

EGGS, EGG CARTONS, AND CONSUMER PREFERENCES

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INTRODUCTION

Red junglefowl, the wild ancestor of domesticated chickens, live in small flocks,¹ but a typical cage-free poultry house holds 20,000 or more birds.²

As of 2013, around 172 egg-producing companies had approximately 95% of all “layers” in the United States.³

From May through November 2010, nearly 2000 people reportedly became ill with *Salmonella enteritidis* poisoning attributed to shell eggs.⁴ The actual number of illnesses was almost certainly much greater, as many illnesses are not reported. When the *Salmonella* was traced back to two Iowa egg producers, the resulting recall was one of the largest egg recalls on record—over half a billion eggs were subject to the recall.⁵ What’s a consumer to do? “[T]reat eggs with the assumption that they’re contaminated with salmonella,” according to Carol Tucker Foreman, a

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¹ Nicholas E. Collias & Elsie C. Collias, *Social Organization of a Red Junglefowl, Gallus gallus, Population Related to Evolution Theory*, 51 ANIMAL BEHAV. 1337, 1337, 1341–42 (1996).

² LYDIA OBERHOLTZER ET AL., U.S. DEP’T AGRIC., ORGANIC POULTRY AND EGGS CAPTURE HIGH PRICE PREMIUMS AND GROWING SHARE OF SPECIALTY MARKETS 6–7 (2006).

³ *Egg Industry Fact Sheet*, AM. EGG BOARD, <http://www.aeb.org/egg-industry/industry-facts/egg-industry-facts-sheet> (last updated Oct. 29, 2013). Note that the 172 producers were those with flocks of over 75,000 birds. *Id.*

⁴ *Multistate Outbreak of Human Salmonella Enteritidis Infections Associated with Shell Eggs (Final Update)*, CENTERS FOR DISEASE CONTROL & PREVENTION (Dec. 2, 2010), <http://www.cdc.gov/salmonella/enteritidis/index.html> [hereinafter *Multistate Outbreak*]. *S. enteritidis* is one of the most common serotypes of *Salmonella enterica* subsp. *Enterica* in the United States. Thomas Hammack, FDA, *Salmonella Species*, in BAD BUG BOOK 12, 12 (Keith A. Lampel et al. eds., 2d ed. 2012), available at <http://www.salmonellablog.com/uploads/image/Bad%20Bug%20Book%20PDF%202nd.pdf>.

⁵ William Neuman, *Growing Concern About Tainted Eggs as Millions More Are Recalled*, N.Y. TIMES, Aug. 21, 2010, at B1. There were actually 3 recalls: an initial Wright County Egg recall, an expanded Wright County Egg recall, and the Hillandale Farms recall. *Id.*

food safety expert for the Consumer Federation of America, as reported in a 2010 New York Times article.⁶

As consumers, we probably share common values around food. Food should not poison us. It should be wholesome and nutritious. Its production should not cause undue harm to the environment, workers, or animals. And we as consumers should have a way of knowing how our food was produced. All of these issues come together in the henhouse and on the egg carton. While the main focus for many consumers is food safety, in the case of eggs, preventing *Salmonella* also tends to improve the lot of the hens involved. Moreover, the consumers who think about egg-laying hens at all prefer to think the hens are living acceptable lives.⁷ Thus consumers have three main interests regarding eggs: (1) that the eggs be safe, (2) that the hens be treated well, and (3) that the label information reports accurately on the first two.

This Article explores these consumer interests. Part I provides a brief background on *Salmonella enteritidis* in eggs and general food safety hazards for eggs. Part II outlines regulatory efforts to prevent *Salmonella* contamination and provide for animal welfare, pointing out that there is virtually no legislation or regulation protecting the welfare of egg-laying hens. Part III turns to consumer and industry measures for improving the welfare of egg-laying hens. Finally, Part IV describes the mismatch between consumer expectations and preferences on the one hand and egg production and labeling on the other. The Article concludes that even with the most recent developments in hen welfare and regulation, consumers are probably not getting what they want.

I. COOKIE DOUGH IS DANGEROUS BECAUSE OF EGGS—*SALMONELLA* IN EGGS AND FLOCKS.

Most of us have been scolded at some point for eating raw cookie dough. Raw cookie dough contains raw egg, which could be contaminated with *Salmonella*.⁸ This Part discusses the incidence of *Salmonella* and

⁶ *Id.*

⁷ Consumers do express a preference for enhanced hen welfare. See ELLEN GODDARD ET AL., CONSUMER ATTITUDES, WILLINGNESS TO PAY AND REVEALED PREFERENCES FOR DIFFERENT EGG PRODUCTION ATTRIBUTES: ANALYSIS OF CANADIAN EGG CONSUMERS 61–62 (2007); YAN HENG ET AL., CONSUMERS' PREFERENCES FOR FARM ANIMAL WELFARE: THE CASE OF LAYING HEN 4 (2012); YIQING LU ET AL., CONSUMER PREFERENCE FOR EGGS FROM ENHANCED ANIMAL WELFARE PRODUCTION SYSTEM: A STATED CHOICE ANALYSIS 23 (2013); William J. Allender & Timothy J. Richards, *Consumer Impact of Animal Welfare Regulation in the California Poultry Industry*, 35 J. AGRIC. & RESOURCE ECON. 424, 440 (2010) (explaining that cage-free eggs are still largely bought by higher income or smaller households).

⁸ The author would like to point out that flaxseed meal mixed with water makes a fine substitute for the eggs in cookie dough recipes. See Cory Ramey, *Replacing Eggs*

briefly visits the ways in which regulation tries to prevent or minimize *Salmonella* contamination. To do so it asks, does the *Salmonella* begin with the chicken?⁹ Or does it begin with the egg?

Salmonella is dangerous and common and therefore one of the most common causes of foodborne illness.¹⁰ Symptoms include an unpleasant combination of diarrhea, fever, headaches, vomiting, and more.¹¹ And while most people get better, not everyone does. *Salmonella* infections can be fatal.¹² As noted above, the seven-month period from May through November 2010 saw almost 2000 reported cases of *Salmonella enteritidis* infections that were associated with contaminated shell eggs, according to the Centers for Disease Control and Prevention.¹³ But eggs are not the only source of *Salmonella* infection. People can also contract *Salmonella* infections from consuming undercooked contaminated chicken, as well as handling diseased chickens or pet turtles and hedgehogs.¹⁴

Salmonella is an “enteric” disease, which means that it infects the intestines of people and animals.¹⁵ So how do eggs become contaminated?

With . . . Flax?, DINER'S J. BLOG (Sept. 4, 2009, 1:47 PM), http://dinersjournal.blogs.nytimes.com/2009/09/04/replacing-eggs-with-flax/?_php=true&_type=blogs&_r=0; see also *Egg Substitutions*, CHEF IN YOU, <http://chefinyou.com/egg-substitutes-cooking/> (last visited Mar. 20, 2014) (soy flour with water as egg replacer). There are many such resources on the internet. Of course, other raw ingredients can also be contaminated with *Salmonella* or other pathogens. See, e.g., Bassam A. Annous et al., *Commercial Thermal Process for Inactivating Salmonella Poona on Surfaces of Whole Fresh Cantaloupes*, 76 J. FOOD PROTECTION 420, 420 (2013) (attributing an outbreak of *Salmonella typhimurium* to cantaloupe); Anahad O'Connor, *Beware of Raw Cookie Dough*, N.Y. TIMES WELL BLOG (Dec. 12, 2011, 4:27 PM), http://well.blogs.nytimes.com/2011/12/12/beware-of-raw-cookie-dough/?_r=0 (attributing an outbreak of *E. coli* to raw flour in cookie dough).

⁹ In this Article, the word “hen” refers to female egg layers (which are also referred to at times as “layers”), while “chicken” is used more broadly to include broilers, pets, or other fowl where the ability to lay eggs is not paramount.

¹⁰ Elaine Scallan et al., *Foodborne Illness Acquired in the United States—Major Pathogens*, 17 EMERGING INFECTIOUS DISEASES 7, 7 (2011); see also CDC, FOOD SAFETY PROGRESS REPORT FOR 2012 (2012), available at <http://www.cdc.gov/features/dsfoodnet2012/food-safety-progress-report-2012-508c.pdf>. For 2012, *Salmonella* infection appears to be one of the most common foodborne disease agents, with *Campylobacter* following close behind and increasing. *Id.*

¹¹ GEO. F. BROOKS ET AL., MEDICAL MICROBIOLOGY 239 (26th ed. 2012).

¹² *Salmonella* accounts for almost one-third of foodborne-illness related deaths each year. Scallan et al., *supra* note 10, at 7.

¹³ *Multistate Outbreak*, *supra* note 4.

