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A tale of two chickens: exploring the social and economic implications of our food choices

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A Tale of Two Chickens:
Exploring the Social and Economic Implications
of Our Food Choices

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I. Introduction

A century ago chicken was considered a luxury item. In fact, people would eat steak or lobster when they could not afford chicken and ladies' magazines advised on how to substitute veal for chicken in recipes (Gordon, 1996). In 1928, President Hoover promised "a chicken in every pot", but it was not until the 1960's that the poultry industry really took off. Today, there are 15 chickens in every pot; the average American consumes 71.8 pounds of broiler meat annually (Oberholtzer, 1997). Where does all of this chicken come from? Who grows the chicken we eat and how do they grow it? How much do we really know about the food, in this case the chicken, that we eat?

My interest in this topic began through my involvement in the UNI Local Food Project, which is organized by Dr. Kamyar Enshayan. The goal of the project is to assist the UNI Dining Services, Allen Hospital, and Rudy's Tacos (a Waterloo restaurant) in purchasing a greater proportion of their food items from Iowa sources.

What is the importance of buying food produced locally? Reasons offered in support of purchasing locally grown food include increased freshness, quality, and nutritional value; investment in the local economy; encouragement of agricultural diversity; and reduced reliance on fossil fuels required for long-distance transportation (Lezberg, 1996; Valen, 1992).

Others advocate reducing the distance between producer and consumer in order to increase the visibility of how our food is produced (Rauber, 1994; Lezberg, 1996; Crouch, 1993; Oberholtzer, 1997). In other words, buying food closer to home increases the awareness and knowledge the consumer has of the product.

According to Lezberg and Kloppenberg (1996):

"For the consumer in the North, the social and environmental repercussions of production are hidden behind product labels, advertising, and brand names. The labels on packaged products contain certain information about ingredients and price, but information about how the food was produced, who produced it, and about who benefited and who stood to lose from its production is obscured" (p. 12).

Only when consumers are aware of what goes into the production of their food, can they make informed, educated, responsible decisions. Ultimately, it is the consumer who supports methods of production by voting with their dollars. But

most consumers know little about the path taken by their food before it reaches the supermarket or restaurant.

Crouch (1993) offers this perspective on bananas:

"All of the processes of growth and transport that got them to me are invisible, hidden by time and distance, and I am thus shielded from both positive and negative aspects of banana production by being alienated from the whole. This allows me to unknowingly participate in practices that I abhor, such as poisoning of the land and air with pesticides and diesel exhaust, or support of oppressive political and economic regimes. Out of sight, out of mind" (p.5).

Because so much of food production remains hidden, one way to explore the invisible aspects is to use commodity chain analysis (Oberholtzer, 1997; Friedland, 1984; Gereffi and Koreniewicz, 1994). In other words, we can gain information about our food by tracing its path.

II. Objectives

I set out to explore the paths of the two chickens, Chicken I and Chicken II. The chickens I selected to track were both from Rudy's Tacos, the Waterloo restaurant involved in the UNI Local Food Project. Recently, Rudy's Tacos changed chicken suppliers, so I traced the path of the chicken previously served at Rudy's Tacos and the path of the chicken currently served there.

Tracing the chickens involved three tasks:

- (1) Interviews with all parties involved in the production of Chicken I,
- (2) interviews with all parties involved in the production of Chicken II,
- (3) and interviews with Barry Eastman, the owner of Rudy's Tacos.

III. Findings

To trace Chicken I and Chicken II, I began at Rudy's Tacos and worked backwards to find the origin of the chickens. The path of Chicken I started at Rudy's Tacos in Waterloo, Iowa and led to Hatton, Alabama. The following is a description of the path traveled and the participants involved.

A. Path of Chicken I:

Rudy's Tacos (Waterloo, Iowa)

Rudy's Tacos used approximately 75 whole chickens per week. The chickens were delivered weekly by semi-truck along with the rest of the goods from H&H Distributing.

H&H Distributing (West Union, Iowa)

H&H buys direct from manufacturers and distributes to institutional buyers such as restaurants, hospitals, schools, and universities. Besides chicken, there are over 7,000 items in the H&H warehouse. Shipments are delivered one day following receipt of the order. H&H is a private, family owned corporation. H&H buys its chickens from Professional Food Systems.

