Breed(ing) Narratives: Visualising Values in Industrial Farming

Camille Bellet

University of Manchester

Emily Morgan

Iowa State University

Abstract: In this study, we consider how farmed animals, specifically pigs and chickens, are visualised in literature designed for circulation within animal production industries. The way breeding companies create and circulate images of industrial animals tells us a lot about their visions of what industrial animals are and how they believe animals should be treated. Drawing upon a wide range of material designed for circulation within animal production industries, from the 1880s to the 2010s, this paper examines how representations of pigs and chickens contribute to stories of perfection and advance ideals of power, race, gender, and progress. We demonstrate that visual representations of industrial animals have remained remarkably stable over time, testifying to the deep roots of human desires and assumptions about animals in capitalist societies. We argue that breed-standard images of pigs and chickens uphold complex and deeply imbricated value systems that extend beyond discourses centred on the animal body.

Keywords: Industrial farming, photography, advertising, visual culture, animal breeding, domestic animals, perfection, value

Introduction

Animal representations in visual culture have long been used to produce and reinforce ideologies and power relations. Numerous scholars have explored uses of animal imagery to legitimise animal oppression and normalise systems of human power and inequality, such as sexism, racism, imperialism and ethnocentrism (Baker; Adams; Chris; Pick; Weil; Malamud). For Berger and others (see for example Mullin), looking at the animal image offers a way for humans to uncover, express, and understand otherwise invisible or 'indescribable' things about animal and human lives, behaviours, social relationships and transformations (*Why Look at Animals?* 10). Representations of the animal body, far from being mere pictures or fantasies, genuinely impact how humans conceive and treat animal subjects, and how humans imagine, construct, and manipulate human-animal relationships (Kalof, Zammit-Lucia, and Kelly). As Baker argues, 'the representational, symbolic and rhetorical uses of the animal must be understood to carry as much conceptual weight as any idea we may have of the "real" animal, and must be taken just as seriously' (10). Visual and verbal representations of pigs on French Belle Époque postcards have been shown to provide a narrative that is inextricable from the profound changes taking place in pig farming, demonstrating how the instability of pig signifiers reflects broader sociocultural shifts and ideals (Garval). Given such complexities, the work of addressing 'the slippery meanings of the animal image' (Baker 194) comes to resemble a kind of unravelling.

Erika Cudworth notes that 'Cattle are selected via trade exhibitions or through breed catalogues' (38), and the same is true of pigs and chickens: the images and texts used to describe breeds and genetic lines in websites and catalogues become a key means by which herd and flock managers select animal lines for their farms, and exchange information about their qualities, strengths, and weaknesses. In this study, we consider how pigs and chickens are visualised in newsletters, periodicals, catalogues, and other breeding company literature designed for circulation within animal production industries. We examine how these visualisations contribute to stories of perfection, wellbeing, and farm adaptation that circulate within food industry communities, and how these stories, in turn, connect to broader discourses of power, race, gender, and progress. Portrayals of chicken and pig bodies by genetic companies resonate with the values, ambitions, and experiences of their future buyers (Calvert) and reinforce the broader

sociocultural views and interests of chicken and pig industries (Lerner and Kalof). Shukin points out the dual meaning of the term 'rendering' with regard to animal economies: it refers both to the representation of animal bodies, and to processes of wringing value from their bodies (21). Circulation of pictures and texts in these inter-industry materials becomes, in a very real way, circulation and exchange of animal bodies and animal substances themselves.

In addition to considering how animals are envisioned, we also examine how pictures of other aspects of breeding and farming, including depictions of human workers, support organisations' overall self-fashioning narratives. In considering not only pictures of ideal/idealised animal bodies, but also human-to-human and human-animal relationships in animal industry media, we find deeply imbricated discourses and assumptions about gender, race, colonialism, and other dynamics. These representations, too, inform and sustain hegemonic power relationships in industrial farming.

In *Beyond Boundaries*, Barbara Noske calls for a 'need to rethink our image of animals' (viii), referring to the relationships and projections that Western societies have with, and place on, animals. In the case of farming, such projections have changed profoundly with Western industrialisation and the globalisation of food production. Rather than companions, farmed animals have become 'bodily substances' such as meat, eggs and milk (Noske 3). The period following World War II, in particular, saw an acceleration of processes of farmed animal 'thingification' (Adams, *The Pornography of Meat*): both their environments and their biology were dislocated, and their bodies transformed into human projects for profit and agrifood development. Animal farms became more concentrated and specialised, and so did animal breeds.[1] With the advent of robotics, animal farms have been modernised and farming practices automated to maximise outputs and minimise cost (Boyd). Little room has been left for an entry of the farmed animal into the human imagination as anything other than 'meat or leather or horn' (Berger, *Why Look at Animals?* 4).

Recent decades have seen increased attention paid to the detrimental side effects of industrial-scale animal production. Landscape transformation and rapid deforestation occasioned by the expansion of industrial farms have multiplied concerns over environmental degradation,

wildlife extinction, and climate change (Moore). Demand for large volumes of inexpensive and non-perishable animal products has fuelled concerns about the marketing of unhealthy, ultra-processed food (Nestle). Recent years have seen an increased focus on public health crises emerging from 'factory farming': crowded by the thousands, genetically undiversified, and constantly moving between business premises, industrial animals are a fertile medium for the emergence and propagation of new pathogens and diseases (Blanchette). The 'mad cow' crisis; antimicrobial resistance; and the emergence of zoonotic epidemics including H5N1, H1N1, and COVID-19, are just a few examples that have brought to light the inextricable connections between human and nonhuman animal lives in farming.

In exploring how visual and verbal representations of pigs and chickens have been constructed by animal industries, our goal is to examine how pigs and chickens are represented within industrial farming systems and to question '*whose* interests' (Noske 23, emphasis original) and values are promoted by such 'ideologically loaded images' (Du Long, qtd. in Calvert). The interests of nonhuman animals as beings, rather than as industrial products, rarely prevail. Over the time period that we consider within this study, roughly the late nineteenth century to today, animal industries have deployed and circulated images to re-envision a broad shift from traditional, small-scale practices of animal farming to large-scale industrial systems of animal production. Indeed, visual images have been deployed not only to depict, but to facilitate and enable this shift. Our study aims to bring to light the stories told by animal industries about industrial pig and chicken beings and bodies, and to show how these stories reinforce wider ideals of gender, race, perfection and progress that underpin Western models of industrial capitalism.

Visualising the industrial animal

Although a great deal of scholarship focuses on histories of animal advertising, most of this has considered materials designed for wide public circulation (Lerner and Kalof; Stewart and Cole; Freeman; Molloy). There has been less examination of materials produced for circulation among specialised audiences, such as the animal industries we examine here. But the question of

audience proves pivotal: as publications foreground the interests of their target audiences, they adjust visual and textual rhetorics to suit expectations. A publication addressing farmers might present animals differently from one targeting an audience of meat-industry executives (Hajdik); and the presentations of both would differ from those in a popular magazine (Molloy).

In this study, we use images to explore some of the values and ideologies that underpin industrial-scale animal agriculture. Through circulating media, industrial values and ideologies likewise circulate: animal images sell a vision of the 'Western animal' (Noske 30) and of farming as an industry, not just reflecting but actively transforming cultures of chicken and pig farming around the world. We focus our analysis on illustrated newsletters, periodicals, and other materials designed for circulation within the worlds of farming, animal breeding, and animal production. We consider a wide range of materials, in terms of when they were produced – from the 1880s, when industrial farming was in its infancy, to the 2010s – and for whom they were intended, from small farmers to operators and managers of industrial-scale production facilities. We have focused on geographic cradles of industrial-scale farming, namely the United Kingdom (UK), Continental Europe (EU) and the United States of America (US).

Once these temporal and geographical frameworks were defined, our collection of photographic images was carried out in several stages. As present-day industrial production of chickens and pigs is largely concentrated and vertically integrated – that is, controlled by a few large transnational companies – we first identified the main UK, EU, and US breeding companies for pigs and chickens. We also identified companies that played important historical roles in industrial chicken and pig breeding. We then researched newsletters, publications, blogs and web pages, locating representative images and considering how these companies presented their own histories and told their stories. Finally, this material was supplemented by historic publications from the collections of the Iowa State University libraries, known for their holdings on pre- and post-industrial animal farming; and by material from UK chicken and pig breed federations.

We analyse only circulating materials in this study – not archival materials, such as negatives or photographs, manuscripts, or business correspondence. Although born, in part, out of practical concerns (COVID-19 has made archival research extraordinarily difficult), delimiting our materials to circulating imagery has served to focus and reinforce our overall argument. While a photograph or advertising image may be the work of an individual photographer or designer, these images were created by individuals working on behalf of animal industries. The points of view of the images we analyse in this study are industry's points of view. What animal industries say about themselves and amongst themselves, publicly and openly, tells us a tremendous amount about how they see themselves and their products, how they understand their work, and what they aim to accomplish.

The meanings ascribed to stock photographs, like the ones we analyse in this study, are fluid by definition: a stock photograph is kept on hand in order to be put to whatever purpose a company or advertiser might need, to be 'treated as raw material, with no intrinsic […] value' (Wilkinson 27). Companies reuse pictures: changing their contexts, flipping or rotating them, repurposing them, moving them from print material to websites and back again. A textual surround, too, can profoundly affect (and be affected by) an image. In daily life, we almost always encounter pictures surrounded by words. Words and images work together to convey an overall sense and to carry meaning, so in analysing these materials it is necessary to consider word and image as a single persuasive entity (Barthes; Hall; Berger, *Ways of Seeing*; Strauss). Although our study addresses primarily photographs, many of the more recent images we analyse here have been created almost wholly through digital imaging, and are 'photographs' only in a loose sense (see Batchen; Squiers, et. al.). Even without archival documentation, images comment eloquently on the circumstances of their own creation.

In this study, we engage in a disruptive reading of images and texts circulated by animal industries. But reading against the dominant narrative is still reading: the meanings we read in these materials *are present*. Against 'the discourses […] that emanate from power,' we engage in 'a practical search for internal inconsistencies' (Sekula 78), working around, beneath, or in opposition to the dominant meanings encoded in the images. The conclusions we draw, too, may be different from those drawn by a representative of the animal industries. In depicting an

animal, an image might fix and reduce the animal to a state of two-dimensionality; but it might also render the animal present, reminding us of her existence and agency. Images 'bring animals in, […] [they] show, include and involve them in ways that reveal their significance as social actors both in relation to humans and in their own right' (Hamilton and Taylor 89).

Photographs are frequently critiqued as implements of oppression, reifying and objectifying subjects in order to quantify, manipulate, and manage them – a dynamic prevalent in Western colonialist projects (Sontag, *On Photography*). The photograph, because of its ostensibly direct, indexical relationship to its referent, carries an authority, a truth effect, that a painting, drawing, or print might not. This evidentiary capacity makes photography a powerful tool for reinforcing hegemonic power relations.[2] Such dynamics unquestionably inhere in photographs created and circulated by breeding companies. But understanding the medium solely as a metonym for capitalist mystification leaves out many of the ways people *actually use* photography (Mitchell). Photographs can also serve as powerful tools to expose the animal, to render visible the invisible, describe the indescribable, and reveal what is stifled by oppressive systems of industrial animal production.

Ariella Azoulay writes about 'the civil contract of photography', wherein the medium can be a way for an under- or mis-represented population to become visible (12-14). She applies her argument to human communities denied political representation, but the formulation can be extended to animals. An image, even one designed and intended to conceal or manipulate the meaning of an animal body, may also reveal it.[3] While images facilitate the instrumental, rationalistic visions of animality preferred by animal industries, Azoulay's ideas also help us to conceive of images as avenues for animal visibility, over and above the intentions of those who make and deploy them in the first place.