¹⁴ Karin Hoelzer et al., *Animal Contact as a Source of Human Non-Typhoidal Salmonellosis*, 42 VETERINARY RES., art. 34, Feb. 2011, at 1, 13, 16; James Andrews, *Foster Farms Outbreak Highlights Prevalence of Salmonella on Chicken*, FOOD SAFETY NEWS (Oct. 9, 2013), <http://www.foodsafetynews.com/2013/10/foster-farms-outbreak-highlights-prevalence-of-salmonella-on-chicken>.

¹⁵ See Hammack, *supra* note 4, at 13–14. According to the FDA's *Bad Bug Book*, there are two main species of the *Salmonella* genus that cause harm to humans. These two

When non-animal foods such as fruits and vegetables cause *Salmonella* poisoning, it is obvious that the *Salmonella* got into or onto the food through improper handling or perhaps while the plants were still in the field before being harvested.¹⁶ But eggs come from hens who themselves may be infected. *Salmonella* can get into the egg before the egg is laid, in which case the contamination is not just a result of improper handling or storage, nor is it necessarily the result of unsanitary chicken houses.¹⁷ While we used to believe that *Salmonella* was always an external contaminant passed from an affected chicken to the egg as it was laid, we now know that the *Salmonella* may start in the chicken and get into the egg as the shell is forming.¹⁸ This means that an infected chicken can lay contaminated eggs, and no amount of cleaning on the outside of the shell can possibly remove the contamination. Any plan to ensure safe eggs, then, must include keeping hens healthy.

II. FOOD SAFETY AND *SALMONELLA* REGULATION—WHICH COMES FIRST? CHICKEN REGULATION OR EGG REGULATION?

Federal and state regulations have addressed the egg *Salmonella* problem with hen-related rules and egg-handling and processing rules.¹⁹ These regulations have had some effects. Food regulation falls into a small number of categories. While consumers are likely to have concerns about price and animal welfare,²⁰ federal regulation of food animals tends to focus on food safety and maintaining healthy herds and flocks.²¹ Ensuring that food is safe to eat is a matter of public health and safety. States can regulate food safety issues within their boundaries under

species are further divided into subspecies and serotypes. This Article will simply use the term “*Salmonella*” for any and all of them; this Article’s focus is on hens and egg production rather than the differences among variants of *Salmonella*. *Id.* at 12.

¹⁶ Larry R. Beuchat & Jee-Hoon Ryu, *Produce Handling and Processing Practices*, 3 EMERGING INFECTIOUS DISEASES 459, 459–60 (1997).

¹⁷ Inne Gantois et al., *Mechanisms of Egg Contamination by Salmonella Enteritidis*, 33 FEMS MICROBIOLOGY REVIEWS 718, 719–20 (2009).

¹⁸ Sandra B. Eskin, *Putting All Your Eggs in One Basket: Egg Safety and the Case for a Single Food-Safety Agency*, 59 FOOD & DRUG L.J. 441, 445 (2004). Compare Kenneth D. Quist, *Salmonellosis in Poultry*, 78 PUB. HEALTH REP. 1071, 1072 (1963) (stating that although “*Salmonellae* in bulk egg products have been generally attributed to contamination from the eggshells during breaking operations,” others have “suggest[ed] that the chief source of salmonellae may be from within the egg”), with Gantois et al., *supra* note 17, at 719 (describing two different routes for *Salmonella* to contaminate an egg including contamination while still within a chicken’s reproductive organs).

¹⁹ See 9 C.F.R. §§ 145.1–3 (2013); see, e.g., Minn. R. 1520.5200–.7200 (2009); 2 VA. ADMIN. CODE § 5-90-30 (LEXIS through 30:8 Va. R., Dec. 16, 2013) (incorporating the National Poultry Improvement Plan into state regulations).

²⁰ See LU ET AL., *supra* note 7, at 23; Allender & Richards, *supra* note 7, at 440.

²¹ See *infra* Part II.B.

their police powers,²² but Congress has authority to regulate food safety and animal health under the Commerce Clause of the United States Constitution.²³ Much regulation related to chickens and eggs falls into the latter category.²⁴

While consumer protection regulation can focus on safety, it can also focus on the free market. Consequently, consumer protection regulation that helps assure consumers that they get what they pay for is fairly common in the food context.²⁵ Most labeling rules fall into this category²⁶ and some of the earliest food laws were aimed at preventing food fraud.²⁷

²² Kyle W. Lathrop, Note, *Pre-empting Apples with Oranges: Federal Regulation of Organic Food Labeling*, 16 J. CORP. L. 885, 901 (1991) (“Using the police power, a state can regulate food safety and labeling as an issue that affects the public health and welfare of its citizens.”); see also *L & L Started Pullets, Inc. v. Gourdine*, 762 F.2d 1, 1, 4 (2d Cir. 1985); *Parrott & Co. v. Benson*, 194 P. 986, 987 (Wash. 1921).

²³ U.S. CONST. art. I, § 8, cl. 3; *Wickard v. Filburn*, 317 U.S. 111, 125 (1942) (allowing Congress to regulate farm activity that “exerts a substantial economic effect on interstate commerce”); see also 21 U.S.C. §§ 451, 1031 (2012) (linking regulation of poultry and eggs to interstate commerce); *Rose Acre Farms, Inc. v. United States*, 559 F.3d 1260, 1262–64, 1279, 1283 (Fed. Cir. 2009) (upholding USDA authority to restrict distribution of shell eggs from a location affected by *Salmonella enteritidis*, and holding the egg producer did not suffer a compensable taking under the Fifth Amendment). See generally Anastasia S. Stathopoulos, Note, *You Are What Your Food Eats: How Regulation of Factory Farm Conditions Could Improve Human Health and Animal Welfare Alike*, 13 N.Y.U. J. LEGIS. & PUB. POL’Y 407, 435–37 (2010) (describing the authority given to the USDA and the FDA to regulate farm animals and food products).

²⁴ See, e.g., Poultry Products Inspection Act, 21 U.S.C. §§ 451–71 (2012); Egg Products Inspection Act, 21 U.S.C. §§ 1031–56 (2012).

²⁵ See, e.g., *Fed. Sec. Adm’r v. Quaker Oats Co.*, 318 U.S. 218, 232 (1943) (“[T]he legislative history of the [Federal Food, Drug and Cosmetic Act] manifests the purpose of Congress . . . to give to consumers . . . what they may reasonably expect to receive.”); *United States v. Lane Labs-USA Inc.*, 427 F.3d 219, 227 (3d Cir. 2005) (“Such a mandate [in the Federal Food, Drug and Cosmetic Act] protects not only the public’s health, but also its economic interest in purchasing products that are what they claim to be.”); *Armour & Co. v. Ball*, 468 F.2d 76, 81 (6th Cir. 1972) (“[O]ne purpose of the Wholesome Meat Act is to empower the Secretary to adopt definitions and standards of identity or composition so that the ‘integrity’ of meat food products could be ‘effectively maintained.’”).

²⁶ See, e.g., Fair Packaging and Labeling Act, 15 U.S.C. §§ 1451–61 (2012) (establishing laws governing accurate labeling to inform and protect consumers); Richard A. Merrill & Earl M. Collier, Jr., *“Like Mother Used to Make”: An Analysis of FDA Food Standards of Identity*, 74 COLUM. L. REV. 561, 561 (1974) (noting the FDA’s role in protecting consumers).

²⁷ For example, in 1906 Congress passed the first legislation of its kind, which prohibited misleading food labels. See Pure Food and Drug Act of 1906, ch. 3915, 34 Stat. 768 (1906) (repealed 1938). The Federal Food, Drug, and Cosmetic Act of 1938, which repealed the 1906 Act, also regulates mislabeled foods. Ch. 675, 52 Stat. 1040 (1938) (codified as amended at 21 U.S.C. §§ 301–99). For historical background regarding the development of the Food and Drug Administration in the context of food fraud, see JAMES T. O’REILLY, 1 FOOD AND DRUG ADMINISTRATION § 3:2 (2d ed. 2005).