Professional Food Systems (Oskaloosa, Iowa)

PFS, a division of the ConAgra Broiler Company, is a wholesale and resale distributor of fresh and frozen poultry. PFS operates as a buying group for food service distributors, like H&H. Poultry orders from three or four distributors are pooled and PFS retrieves the product from Alabama or Georgia. PFS gets its chickens from ConAgra Slaughterhouses, like the one in Athens, Alabama.

ConAgra Slaughterhouse (Athens, Alabama)

This ConAgra slaughterhouse processes 180,000 chickens per day. It receives batches of chickens from approximately 158 contract chicken growers, like the one I spoke to from Hatton, Alabama.

Contract Grower (Hatton, Alabama)

Contract growers for ConAgra raise the poultry that is to be processed by the ConAgra slaughterhouses. The contract grower I spoke with owns seven chicken houses. He raises six batches of chickens per year with approximately 131,500 chickens per batch. ConAgra provides the chicks, feed, medicine, and transportation. The contract grower receives between approximately 3.9 and 4.5 cents per pound of chicken raised.

ConAgra Feed Mill (Falkville, Alabama)

Feed from the ConAgra feed mill is delivered to the contract growers. Ingredients of the feed are: corn, soybean, minerals, vitamins, coccistat (an antibiotic to control coccitiosis, a intestinal parasite), and zinc bacitracin. The veterinarian I spoke with said zinc bacitracin is used in hogs as a growth promoter, however, he was unsure of its use in chickens.

ConAgra Hatchery (Moulton, Alabama)

This facility hatches 940,000 chicks per week and employs 30 people. The chicks are sent to the growers when they are one day old. The hatchery receives the eggs from a ConAgra layer farm.

ConAgra Layer Farm

The layer farm provides the eggs for the hatchery. ConAgra contracts with farmers to provide the layer farm with laying hens.

Figure 1 shows the path for Chicken I, the ConAgra chicken. The arrows denote the direction of the product while the box denotes ConAgra ownership. The total distance traveled by the chicken from Hatton, Alabama to Rudy's Tacos in Waterloo, Iowa is approximately 1,000 miles.