Shaping an ideal of breed perfection

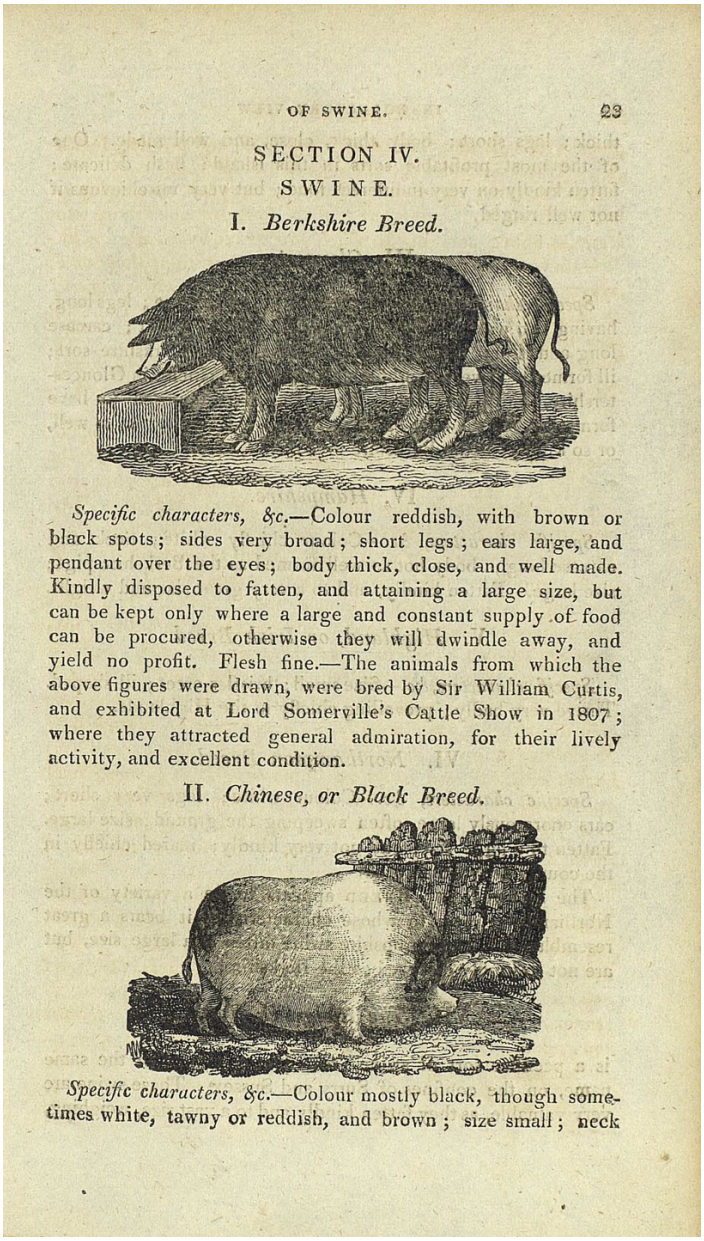
Across time and space, certain kinds of animal representations have remained remarkably stable – the 'breed-standard' photograph, for instance, used to communicate the characteristics of an individual animal and to show her similarity to a breed or hybrid ideal. Images of prize or

paragon animals conform to a set of standards for the presentation of the animal so rigid that they have persisted nearly unchanged in breeding-animal images from the pre-photographic period of the early nineteenth century up to the present day. Art histories of animal imagery usually concentrate on images of special animals: prized racehorses, beloved hunting dogs, 'elite cattle' (Ritvo 46). We are interested here, however, in depictions of the bodies of workaday breeding animals, those 'lesser beasts that [are] the mainstay of livestock industry' and who often do 'not seem to be judged by the same standards' as prestigious specimens or beloved companions (Ritvo, 46). 'Uncharismatic' farmed animals such as industrial pigs and chickens have often been neglected (Woods et. al. 32), including in visual studies. Their ubiquity in present-day food systems, however, demands closer scrutiny of how they are represented.

Breed-standard images are designed to present the clearest possible vision of an animal's features – specifically, the features a breeder perceives as most valuable. Images show the individual animal as a representative or type of the overall breed. The rigidity of the standards for such images corresponds to a rigidity in how 'perfection' is perceived in any given breed: consideration of breed perfection rests on identifying *and visualising* the breed standard. 'The breed standards are what is expected for each breed, in terms of looks and conformation' (BPA).

In one 1816 farming manual, two images of pigs show that the form of the breed-standard image was already well-established long before the invention of photography (fig. 1). The manual accompanies descriptions of several porcine breeds, including the Berkshire and 'Chinese, or Black' breeds, with engraved images showing representative animals in strict profile. The breed's typical body shape appears clearly, and a viewer familiar with the breed could judge how well the animals conform to the ideal characteristics for each type. Of the Berkshires, accompanying text notes that 'The animals from which the above figures were drawn, were […] exhibited at Lord Somerville's Cattle Show in 1807, where they attracted general admiration.' Context is minimally rendered, the better to focus on the animal's body. The Berkshires stand at a feeding trough, bearing witness to the text's assertion that the breed is 'kindly disposed to fatten, and attaining a large size, but can be kept only where a large and constant supply of food can be procured, otherwise they will […] yield no profit'. The

'Chinese, or Black' pig, her slab-like body nearly skimming the earth, feeds on corncobs. Her image similarly attests to her capacity for putting on weight, and thus bringing prosperity to the farmer who raises her.



OF SWINE. 23

SECTION IV.

SWINE.

I. *Berkshire Breed.*

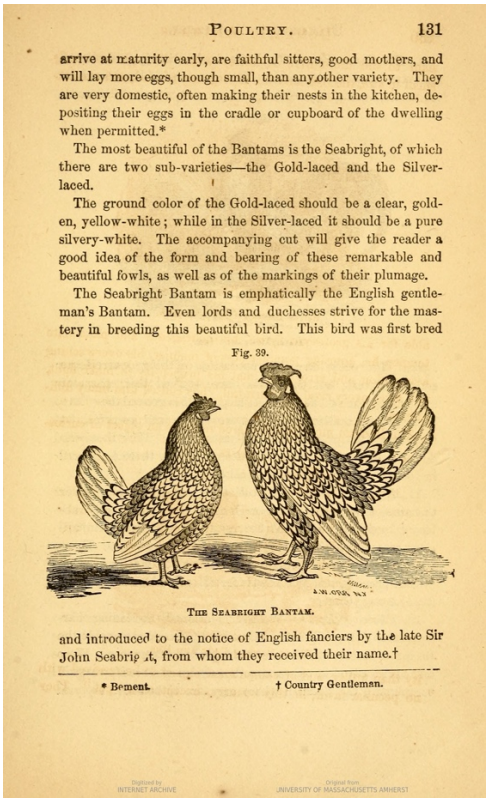
Specific characters, &c.—Colour reddish, with brown or black spots; sides very broad; short legs; ears large, and pendant over the eyes; body thick, close, and well made. Kindly disposed to fatten, and attaining a large size, but can be kept only where a large and constant supply of food can be procured, otherwise they will dwindle away, and yield no profit. Flesh fine.—The animals from which the above figures were drawn, were bred by Sir William Curtis, and exhibited at Lord Somerville's Cattle Show in 1807; where they attracted general admiration, for their lively activity, and excellent condition.

II. *Chinese, or Black Breed.*

Specific characters, &c.—Colour mostly black, though sometimes white, tawny or reddish, and brown; size small; neck

[Figure 1: 'Berkshire Breed' and 'Chinese, or Black Breed.' Thomas Horne Hartwell, The complete Grazier, or, Farmer's and Cattle-breeder and Dealer's Assistant, Bradwell, Craddock and Joy, 1816, p. 23.]

Pre-photographic images of poultry, too, tend to conform to a set of standard characteristics. D.H. Jacques' 1866 animal farming manual *The Barn-Yard* includes a number of images that accompany written descriptions of the characteristics of various poultry breeds. Jacques' description of the 'Seabright Bantam' notes that the breed is 'the most beautiful of the Bantams.' While the monochrome print image (fig. 2) cannot show the plumage colours described in the text, the text notes that 'it will give the reader a good idea of the form and bearing of these remarkable and beautiful fowls, [and] the markings of their plumage' (131). The animals stand in profile view, holding their bodies erect as though aware they are on display. Typical of poultry breed images, this print depicts both a rooster and a hen: since body shape, size, and plumage may vary between male and female of a given breed, purebred chickens are often shown in breeding pairs.



POULTRY. 131

arrive at maturity early, are faithful sitters, good mothers, and will lay more eggs, though small, than any other variety. They are very domestic, often making their nests in the kitchen, depositing their eggs in the cradle or cupboard of the dwelling when permitted.*

The most beautiful of the Bantams is the Seabright, of which there are two sub-varieties—the Gold-laced and the Silver-laced.

The ground color of the Gold-laced should be a clear, golden, yellow-white; while in the Silver-laced it should be a pure silvery-white. The accompanying cut will give the reader a good idea of the form and bearing of these remarkable and beautiful fowls, as well as of the markings of their plumage.

The Seabright Bantam is emphatically the English gentleman's Bantam. Even lords and duchesses strive for the mastery in breeding this beautiful bird. This bird was first bred

Fig. 39.

THE SEABRIGHT BANTAM.

and introduced to the notice of English fanciers by the late Sir John Seabright, from whom they received their name.†

* Bement. † Country Gentleman.

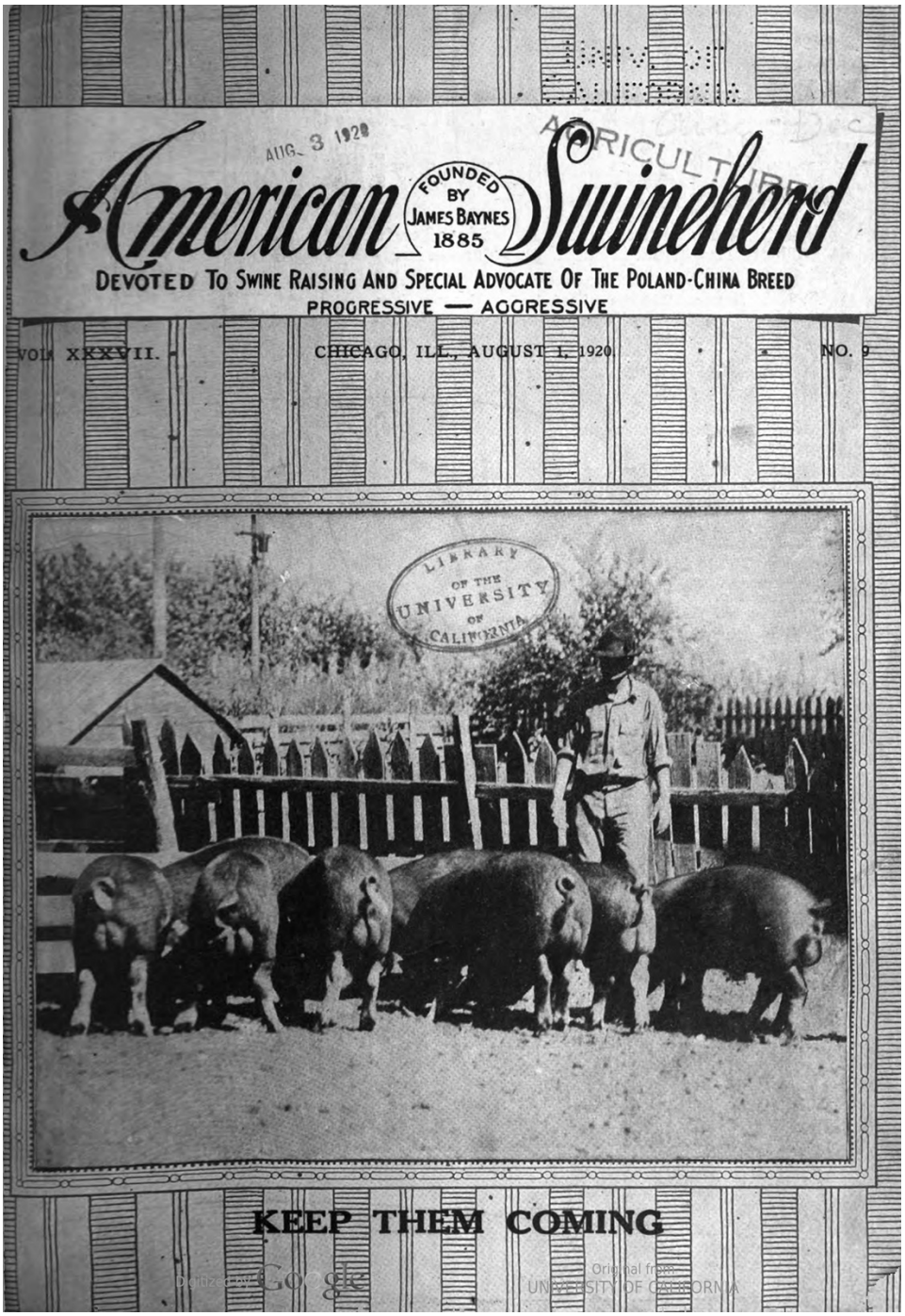
[Figure 2: 'The Seabright Bantam'. D.H. Jacques, The Barn-Yard; A Manual of Cattle, Horse and Sheep Husbandry, rev. ed., New York: G.E., 1866, p. 131.]

As it became possible to depict animals with photography in the mid-to-late nineteenth century, the medium came into more frequent use for this purpose, just as it did for other sorts of pictures (see Bruno). Within a few years at the end of the nineteenth century, photographic illustrations wholly supplanted etchings, wood engravings, and other images in print media (Ivins). But standards for the depiction of animal bodies did not substantially change. Indeed, the industrialisation of the imaging process by means of photography led the form to calcify into a rigid set of standards.

Breed-standard photographs of pigs retain many characteristics that first emerged in the pre-photographic era. As with printed imagery, in photographs the animals are typically shown from the side, usually in strict profile (see for example BPA). Sometimes a boar might stand with one leg forward, making the testicles more prominent, while a sow might be lit in such a way as to show the belly and teats clearly (fig. 3; and fig. 4, top). The head may be raised, to reveal the erectness or floppiness of the ears (a key identifying trait of some breeds); or the animal may appear with nose to ground (fig. 3). Pigs may also be shown from the rear, to highlight the conformation of the rear legs and the size of the hams (fig. 5). Photographs of animals from the rear sometimes depict them in small groups, to show the overall quality and consistency of traits among a group of related animals.