Interestingly, both food safety regulation and consumer fraud prevention are also good for industry as a whole. When consumers believe that a type of food is unsafe, all producers suffer. For example, when *E. coli* in bagged spinach caused a deadly outbreak in 2006, all bagged produce sales declined.²⁸ The market for all spinach declined as well, causing significant economic damage to the spinach industry.²⁹ The result was an industry-wide effort to prevent further such events and to reassure consumers.³⁰ Since the outbreak, 99% of California leafy green producers, which produce a significant proportion of total U.S. leafy greens, operate under a voluntary marketing agreement called the Leafy Greens Marketing Agreement. The agreement imposes food safety standards and inspections on producers who choose to participate.³¹ Regulation of poultry operations is no exception. Before there was actual federal regulation of laying hens, there was industry self-regulation, and joint industry-government regulation.³²

Finally, some food-related regulation is not aimed at food safety or consumer fraud, but at other issues of interest to consumers, such as animal welfare,³³ or of interest to producers, such as preventing loss of a valuable resource (in this case, a flock).³⁴ To some extent, animal welfare concerns and healthy flock concerns overlap.³⁵ This is not surprising; any rule that increases consumer trust should be beneficial for producers,

²⁸ Elizabeth Weise & Julie Schmit, *Spinach Recall: 5 Faces. 5 Agonizing Deaths. 1 Year Later*, USA TODAY, Sept. 24, 2007, available at http://usatoday30.usatoday.com/money/industries/food/2007-09-20-spinach-main_N.htm (“The outbreak would ultimately cost the leafy green industry more than \$350 million . . . Sales of packaged spinach are still off about 20% from pre-outbreak levels, industry executives say.”); see also A. Bryan Endres & Nicholas R. Johnson, *Integrating Stakeholder Roles in Food Production, Marketing, and Safety Systems: An Evolving Multi-Jurisdictional Approach*, 26 J. ENVTL. L. & LITIG. 29, 51 (2011).

²⁹ See sources cited *supra* note 28.

³⁰ See Endres & Johnson, *supra* note 28, at 66–67.

³¹ The participants represent the largest leafy green growers in California. See *id.*; see also Marketing Agreement, Cal. Dep’t of Food & Agric., California Leafy Green Products Handler Marketing Agreement (Mar. 5, 2008), available at <http://www.caleafygreens.ca.gov/sites/default/files/LGMA%20marketing%20agreement%2003.08.pdf>.

³² Glenn E. Bugos, *Intellectual Property Protection in the American Chicken-Breeding Industry*, 66 BUS. HIST. REV. 127, 134–36 (1992).

³³ See *infra* Part III.

³⁴ See *infra* Part II.A.; see also William Boyd, *Making Meat: Science, Technology, and American Poultry Production*, 42 TECH. & CULTURE 631, 640–41 (2001).

³⁵ Cf. Lucinda Valero & Will Rhee, *When Fox and Hound Legislate the Hen House: A Nixon-in-China Moment for National Egg-Laying Standards?*, 65 ME. L. REV. 651, 659 (2013) (“If increasing animal welfare guaranteed greater profits, all agricultural firms most probably would support increased animal welfare.”).

and this is as true of food-related legislation and regulation as for any other.³⁶ In the case of eggs, regulation is mostly about protecting flocks from disease.³⁷ While this may seem like a food safety or animal welfare issue, the original impetus was actually preservation of flocks—a concern for animal welfare per se had little to do with it.³⁸

Numerous regulatory agencies are involved at different levels:³⁹ The United States Department of Agriculture (“USDA”), Food and Drug Administration (“FDA”), state and local agencies, and industry itself all have roles in regulating eggs and poultry. These intersecting purposes and the multitude of agencies can make the egg and chicken regulatory landscape seem as intractable as the chicken and egg question.

A. On Farm Regulation

Let us begin with the chicken (setting aside for the moment the question of which came first). Chickens on the farm are raised under the surveillance of the USDA, in particular, by the Animal and Plant Health Inspection Service (“APHIS”).⁴⁰ Actual regulations are few, however.⁴¹ The National Poultry Improvement Plan (“NPIP”) is a joint effort of state agriculture departments, industry, and APHIS.⁴² The goal of this effort is to prevent *Salmonella* and other diseases from destroying commercial flocks. In that sense it is very much an industry-favorable program aimed at maintaining the industry. Let’s look at the features of NPIP.⁴³

Almost a century ago, in the 1930s, there were problems with *Salmonella pullorum*, a strain of *Salmonella* lethal to chicks.⁴⁴ In some

³⁶ See *id.*

³⁷ National Poultry Improvement Plan for Commercial Poultry, 9 C.F.R. § 146 (2013); Production, Storage, and Transportation of Shell Eggs, 21 C.F.R. § 118 (2013) (addressing specifically *Salmonella* in eggs).

³⁸ Boyd, *supra* note 34, at 640 (explaining that food safety was not the main purpose for passing regulations because the fear was loss of flocks, not contaminated food products).

³⁹ Sandra Eskin’s article, *supra* note 18, provides an excellent overview of agency egg regulation in particular. Morris E. Potter’s statement on egg safety before the Senate Committee on Government Affairs is another useful background source. *Statement on Egg Safety: Are There Cracks in the Federal Food Safety System?: Hearing Before the Subcomm. on Oversight of Gov’t Mgmt., Restructuring, & the D.C. of the S. Comm. on Governmental Affairs*, 106th Cong. (1999) (statement of Morris E. Potter, Director of Food Safety Initiatives), available at <http://www.hhs.gov/asl/testify/t990701a.html>.

⁴⁰ 9 C.F.R. § 145.1–.2.

⁴¹ See, e.g., Animal Welfare Act, 7 U.S.C. § 2132(g) (2012) (defining “animal” to exclude poultry).

⁴² 9 C.F.R. § 145.1–.3.

⁴³ For an example of how a state has incorporated the NPIP into its own statutes, see MINN. R. 1520.5200–.7200 (2009).

⁴⁴ Boyd, *supra* note 34, at 640 & n.28.

cases 80 percent of an infected flock would be wiped out.⁴⁵ The NPIP was developed to fight this dangerous pathogen by ensuring healthy flocks.⁴⁶ Chicks are not food, so the *Salmonella* at issue would not have affected food safety unless the few chicks that survived remained infected and were introduced into the food supply or produced contaminated eggs. Rather, saving these flocks was necessary to keep the poultry and egg industries healthy. Participation in NPIP was (and is) voluntary, but it is all or nothing—if one part of an operation participates, the whole operation must participate.⁴⁷ Participants earn the right to use a logo on their products to show compliance with the program.⁴⁸ The program generally requires that all chicks come from participating hatcheries and that they be kept in sanitary conditions.⁴⁹ What are sanitary conditions in a henhouse? The walls, ceilings, and floors of the rooms where eggs are kept before hatching have to be cleaned and disinfected twice a week, as does certain equipment.⁵⁰ In addition, the eggs are inspected to make sure that they are “reasonably uniform in shape.”⁵¹ The objective is to prevent the pathogen from entering the henhouse, and to monitor frequently to detect its presence.⁵²

Disease-free chicks are the starting point. Strictly maintaining a clean environment is the next phase, and this means preventing people or animals from bringing in disease.⁵³ Finally, the environment is tested.⁵⁴ When pathogens are found in the environment, say in the

⁴⁵ ANIMAL & PLANT HEALTH INSPECTION SERV., U.S. DEP’T OF AGRIC., PROGRAM AID NO. 1708, HELPING YOU, THE POULTRY BREEDER, PREVENT DISEASE, (rev. ed. 2009), available at http://www.aphis.usda.gov/publications/animal_health/content/printable_version/HelpingYouPoultryBreeder-PA1708-FinalJuly09.pdf.

⁴⁶ 9 C.F.R. § 146; Boyd, *supra* note 34, at 640–41; U.S. DEP’T OF AGRIC., AGRIC. HANDBOOK 75, EGG-GRADING MANUAL 2 (rev. ed. 2000).

⁴⁷ 9 C.F.R. §§ 145.3, 146.3. Moreover, if a person is “responsibly connected” (for example, a partner, officer, or director) with more than one hatchery, then all such hatcheries must participate or none will be certified. *Id.* § 145.6(f).

⁴⁸ *Id.* § 145.10. There are several logos, which are specific to the various diseases for which monitoring may be undertaken. *See, e.g., id.* § 145.10(o) (displaying a picture of the “U.S. *Salmonella* monitored” logo).

⁴⁹ *See id.* §§ 145.3(c), 145.5, 147.21–22.

⁵⁰ *Id.* § 145.6(a)(1).

⁵¹ *Id.* § 145.6(d).

⁵² *See id.* § 145.6; Boyd, *supra* note 34, at 640–41. Facilities must keep records and they are audited at least annually. If a state inspector determines that there has been a breach of sanitation, then more extensive testing is done to try to detect pathogens before they do much damage. 9 C.F.R. § 145.12. In addition, for hatcheries that produce layers, additional requirements apply, such as feed requirements and blood tests. *See id.* § 145.73(d).

⁵³ *See id.* § 147.24(c). We will return to this when we consider free range hens.