Path of ConAgra Chicken

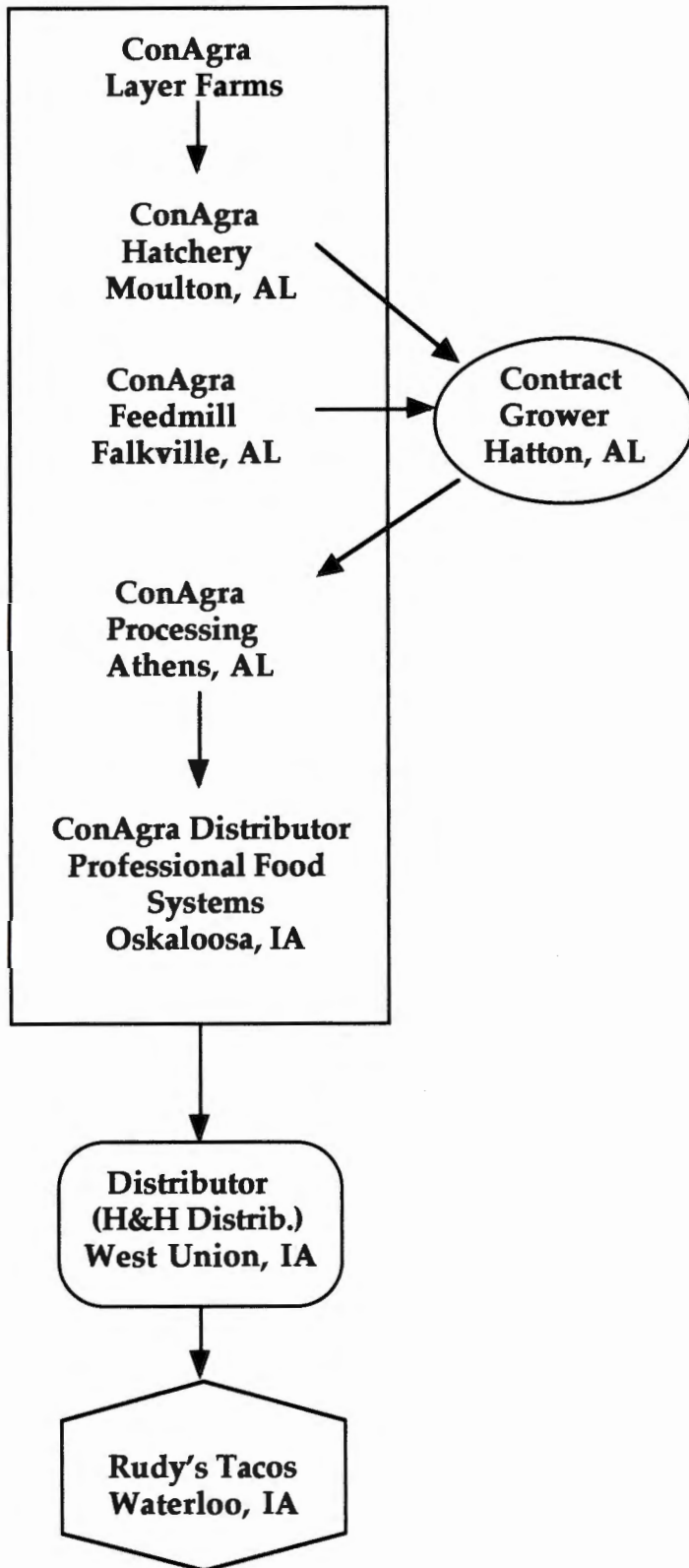


Figure 1

B. Path of Chicken II:

Rudy's Tacos

Rudy's Tacos now purchases around 100 chickens per week. The chicken is shipped from Minneapolis, Minnesota.

Cold Storage and Shipping (Minneapolis, Minnesota)

Chicken II is kept in cold storage in Minneapolis, Minnesota. It is shipped directly to customers via UPS or refrigerated semi-truck. The chicken comes to Minneapolis directly from the processing plant, Wapsie Produce in Decorah, Iowa.

Wapsie Produce (Decorah, Iowa)

Wapsie Produce is a locally owned, USDA approved, independent processor of poultry. The facility processes between 6,000 and 7,000 chickens per day and employs 100 people. Chicken II, which comes from the Welsh Family Organic Farm, is processed at Wapsie Produce.

Welsh Family Organic Farm (Lansing, Iowa)

The Welshes raise three batches of chicken each year and then have them processed at Wapsie Produce. The chickens they raise are purchased as one-day old chicks from Hoover Hatchery.

The Welsh family has been farming since 1955. They stopped using chemicals in 1979 and the farm has been certified organic since 1988. They raise beef, pork, turkey, and chicken and sell them under their own label.

The Welshes grow and mix their own feed, which consists of corn, soybean, wheat, barley, vitamins, minerals, and probiotics (naturally occurring bacteria found in the gastrointestinal tract of healthy chickens). No antibiotics or other drugs are given to the chickens. The feed is grown utilizing crop rotation, natural fertilizer (manure), and no chemical pesticides. The chickens have access to approximately 28,500 square feet of land outside of the chicken house.

Customers include an Atlanta, Georgia organic baby food company (Earth's Best), natural food distributors (such as Blooming Prairie), individuals (particularly chemically sensitive persons), natural food stores, and several restaurants.

Hoover Hatchery (Rudd, Iowa)

The Welshes purchase their chicks from Hoover Hatchery, a locally owned hatchery. Hoover hatches approximately 150,000 chicks each week and employs 25 people. All of the broiler eggs come from Arkansas.

Figure 2 illustrates the path of Chicken II, the local chicken. The different shapes in figure 2 denote separate ownership. The total distance traveled is approximately 500 miles.