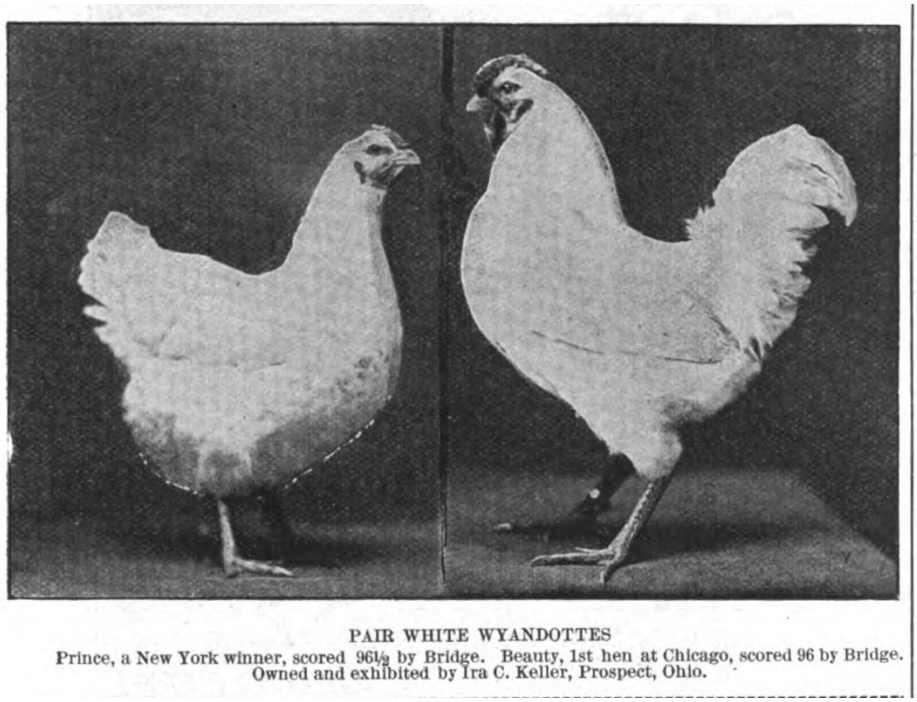
[Figure 3: 'Dunndale Pilot, Grand Champion Boar, Iowa State Fair 1920.' Cover, American Swineherd, vol. 37, no. 12, September 15, 1920.]

[Figure 4: 'W.O. Bower's Giant Poland Chinas.' American Swineherd, vol. 37, no. 12, September 15, 1920, p. 63.]



[Figure 5: 'Keep Them Coming.' Cover, American Swineherd, vol. 37, no. 9, August 1, 1920.]

Chickens, too, have standard depictions derived from pre-photographic print imagery. 'Pure' breeds (breeding breeds) are often shown standing in profile or one-quarter profile, turning slightly toward but not facing the viewer, the better to display their stance (fig. 6). Their legs and toes are homogeneous and straight. They may also be shown with offspring, due to their reproductive role (fig. 7). Modern, 'hybrid' (laying or meat) chickens, on the other hand, usually stand alone (since they are not bred), and may face the camera directly, the better to show off their ample, broody bodies and meaty breasts.[4]



PAIR WHITE WYANDOTTES
Prince, a New York winner, scored 96½ by Bridge. Beauty, 1st hen at Chicago, scored 96 by Bridge.
Owned and exhibited by Ira C. Keller, Prospect, Ohio.

[Figure 6: 'Pair White Wyandottes.' 'Boston Show: General Description of the Classes,' American Poultry Journal, vol. 32, no. 2, February 1901, p. 128.]

[Figure 7: Cover, 'Brown Nick: Parent Stock Layer Breeder: New Management Guide,' H&N International GMbH, https://hn-int.com/downloads/# (accessed 10 March 2022); ©H&N Group 2022; used with permission.]

The emergence of machine-made, industrialised images of animals parallels the industrialisation of animal bodies themselves. Before the 1940s, small-scale breeders dominated in animal production (see Horowitz, *Chicken of Tomorrow*), and visual representations of breed standards circulated on a limited scale. In the US, animal 'fanciers' and small farmers who showed their animals at regional fairs and exhibitions might advertise stock in magazines such as *The Barred Rock Journal* (for breeders of Barred Rock chickens) or *The American Swineherd* (targeting pig breeders and farmers). Fanciers' ads often focus on a single animal or a small group, depicting them as paragons of their breed, touting their pedigrees and listing their accolades. But as breeding itself industrialised and farmed animals proliferated, breed-standard photographs similarly multiplied. The form made its way from fanciers' magazines and livestock competitions into the representational and promotional programmes of larger enterprises, up to present-day animal industries. Established in the era before photography, the format of the breed-standard picture persists almost unchanged, except inasmuch as it has been, like the animals themselves, made 'more perfect' through technological interventions such as improved lighting, more sensitive films and faster lenses, controlled backdrops, and the addition of colour

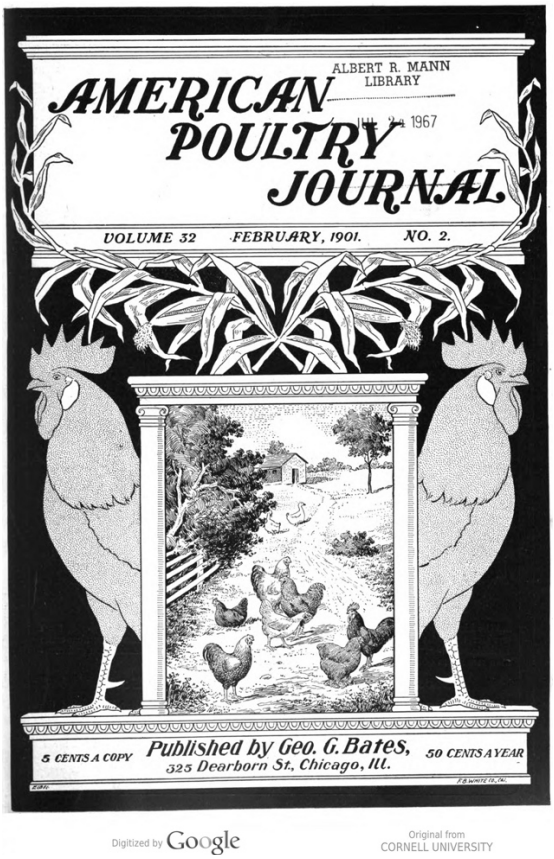
(fig. 8). The utility of photography itself is widely recognised. One livestock judging textbook notes that 'ideal [breed] types can be learned by observing good individuals in both the live and picture forms' (Nordby, Beeson, and Fourt xv).

[Figure 8: Advertisement in Breeders Digest, October 2016, p. 9; Certified Pedigreed Swine, cpsswine.com/breeders_digest/2016-october/ (accessed 10 March 2022); used with permission of Certified Pedigreed Swine.]

Unremarkable and deliberately repetitive, such breed-standard imagery seems to resist analysis. What other way would one depict a pig? But the side view hardly represents all the ways it is possible to look at a pig. One might look down on a pig from above; or look one in the face; or pick a piglet up (figs. 9 and 10). One might see pigs at a distance, in family groups, rooting. Pigs might look at the camera, confronting it and, by extension, the viewer; or they might move away, resisting depiction entirely. The same applies to chickens: left to themselves and loosed from cages, they roost, they settle, they groom themselves. Indeed, such images abound in depictions of traditional farming (fig. 11). But within the bounds of industrial agriculture, such variation in the visibility of the animal might imply an uncomfortable and undesirable variation in the human-animal relationship, potentially 'challeng[ing] the human audience's habitual expectations of omniscient insight with regard to other animals' (Malamud 51). Varied representations of animals tend to be sidelined or eliminated, lest they complicate assumptions of absolute human control and dominance over nonhuman animals. Breed-standard images, on the other hand, aim to suppress the idea of variability. They minimise or deny the possibility that there is any way, other than industrial, to look at, relate to, or produce food and 'human-wanted things' (Noske 15) from a nonhuman animal.

[Figure 9: From 'Hendrix Genetics: Advanced Genetic Solutions Will Improve Animal Welfare,' Pig333.com, https://www.pig333.com/company_news/advanced-genetic-solutions-will-improve-animal-welfare_13852/#:~:text=Hendrix%20Genetics%3A%20Advanced%20genetic%20solutions%20will%20improve%20animal%20welfare&text=%E2%80%9CRecombinetics%20has%20a%20proven%20track,for%20routine%20castration%20of%20swine (accessed 19 April 2022); ©Hendrix Genetics Group 2022; used with permission.]

[Figure 10: From 'Research: Gentec NV,' Rattlerow, https://rattlerow.co.uk/gentec-nv/ (accessed 19 April 2022); ©Rattlerow Group 2022; used with permission of Rattlerow and the scientist depicted in the image.]



[Figure 11: Cover, American Poultry Journal, Vol. 32, no. 2, February 1901.]

Banal images may prove more powerful than any other sort in reinforcing human assumptions about animals, upholding humans' feeling of dominion *over* animals, standardising human conceptions and visions of animal farming, and fostering the turn toward factory farming. Cultural attitudes become that much more forceful when they are unthought, when they feel like natural law. The side view of the pig seen in breed catalogues presents the animal as much as possible like an object, and more important like an owned object, a piece of property. The reinforced artificiality of the side view becomes that much more obvious, too, when we recognise how often the pig resists it. In breed-standard images from smaller-scale farming contexts, animals are commonly offered food or water to convince them to stay in one place (fig. 8). Images from industrial farming contexts, however, rarely show the food; whatever the animal has been offered to get her to stand still, parallel to the picture plane for an ideal side view, has usually been removed from the final image, the better to show the animal as a perfect, self-contained, self-maintaining unit.[5]

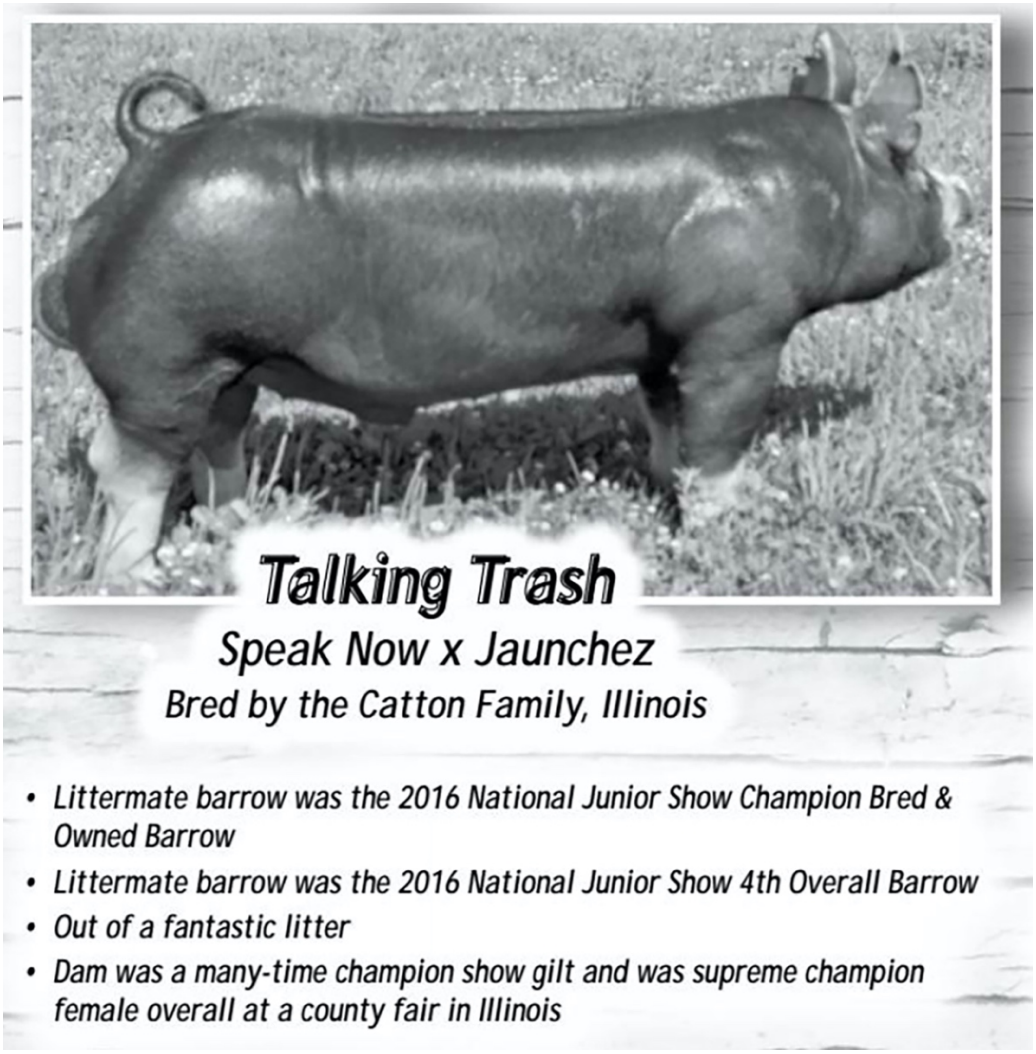
Breed-standard photographs are not the only images that circulate in media produced by animal industries. While they may be the most traditional, and the most direct in presenting animal bodies as controlled and controllable, breed-standard images are supported by entire programmes of other imagery that aid in reinforcing the assumptions they carry in an unremarkable, unobtrusive, and pervasive fashion. Developments in digital imaging permit a wide range of visual interventions in animal-industry media. Repurposing a single image in multiple contexts, for instance, reinforces assumptions about the reproducibility of perfect, uniform animal bodies. Large-scale poultry breeding company Aviagen Ltd. offers several proprietary hybrid chickens all originating from the same female parent stock. Images for each of the hybrids use the same picture of the female parent, an attractive brown-feathered hen shown in three-quarter profile. Each image depicts a different male behind her (shown facing the other direction to symbolise the 'cross' of the two breeds) and a different hybrid progeny.[6] The move obviates the need for an animal to be photographed repeatedly; it allows Aviagen to show off the features of the parent breed through a breed-standard photograph of a particularly attractive individual animal; and it emphasises the stability of the parent stock, which remains the same across hybrids.