⁵⁴ *Id.* § 147.12.

bedding in the henhouse, a sample of birds must undergo testing.⁵⁵ Since some diseases might not make the adult birds appear sick, blood tests may be needed.⁵⁶ If there is even one positive for *Salmonella enteritidis* out of a sample of 30 or 60 birds, the whole flock is disqualified.⁵⁷ Accordingly, the program encourages producers to do everything possible to eliminate disease by carefully ensuring that none gets started. Record-keeping and annual audits round out the picture.⁵⁸ This is expensive. And none of this applies to smaller flocks or to farmers who sell all of their eggs directly to consumers and choose not to participate in NPIP.⁵⁹

NPIP, as we noted, is a joint program of the poultry industry and APHIS.⁶⁰ APHIS is not a food agency, however.⁶¹ Rather, APHIS has a broad general mission: “to protect the health and value of American agriculture and natural resources.”⁶² For example, APHIS is charged with administering the Animal Welfare Act of 1966,⁶³ the mission of which is “to insure that animals intended for use in research facilities or for exhibition purposes or for use as pets are provided humane care and treatment” because Congress found that such animals “are either in interstate or foreign commerce or substantially affect such commerce or

⁵⁵ See *id.* § 147.10, .12(a)(1).

⁵⁶ *Id.* § 145.15 (demonstrating that NPIP is not only aimed at *Salmonella*).

⁵⁷ *Id.* § 145.73(d)(2). The regulation allows for a second test if there was initially only one positive, and if there are no positives following the second test, then the flock is not disqualified. *Id.*

⁵⁸ *Id.* § 146.11.

⁵⁹ See *supra* note 47 and accompanying text.

⁶⁰ *Animal Health: Poultry Disease Information, Animal & Plant Health Inspection Service*, U.S. DEP’T OF AGRIC., http://www.aphis.usda.gov/animal_health/animal_dis_spec/poultry/ (follow “Avian” hyperlink) (last updated Feb. 7, 2014) (“The National Poultry Improvement Plan was established in the early 1930’s to provide a cooperative industry, state, and federal program through which new diagnostic technology can be effectively applied to the improvement of poultry and poultry products throughout the country.”); see also 9 C.F.R. §§ 145.1–3.

⁶¹ See Terence P. Stewart & Caryn B. Schenewerk, *The Conflict Between Facilitating International Trade and Protecting U.S. Agriculture from Invasive Species: APHIS, the U.S. Plant Protection Laws, and the Argentine Citrus Dispute*, 13 J. TRANSNAT’L L. & POL’Y 305, 306 (2004). The United States Department of Agriculture includes several other agencies that are involved with food: the Food Safety and Inspection Service, the Food and Nutrition Service, the Center for Nutrition Policy and Promotion, and the National Institute of Food and Agriculture. See *USDA Agencies and Offices*, USDA, http://usda.gov/wps/portal/usda/usdahome?navtype=MA&navid=AGENCIES_OFFICES_C (last updated May 6, 2013).

⁶² *About APHIS, Animal & Plant Health Inspection Service*, U.S. DEP’T OF AGRIC., http://www.aphis.usda.gov/about_aphis/ (last modified Jan. 30, 2014).

⁶³ Animal Welfare Act, 7 U.S.C. §§ 2131–59 (2012); see also Christina Widner, *Channeling Cruella De Vil: An Exploration of Proposed and Ideal Regulation on Domestic Animal Breeding in California*, 20 SAN JOAQUIN AGRIC. L. REV. 217, 221–22 (2011).

the free flow thereof.”⁶⁴ For purposes of the Animal Welfare Act, the term “animal” *excludes* “farm animals, such as, but not limited to livestock or poultry.”⁶⁵ So chickens are not animals under this legislation, and the legislation does not apply to them.⁶⁶ The second federal statute governing animal welfare is the Humane Methods of Slaughter Act⁶⁷ which amended the Federal Meat Inspection Act,⁶⁸ enforced by the Food Safety and Inspection Service, another arm of the USDA.⁶⁹ This statute also does not apply to chickens.⁷⁰ In any event, this legislation kicks in at slaughter and not on the farm.

Finally, the Animal Health Protection Act does apply to chickens.⁷¹ In fact, it applies to all animals, even those raised for food, and even poultry, but it operates primarily by creating authority to order destruction or quarantine of animals and disinfection of equipment and living quarters.⁷² It does not actually impose requirements on how animals are raised.⁷³ Thus, when APHIS regulates chicken or hen welfare under NPIP, its purpose is to protect a food supply, not to ensure animal welfare per se. To the extent that consumers have a preference for eggs from well treated hens,⁷⁴ federal legislation does not protect that preference.

B. Food Safety Regulation of Poultry—Egg Safety Final Rule (as of 2010)

The FDA is charged with maintaining egg safety.⁷⁵ After years of consideration, the FDA announced its Egg Safety Final Rule in 2009, bringing the food safety arm of the government into the picture for

⁶⁴ 7 U.S.C. § 2131 (2012).

⁶⁵ *Id.* § 2132(g).

⁶⁶ *Id.*

⁶⁷ *Id.* §§ 1901–07.

⁶⁸ *See* 21 U.S.C. §§ 601–95 (2012).

⁶⁹ A. Bryan Endres, *United States Food Law Update*, 3 J. FOOD L. & POL’Y 103, 107–09 (2007).

⁷⁰ *See* 7 U.S.C. § 1901.

⁷¹ *Id.* §§ 8301–22.

⁷² *Id.* §§ 8302(1), 8303, 8306.

⁷³ *See generally id.* §§ 8301, 8303–08.

⁷⁴ *See* sources cited *supra* note 7.

⁷⁵ *See* 21 U.S.C. § 331(a)–(c) (2012) (prohibiting the introduction of adulterated food into interstate commerce under the Federal Food, Drug, and Cosmetic act, which is enforced by the Food and Drug Administration); *id.* § 342(a) (providing a definition for “adulterated”); *see, e.g.*, 21 C.F.R. § 115.50(e) (2013) (authorizing the FDA to regulate shell eggs to prevent adulteration).

eggs.⁷⁶ The Egg Safety Rule applies to any flock with more than 3000 hens.⁷⁷ In general, the rule provides guidelines intended to prevent *Salmonella* contamination,⁷⁸ and it is similar to the NPIP in that regard.⁷⁹

Accordingly, a farmer must buy chicks only from certified suppliers who comply with the NPIP requirements or its equivalent.⁸⁰ In addition, a farmer must prevent rodents and other pests from interacting with the hens.⁸¹ The barnyard in Charlotte's Web, where Templeton the rat comes and goes at will, would surely not qualify.⁸² But barnyards we see in stories do not have 3000 hens. Most large operations keep the hens indoors and rodent prevention may be possible. There are, however, some operations of over 3000 hens that allow the hens to roam freely on

⁷⁶ Prevention of Salmonella Enteritidis in Shell Eggs During Production, Storage, and Transportation, 74 Fed. Reg. 33,030 (July 9, 2009) (to be codified at 21 C.F.R. pt. 16 & 118).

⁷⁷ 21 C.F.R. § 118.1(a).

⁷⁸ *E.g.*, *id.* § 118.4.

⁷⁹ *Compare id.* (requiring all shell egg producers to comply with a list of *Salmonella* prevention measures), *with* 9 C.F.R. § 145.23(d)(1) (2013) (establishing various feed standards and *Salmonella* testing methods with which egg producers must comply in order to achieve compliance under the National Poultry Improvement Plan).

⁸⁰ To that extent, the Egg Safety Final Rule is similar to NPIP. *Compare* 9 C.F.R. §§ 145.1, 145.3, 145.4(d) (requiring NPIP participants to by all "hatching eggs, baby poultry, and started poultry" from other NPIP participants), *with* Prevention of Salmonella Enteritidis in Shell Eggs During Production, Storage, and Transportation, 74 Fed. Reg. 33,030, 33,034 (July 9, 2009) (requiring regulated farmers to procure chicks from *Salmonella* monitored suppliers that meet NPIP or equivalent standards).

⁸¹ 21 C.F.R. § 118.4(c)(1)–(3).

⁸² E.B. WHITE, CHARLOTTE'S WEB 44–45, 47 (1952).

It was on a day in early summer that the goose eggs hatched. This was an important event in the barn cellar. . . . At this point, Templeton showed his nose from his hiding place under Wilbur's trough. He glanced at Fern, then crept cautiously toward the goose, keeping close to the wall. Everyone watched him, for he was not well liked, not trusted. "Look," he began in his sharp voice, "you say you have seven other goslings. There were eight eggs. What happened to the other egg? Why didn't it hatch?" "It's a dud, I guess," said the goose. "What are you going to do with it?" continued Templeton, his little round beady eyes fixed on the goose. "You can have it," replied the goose. "Roll it away and add it to that nasty collection of yours." . . . With her broad bill the goose pushed the unhatched egg out of the nest, and the entire company watched in disgust while the rat rolled it away. Even Wilbur, who could eat almost anything, was appalled. "Imagine wanting a junky old rotten egg!" he muttered. . . . [Templeton] disappeared into his tunnel, pushing the goose egg in front of him.

Id.

pasture.⁸³ These pastured operations present special challenges to which we will return.