Path of Local Chicken

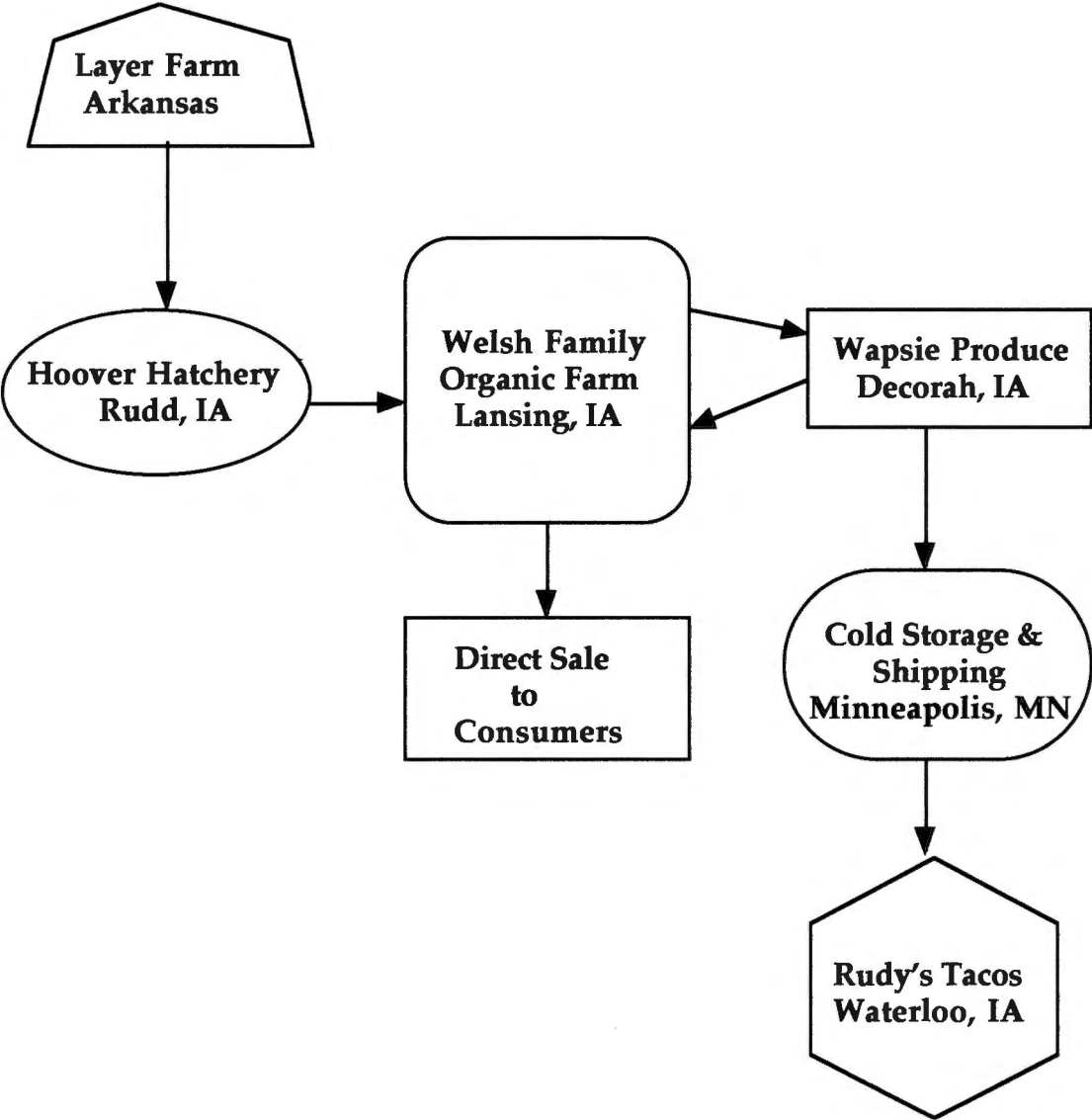


Figure 2

C. Interviews with Barry Eastman, Owner of Rudy's Tacos Restaurant

Buying regionally produced items for Rudy's Tacos is not new to Barry Eastman. He has been purchasing beer from Solon, Iowa, tortillas from a small producer in Illinois, and cheese from Shullsburg, Wisconsin. It was not until this summer, however, that Barry began exploring purchasing other items from local sources. He ordered several chickens (Chicken II) from a farmer in Lansing, Iowa to compare them to the chicken he had been buying from a grocery distributor (Chicken I). After one taste, Barry switched to the locally grown chicken.

Not only did Barry notice a dramatic difference in taste between the two chickens, but he also was impressed by the firmer texture of the local chicken. According to Barry, the meat from the locally grown chicken was also easier to remove from the bone because it contained less fat, water, and waste. Barry estimates the local chicken cost about twice as much as the ConAgra chicken, but the price difference is made up in the greater yield per bird and the labor saved in removing the meat from the bone.

Customers at Rudy's Tacos have offered nothing but positive responses to the new chicken. In fact, Barry sells more chicken dishes than ever before. He advertises the new chicken by a small sign on each table at his restaurant. The use of the new chicken has also resulted in publicity for the restaurant, as Barry has been featured in the Waterloo Courier and the AgriNews.

Following the success of the new chicken at Rudy's Tacos, Barry sought local suppliers of tomatoes and onions. He was able to negotiate with two Waterloo farmers, Dale Hart, who could meet Barry's weekly demand of 150-200 pounds of tomatoes, and Greg Hoffman, who could supply 50-75 pounds of onions every week.