Even within individual photographs, repetition proves useful in certifying a breed's industrial reproducibility. Although not as rigid in form as breed-standard imagery, stock photography of animals in breeding company media proves just as useful in conveying a reassuringly uniform sameness among animal bodies. In their monthly newsletters, breeding companies Genus PIC and Cobb-Vantress provide images in which large quantities of piglets and poultry lie perfectly aligned, the bodies well defined and any imperfections blurred or cropped out.[7] The apparent order provided by these body alignments conforms to longstanding Western pictorial conventions, in which repetition conveys a sense of harmony and balance. Such visual logic would be especially pleasing to those with interest in the uniform reproducibility of animal bodies, such as the breeders, farm managers, and herd managers who are these publications' target audiences.

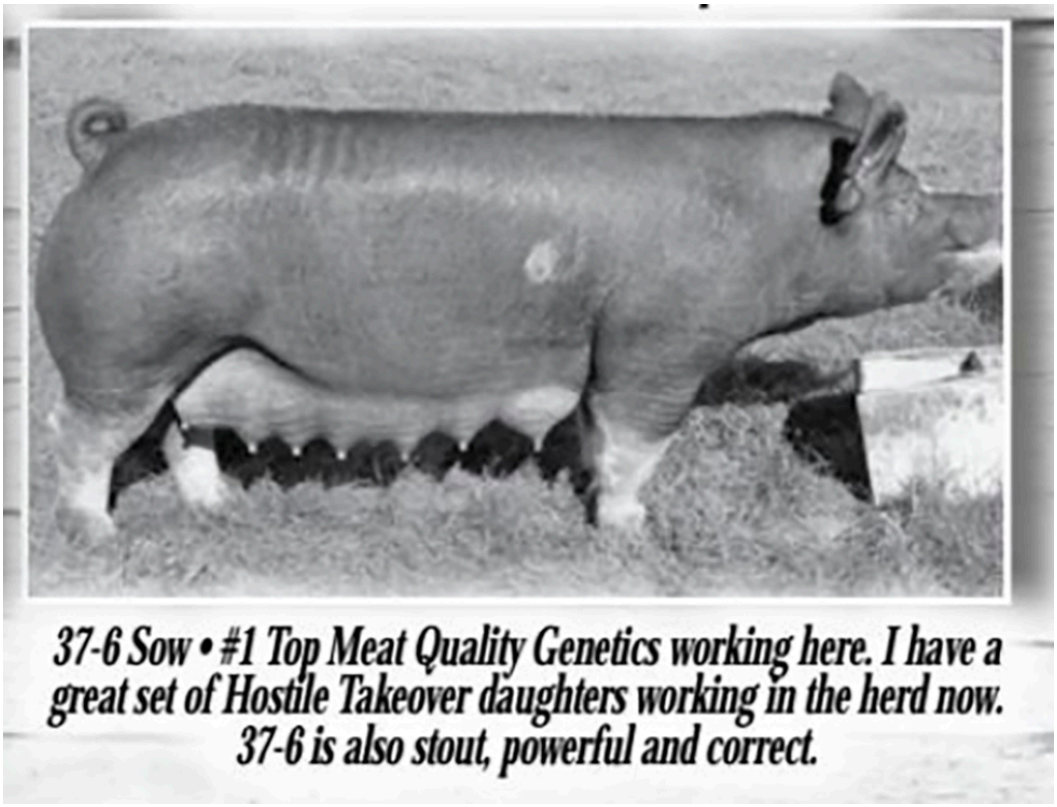
The Genus PIC image, in particular, appears heavily stage-managed, its creation almost certainly demanding extensive human intervention.[8] Piglets typically feed messily, scrabbling over one another and competing for access. Within a litter they vary widely in size and constitution, with larger litters having higher percentages of runted pigs. Sows often express annoyance or discomfort while nursing, sometimes crushing piglets as they shift their body weight. But the Genus PIC image depicts a sow who is presumably happy and calm, nursing a large number of piglets who all (rather miraculously) face the same direction, each with equal access to a teat. The metal flooring and fencing of the sow crate, confining as they are, here seem to facilitate, rather than hinder, the bond between sow and piglets: a near-utopian vision of industrial animal production (Noske). The resulting manufactured image parallels the extensively human-facilitated reproductive processes for industrially bred animals (Blanchette). Echoes of this rhythmic repetition appear, too, in other stock photos from animal industry media that show inert bodies on slaughter lines.[9] The hanging carcasses, 'arranged in rows and lines of sufficient mass that the mind struggles to imagine the sheer scale of the overall puzzle of which they are the pieces' (Pachirat 33), convey in their own way the sense of abundance that animal industries aim to provide through mass production of animal bodies.

Gendering perfection

Animal images have long been used to speak to human interests and values, and animal bodies have been shaped to show human preferences. The banal breed-standard image functions, in some ways, as a blank canvas onto which assumptions, assertions, and discourses are projected. Discourses related to gender are among the most common: the hypermasculine boar; the prolific and nurturing sow; the perfect 'heterosexual nuclear' (Calvert 299) chicken family with the prolific mother, the protective father and their multitude of growing chicks (fig. 7). Advertisements in fanciers' and breeders' media, like *Breeders' Digest,* show standard images of pigs in profile, but surrounding texts often emphasise the animals' conformity to gender stereotypes: the virility of boars; the prolificacy of sows (see Cudworth). Boars carry hypermasculine names like 'Goliath', 'Loudmouth', 'Assault', or 'Talking Trash' (fig. 12). Sows, numbered rather than named, appear with teats clearly visible, while texts promote their valuable characteristics and delineate their family relationships to prize-winning male animals – their potential to birth and mother even more valuable, virile boars. One 2016 advertisement promotes a sow who is descended from a notable boar, 'Hostile Takeover.' She has 'Top Meat Quality Genetics,' and is 'stout, powerful, and correct,' but has no name of her own (fig. 13).



[Figure 12: 'Talking Trash'. 'Brice Conover Berkshires,' advertisement, Breeders Digest, October 2016, p. 22; Certified Pedigreed Swine, cpsswine.com/breeders_digest/october-2016/ (accessed 6 May 2021); used with permission of Certified Pedigreed Swine.]



[Figure 13: '37-6 Sow', 'Brice Conover Berkshires,' Advertisement, Breeders Digest, October 2016, p. 21; Certified Pedigreed Swine, cpsswine.com/breeders_digest/october-2016/ (accessed 6 May 2021); used with permission of Certified Pedigreed Swine.]

Promotional materials from larger genetics companies incorporate similar breed-standard imagery, but they place emphasis on the breed as a whole, rather than singling out individuals – gendered perfection on an industrial scale. In industrial farming, individual animals do not have names, but gender makes its way into the names of entire breeding lines. Swine breeders Rattlerow and Hypor assign evocatively strong, masculine names to their sire lines, similar to heroic hunters and gladiators of the past – Rattlerow's 'MaxiMus', Hypor's 'Maxter', 'Magnus', and 'Kanto'. One of Hypor's maternal lines, on the other hand, receives the name 'Libra*' (pronounced 'Libra Star'), evoking a feminine ethereality and a freely productive maternal nature (fig. 14). For the 'Libra*' line, Hypor coins a neologism: this is 'the world's

most "prolificient" sow – she is both prolific and efficient and brings you a higher income while lowering your expenses […] with the superior mothering ability and weaning capacity of the Hypor Libra* you'll spend less time taking care of struggling pigs and replacing sows and more time managing your operation' (Hypor, 'Hypor Libra*').

[Figure 14: Banner image, 'Hypor Libra,' Hypor, https://www.hypor.com/en/product/libra/ (accessed 20 April 2021). ©Hypor Group 2021; used with permission.]*

Within animal breeding industries, assumptions about gender roles extend beyond discourses centred on the animal body. Even photographs depicting human-animal relationships and human interactions sustain deep-seated gender hierarchies. Research and development, building, teaching, supervision: in media released by animal industries, men often perform such jobs, while women provide care and nurturance, or serve as technicians and auxiliaries (Cudworth; Coulter). In one 2007 newsletter from poultry breeding giant Cobb-Vantress, a story about the role of technology in quality improvement carries a picture of a male scientist, identified by name and title, working alongside a woman identified only as 'the farm crew' to

take an ultrasound of a chicken (see Lubritz 7). The company tends to foreground the contributions of women when work is 'considered feminised' or driven by emotions (Coulter 29).[10] Narratives about welfare and care are more likely, in Cobb's media output, to feature female workers. For much of 2021, the banner image at the top of Cobb's animal welfare dedicated website, cobbcares.com, featured a female worker cradling a fuzzy yellow chick.[11] Her face was blurred in the background of the image, but the picture emphasised both her presence and her femininity, with her rosy lipstick and pink cheeks visible even through the blurring. Soft focus, fuzzy chick, gentle woman: the picture deployed a visual language of feminine delicacy to convey the company's dedication to care, welfare, and animal wellbeing.[12]

Adult pigs are, understandably, held and cradled far less often in images than adult chickens. But piglets, much like chicks, do appear in photographs held or cradled in human arms, particularly where animal industries hope to emphasise values of care, health, and vitality (fig. 15). Interestingly, holding a piglet seems to be a more appropriately 'masculine' activity than holding a chick: people holding piglets in animal-industry photographs are as likely to be men as women (see fig. 10). But in many pictures, the activity of holding and cradling the piglets feels more like control than care – the animals appear more like specimens of vitality than vulnerable creatures. In one image, two men hold piglets while their mother, the sow, stands below them: a dynamic speaking to the exertion of power over pig bodies large and small.[13]

[Figure 15: From 'Research: Gentec NV,' Rattlerow, https://rattlerow.co.uk/gentec-nv/ (accessed 21 April 2022); ©Rattlerow Group 2022; used with permission of Rattlerow and the scientist depicted in the image.]

Colonising bodies and space

Separate from, but sometimes entangled with, these discourses about gender and perfection, animal images also express a host of Western assumptions and desires related to race and colonialism. The analysis of 'colour codes' (Borneman 31) used in these images is particularly informative.[14] The all-white chicken known as Cobb100 is a perfect example. This breed was introduced by US poultry breeding company Cobb-Vantress in the broiler breeder market in 1966 (Berlan).[15] Known for outstanding growth records and reproductivity, the Cobb100 breed became a central instrument through which the company, and the Western poultry industry more broadly, established, developed, and extended power over new territories (Brockotter; Cobb Focus 2016, no. 2). Playing into the identity of the US as an agricultural-industrial power, the domesticated white bird spurred geopolitical gamesmanship: Soviet Premier Nikita Khruschev's admiration of a Cobb 100 rooster at a trade event in Moscow prompted him to chastise Soviet agriculturists for being insufficiently innovative (Godley 315-16).[16] Present-day Cobb advertisements still show their all-white bird standing in front of a world map (now often focused on Asia) to illustrate the company's ongoing devotion to its ambitions of global

dominance (Cobb Focus 2015). The global 'seeding' of the US white chicken continues to transform farming ecosystems, 'and native species [are quickly] displaced […] wiped out' (Mullin 205) or radically altered.

As Haraway contends for primates, we argue that 'literally and figuratively', industrial breeding is a 'colonial affair, in which knowledge [becomes] part of the system of unequal exchange of extractive colonialism' (*Primate Visions* 19). White chicken breeds, developed by US companies and marketed around the world, were created to satisfy Western cultural and industrial preferences, offering maximum uniformity in both aesthetics (colour, size) and production (growth rate). Cobb followed its initial white breed with the Cobb500 and Cobb 700, both 'better' in terms of uniformity and breast meat yield (Cobb Focus 2007). To Cobb, white-feathered breeds were the future: they appeared clean and bright, and male and female birds were nearly identical. White feathers also improved the appearance of meat in burgeoning Western markets, where black feather remnants or skin spots are seen as off-putting (Bugos; Horowitz, *Putting Meat on the American Table;* Abbots and Lavis; Cobb Focus 2016, no. 2). Altogether, Cobb's white breeds have provided a 'foundation for continual expansion over the last 20 years' (Brockotter).

Pig bodies, too, have become whiter, faster-growing and more uniform in body size and shape, following on the vertically integrated production models developed for US chickens. Although this process has happened slower and later than for chickens, the result is similar: a fast-growing, large, meaty, pale animal. As industrially produced pork became 'the other white meat' in the US in the 1980s and 90s (Mizelle 78), industrially bred pigs themselves became the other white animals, their skin more uniformly pinky-pale, their bristles light or white (ACH).