Other requirements include testing of the henhouse environment and sometimes the eggs, timely refrigeration of eggs, and a written *Salmonella* prevention plan.⁸⁴ While eggs may be safer now, the grand effect of all of this legislation for chicken welfare is almost nothing. Federal law does not create any requirements for the type or size of cages, access to the outdoors, type of feed, or anything else one might consider. As far as chickens are concerned, it is a hen-peck-hen sort of world.

There are, however, some lifestyle guarantees for organically raised chickens. For organically raised chickens producing organic eggs or being raised as broilers, the USDA is still the agency in charge, but in addition to APHIS, the National Organic Program is involved.⁸⁵ The National Organic Program is administered under another part of the USDA, the Agricultural Marketing Service (“AMS”).⁸⁶ Accordingly, although the National Organic Program rules dictate how organic chickens are raised, the purpose of organic certification is somewhat marketing oriented, aimed at “[e]nsuring the integrity of USDA organic products in the U.S. and throughout the world.”⁸⁷ The integrity of an organic chicken is ensured when an authorized third-party certifier confirms that the farmer is following the organic program rules.⁸⁸ For the chicken, this means that it has been under organic management since at least the second day of life.⁸⁹ Organic chickens do not need to be born organic.⁹⁰

Organic chickens have to be kept in circumstances that will protect their health and welfare, which means, *inter alia*, “conditions which allow for exercise, freedom of movement, and reduction of stress

⁸³ See, e.g., Dan Charles, *The FDA Doesn't Want Chickens to Explore the Great Outdoors*, NPR (July 25, 2013, 11:59 AM), <http://www.npr.org/blogs/thesalt/2013/07/24/205230655/the-fda-doesnt-want-chickens-to-explore-the-great-outdoors>.

⁸⁴ Production, Storage, and Transportation of Shell Eggs, 21 C.F.R. § 118.4 (“[Y]ou must have and implement a written [*Salmonella enteritidis*] prevention plan that is specific to each farm where you produce eggs”); *id.* § 118.4(e) (describing the requirement of refrigeration); *id.* § 118.5(a) (detailing environmental testing procedures for henhouses and eggs).

⁸⁵ See Organic Foods Production Act, 7 U.S.C. §§ 6501–23 (2012); National Organic Program, 7 C.F.R. § 205.236(a)(1) (2013).

⁸⁶ See 7 C.F.R. § 205.2.

⁸⁷ Regulatory Information Service Center: Introduction to the Unified Agenda of Federal Regulatory and Deregulatory Actions, 79 Fed. Reg. 896, 907, 911 (Jan. 7, 2014).

⁸⁸ See 7 U.S.C. §§ 6502(3), 6503(d).

⁸⁹ 7 C.F.R. § 205.236(a)(1).

⁹⁰ *Id.*

appropriate to the species.”⁹¹ In addition, all organic animals must have access to the outdoors for at least part of the year.⁹² As we will see, this means that some conventional poultry practices are not acceptable for organic chickens.⁹³

Finally, even though there are no federal requirements regarding the treatment of chickens in general, the NPIP, with its goals of minimizing or eliminating disease, does provide some standards, as we have seen.⁹⁴ Whether those standards improve the welfare of poultry in the program is a subject of discussion a bit further on in this Article.⁹⁵

Once a hen has laid an egg, we can focus on regulation of the eggs themselves. We make a distinction between “shell eggs,” which are eggs still inside intact shells, and “egg products,” which are all other eggs.⁹⁶ Mostly, “egg products” means eggs that were cracked (intentionally) to make liquid or processed egg products.⁹⁷ Shell eggs must be handled carefully and correctly to prevent growth of pathogens such as *Salmonella*. Although the FDA has jurisdiction over shell eggs on the farm and at the market,⁹⁸ the USDA’s Agricultural Marketing Service administers the grading and quality classifications.⁹⁹ Processed eggs, on the other hand, are inspected by another arm of the USDA, the Food Safety and Inspection Service (“FSIS”).¹⁰⁰

So to summarize, there is very little regulation of chickens at the federal level. If a chicken farmer wants organic certification, then the National Organic Program has oversight. If the farmer wants NPIP

⁹¹ *Id.* § 205.238(a)(4). Nonetheless, organic animals may undergo “physical alterations as needed to promote the animal’s welfare and in a manner that minimizes pain and stress.” *Id.* § 205.238(a)(5). For a chick, this usually means a debeaking procedure. Since chicks do not have to be organically raised until the second day, organic and conventional chicks can come from the same broods.

⁹² *Id.* § 205.239(a)(1).

⁹³ *See infra* Part IV (describing many poultry practices that are normal in the current poultry industry).

⁹⁴ *See supra* notes 44–59 and accompanying text.

⁹⁵ *See infra* Part III.

⁹⁶ *Compare* 21 U.S.C. § 1033(f) (2012) (defining “egg product”), *with* Production, Storage, and Transportation of Shell Eggs, 21 C.F.R. § 118.2 (2013) (defining “shell egg”).

⁹⁷ § 1033(f) (defining “egg product”).

⁹⁸ *See id.* § 331(a)–(c); *see, e.g.*, 21 C.F.R. § 115.50(e).

⁹⁹ *See, e.g.*, Agricultural Marketing Service, 7 C.F.R. § 56.4 (2013); *see also Specifics About Eggs*, AM. EGG BOARD, <http://www.aeb.org/foodservice-professionals/egg-products> (last visited Mar. 20, 2014) (summarizing egg sizes and grade meanings).

¹⁰⁰ 21 U.S.C. § 1034(e)(1); *see* Food Safety and Inspection Service, Department of Agriculture, 9 C.F.R. § 300.2. The Secretary of the Department of Health and Human Services (HHS) has authority and responsibility for inspecting food manufacturing establishments, institutions, and restaurants that are not egg packers. § 1034(d). Egg handlers with flocks of less than 3000 are exempt from USDA inspection. *Id.* § 1034(e)(4).

certification, then APHIS has oversight. And if the farmer wants to sell shell eggs labeled with grade and quality, then AMS has some say. Compliance with these sources of regulation and standards is voluntary,¹⁰¹ but most chickens and eggs fit into one of them.

III. HEN WELFARE—CONSUMERS WANT EGGS FROM HAPPY HENS

In addition to concerns about *Salmonella*, some consumers have concerns about chicken welfare.¹⁰² The egg industry is said to be the worst offender in terms of animal cruelty and environmental degradation.¹⁰³ While there is no actual animal welfare legislation that applies to chickens, industry efforts at self-regulation are slowly moving towards systems that allow more natural behaviors. Nevertheless, most commercial eggs come from chickens raised in cramped conditions in battery cages. Given the almost universal picture of hens scratching in dirt, how did chickens come to be kept in such cramped conditions?

A century ago, most eggs were produced in flocks of fewer than 400 birds.¹⁰⁴ Today, 99% of the egg-laying hens live on farms with 400 or more layers,¹⁰⁵ and some flocks have over a million birds.¹⁰⁶ What difference does this large scale production make? Aren't eggs just eggs? While regulatory efforts, as we have seen, attempt to keep disease away from eggs, consumers are also interested in the lifestyles of the hens that

¹⁰¹ 7 C.F.R. § 56.20 (describing who may initiate the voluntary application process for AMS shell egg grading service); 9 C.F.R. § 145.3 (detailing the voluntary participation standard for the APHIS's NPIP certification).

¹⁰² See LU ET AL., *supra* note 7, at 3 (“Research on consumer attitudes . . . shows that people in Europe, Australia, US[,] and Canada are concerned about farm animal welfare issues.”); see also RW Prickett et al., *Consumer Preferences for Farm Animal Welfare: Results from a Telephone Survey of US Households*, 9 ANIMAL WELFARE 335, 336 (2010) (“Studies have demonstrated that Americans as a whole are concerned about farm animal welfare. . . . [I]t is clear that some [Americans] exhibit great concern for the well-being of farm animals . . .”).

¹⁰³ See MICHAEL POLLAN, *THE OMNIVORE’S DILEMMA* 317–18 (2006); PETER SINGER & JIM MASON, *THE ETHICS OF WHAT WE EAT* 37–41 (2006).

¹⁰⁴ Cf. 5 BUREAU OF THE CENSUS, DEP’T OF COMMERCE, *FOURTEENTH CENSUS OF THE UNITED STATES: TAKEN IN THE YEAR 1920*, at 678–79, available at http://www.agcensus.usda.gov/Publications/Historical_Publications/1920/Livestock_Products.pdf (noting 359,537,127 total chickens on hand in 1920, out of 5,837,367 farms reporting chickens, yielding an average of 61.6 chickens per farm).