In addition to the quality and freshness of the local products, Barry is excited about the relationships he has been developing with the farmers. He has been pleasantly surprised with the service and flexibility the local growers have provided. For example, when Barry ran out of tomatoes he called Dale. Dale went out and picked 100 pounds of tomatoes and delivered them to the restaurant within an hour and a half. On another occasion, Bill Welsh, Barry's local chicken supplier, invited Barry to go fishing with him.

IV. Discussion

The two paths may not seem remarkably different upon first inspection, but there are important differences between the two commodity chains. In fact, when comparing the ConAgra chicken to the local chicken, I realized I was really comparing and investigating two vastly different food systems; the conventional system of industrialized poultry and the small independent poultry producer. For the discussion of these two food systems I have used several categories: economic implications and rural development issues; ownership, control, and contract growing; food safety; labor issues; environmental concerns; and animal welfare issues.

Economic implications and rural development issues

Barry spends approximately \$1,500 per month for the Welsh chickens. And because of the multiplier effect, "newly generated dollars in the agricultural sector would circulate in the community, changing hands from one entrepreneurial family to another three or four times before leaving the rural communities" (Heffernan, 1997, p. 2). Ultimately, Barry's purchase of local chickens enhances the economy of the region by between \$4,500 and \$6,000 dollars per month. (And this is only one item from one restaurant!) The entrepreneurial activity of the Welshes also strengthens the economy of the northeast Iowa. For the three batches of chickens the Welshes raise per year, they spend approximately \$150,000 to purchase chicks from Hoover Hatchery and to have them processed at Wapsie Produce. If we apply the multiplier effect here, we can estimate a \$450,000 to \$600,000 annual regional economic impact for just two of the Welshes many expenses.

Barry had previously spent approximately \$1,000 dollars per month on Chicken I, the ConAgra chicken. Because so much of this particular commodity chain is not in Iowa, but Alabama, very little of the money spent by Barry actually stayed in Iowa.

ConAgra is the second largest food firm in the U.S. and the fourth largest in the world with operations in 23 countries. ConAgra is also the largest agricultural chemical distributor in North America, the largest turkey producer and sheep slaughterer, the largest flour miller and the fourth largest broiler (chicken)

producer. It markets poultry under the names Country Pride, Banquet, and Beatrice Food. Other ConAgra owned labels include: Swift, Butterball Turkeys, Hunts, Peter Pan, and Orville Redenbacher (Heffernan, 1997)

From fertilizer to feed to chicken to frozen dinners, ConAgra is totally integrated. (See figure 1. Box denotes ConAgra ownership and control.) Heffernan (1997) points out that this type of concentration, typical of the poultry industry, hurts rural communities economically. Profits made by a large corporation are usually removed from the rural community immediately. On the other hand, a family farmer spends much of his profit in the local community, which is recycled throughout the community three to four times.

Criticism of large scale non-local corporations is not just limited to the removal of profits from rural communities. Other charges include those of civic irresponsibility. Schwab (1989) criticizes ConAgra for using its economic and political clout to pressure the economically vulnerable city of Omaha. He asserts, ConAgra threatened to pull its headquarters from downtown Omaha if it was not able to expand into Jobbers Canyon, a historic district. Faced with the prospect of losing ConAgra, the city folded, resulting in "the largest demolition of a National Register historic district"(p. 36).

ConAgra has also been heavily fined for illegal business practices. In fact, ConAgra was fined \$8.3 million dollars in March of 1997 for "systematically cheating" farmers by misweighing, misgrading, and adulterating grain(Agri News, 1997). Other companies like Tyson and Cargill have also been sued for tipping the scales in their favor(Clouse, 1995).

For consumers, knowing where our food comes from and who produces it enables us to choose between those producers who enrich and strengthen our communities and those who undermine them. When large food companies own so much of the processing sector, competition, and consequently consumer choice is reduced. Heffernan (1997) suggests that the disproportionate power wielded by these large food firms gives them immense political power. Ultimately, it is not the farmer whose voice speaks for agriculture in America, but the multi-national food corporation that dictates the future of agriculture. In the poultry industry, the four largest producers, Tyson, ConAgra, Gold Kist, and Perdue Farms, control 45% of production (Heffernan, 1997).