The bodies of white industrial chickens and pigs are now as nearly standardised as possible – their growth rates predictable, their uniform sizes fitted to the machinery of an almost-wholly-automated slaughter and disassembly process.[17] Over time, white chickens and pale pigs have become so emblematic of industrial animal agriculture that their colour now implies not just purity, but also modernity, artificiality, even fragility. The white chicken is a

cyborg-like creature, her existence both resulting from and wholly dependent on zootechny (Haraway, *Modest_Witness*). Industrial chicken meat, especially, is sometimes perceived as being bland and anonymous, just like the animals' existence: food for dieters and children.

As white animals are more visible, and thus more vulnerable, to predators, the tendency toward white chickens and pale pink pigs made it necessary to protect animals from risks posed by the beast-like savagery of the natural world. Technological development in Western food industries was, in part, contingent upon and driven by the whiteness of Western industrial breeds. In the name of protection, zootechny intervened more and more aggressively in animal lives and animal farming. White chickens and pale pink pigs were first primarily and then wholly moved indoors, charting the course toward an increasingly isolated, controlled, technology-enabled life cycle (Boyd; Finlay). But closer confinement and faster growth fostered the spread of stress and sickness, so tremendous effort and resources were then dedicated to controlling disease (Mizelle). Companies set up elaborate disease-control systems, including establishment of heavily monitored facilities in isolated locations.[18] Zootechny has become a colonialist and 'imperialist trap' (Hamilton and Taylor 173), in which 'as soon as one problem is solved, others emerge' (Boyd 642).

So-called 'heritage' or rustic breeds of chickens and pigs, those 'suited to traditional, free range and organic farming as well as less intensive indoor production' (Cobb, 'CobbSasso'), retain diverse body shapes, colours, and growth rates. Red-haired, brown-skinned Duroc pigs or ruddy-brown Rhode Island Red chickens carry connotations of hardiness and resilience, in opposition to those associated with white animals. Breeding companies promote their dark or multicoloured animals as more robust, slower-growing, more disease-resistant, and more adaptable than pale breeds. Even the taste of their meat is described as more 'succulent' (Cobb, 'CobbSasso'). These breeds are generally dark in colour, 'robust' and 'adaptable' to a number of climates and housing systems. Hendrix Genetics describes its rustic Bovan Black and Babcock Brown chickens as 'well suited for challenging poultry farming conditions'; while they 'handle difficult conditions', they produce 'large numbers of good quality eggs,' 'requiring minimal control and human intervention' (Babcock; Bovan).

Similarly, within Hendrix's pig breeding division, known as Hypor, both its 'Kanto' and 'Magnus' are brown breeds. The 'Kanto' pig is described as 'perfect for systems with health, environment or labour challenges' ('Hypor Kanto'). 'With its unmatched adaptability', the Hypor Magnus, too, 'will thrive in a variety of barns' ('Hypor Magnus').[19] Hypor's lighter-coloured, spotted 'Maxter,' on the other hand, is described as 'fast growing, efficient, and uniform,' but with no indication of robustness or adaptability ('Hypor Maxter'). Overall, animal industries tend to promote coloured breeds as more tolerant of variable or unpredictable breeding and housing infrastructures. Where a white animal does prove unusually hardy, industry media will state this outright: JSR Genetics describes its 'Genepacker 150' as 'our *white but robust* outdoor F1 parent […] [which] continues to perform in the harshest of environments' (JSR, our emphasis).

In the early years of industrial breeding, there was a dichotomy of white animals for industry and dark-coloured animals for small-holders and hobbyists. Today, this distinction has largely broken down: as large-scale breeding companies seek to expand their geographical scope and dominate world markets, they are propagating – and standardising – many of the darker breeds. Announcing a partnership with the French specialised coloured broiler breeding company Sasso in 2008, Cobb stated explicitly that it aimed 'to develop, produce, sell and market […] colored bird and specialty breeding stock globally' (WorldPoultry). Increased interest in robust dark, brown or multicolour breeds has correlated with globalisation: multicolour animals are being bred not only for free-range environs in Western nations, but for environs beyond the West where, industry media implies, zootechnical controls may be looser. Hypor notes that 'wherever you are and whatever you need', its Magnus pigs 'will adapt, thrive and deliver' ('Hypor Magnus').

Animals in 'primitive' (Douglas) and less-controlled environs often appear in images with dirt on their bodies – a condition appropriate for pigs or chickens living in outdoor, barnyard conditions, but highly unusual in animal industry media, which more often shows animals in clean, almost sterile indoor conditions. In a 2017 newsletter, PIC Genetics accompanies the article 'PIC is selecting for real life robust performance' with an image of dirt-caked pigs.[20] The newsletter notes that at PIC's own genetic breeding facilities, the company

raises animals under pristine, controlled conditions. 'PIC genetic farms […] are generally located in temperate climates and animals are purebreds targeted for selection purposes' (PIC). But to expand its reach, the company has to breed animals capable of surviving in a wider variety of environs and conditions. 'To add value to our global customer base, our pigs need to perform well in a range of environments, from Iowa, USA, to Yucatan, Mexico, to China', the article continues – implying that Iowa represents the temperate, controlled end of the range while Mexico and China represent the less-predictable end (PIC). Next to this image of dirty pink pigs, then, the article suggests that its new markets are dirtier and less-controlled places.

Marketing materials often represent the maximally versatile hybrid animal (whether for meat or eggs) as a cross of light and dark breeds. One article in a 2018 newsletter from poultry breeder Hubbard notes that 'the world population is growing at a frightening level of 220,000 persons per day,' and that 'Asia and Africa are the regions likely to experience the fastest growth' (Hubbard). The company will address this 'frightening' growth by breeding chickens appropriate for these huge new markets. Through R&D testing on controlled 'pedigree' farms in 'temperate' Europe, and on 'robustness' farms in 'hot and humid' Southeast Asia, the company aims to breed more tolerant birds (Hubbard). The accompanying image supports this best-of-both-worlds breeding scenario, presenting two birds, one brown and the other white, standing side by side in nearly mirror-image postures.[21] The company aims to achieve uniform perfection: across birds, across continents, across races; for familiar markets as well as the developing markets growing with 'frightening' speed. As with gender, inequalities grounded in racial difference and exacerbated by colonialism, too, are projected onto animal bodies.

The fantasy of breed perfection

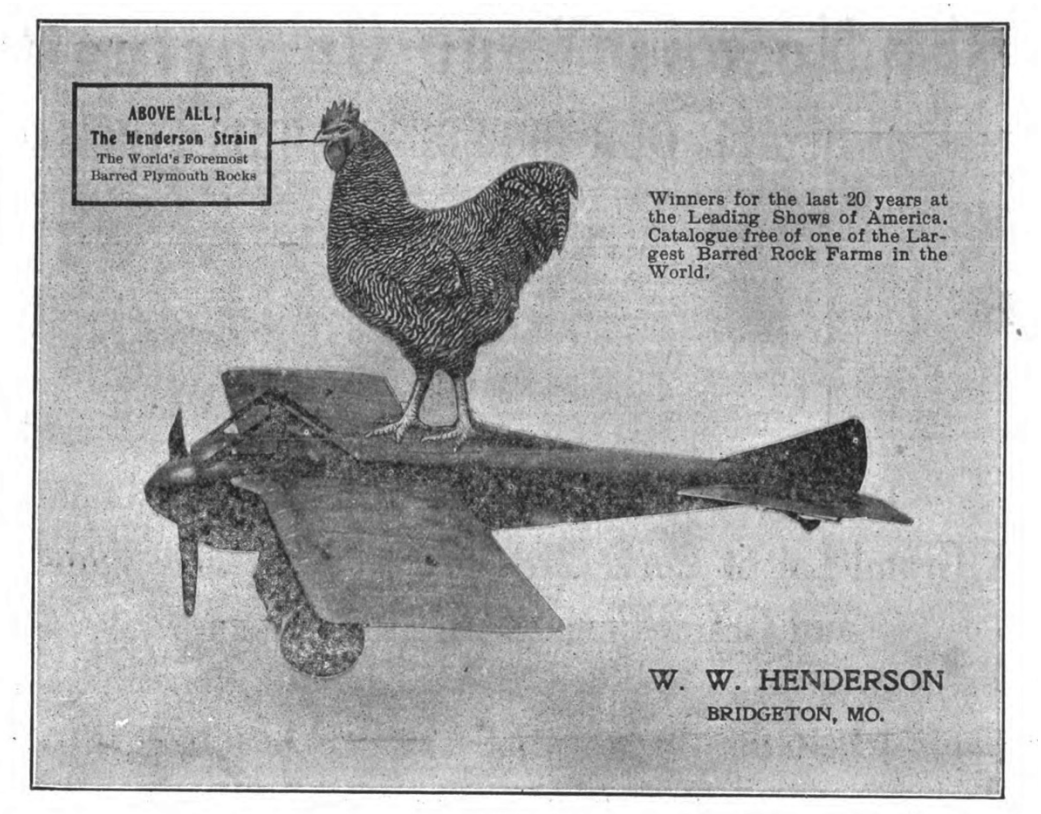
Even as they seek to perfect animal bodies, animal genetics companies recognise that perfection is illusory. No actual animal body conforms wholly to every marker of a breed standard. Standards are aspirational: comprised of the best characteristics of many different real animals, the standard itself exists in a space above and outside the real (Ewart 98). And perfection is as difficult to define as to achieve. A 'perfect' animal may grow extremely rapidly, exhibiting

perfect growth; or she may have an ideal muscle-to-fat ratio, becoming perfect meat. She may be inexpensive to raise – a perfect investment. Perfection may be tied to reproduction: a perfect sow is a perfect mother, producing and nurturing many viable piglets; a perfect boar is a perfect sire, producing semen with a high rate of viable sperm and reliably passing on his genetic endowments. Perfection may be context-dependent: an animal may be perfect within the confines of an industrial facility with tight biocontrols, as close to a sterile environment as possible; but outside such a facility she would collapse (Blanchette). With regard to market growth in regions beyond the West, the perfect breed is the most perfectly expansionist, capable of thriving in the most places, under the widest range of conditions.

Perfection is not purity. In industrial farming systems reliant on hybrid animals, perfection is not sustainable by definition – a hybrid animal may be a perfect animal, but she is also a genetic dead end. While crossing two pure breeds can result in a predictable hybrid offspring, subsequent crossing among hybrids results in genetic chaos (Bugos).[22] Hybrid perfection must be sustained by constant revisitation, constant re-creation. Achieving an animal ideal requires genetic tinkering, with every industrially bred animal body as a prototype for the next. Perfection remains perpetually just out of reach.

For this reason, depicting perfection is, likewise, a highly variable endeavour. In early animal farming media, breeders often resorted to fanciful imagery to emphasise their champion animals' superior traits. One 1915 advertisement for champion Barred Rock fowl included a photomontaged image of a rooster flying atop an airplane, 'above all' his competition (fig. 16). Unable to fly far on his own, the rooster soars aloft on the back of a machine: not quite yet a cyborg, but already the beneficiary of technological intervention that helps him achieve new heights, greater proximity to an ideal of physical excellence. The image presages the zootechnical developments of coming decades, as well as the expansion of food markets to global scale via speedy, heavily networked transport. Similarly, a 1920 advertisement for Poland China pigs showed a boar so large he could wear a saddle, with text implying that the breeder had many more such animals 'of the saddle horse kind' (fig. 4, bottom). A nineteenth-century American breed created for lard production, the Poland China already bespoke the potential of crossbreeding to yield large, valuable animals. Evoking the notion of an even more useful

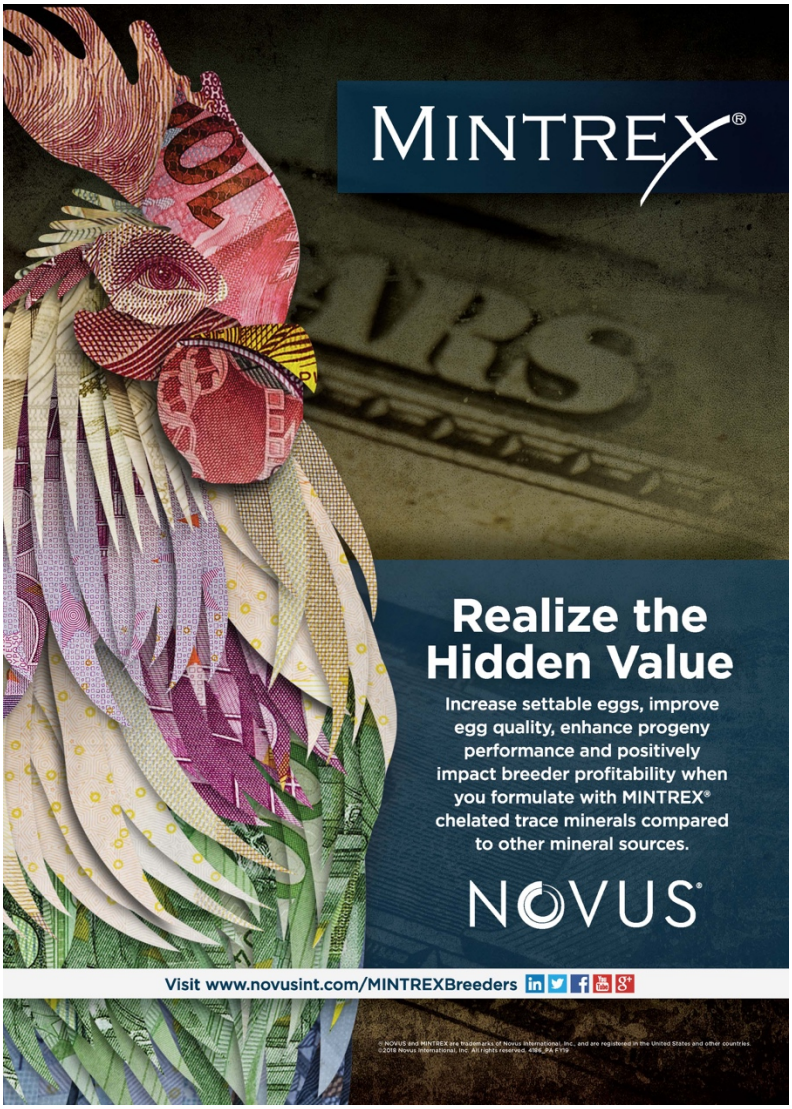
animal, both horse and pork, this image again predicts the heavily hybridised and zootechnically manipulated pig of coming decades, his body a screen onto which humans project their fantasies, hopes, and dreams of profit.