¹⁰⁵ See 1 U.S. DEP’T OF AGRIC., *2007 CENSUS OF AGRICULTURE* 24 (Dec. 2009 ed.) (indicating that 346,329,244 of the nation’s 349,772,508 egg-laying hens, or 99% of hens, come from farms with 400 or more layers). In fact, over 90% of layers live on farms with 20,000 or more egg-laying hens. See *id.*

¹⁰⁶ Marsha Laux, *Eggs Profile*, AGRIC. MKTG. RES. CTR. (Oct. 2013), http://www.agmrc.org/commodities_products/livestock/poultry/eggs-profile/.

lay the eggs.¹⁰⁷ Producers are aware that consumers prefer to eat eggs from hens living the good life, and we see the evidence of this on egg carton labels. Most consumers have at least noticed that some egg cartons say “cage free.” Other commonly seen labels proclaim “vegetarian fed” and “free range.” Consumers want to know that their eggs come from hens that are not mistreated. Unfortunately, consumers imagine that hen conditions are better than they really are.

In *Eat Like You Care*, law professors Gary Francione and Anna Charlton describe animal agriculture as producing “an absolutely staggering amount of suffering and death.”¹⁰⁸ Most people agree, moreover, that we should not cause unnecessary suffering to animals.¹⁰⁹ Economists have tried to quantify this moral preference through various studies. In general, studies show that consumers state a preference for eggs from well-treated hens. For example, Lu, Cranfield, and Widowski asked Canadian study subjects their preferences for different housing systems—including typical cages or enhanced cages that allow for natural behaviors.¹¹⁰ Consumers were willing to pay more for eggs from free range and cage-free systems, but not for eggs from enhanced cage systems.¹¹¹ In addition, the study demonstrated willingness to pay for specific features such as nest boxes, perches, and more space.¹¹²

On the other hand, studies of actual market behavior show that consumers are more price-motivated than they think they are. In other words, they don’t behave in the grocery store the way they claim they will when answering survey questions. For example, a California study examined actual grocery purchases of households that purchased eggs on a regular basis before the California Proposition 2 cage-free egg

¹⁰⁷ See HENG ET AL., *supra* note 7, at 2 (noting that an increase in the United States of awareness of farm animal welfare has led to changes in state regulations and industry standards); LU ET AL., *supra* note 7, at 2–3 (stating that increasing awareness of and concern about animal welfare impacts the production and marketing methods of animal products); GODDARD ET AL., *supra* note 7, at 62 (finding that there are key characteristics in consumers that drive animal welfare concerns); Allender & Richards, *supra* note 7, at 440 (concluding that consumers express a preference for enhanced animal welfare standards but are less willing to actually pay for it).

¹⁰⁸ GARY L. FRANCIONE & ANNA CHARLTON, *EAT LIKE YOU CARE* 9 (2013).

¹⁰⁹ Gary L. Francione, *Animal Rights and Animal Welfare*, 48 RUTGERS L. REV. 397, 398 (1996) (“Almost *everyone*—including those who use animals in painful experiments or who slaughter them for food—accepts as an abstract proposition that animals ought to be treated ‘humanely’ and not subject to ‘unnecessary’ suffering.”).

¹¹⁰ See LU ET AL., *supra* note 7, at 9.

¹¹¹ *Id.* at 23.

¹¹² *Id.*

debate.¹¹³ The study found that for many consumers, higher egg costs could significantly curtail egg consumption.¹¹⁴

Of course, what consumers understand about egg production may not fit reality, and it is possible that more information about actual production practices might induce people to change their purchasing behavior. I have argued elsewhere that label information is most important for people who would have a preference if they knew more about their available purchasing choices.¹¹⁵ Next, this Article will explore the available label information and its meaning.

Remember the Little Red Hen? The Little Red Hen is a children's story about a very busy hen who lived on a farm with several other animals. The busy little hen asked for help to plant, grow, and harvest wheat, and then to take the grain to the miller, bring back the flour, and make bread. The other animals, who were lazy, were never willing to help. And when the bread was ready, the hen refused to share it with them. The intended moral, of course, is that work is important because that's how we get bread. But there is another, perhaps unintended, message. In this story and other stories with hens, there are a very small number of barnyard hens involved. They freely go in and out, and they eat grain. This is the picture of hens and chickens that most of us imagine. It is the picture of chickens and hens painted by great artists. It is the barnyard scene in *Cinderella*.¹¹⁶ It is in *Charlotte's Web*.¹¹⁷ But this is a picture of backyard chickens, not industrial egg layers.

IV. YOU CAN'T REALLY GET WHAT YOU WANT—LABELS ARE MISLEADING, AND RECENT WELFARE EFFORTS MAY BE MISGUIDED

In some urban areas, interest in backyard chicken coops has been on the rise. Martha Stewart says, “[k]eeping and caring for chickens

¹¹³ Allender & Richards, *supra* note 7, at 440. Proposition 2 was a 2008 California ballot measure that will require that calves raised for veal, egg-laying hens and pregnant pigs be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs and turn around freely. The measure passed with 63% of the vote, and some provisions will take effect in January 2015. *See also* Cal. Sec'y of State, *Prevention of Farm Animal Cruelty Act*, in CALIFORNIA GENERAL ELECTION: OFFICIAL VOTER INFORMATION GUIDE 82 (2008), available at <http://vig.cdn.sos.ca.gov/2008/general/pdf-guide/vig-nov-2008-principal.pdf> (requiring that calves raised for veal, egg-laying hens, and pregnant pigs be confined only in ways that allow those animals to lie down, stand up, fully extend their limbs, and turn around freely).

¹¹⁴ Allender & Richards, *supra* note 7, at 439–40.

¹¹⁵ *See* Donna M. Byrne, *Cloned Meat, Voluntary Labeling, and Organic Oreos*, 8 PIERCE L. REV. 31, 70–71 (2009).

¹¹⁶ *See* DAVID WHITLEY, *THE IDEA OF NATURE IN DISNEY ANIMATION* 34–36 (2d ed. 2012).

¹¹⁷ *See* WHITE, *supra* note 82, at 68 (referencing a “henhouse”).

myself means I know exactly how they are housed, what they eat, and what goes into their delicious eggs.”¹¹⁸ The implication, of course, is that how a hen is housed, what she eats, and therefore what goes into her eggs is important to Martha (and by extension to her readers). But most consumers do not know that most hens spend their lives in cramped cages indoors, or that “cage free” merely means packed by the thousands into a closed building instead of into small cages.¹¹⁹ Most consumers do not get to make choices about the kind of hens that lay their eggs because they simply do not know there is a choice. The horrific reality of egg production is well described elsewhere; the goal is to simply show that consumers are not getting clear information that they may want. This is the lite version.

This section describes some of the hen welfare issues that are, or may be, of interest to consumers and discusses the reality behind the label.¹²⁰ Any legislation regarding hen welfare is likely to address some or all of these issues.¹²¹ The section first describes the issues and then examines the provisions of the former United Egg Producers (“UEP”) and Humane Society of the United States’ (“HSUS”) agreement regarding hen welfare.¹²² While the agreed-upon changes would have moved egg production a bit closer to the ideal “hens-in-the-yard” picture, the new standards still would not reflect the picture consumers are likely to hold in their imaginations. Moreover, even if the agreement were more helpful for hen welfare, United Egg Producers decided in February 2014 not to renew its agreement with the Humane Society.¹²³

¹¹⁸ Martha Stewart, *The Chicken and the Egg*, MARTHA STEWART LIVING, Apr. 2013, at 23, 23.

¹¹⁹ See Angela R. Green, A Systematic Evaluation of Laying Hen Housing for Improved Hen Welfare 2–3 (2008) (unpublished Ph.D. dissertation, Iowa State University) (on file with the Regent University Law Review) (discussing the size of flocks in cage-free systems).

¹²⁰ See Richard L. Cupp, Jr., *Moving Beyond Animal Rights: A Legal/Contractualist Critique*, 46 SAN DIEGO L. REV. 27, 83 (2009) (“[P]ublic interest in humane treatment of animals has probably never been stronger.”).

¹²¹ There is currently no federal legislation regarding the welfare of layer hens. In 2012, United Egg Producers and the Humane Society of the United States agreed that the two organizations would work to pass legislation that would ban conventional battery cages. See JOEL L. GREENE & TADLOCK COWAN, CONG. RESEARCH SERV., R42534, TABLE EGG PRODUCTION & HEN WELFARE: THE UEP-HSUS AGREEMENT AND H.R. 3798 (2012). To that end, legislation which would amend the Egg Products Inspection Act, 21 U.S.C. §§ 1031–56 (2012), has been introduced but not yet passed. See S. 820, 113th Cong. (2013); H.R. 1731, 113th Cong. (2013). In February 2014, United Egg Producers announced that it would cease pursuing the legislation. Dudley W. Hoskins, *United Egg Producers Decline to Renew MOU with HSUS*, NASDA (Feb. 19, 2014), <http://www.nasda.org/News/24781.aspx>.