Ownership, Control, and Contract Growing

ConAgra and other poultry giants, like Tyson, Perdue, and Gold Kist, contract with growers to raise broilers. In our case, ConAgra hires growers to care for the chickens as they mature and then ConAgra processes them in their own facilities. Throughout the entire process, ConAgra maintains ownership of the chickens. The grower is paid a fixed rate per pound of chicken produced. ConAgra provides the chicks, feed, medicine, and the transportation of the broilers. The grower incurs the cost of the chicken houses, labor and equipment, and all other expenses, such as waste disposal, water, electricity, and carcass disposal. Behar and Kramer (1992) say, "The traditional agreement that binds the growers to the processors makes the farmers virtual serfs on their own land" (p.54).

Essentially, by contracting out the raising of the chickens, ConAgra outsources the risk involved in chicken production. The enormous debt incurred by growers and the fact that contracts are negotiated batch to batch, or approximately five times a year, places growers in an extremely vulnerable economic position (Yeoman, 1989).

Clouse (1995) characterizes the relationship between the grower and the firm to be one in which investment and risk is not shared equally. The firm assumes minor risks, such as market fluctuations, but the grower assumes the risks of:

- "1) home (as collateral)
- 2) personal income
- 3) sick birds
- 4) poor feed
- 5) wrong medication
- 6) inaccurate weights
- 7) long layouts
- 8) contract termination
- 9) equipment changes required
- 10) poor company management
- 11) long debt, short contract
- 12) loss of management control at farm level
- 13) natural disasters
- 14) no raises for years and years
- 15) cost of living increases
- 16) increases in variable interest rates"(p. 17)

Heffernan (1984) notes that chicken houses, which cost approximately \$100,000 each, are very specialized and virtually useless for anything other than chicken production. Therefore, a grower has no viable alternative and is essentially locked into raising chickens.

Studies of the poultry industry suggest the average annual net income from one chicken house (with 20,000-25,000 chicken capacity) is approximately \$4,000, but with the additional expenses incurred by the grower, they are lucky to break even (Clouse, 1995). For prospective contract growers in Athens, Alabama, ConAgra estimates a net profit of only \$3,114 per chicken house (Broiler Grower Prospects, 1997).

The contract grower I spoke with is one of the 158 contract growers that provides the chickens for one ConAgra slaughterhouse. The relationship he has with ConAgra is consistent with previously mentioned aspects of contract growing. He receives chicks, feed, and medicine from ConAgra. He has mortgaged seven chicken houses and is responsible for additional equipment, water, electricity, gas, insurance, and shavings for bedding. In other words, he has little control, he has made a large financial investment, and he assumes a great deal of risk. For all of this, he receives between 3.9 and 4.5 cents per pound of chicken raised.

There is a surprising contrast in terms of investment, control, and risk when we discuss The Welsh Family Organic Farm. In essence, the Welshes control every aspect of their operation; they select the breed of chicken desired, mix their own feed, retain ownership of the chickens throughout the processing, and market the final product under their own label. For the risks the Welshes do assume, they are financially rewarded by receiving between 25 and 50 cents per pound for their wholesale chicken. The Welshes estimate a net profit of \$15,000 to \$18,000 per year for their chicken production.

Lastly, it is interesting to compare the relationship each grower has with the other members of the commodity chain, or production process. The ConAgra contract grower is relatively isolated. Other than deliveries of chicks, feed, and medicine, he has little contact with other participants in the chain. He is certainly very removed from the consumer. On the other hand, the Welshes have direct contact with individuals at Hoover Hatchery and Wapsie Produce. They market their own products, and therefore have personal contact with their customers.

The scope of my data collection was limited by factors of distance and time. I was unable to thoroughly investigate every participant in both commodity chains, especially the ConAgra facilities in Alabama (which only further illustrates how distance between producer and consumer hinders visibility of food production). Consequently, the following categories of discussion are ones on which I have not collected first hand data, but are nevertheless extremely important and deserve attention.

Food Safety (Processing)

After the chickens reach about four pounds, they are ready for processing. Processing, a feature of the commodity chain of little interest to most, is hidden from consumers. But when bad chicken kills over 1,000 people every year and sickens more than 6.5 million (possibly as many as 80 million) people annually, there is cause for concern (Behar and Kramer, 1994).