[Figure 16: 'The Greatest Win Ever Made by a Barred Rock Breeder.' Advertisement, National Barred Rock Journal, vol. 7, no. 6, November 1915, n.p.]

Just as breed-standard imagery persists from the days of animal farming into present-day animal industry, so too do contemporary variants of these fanciful images of the past. If perfection remains a fantasy, what better way to sustain it than with fantastic pictures? Advertising imagery offers some compelling examples. Reinforcing the idea of perfection as pure profitability, animal feed company Novus International has advertised its Mintrex feed supplement line with an image of a rooster made from currencies of various nations, reinforcing

the company's pride and ambitions to global market reach (fig. 17). The ad encourages breeders to 'realize the hidden value' of their animals, maximising yield while minimising 'condemnations'. The animal is, the ad implies, made more perfect through administration of a supplement designed to unlock all the potential already contained within his body.



[Figure 17: Mintrex advertisement, Poultry International, January 2018, p. 17, https://www.poultryinternational-digital.com/poultryinternational/201801/MobilePagedReplica.action?pm=2&folio=16#pg18; ©Novus International 2022; used with permission.]

But perfection requires constant vigilance, care, and human intervention at all stages of development. The chicken approximates a human invention himself, no longer bird at all, managed and helped along for the entirety of his short life. Such imagery is pervasive in contemporary breeding-industry media. One 2018 advertisement from the veterinary pharmaceutical company Boehringer Ingelheim shows a chicken comprised of human hands, a graphically-striking image that speaks to the interventionist nature of the chicken's life cycle, his existence not as a creature but as a technology.[23] Novus advertises its feed additives with an image of a circle, bisected horizontally: the top half is a petri dish, into which gloved hands drop clear liquid, while the bottom half is a feed tray in which newly-hatched chicks peck and squirm (fig. 18). 'The digestive system is directly linked to the health of your operation', reads the text. Again, the ad reinforces the industrially-bred and raised chicken as a human creation, built or synthesised rather than hatched or born. Even where chicken bodies are identified with natural rather than human-made phenomena, the overall message is one of control: another Boehringer Ingelheim advertisement from 2020 depicts a chicken-shaped tree on which spring, summer, autumn and winter all appear to be acting at once.[24] Despite the refreshingly outdoorsy imagery, however, the text refers not to the life cycle of a cage-free chicken but to the seasonal disease cycles of a confinement barn: 'from summer heat to winter frost, the ecology of a broiler house is constantly changing.' Nature is used to represent the chicken, but the chicken does not, in turn, represent – or even experience – nature.

Build on the strength of each generation. Zinc, copper and manganese feed additives affect more than just the hen. Novus researchers combined organic trace minerals with methionine hydroxy analogue HMTBa to stimulate greater absorption. Along with supporting hen health, these nutrients are passed on to the eggs and chicks through better structural integrity and shell strength as well as stronger bones and lower mortality.

Learn more about the solutions Novus is developing for your farm at **novusint.com**

NOVUS
SOLUTIONS | SERVICE | SUSTAINABILITY

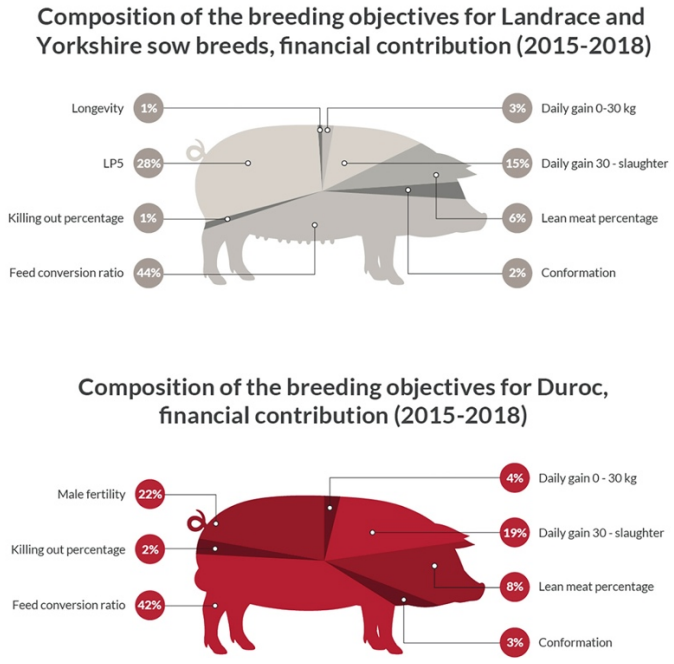
[Figure 18: Novus advertisement, Poultry International, June 2020, back cover, https://www.poultryinternational-digital.com/poultryinternational/june_2020/MobilePagedReplica.action?pm=2&folio=C4#pg44; ©Novus International 2022; used with permission.]

Advertising images of pigs prove no less fanciful or consequential in their representation of industrial animal existence. One image, from the Danish swine breeder Topigs Norsvin, advertises its TN Tempo boar line with a depiction of a pig that not only 'wears' armour but appears to be literally made of metal.[25] The digital image conveys simultaneously the animal's supposed toughness as a living creature, and his tender meatiness as a source of food.[26] The illustration draws on a type of image, ubiquitous in meat markets and advertisements, that depicts animal bodies pre-portioned into primal cuts of meat. Such renderings condition viewers to think of the animal body as a means of sustenance. In the Topigs advertisement the primal cut divisions on the pig's body become plates in a suit of armour custom-fitted to the animal's body, even down to his testicles (a key feature, in a boar line). The company markets this white boar line for intensive, indoor rearing facilities, environments in which 'toughness' refers not to the animal's ability to survive and self-regulate outdoors but rather to resist disease, 'even in a pig-dense area' (Norsvin).

Another set of images, associated with swine breeder Danbred, emphasise perfection in the form of profitability. One image (fig. 19) superimposes onto a photograph of a pale pink pig, a graph depicting an upward-trending growth – although since the graph is unlabelled, it is unclear what it measures. Along with the image of the pig herself, who raises her head and gazes forward with a mild eye and closed mouth uptilted at the corner, the image conveys a vague sense of positivity and hope. Text reads 'Measured in Euro, genetic progress is not only affected by the economic value of the traits in the breeding goal, but also by a number of other factors such as their heredity, genetic variation, the scope of testing and selection intensity, along with the shared genetic correlations of the traits' (Danbred). While the sentence seems to offer a variety of ways to gauge genetic progress, it begins with the words 'measured in Euro', indicating that the most important form of measurement is the profit margin. On a linked page, the company offers pie charts depicting the 'composition of the breeding objectives' for some of its breeding lines, the 'Landrace and Yorkshire Sow breeds' on top, and the Duroc, below (fig. 20) (Danbred). Each is in the shape of a pig's body, the company's values measured on the animals themselves. This seems like a fanciful afterthought, designed to make the charts cuter and more memorable. But the sow chart has teats, and the Duroc boar chart has testicles: even

in aestheticising the charts, the company emphasises the animals' functionality. At the same time, the downsides of industrial animals' lives are minimised: each chart-animal retains a curly tail, though pigs' tails are nearly always docked in industrial breeding and farming facilities.

[Figure 19: From 'Danbred Breeding Goals and Documented Results,' Danbred.com, https://danbred.com/en/danbred-breeding-goals-and-documented-results/ (accessed 11 March 2022); ©Danbred Group 2022; used with permission.]



[Figure 20: From 'New Danbred breeding goals on the way!,' Danbred.com, https://danbred.com/en/new-danbred-breeding-goals-on-the-way/ (accessed 11 March 2022); ©Danbred Group 2022; used with permission.]

(Re-)visualising values

In *The War Against Animals,* Wadiwel argues that shaping animals' bodies represents an 'effective and simple torture technique' deployed by the food industry. Wadiwel offers the example of the 'hangers' on chicken slaughter lines, which use 'chickens' own [feet] as a means of imprisonment' (2-3). The animal's foot must be perfect in shape and size to fit the calibrated and automated machines, guaranteeing a 'seemingly limitless supply' of chicken meat (1). The hanger and the chicken's body are co-designed to conform, reducing 'friction' (14) that might slow down the killing and processing line. Industrial chickens' muscles, too, are designed to appeal to consumers: lean, uniformly pale in colour, and nearly odorless. It is the same for pigs. Selected for their docile, resilient, appealing bodies, industrial chickens and pigs are bred by the billions to provide prodigious amounts of raw material for food industries and ensure the eating pleasure of billions of consumers.[27]

In this article, we wanted to explore the values that govern and construct these overlaps of bodies and industrial processes, and to consider how animal breeding industries circulate text and images to promote, propagate, and reinforce certain assumptions about animals and their bodies. Our interest has been to highlight the social and ideological values promoted by those who breed industrial chickens and pigs, shaping their bodies to fit an ideal of animal production that serves industry interests over those of the animal (Wadiwel; Adams; Boyd; Moore). Industrial animal representations, we have argued, permeate, elevate, *and breed* 'systems of subordination and domination' (Wadiwel 9). Economic, social and cultural rationales drive animal body shape, as well as how animals are depicted and represented.

A viewer's experience of visual imagery is affected, often profoundly, by values the viewer already holds. For a farmer, images of animal bodies may connote business or productivity. Small-scale farmers may view and represent animal bodies differently from large-scale producers. Where a breeder of animals for intensive, indoor systems might see a highly standardised, pale, clean animal body as connoting compliance, productivity, and large-scale production, a breeder of animals for extensive, outdoor production might see the same animal body as connoting artificiality, fragility, and susceptibility to disease. Our study has aimed to

bring to the fore some of the assumptions that are buried within imagery, particularly highly standardised, anonymous, unremarkable imagery, to demonstrate how even dry, boring, or merely illustrative pictures may uphold complex and deeply imbricated value systems.

Visual images and particularly photographs have the power to conjure the absent and make it present (see Callon and Law). More impactfully (and insidiously), they may come to replace the referent entirely in the viewer's mind. What one feels in the presence of the animal image – a pleasing feeling of mastery, a comprehension of the animal's value to humans – becomes how one behaves toward the animal herself. The way we treat images of pigs and chickens is, very often, the way we treat actual pigs and chickens; and the way we treat pigs and chickens, in turn, both affects and reflects the way we treat one another. 'Sexual violence' (Wadiwel 9) against the sow and the hen, which must reproduce prolifically and be good mothers, and against the boar and the rooster, which must be ever more muscular, strong, and productive, resembles that exercised on a daily basis against women and men in heteronormative capitalist societies (Gimenez; Jordan). Industrial chicken and pig images strengthen and maintain 'patriarchal relations' and 'construct gender roles' (Wadiwel 9) that are naturalised and normalised by the animal body, like universal laws immune to species distinctions: women, like sows and hens, give birth and provide nurturance; while men, boars, and roosters regulate affairs, produce, and defend boundaries. Animal images and texts 'encode' a vision of 'how [chicken, pig and human] life ought, or ought not, to be lived', they express a 'social order', a 'society's shared understanding of good and evil' (Jasanoff 3-4) – of healthy and unhealthy environments, safe and risky lives, clean and dirty bodies, states of care or neglect, relationships of dominance and subordination.

Images result from choices made by those who create, edit, and circulate them. The ways breeding companies capture and stage bodies of chickens and pigs, or transform them through visual manipulation, are all clues that tell us about the 'image-maker's psychic landscape' (Grady 85): animal industries' own visions and fantasies of what chickens and pigs are and should be. Animal images reveal human projections onto the animal body. As part of larger organisational storytelling efforts, visual chicken and pig narratives become 'integral to any complete analysis of [agricultural] organizational becoming', conveying the 'actual futures and

possible worlds' of the chicken and pig industries (Brown, Gabriel, and Gherardi 325). The American breeding company Cobb knew this when, in the 1950s, it foresaw a future through its revolutionary all-white chickens, asserting through imagery its thirst for global expansion. Large breeding companies breed animals in order to breed themselves (Mullin).