¹²² See generally GREENE & COWAN, *supra* note 121.

¹²³ Hoskins, *supra* note 121.

Finally, we consider the role of egg carton labels and conclude that egg labels are and will continue to be misleading for many consumers.

The UEP estimates that worldwide, 90% of eggs produced come from hens living out their lives in battery cages.¹²⁴ In the United States, the figure is higher—95% or more.¹²⁵ The conventional battery cages hold 6 to 10 birds per cage and provide about 67 to 86 square inches per bird.¹²⁶ For comparison, a sheet of notebook paper is 93.5 square inches, but if someone tore a 2.5 inch strip off the end, the resulting 8.5 inch square would have 72.25 square inches, about the amount of space allowed to a typical egg-laying hen.¹²⁷ To put this density in context, the University of Minnesota Extension Service recommends 3 to 5 square feet (or 432 to 720 square inches) per bird for backyard hens, or around 8 to 10 times the space provided in a typical battery cage.¹²⁸ The cages, holding 6 to 8 hens each, are situated in long rows, three to five rows high—a battery of cages.¹²⁹ Cages facilitate egg collection, feeding, and removal of fecal material. They also serve to keep hens safe from predators.¹³⁰ When an egg carton label says “cage free” these are the cages from which the layers are free.

While battery cages provide for efficient egg production, they really do not allow hens to engage in typical chicken-like behavior. Chickens are jungle fowl; in the wild, they would roost in trees and other surfaces

¹²⁴ See UNITED EGG PRODUCERS, ANIMAL HUSBANDRY GUIDELINES FOR U.S. EGG LAYING FLOCKS 1 (2010 ed. 2010) [hereinafter GUIDELINES] (estimating that 95% of United States commercial egg production and 90% of world egg production comes from caged layers).

¹²⁵ See *id.*

¹²⁶ See *id.* at 18; see also GREENE & COWAN, *supra* note 121, at 3.

¹²⁷ The space allowed to broilers is specified in inches per pound of bird weight. Although broilers also share space with each other, they may not experience the same crowding as layers. Under the National Chicken Council guidelines, stocking density depends on weight and is specified in pounds per square foot. See NAT'L CHICKEN COUNCIL, NATIONAL CHICKEN COUNCIL ANIMAL WELFARE GUIDELINES AND AUDIT CHECKLIST FOR BROILERS 4 (2010), available at <http://www.nationalchickencouncil.org/wp-content/uploads/2012/01/NCC-Animal-Welfare-Guidelines-2010-Revision-BROILERS.pdf>. The range is 6.5 to 8.5 pounds per square foot. *Id.* This means just under one and a half 5.5-pound broilers per square foot.

¹²⁸ BETSY WIELAND & NORA NOLDEN, UNIV. OF MINN. EXTENSION, BACKYARD CHICKEN BASICS (2011), available at <http://www.extension.umn.edu/food/small-farms/livestock/poultry/backyard-chicken-basics/docs/backyard-chicken-basics.pdf>.

¹²⁹ Green, *supra* note 119, at 21.

¹³⁰ *Id.* at 20, 40 (noting benefits of traditional cage systems, including better performance and health and a reduction of the risk from predators for hens that have access to the outdoors, such as free-range hens).

off the ground.¹³¹ They would make nests. They would scratch in the dirt, stretch their wings, and develop a social hierarchy—a pecking order.¹³² None of these behaviors is possible in a battery cage.

In cage-free production, battery cages are eliminated.¹³³ A typical cage-free barn may contain 20,000 birds, however, so crowding is still part of the lifestyle.¹³⁴ But perches and roosting places off the ground can be made available, along with dark nesting boxes.¹³⁵ Roosting and nesting places are recommended for backyard hens too because these allow for natural behaviors.¹³⁶ But cage-free poultry houses are still a far cry from the chicken yards consumers imagine. Chickens do not naturally form flocks of 20,000 birds, and this flock size makes it difficult or impossible to develop a social hierarchy.¹³⁷ In addition, such a large number of birds means a lot of bird waste. Keeping ammonia levels down in poultry barns can be a challenge, especially when ventilation is limited to preserve heat.¹³⁸ And although cage-free hens are able to roost and nest, other natural behaviors may still be inhibited.¹³⁹ Egg industry websites suggest that the cage-free barns are less sanitary than cage systems—for example, eggs and birds are more likely to come into contact with fecal material—and less safe for the birds, which are more likely to be injured or trampled because of their increased movement.¹⁴⁰

Another way in which commercial egg production does not quite fit the chicken yard picture is that for the most part, commercial hens spend their lives indoors. It should be obvious that caged hens have no access to the outdoors, but cage-free hens also typically spend their

¹³¹ Jennifer Cook, *Backyard Chickens*, COLO. ST. U. (2011), <http://www.ext.colostate.edu/sam/backyard-chickens.pdf> (stating chickens in the wild roost in trees).

¹³² Chickens are said to recognize up to 100 other birds in order to develop this social order. Michael Specter, *The Extremist*, NEW YORKER, Apr. 14, 2003, at 52, 64.

¹³³ Green, *supra* note 119, at 2.

¹³⁴ *Id.* at 2–3 (stating flocks in cage-free systems range from just a few thousand to well over 100,000).

¹³⁵ *See id.* at 24.

¹³⁶ WIELAND & NOLDEN, *supra* note 128.

¹³⁷ *See* PETER SINGER, ANIMAL LIBERATION 100 (2009) (discussing aspects of social interaction between chickens and the impact high-density housing has on those interactions).

¹³⁸ *See* GUIDELINES, *supra* note 124, at 28 (establishing UEP guidelines for ammonia concentration of no more than 25 ppm and preferably under 10 ppm, although higher exposure for brief periods may be acceptable); *see also* NAT'L CHICKEN COUNCIL, *supra* note 127, at 3 (requiring an ammonia concentration, for broilers rather than layers, of no more than 25 ppm at the bird height).

¹³⁹ *See infra* notes 141–47 and accompanying text.

¹⁴⁰ *See Cage-Free Farm Tour*, UNITED EGG PRODUCERS, <http://www.uepcertified.com/VirtualTours/vtModernCageFreeHR.html> (last visited Mar. 20, 2014).

whole lives indoors.¹⁴¹ There is no chicken yard in their lives, and they may never see the outdoors at all. But consumers like to imagine hens free to scratch in the dirt, so some egg producers are willing to provide “free range” eggs from hens that were free to go outside.¹⁴² This designation does not mean that the hens actually went outside; it only means that they had the option.¹⁴³ The caricature of chickens as being fearful is well deserved,¹⁴⁴ and in a large poultry house with a small door leading out to a bright world, few hens are likely to be outside at any time.¹⁴⁵

Because most hens spend their lives indoors, they miss out on seasonal cues such as day length. Seasons matter, however. In the normal scheme of things, hens “molt”—lose their feathers and grow new ones—in the fall when days get shorter.¹⁴⁶ They lay more eggs in the spring when days get longer.¹⁴⁷ This seasonal molting cycle results in greater egg production overall, although there may be a decrease during the molting period.¹⁴⁸ Unfortunately, without seasonal cues, hens do not molt and their egg production merely declines.¹⁴⁹ Farmers interested in egg production have the choice of either killing the hens after that first laying cycle, or finding a way to get the hens to molt, ideally all at the same time.¹⁵⁰ This induced molt can be accomplished in various ways, the traditional approach being to withdraw feed for a week or two.¹⁵¹ The feed-withdrawal method of inducing molting is now seen as inhumane

¹⁴¹ Green, *supra* note 119, at 24.

¹⁴² *Id.*

¹⁴³ *See id.* at 24, 41.

¹⁴⁴ *Id.* at 41.

¹⁴⁵ *Id.*

¹⁴⁶ SINGER, *supra* note 137, at 118; *see also* Kathy Shea Mormino, *Molting—What Is It & How to Help Chickens Get Through It*, GRIT (July 27, 2012, 3:01 PM), <http://www.grit.com/animals/molting-what-is-it-how-to-help-chickens-get-through-it> (describing the molting process and providing pictures of molting hens).

¹⁴⁷ *See generally* SINGER, *supra* note 137, at 118; *see also* Mormino, *supra* note 146 (explaining that chickens lay eggs more frequently in the spring).

¹⁴⁸ A.B. Webster, *Physiology and Behavior of the Hen During Induced Molt*, 82 POULTRY SCI. 992, 992 (2003).

¹⁴⁹ SINGER, *supra* note 137, at 118.