According to Behar and Kramer (1994), over 60% of U.S. poultry is contaminated by micro-organisms, such as salmonella and campylobacter. To blame are the fast paced processing lines and the automation of evisceration in large scale slaughterhouses. In 1978, a regulatory change to speed up processing occurred. This change allows for the "washing" of birds contaminated with fecal matter rather than the trimming or discarding previously required. Washing the bird "merely removes the visible fecal matter while forcing harmful bacteria into the chicken's skin and body cavity"(Behar and Kramer, 1994, p. 43).

In terms of food safety, definite conclusions cannot be drawn regarding the two slaughterhouses in the commodity chains I researched. The data I collected on the slaughterhouses relates only to the size and capacity of each plant. The ConAgra slaughterhouse in Athens, Alabama slaughters 180,000 chickens per day. At Wapsie Produce, between 6,000 and 7,000 chickens are processed daily, mostly by hand. It is important to remember that proper handling and cooking of chicken kills any harmful bacteria. However, as evidenced by the above statistics, mishandling of chicken does occur, often with drastic consequences.

Another aspect of food safety is the use of antibiotics in poultry production. Because chicken houses are so crowded, chickens are routinely dosed with

antibiotics as part of their feed to lessen the spread of disease. With the number of resistant strains of bacteria growing, antibiotics capable of combating dangerous diseases, like typhoid fever and dysentery, are becoming more scarce and more treasured. It is feared that by feeding poultry antibiotics, we may be giving bacteria the opportunity to develop resistance, therefore making the drugs useless to humans (Hansen, 1995). It is estimated that nearly half of all of the antibiotics made in the United States are used in farm animals (Wright, 1990).

As noted in the Path of Chicken I and the Path of Chicken II, the feed provided to the contract grower does contain antibiotics. The feed grown and mixed by the Welshes does not include antibiotics.

Labor Issues

Low pay and hazardous working conditions are the two major labor issues in the poultry processing industry. The average pay in chicken-plants (slaughterhouses) is \$7 an hour, versus \$10 an hour for the food processing industry as a whole. The issue of low pay is especially noteworthy when coupled with the fact that chicken processing is one of the nation's most dangerous jobs-- 27% of the workers suffer on-the-job illness or injury annually (Behar, 1992). The fast pace of assembly lines, which move 70-90 chickens per minute, are blamed for the disabling repetitive motion injuries that plague workers (Goldoftas, 1989).

I did not obtain information on wages, working conditions, or job related injuries for the two slaughterhouses in our commodity chains. However, for a concerned consumer from Waterloo, Iowa, it would be much easier to go to Decorah and tour the facility there than it would be to investigate conditions in Athens, Alabama.

Environmental Concerns

Studies estimate for the 5.7 billion broilers sold annually, 14 billion pounds of manure and 28 billion gallons of waste water are produced- which, if improperly disposed of, pollutes fields and streams (Giardina and Bates, 1991). The sheer amount of waste is the problem, especially for farmers with limited land on which to apply it.

The recent outbreak of the water borne bacteria *Pfiesteria piscida* in the

Chesapeake Bay is attributed to agricultural runoff from chicken farms. The bacteria has killed and infected thousands of fish and has been linked to symptoms in humans including skin rashes, memory loss, and respiratory problems (Cohen, 1997).

In the commodity chains I traced, the manure accumulated at the Welsh farm is applied to the fields as fertilizer. Since he raises the feed for his chickens on his farm, the return of the manure is a necessary nutrient cycling process. The ConAgra contract grower in our chain also applies the manure to his fields, but has a substantially greater volume to deal with. Over application or misapplication of manure leads to the aforementioned problems of runoff and contamination of water sources.

Animal Welfare Issues

Many consumers are also concerned about issues surrounding animal welfare, such as the way the animals are raised (Tolles and Dyott, 1996). In terms of the poultry industry, the density of chicken houses has raised concerns about the spread of disease and the humaneness of crowded chicken houses.

At the Welsh farm, each chicken has approximately 2.5 square feet of space. At our contract grower's farm, each chicken has approximately 0.7 square feet of space. Note that the chickens raised at the Welsh farm have access to the out of doors. The densities of the Welsh chicken house and of the ConAgra grower's chicken houses are shown below.

	<u>Welsh Family Farm</u>	<u>ConAgra Grower</u>
Dimensions of chicken house(s)	72' x 288'	(4) 40' x 300' (3) 40' x 350'
Square Footage	49,236 sqft *	90,000 sqft
Number of chickens	19,950	131,500
Sq footage per chicken	2.5 sqft/chicken	0.7 sqft/chicken
Chickens per sqft	0.4 chickens/sqft	1.5 chickens/sqft

*Square footage on the Welsh farm includes 28,500 square feet outside the chicken house to which the chickens have free access.