But viewing involves making choices, too. Animal images may 'move and engage the reader' (Hamilton and Taylor), eliciting emotional responses that reveal what has been produced and manufactured by structuring forces and systems of oppression. In delivering industrial animal bodies to the viewer, images can convey what these animals are, and what they have lost in so becoming. Encountering images of the android-like bodies of industrial chickens and pigs, the spectator may be spurred to awareness of the losses these animals suffer as they essentially become new lifeforms.

In reading against the dominant narrative, in reflecting on the things we aren't supposed to reflect on, we create a kind of friction. Reflection itself constitutes a kind of resistance (Sontag, *Regarding the Pain of Others*). Animal industries propose that they 'care' deeply for animal bodies, and they bring this care to the images they produce. But as the course of industry trends toward profit above all, the discourse of industrial images trends toward instrumentalism. The image of the animal, and the image of a care anchored primarily to monetary value and industry interests, have come to replace the actual animal, and the notion of a care that is applied to the animal for its own sake. 'Cobb cares,' the company's welfare website declares; but industrial animals are substances before they are creatures. 'There is barely any room left for value-free biology' (Blanchette 209).

Through analysis of images in this paper, we have challenged hegemonic notions of breed perfection in industrial farming. This approach has allowed us to attend to marginalised voices which are often 'concealed or ignored by webs of ideologically-based discursive practices that militate against change' (Brown 327). But as 'reality changes, [so] in order to represent it, modes of representation must change' (Brecht 229). Carefully considering visual representations generated by industry can help organisations to reflect on their deep ideologies. We propose that, as with any change, new stories can be told, whereby norms may be redefined and current practices reoriented towards inclusive and ethical responsibility and care.

Notes

[1] In cattle farming, for instance, with the Holstein for milk and the Angus for meat.

[2] 'The camera has always been part of a larger assemblage […] To the magical capture of the image is harnessed the mechanics of subjection of a bureaucratic apparatus' (Tagg, *Disciplinary Frame* 3).

[3] Azoulay encourages spectators to actively *watch* photographs rather than passively looking at them, with the understanding that 'the photograph – every photograph – belongs to no one, that [a spectator] can become not only its addressee but also its addresser, one who can produce a meaning for it and disseminate this meaning further' (Azoulay 14-16).

[4] Aviagen, Inc., for instance, advertises its Ross 308 broiler with a photograph of a bird directly facing the lens. See an archived version of the page at https://web.archive.org/web/20220310220943/http://tmea.aviagen.com/brands/ross/products/ross-308

[5] For example, see an image of 3 pigs accompanying the article 'Møllevang' in the newsletter of breeding company Hermitage AI, Spring 2018, p. 4: https://web.archive.org/web/20220310233825/https://pichermitage.com/wp-content/uploads/2018/03/NewsletterUKd2.pdf

[6] See the Aviagen images, for example, at https://web.archive.org/web/20220310225011/https://eu.aviagen.com/brands/rowan-range/products/ranger-classic ; and at https://web.archive.org/web/20220310230512/https://eu.aviagen.com/brands/rowan-range/products/ranger-gold

[7] The Cobb image accompanies the article 'Cobb Achieves First Compartment Status in Brazil,' in *Cobb Focus* Issue 1, Winter 2017, p. 4, https://web.archive.org/web/20220310234250/http://www.cobbfocus.com/publication/?m=66113&i=701761&p=4

[8] For the Genus PIC image, see https://web.archive.org/web/20201127110845/https://www.pic.com/2020/03/17/5-practical-tips-to-improve-farrowing-rates/

[9] See, for example, an image of poultry carcasses accompanying the article 'New Opportunity to Reduce Cost of Chicken Production,' *Cobb Focus Europe Special*, 2003, p. 1: https://www.yumpu.com/en/document/read/45931460/cobb-focus-euopespecial-2003-english-cobb-vantress

[10] One 2012 news story (appearing in an independent media outlet, but sponsored by Cobb) highlights the hire of a female scientist to lead the company's animal welfare efforts. See Morton. But the company's media overall tend to uphold, not disrupt, traditional gender hierarchies and roles.

[11] The banner image on the site has now changed. The one referenced here can be viewed at https://web.archive.org/web/20211129054422/https://www.cobb-vantress.com/en_US/cobb-cares/

[12] The same website incorporated an animated video in which a male worker educated a group of new employees in proper animal care. One of these newly-minted trainees, ponytailed to highlight her femininity, then stood cradling a chicken. Even in animated media, men train and direct while women provide care. In all instances, regardless of whether the aim is to communicate control or care, the desired effect is the same: 'industry cover stories work to disincline [viewers] from sympathetic intervention' (Luke 138). If women in animal industry newsletters care for and nurture animals, they also perform a similar role for the family. Popular media in the West has long represented the archetypal shopper/consumer as female (Fredericks; Coulter). Images of women in animal industry media tend to uphold such assumptions. Women shoppers buy meat from male butchers in many images: the butcher, knowledgeable and benevolent, stands in for the meat industry, with the woman consumer as his momentary student, in need of friendly guidance. See image accompanying the article 'PIC Pork Quality Programme: A Quarter of a Century of Progress,' *PIC Newsletter*, December 2018, p. 1;

https://web.archive.org/web/20220311004401/https://gb.pic.com/wp-content/uploads/sites/9/2019/04/PIC_UK_Newsletter_2016-12.pdf. Images of company leadership, on the other hand, skew heavily male (and white): a 2010 Cobb newsletter carries a posed image of a ground-breaking for a new Cobb facility, in which a row of twelve executives, all men, press ceremonial shovels into the ground. See image in the article 'Major New Cobb Production Complex in Tennessee,' Cobb Focus Issue 2, 2010, p. 1; www.yumpu.com/en/document/read/29288056/cobb-focus-two-2010-english. The company's leadership remains male-dominated: as of December 2021, every executive on the 'Leadership' section of the Cobb-Vantress website was male (Cobb, 'Leadership').

[13] The image accompanies the article 'Topigs 20 shows its potential with 69.5 pigs per sow,' in *The Insider: Topigs Norvsin Canada &USA*, Fall 2016, p. 2; https://web.archive.org/web/20220311003913/https://topigsnorsvin.com/tn-content/uploads/2020/01/Topigs-Norsvin-Insider-1609.Fall16.pdf

[14] As Sahlins argues, 'Colors are, in practice, semiotic codes. Everywhere, both as terms and concrete properties, colours are engaged as signs in vast schemes of social relations' (3).

[15] Images of some early Cobb advertisements, including for the 'White Rock' breed, are available in the article 'The Cobb Story: The First 50 Years," *Cobb Focus* issue 2, 2016, p. 2-3; https://web.archive.org/web/20220322133938/http://www.cobbfocus.com/publication/?m=66113&i=701764&p=2&ver=html5

[16] An image of Khruschev with the rooster is available at https://web.archive.org/web/20220311193320/https://www.thepoultrysite.com/news/2008/10/cobbs-early-lesson-in-capitalism

[17] As Cobb explains in one of its newsletters, Cobb700 development was partly motivated by a demand from processors for a 'higher uniformity' in chickens' bodies, 'to optimize cutting and portioning' (Cobb Focus 2007).

[18] This process of 'easy purification' through technological 'washings' and large buffer zones around industrial animals' living spaces has enabled animal industries 'to defy with impunity the hard realities of their social system' (Douglas 138). See, for example, an image of a Cobb chicken farm in Brazil in the article 'Compartmentalization progress still hinges on trading partner acceptance,' *Cobb Focus* Issue 1 (2010), p. 7, www.yumpu.com/en/document/read/33700851/cobb-focus-one-2010-english (accessed 23 April 2021)

[19] Indeed, the association of brown pig and hardy disposition is so ingrained that the company has used the same image of brown piglets to illustrate articles about both of these product lines – another example of the image repetition referenced above, connoting an infinitely reproducible, uniform animal body.

[20] See the article and image at https://web.archive.org/web/20220311194300/https://gb.pic.com/wp-content/uploads/sites/9/2019/04/PIC_UK_Newsletter_2017-09.pdf

[21] See the article and image at https://web.archive.org/web/20220311200153/https://www.hubbardbreeders.com/media/art_zootecnica_en_april_2018_hubbard_rd1__040855100_1027_28062018.pdf

[22] 'Since all hybrid chicks inherited the same dominant traits, flocks of hybrids offered even greater genetic uniformity than pure-bred flocks', but 'if the double-crossed male and female siblings sold to farmers were [then] mated together […] no single trait would dominate among the third generation flocks […] The offspring of hybrid chicks […] would reflect an almost random expression of all traits, with none of the advantages of hybrid vigor.' Bugos 141-43.

[23] The advertisement is available at https://www.poultryinternational-digital.com/poultryinternational/201801/MobilePagedReplica.action?pm=2&folio=2#pg4

[24] The advertisement is available at https://www.wattpoultryusa-digital.com/wattpoultryusa/april2020/MobilePagedReplica.action?pm=2&folio=6#pg8

[25] The image is available at https://web.archive.org/web/20220311202537/https://tntempo.com/#tntempo

[26] Accompanying text describes the TN Tempo as an animal 'designed for producers demanding fast barn throughput and efficiency to medium or heavy market weights in combination with a medium lean carcass.' (Norsvin).

[27] In 2019 alone, more than 1.9 billion pigs and 83 billion chickens were slaughtered for meat worldwide (FAO).

Works Cited

Abbots, Emma-Jane, and Anna Lavis, editors. *Why We Eat, How We Eat: Contemporary Encounters Between Foods and Bodies*. Ashgate, 2013.

Adams, Carol J. *The Sexual Politics of Meat: A Feminist-Vegetarian Critical Theory*. Bloomsbury, 1990.

---. *The Pornography of Meat*. Continuum, 2004.

Agroalimentario Chico (ACH). 'Differences Between the Duroc and the White Pig Breeds.' agroalimentariachico.com/en/differences-between-the-duroc-and-the-white-pig-breeds/. Accessed 4 May 2021.

Azoulay, Ariella. *The Civil Contract of Photography*. Zone Books, 2008.

Babcock. 'Babcock Brown.' www.babcock-poultry.com/babcock-home/product/babcock-brown/. Accessed 31 March 2021.

Baker, Steve. *Picturing the Beast: Animals, Identity, and Representation.* University of Illinois Press, 2001.

Barthes, Roland. *Mythologies.* Translated by Annette Lavers, Hill and Wang, 1972.

Batchen, Geoffrey. 'Ectoplasm.' *Each Wild Idea: Writing Photography History*, MIT Press, 2001, pp. 128-144.

Berger, John. *Ways of Seeing*. BBC and Penguin, 1973.

---. *Why Look at Animals?* Penguin, 2009.

Berlan, Jean-Pierre. 'The Origins of American Agricultural Policy: Long-Term Growth and Crisis.' *Production et Politiques Agricoles dans les Pays Industriels : du Dedans au Dehors*, vol. 12, no. 1, 1981, pp. 89-101.

Blanchette, Alex. *Porkopolis: American Animality, Standardized Life, and the Factory Farm*. Duke University Press, 2020.

Borneman, John. 1988. 'Race, Ethnicity, Species, Breed: Totemism and Horse-Breed Classification in America.' *Comparative Studies in Society and History*, vol. 30, no. 1, pp. 25-51.

Brockotter, Fabian. 'Cobb celebrates 100 years.' *Poultry World*, 2016. www.poultryworld.net/Genetics/Articles/2016/2/Cobb-celebrates-100-years-2748894W/. Accessed 31 March 2021.

Bovans. 'Bovans Black'. www.bovans.com/en/product/bovans-black/. Accessed 31 March 2021.

Boyd, William. 'Making Meat: Science, Technology, and American Poultry Production.' *Technology and Culture*, vol. 42, no. 4, October 2001, pp. 631-664.

Brecht, Bertolt. 'Popularity and Realism.' *Modern Art and Modernism: A critical Anthology*, edited by Francis Fascina and Charles Harrison, Harper & Row Ltd., 1982, pp. 227-231.

British Pig Association (BPA). 'Breed Standards.' www.britishpigs.org.uk/breed-standards. Accessed 31 March 2021.

Brown, Andrew D., Yiannis Gabriel, and Silvia Gherardi. 'Storytelling and Change: An Unfolding Story.' *Organization*, vol. 16, no. 3, 2009, pp. 323-333.

Bruno, Michael H. 'Photomechanical Printing Processes.' Neblette's *Handbook of Photography Reprography: Materials, Processes, and Systems*, edited by John Sturge, 7th Ed, Van Nostrand Reinhold, 1977, p. 481-495.

Bugos, Glenn E. 'Intellectual Property Protection in the American Chicken-Breeding Industry.' *The Business History Review*, vol. 66, no. 1, Spring 1992, pp. 127-168.

Callon, Michael, and John Law. 'Introduction: Absence-Presence, Circulation, and Encountering in Complex Space.' *Environment and Planning D: Society and Space*, vol. 22, 2004, pp. 3-11.

Calvert, Scout. 'Certified Angus, Certified Patriot: Breeding, Bodies, and Pedigree Practices.' *Science as Culture*, vol. 22, no. 3, 2013, pp. 291-313.

Chris, Cynthia. *Watching Wildlife*. University of Minnesota Press, 2006.

Cobb. 'Cobb Focus.' No. 2, 2007. www.sabzdasht.com/Filefile/27cobb_focus_two_2007_english.pdf. Accessed 31 March 2021.

