although, at this writing, the Farm Bureau group's campaign to weaken the regulations has not been successful, it was able to fix the definition of farming as industrial operations only. Although the activist group did not attain the stringency it had hoped for, it was successful in asserting a broader definition of economic rationality that accounts to some extent for potential environmental impacts of industrial farming. The group also succeeded in raising public awareness (beyond the farming community) of the linkages between power and knowledge production by highlighting the role of the Farm Bureau, land grant system, and state agencies in the production and legitimation of particular knowledges. Thus, inequalities between the two groups notwithstanding, the activist group contributed to the development of a new regime of truth that will have real effects on subjects.

Those who choose to continue or adopt industrial farming practices will find their identities altered by the inclusion of a newly defined form of environmental management. If challenges to the regulations fail, the buffer zone and technology provisions may preclude some subjects from 'real' farming. Additionally, if the Farm Bureau group's current challenges are successful or, as the activist group charges, buffer zones and technologies in the regulations are insufficient, residents whose quality of life depends upon regulatory protection may find their subject positions dramatically altered as a result of their inability to influence hegemonic power relations. For all of the participants, the outcome of this debate is more than an academic concern.

A Foucauldian analysis, however, indicates that through our subject positions, constructed within the institutionalized and

rationalized practices of knowledge production in academic structures, academics are intimately implicated in such outcomes. It is the knowledge produced by the land grant universities and transferred by Extension personnel that constitutes the 'common sense' of the Farm Bureau group's subject position. That history of knowledge production and transfer is now being challenged both by competing knowledges produced within different milieus in the university structure and by residents who fear the effects of that 'common sense.' Through regulation, the Cabinet is attempting to mediate the often opposing rationalities produced by competing regimes of truth.

Just as industrial farming has constructed a new form of agricultural rationality, a new regime of truth, and a new subject, the regulations construct a competing form of environmental rationality and truth, and governed subjects. The conflict between these rationalities plays out in differences in the objectives of state agencies and the knowledges they produce and validate. Differences in objectives among academics working within disciplinary and institutional boundaries will likely result in the continued production of competing regimes of truth with different implications for the production of subjects. Because a Foucauldian analysis points to the situatedness and partiality of *all* knowledges, it provides a framework within which delegitimated knowledges, such as those of activists, may be included, and it is this inclusion that may allow for a collaborative production of knowledge by academics and activists that, in the process, alters the subject positions of both while creating a new nexus of micro and macro power relationships.

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