¹⁵⁰ *See id.*

¹⁵¹ ERIN E. WILLIAMS & MARGO DEMELLO, *WHY ANIMALS MATTER* 41 (2007).

and is no longer favored.¹⁵² Instead there are now various non-feed-withdrawal methods.¹⁵³

Molting is not the point here. Rather, it is that consumers with the henyard model in their minds have no idea that this is part of the process. Would they care about molting if they knew? It is hard to know because labels are silent about most aspects of egg production, including molting. When did you last see a label that read “no-forced-molt eggs”? Industry advocates argue that induced molting gives chickens a longer productive life and thus a longer life in general.¹⁵⁴ Surely a longer life is better than a short one, but this is a somewhat ingenuous argument. Chickens can live up to ten or fifteen years.¹⁵⁵ A laying hen, however, has a useful lifespan of about one to three years.¹⁵⁶ But the life of a layer is not much to envy.

Breeding itself can reduce the quality of life for hens. Selecting for hens that lay more eggs may mean selecting hens that have more fragile bones.¹⁵⁷ Accordingly, broken bones and the attendant suffering they produce may be higher than necessary among layers.¹⁵⁸ Fragile bones may also result from cage production itself. When hens cannot move around, they lose muscular strength, resulting in increased fractures.¹⁵⁹

Moreover, hens in close quarters deprived of normal behavior may experience hysteria and peck each other,¹⁶⁰ so a standard practice is to sear off the end of the beak within a week or two of hatching.¹⁶¹ The UEP

¹⁵² See GUIDELINES, *supra* note 124, at 10 (noting that current UEP-certified guidelines allow only non-feed withdrawal methods).

¹⁵³ P.E. Biggs et al., *Further Evaluation of Nonfeed Removal Methods for Molting Programs*, 83 POULTRY SCI. 745, 745 (2004) (researching eight alternative methods to complete feed removal molt induction).

¹⁵⁴ See SINGER, *supra* note 137, at 118 (describing how molting increases production).

¹⁵⁵ WILLIAMS & DEMELLO, *supra* note 151, at 29 (contrasting the lifespan of a broiler of just forty-five days with a chicken’s typical lifespan of up to fifteen years).

¹⁵⁶ See GUIDELINES, *supra* note 124, at 9; see also Ruth C. Newberry, *Contemporary Issues in Farm Animal Housing and Management: Poultry Well-being*, in SUSTAINABLE AGRICULTURE 338, 339 (Christine Jakobsson ed., 2012) (asking whether it would be better to terminate the lives of hens after the first productive cycle rather than inducing a molt).

¹⁵⁷ WILLIAMS & DEMELLO, *supra* note 151, at 40 (remarking how vitamin deficiency, lack of exercise, and over-breeding to further egg production cause the majority of laying hens to have osteoporosis).

¹⁵⁸ See *id.*

¹⁵⁹ *Id.*

¹⁶⁰ While “pecking” is natural behavior (hence the term “pecking order”), in close quarters, the pecked hen has no escape. See D.C. Lay Jr. et al., *Hen Welfare in Different Housing Systems*, 90 POULTRY SCI. 278, 283 (2011).

¹⁶¹ WILLIAMS & DEMELLO, *supra* note 151, at 37 (stating that, typically, within one to two weeks of birth the beaks of chicks are removed).

cites some advantages: less pecking, feather pulling, and cannibalism, and better stress levels and feather condition.¹⁶² On the other hand, debeaked hens may have difficulty eating in addition to pain and stress from the procedure.¹⁶³ But the welfare question is not whether the advantages outweigh the disadvantages; the real issue is that production practices that lead to pecking, feather pulling, and stress, and lead to a perceived need for such an invasive and painful procedure as beak trimming, are far from the consumer picture of happy hens in a courtyard. To a large extent, consumers are not getting what they think they are. For many people, eggs are eggs, but if consumers believe the eggs come from hens like those pictured in story books and on egg cartons, then consumers are being misled.

Consumers do care about animal welfare, and the UEP has made an effort to respond to animal welfare concerns. It has developed voluntary guidelines and a “UEP certified” logo.¹⁶⁴ The UEP website proudly exhorts consumers to “[s]how your commitment to animal welfare and buy UEP certified eggs.”¹⁶⁵ The website points out that although caged hens don’t seem to have much room, they naturally huddle together anyway, even when they have more room.¹⁶⁶ Nonetheless, although cage-free hens can move about more and exhibit more natural hen behaviors, they are more likely to be injured as a result and there is greater possibility of hens and eggs coming in contact with fecal material.¹⁶⁷ Intensive egg production means that hens are raised in large groups; as a result, debeaking is necessary for caged and cage-free flocks alike.¹⁶⁸ But is this what consumers want? Is it what consumers think they are buying?

Ignorance is bliss, and to an extent it may be utility maximizing. If consumers have no idea an issue or choice exists, then they suffer no

¹⁶² GUIDELINES, *supra* note 124, at 8.

¹⁶³ *Id.*

¹⁶⁴ *Id.* at 5–6 (defining and explaining the UEP-Certified logo, as well as procedures that certified companies must implement when choosing to display the logo on their products).

¹⁶⁵ UNITED EGG PRODUCERS, <http://www.uepcertified.com/> (last visited Mar. 20, 2014) (inviting website visitors to link to the UEP on Facebook to show commitment to animal welfare).

¹⁶⁶ *Modern Cage Farm Tour*, UNITED EGG PRODUCERS, <http://www.uepcertified.com/VirtualTours/vtCagedHR.html> (follow “Cage Space” hyperlink) (last visited Mar. 20, 2014) (explaining that hens naturally flock and huddle together regardless of space).

¹⁶⁷ *Cage-Free Farm Tour*, UNITED EGG PRODUCERS, <http://www.uepcertified.com/VirtualTours/vtModernCageFreeHR.html> (follow “Smothering” hyperlink) (last visited Mar. 19, 2014).

¹⁶⁸ *Id.*

direct loss of utility by being deprived of choice.¹⁶⁹ But when consumers do know about an issue and care about it, utility is affected by choice. The problem is that sometimes consumers *would* care if they knew an issue existed, but because they are ignorant of the issue altogether, they have no preference. Food labels perform a variety of functions, one of which is education.¹⁷⁰ Labels may alert us to issues we might not otherwise realize are issues, and labels may provide information about those issues. When consumers know enough about an issue to form a preference, they are best able to maximize their utility through market choices based on information about products.¹⁷¹

CONCLUSION

Martha Stewart asks whether backyard coops are a possible solution to the food safety, animal welfare, and sustainability concerns related to egg production.¹⁷² But this is not an Article about backyard chicken coops. Rather, we are focused on the mismatch between consumer beliefs and expectations, and the eggs available in the grocery store. As we have noted, people care about animals, but perhaps surprisingly, there are very few if any laws or regulations specifically aimed at the well-being of poultry. Nevertheless, due to consumer concerns, chicken welfare is an issue, and the industry is attempting to self-regulate as a way of warding off mandatory regulations.¹⁷³

Consumer studies show a stated preference for eggs from hens with opportunities for natural behavior. Moreover, the preference is affected by information about egg production practices. This suggests that even in the presence of labels proclaiming “cage free” and “free range,” consumers don’t have enough information to make informed choices. If consumers would choose differently given more information, then they are essentially being misled to their detriment by being kept in the dark.

¹⁶⁹ Consumers are blissfully ignorant of the fate of male chicks in egg production, for example. Male chicks, as well as hens that have become unproductive, are “euthanized.” See WILLIAMS & DEMELLO, *supra* note 151, at 35–37. The UEP provides guidelines for how this is to be accomplished. GUIDELINES, *supra* note 124, at 12–14. Euthanasia is supposed to be instantaneous and painless. Acceptable methods are based on American Veterinary Medical Association guidelines and do not allow for throwing live chicks in the trash. See AM. VETERINARY MED. ASS’N, AVMA GUIDELINES FOR THE EUTHANASIA OF ANIMALS 6 (2013 ed. 2013).

¹⁷⁰ See Byrne, *supra* note 115, at 37.

¹⁷¹ *Id.* at 60 (stating labels alert the consumer to the existence of an issue, playing an educational role, and provide information to allow the consumer to make a choice, fulfilling an informational role).

¹⁷² See Stewart, *supra* note 118, at 24–26.

¹⁷³ The UEP’s mission includes “guidelines that are driven by the industry rather than government mandates or legislation.” GUIDELINES, *supra* note 124, at 3.

The result is that many consumers who buy cheap conventional eggs may actually be *overpaying*. The Food, Drug, and Cosmetic Act labeling provisions are intended to prevent misleading consumers to their detriment, but egg cartons, with their pictures of individual hens, open fields, and sun shining on barns, mislead consumers just as inaccurate label words might do.

Given the failure of the UEP-HSUS agreement, it seems unlikely that either consumers or hens have much hope of improving conditions in the near future. Indeed, until consumers really have complete information about hen welfare, they cannot truly exercise their market preferences.