V. Conclusion

The path taken by our food and the issues surrounding food production can be confusing and complicated. In closing, I would like to briefly summarize the most important differences between the two paths I traced.

Non-local Chicken

Production dominated by one corporate entity.

Path almost entirely non-local. Shipped from Alabama.

Food dollars spent on this chicken, for the most part, leave Iowa.

Consumers are distanced from how this chicken was raised.

The contract grower assumed great risk and had little control over operation.

The contract grower was unaware of ingredients of feed, including amount of medications.

The grower had no contact with consumers.

Local Chicken

Production involved many independent Iowa businesses.

Path almost entirely local. Entirely regional.

Food dollars spent on this chicken are almost entirely reinvested in independent Iowa businesses.

Consumers can easily know how this chicken was raised.

The farmer controls entire operation.

The farmer grows and mixes his own feed. There are no antibiotics in his feed.

The farmer knows his customers.

As mentioned earlier, the visibility of our food system is directly related to the distance between the producer and the consumer. I have used commodity chain analysis to explore two food systems and examine the implications of each. By knowing more about how our food is produced and processed, who produced it, and the ramifications of the methods used, we can make informed decisions as consumers. With our dollars, we can choose to support methods we approve of, systems of agriculture which bolster our local economies, and independent farmers who thrive economically while retaining control over their farms.

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References

- Behar, Richard. "Arkansas Pecking Order." Time 26 Oct. 1992: 52-54.
- Behar, Richard and Michael Kramer. "Something Smells Fowl." Time 17 Oct. 1994: 42-44.
- Clouse, Mary. (1995, Jan.). Farmer Net Income from Broiler Contracts. Rural Advancement Foundation International-USA.
- Cohen, Adam. "Massacre on the bay." Time 29 Sept. 1997: 60.
- Collmer, Kathryn. "From Hand to Mouth: The Business of Food." Sojourners June 1993: 18-21.
- "ConAgra to pay \$8.3 million fine". Agri News 27 March 1997.
- Crouch, Marti. "Eating our teachers: local food, local knowledge." Raise the Stake: The Planet Drum Review (23): 5-6.
- Friedland, William H. "Commodity Systems Analysis: An Approach to the Sociology of Agriculture." Research in Rural Sociology and Development vol. 1, 1984: 221-235.
- Goldoftas, Barabara. "Inside the Slaughterhouse." Southern Exposure Summer 1989: 25-29.
- Gordon, John Steele. "The Chicken Story." American Heritage Sept. 1996: 53-67.
- Hansen, Lars. "Will healthier birds mean sicker people?" Business Week 4 Sept. 1995: 34.
- Heffernan, William D. "Constraints in the U.S. Poultry Industry." Research in Rural Sociology and Development. Vol.1 (1984): 237-260.
- Heffernan, William D. "Who Speaks for Agriculture?" Paper presented to the Agricultural Institute of Canada Conference, Truro, Nova Scotia. August 1997.
- Lezberg, Sharon. "A Case of Apples and Oranges: What's so special about eating locally?". From Asparagus to Zucchini: A Guide to Farm-Fresh Seasonal Produce. Madison: Madison Area Community Supported Agriculture Coalition, 1996.

Lezberg, Sharon and Kloppenburg. "That We All Might Eat". Development Nov. 1996.

Oberholtzer, Lydia. "A Chicken in Every Pot: Tracing our Food. " Yahara Watershed Journal vol 2, 1997: 2-6. Unpublished Master's thesis title: "A Chicken in Every Pot: A comparison of conventional and alternative broiler commodity chains." University of Wisconsin, Madison.

Rauber, Paul. "Conservation A la Carte." Sierra Nov/Dec 1994: 42-49,95.

Schwab, Jim. "Omaha Held Hostage: How a food giant gobbled up a historic district." The Progressive May 1989: 36-39.

Tolles, Amanda and Steve Dyott. "Consumers seek to curb farm animal suffering." Business and Society Review Wntr 1996: 19-22.

Valen, Gary L. "Hendrix College Local Food Project." New Directions for Higher Education Spring 1992: 79-85.

Yeoman, Barry. "Don't Count Your Chickens." Southern Exposure Summer 1989: 21-24.