---. 'Cobb Focus'. No. 2, 2015. www.cobbfocus.com/publication/?m=66113&i=701768&p=1. Accessed 13 April 2021.

---. 'Cobb Focus'. No. 2, 2016. www.cobbfocus.com/publication/?m=66113&i=701764&p=1. Accessed 31 March 2021.

---. 'Cobb Focus'. No. 3, 2016. www.cobbfocus.com/publication/?m=66113&i=701763&p=1. Accessed 31 March 2021.

---. 'Cobb Focus.' No. 4, 2017. http://www.cobbfocus.com/publication/?m=66113&i=701743&p=1. Accessed 13 April 2021.

---. 'Leadership.' 2021. www.cobb-vantress.com/en_US/our-story/leadership/. Accessed 1 April 2021.

---. 'CobbSasso.' 2021. www.cobb-vantress.com/assets/Cobb-Files/product-guides/6c1436d72b/CobbSasso_Breeder_Management_Supplement_v1_EN.pdf. Accessed 1 April 2021.

Coulter, Kendra. *Animals, Work, and the Promise of Interspecies Solidarity*. Palgrave Macmillan, 2016.

Cudworth, Erika. ''Most Farmers Prefer Blondes': The Dynamics of Anthroparchy in Animals' Becoming Meat.' *Journal for Critical Animal Studies*, vol. 6, no. 1, 2008, pp. 32-45.

Danbred. 'Danbred Breeding Goals and Documented Results.' 2018. danbred.com/en/danbred-breeding-goals-and-documented-results/. Accessed 6 April 2021.

---. 'New Danbred Breeding Goals on the Way.' danbred.com/en/new-danbred-breeding-goals-on-the-way/. Accessed 6 April 2021.

Douglas, Mary. *Purity and Danger: An Analysis of Concepts of Pollution and Taboo*. Routledge, 1966.

Ewart, John. *Meat Production: A Manual for Producers, Distributors, and Consumers of Butchers' Meat, Being a Treatise on Means of Increasing its Home Production*. Crosby, Lockwood, and Co., 1878.

Finlay, Mark. 'Hogs, Antibiotics, and the Industrial Environments of Postwar Agriculture.' *Industrializing Organisms: Introducing Evolutionary History*, edited by Susan Schrepfer and Philip Scranton, Hagley Perspectives on Business and Culture, vol. 5, Routledge, 2004, pp. 237-260.

Food and Agriculture Organization of the United Nations (FAO). 'FAOSTAT Database: Livestock Primary.' 2021. www.fao.org/faostat/en/#data/QL. Accessed 8 April 2021.

Fredericks, Christine. *Selling Mrs. Consumer*. Business Bourse, 1929.

Freeman, Carrie Packwood. 'This Little Piggy Went to Press: the American News Media's Construction of Animals in Agriculture.' *The Communication Review*, vol. 12, no. 1, 2009, pp. 78-103.

doi:10.1080/10714420902717764.

Garval, Michael D. 'Visions of Pork Production, Past and Future, on French Belle Époque Pig Postcards.' *Nineteenth-Century Art Worldwide,* vol. 14, no. 1, Spring 2015, www.19thc-artworldwide.org/index.php/spring15/garval-on-visions-of-pork-production-past-and-future-french-belle-epoque-postcards. Accessed 29 April 2021.

Gimenez, Martha E. 'Capitalism and the Oppression of Women: Marx Revisited.' *Science and Society*, vol. 69, no. 1, 2005, pp. 11-32.

Godley, Andrew. 'The Emergence of Agribusiness in Europe and the Development of the Western European Broiler Chicken Industry, 1945 to 1973.' *Agricultural History Review,* vol. 62, no. 2, 2014, pp. 315-336.

Grady, John. 'Becoming a Visual Sociologist'. *Sociological Imagination*, vol. 38, no 2-3, 2018, pp. 81-112.

Hajdik, Anna Thompson. 'A "Bovine Glamour Girl": Borden Milk, Elsie the Cow, and the Convergence of Technology, Animals, and Gender at the 1939 New York World's Fair.' *Agricultural History*, vol. 88, no. 4, Fall 2014, pp. 470-490.

Hamilton, Lindsay, and Nik Taylor. *Ethnography After Humanism: Power, Politics and Method in Multi-Species Research.* Palgrave MacMillan, 2017.

Hall, Stuart. 'The Determinations of News Photographs.' *The Manufacture of News: Social Problems, Deviance, and the Mass Media*, edited by Stanley Cohen and Jock Young, Revised edition, Sage, 1981: pp. 226-243.

Haraway, Donna. *Primate Visions - Gender, Race, and Nature in the World of Modern Science*. Routledge, 1989.

---. *Modest_Witness@Second_Millennium.FemaleMan_Meets_OncoMouse: Feminism and Technoscience*. Routledge, 1997.

Hartwell, Thomas Horne. *The Complete Grazier, or, Farmer's and Cattle-Breeder and Dealer's Assistant*. Bradwell, Craddock and Joy, 1816.

Holloway, Lewis, and Carol Morris. 'Viewing Animal Bodies: Truths, Practical Aesthetics and Ethical Considerability in UK Livestock Breeding.' *Social and Cultural Geography*, vol. 15, no. 1, 2014, pp. 1-22. doi.org/10.1080/14649365.2013.851264.

Horowitz, Roger. 'Making the Chicken of Tomorrow: Reworking Poultry as Commodities and as Creatures, 1945-1990.' *Industrializing Organisms: Introducing Evolutionary History*,

edited by Susan Schrepfer and Philip Scranton, Hagley Perspectives on Business and Culture, vol. 5, Routledge, 2004, pp. 215-236.

---. *Putting Meat on the American Table: Taste, Technology, Transformation*. Johns Hopkins University Press, 2006.

Hubbard. 'The Challenging World of a Primary Breeder, Matching Genetics to Market Requirements.' 2018. www.hubbardbreeders.com/media/art_zootecnica_en_april_2018_hubbard_rd1__04 0855100_1027_28062018.pdf. Accessed 1 April 2021.

Hypor. 'Hypor Kanto. The Premium Pork Quality.' 2021. https://www.hypor.com/en/product/kanto/. Accessed 1 April 2021.

---. 'Hypor Maxter. The Most Pork at the Least Cost.' 2021. https://www.hypor.com/en/product/maxter/. Accessed 1 April 2021.

---. 'Hypor Libra*. The World's Most 'Prolificent' Sow.' 2021. https://www.hypor.com/en/product/libra/. Accessed 1 February 2021.

---. 'Hypor Magnus: More Performance for Less.' 2021. https://www.hypor.com/en/product/magnus/. Accessed 27 April 2021.

Ivins, William M., Jr. *Prints and Visual Communication*. MIT Press, 1969.

Jasanoff, Sheila. 'Future Imperfect: Science, Technology, and the Imaginations of Modernity.' *Dreamscapes of Modernity: Sociotechnical Imaginaries and the Fabrication of Power,* edited by Sheila Jasanoff and Sang-Hyun Kim, University Chicago Press, 2015, pp. 1-33.

Jacques, D.H. *The Barn-Yard; A Manual of Cattle, Horse and Sheep Husbandry*. Revised edition. G.E., 1866.

Jordan, Ana. 'Masculinizing Care? Gender, Ethics of Care, and Fathers' Rights Groups.' *Men and Masculinities*, vol. 23, no. 1, 2020, pp. 20-41. doi.org/10.1177/1097184X18776364.

JSR Genetics. 'GP150 | JSR Genetics.' 2021. www.everychina.com/buy/c-z140e6df/p-44103727-gp150-jsr-genetics.html. Accessed 8 April 2021.

Kalof, Linda, Joe Zammit-Lucia, and Jennifer R. Kelly. 'The Meaning of Animal Portraiture in a Museum Setting -Implications for Conservation.' *Organization & Environment*, vol. 24, no. 2, 2011, pp. 150-74. doi.org/10.1177/1086026611412081.

Lerner, Jennifer E., and Linda Kalof. 'The Animal Text: Message and Meaning in Television Advertisements.' *The Sociological Quarterly*, vol. 40, no. 4, 1999, pp. 565-86.

Lubritz, Danny. 'Breeding for Meat Quality and High-Yield Products.' *Cobb Focus* vol. 1, 2007, pp. 6-7.

Luke, Brian. 'Justice, Caring, and Animal Liberation.' In Josephine Donovan and Carol J. Adams, eds., *The Feminist Care Tradition in Animal Ethics*. Columbia University Press, 2007, 125-152.

Malamud, Randy. *An Introduction to Animals in Visual Culture*. Palgrave Macmillan, 2012.

Mitchell, W.J.T. *What do Pictures Want? The Lives and Loves of Images*. University of Chicago Press, 2005.

Mizelle, Brett. *Pig*. Reaktion Books, 2011.

Molloy, Claire. *Popular Media and Animals*. Palgrave Macmillan, 2011.

Moore, Jason W. *Capitalism in the Web of Life: Ecology and the Accumulation of Capital*. Verso, 2015.

Morton, Nick. 'Animal Welfare as a Key Component of Daily Poultry Routine.' 2012. https://www.thepoultrysite.com/articles/animal-welfare-as-a-key-component-of-daily-poultry-routine. Accessed 20 April 2021.

Mullin, Molly H. 'MIRRORS AND WINDOWS: Sociocultural Studies of Human-Animal Relationships.' *Annual Review of Anthropology*, vol. 28, 1999, pp. 201-224.

Nestle, Marion. *Food politics: How the Food Industry Influences Nutrition and Health*. University of California Press, 2007.

Nordby, Julius E., William M. Beeson and David L. Fourt. *Livestock Judging Handbook*. 9th ed. Danville, IL: Interstate Printers and Publishers, 1962.

Norsvin. 'TN Tempo. Bred for Toughness.' 2021. https://tntempo.com/#tntempo. Accessed 21 April 2021.

---. 'The Robust TN Tempo Contributes to Labor Efficient and Easy Production.' 2019. https://topigsnorsvin.us/news-us1/tn-tempo-en-us/the-robust-tn-tempo-contributes-to-labor-efficient-and-easy-production/. Accessed 6 April 2021.

Noske, Barbara. *Beyond Boundaries - Humans & Animals.* Black Rose Books, 1997.

Pachirat, Timothy. *Every Twelve Seconds: Industrialized Slaughter and the Politics of Sight*. Yale University Press, 2011.

PIC. 'PIC Newsletter'. Summer/Autumn 2017. https://gb.pic.com/wp-content/uploads/sites/9/2019/04/PIC_UK_Newsletter_2017-09.pdf. Accessed 1 April 2021.

Pick, Anat. *Creaturely Poetics: Animality and Vulnerability in Literature and Film*. Columbia University Press, 2011.

Poultry Site. 'Cobb's Early Lesson in Capitalism.' 2008. https://www.thepoultrysite.com/news/2008/10/cobbs-early-lesson-in-capitalism. Accessed 13 April 2021.

Ritvo, Harriet. *The Animal Estate: The English and Other Creatures in the Victorian Age.* Harvard University Press, 1987.

Sahlins, Marshall. 'Colors and Cultures.' *Semiotica*, vol. 16, no. 1, 1976, pp. 1-22.

Sekula, Allan. 'The Traffic in Photographs.' *Photography Against the Grain: Essays and Photo Works 1973-1983,* The Press of the Nova Scotia College of Art and Design, 1984, pp. 77-101.

Shukin, Nicole. *Animal Capital: Rendering Life in Biopolitical Times*. University of Minnesota Press, 2009.

Sontag, Susan. *On Photography*. Farrar, Strauss, and Giroux, 1977.

---. *Regarding the Pain of Others*. Farrar, Strauss, and Giroux, 2003.

Squiers, Carol, et al. *What is a Photograph?* ICP/Delmonico, 2014.

Stewart, Kate, and Matthew Cole. 'The Conceptual Separation of Food and Animals in Childhood.' *Food, Culture and Society*, vol. 12, no. 4, 2009, pp. 457-76. doi.org/10.2752/175174409X456746

Strauss, David L. 'Photography and Propaganda.' *Between the Eyes: Essays on Photography and Politics*, Aperture, 2003, pp. 12-41.

Tagg, John. *The Disciplinary Frame: Photographic Truths and the Capture of Meaning.* University of Minnesota Press, 2009.

Wadiwel, Dinesh. *The War Against Animals*. Brill, 2015.

Weil, Kari. *Thinking Animals: Why Animal Studies Now*. Columbia University Press, 2012.

Wilkinson, Helen. '"The New Heraldry": Stock Photography, Visual Literacy, and Advertising in 1930s Britain.' *Journal of Design History*, vol.10, no.1, 1997, pp. 23-38.

Woods, Abigail, et al. *Animals and the Shaping of Modern Medicine: One Health and Its Histories.* Palgrave Macmillan, 2018.

WorldPoultry. 'Cobb and Sasso in new partnership.' 2008. https://www.poultryworld.net/Breeders/General/2008/1/Cobb-and-Sasso-in-new-partnership-WP002124W/. Accessed 1 April 2021.

WorldPoultry (2015). Breeding for alternative markets. 2015. https://www.poultryworld.net/Genetics/Articles/2015/11/Breeding-for-alternative-markets-2709620W/. Accessed 1 April 2021.

Acknowledgements

Camille Bellet currently receives funding from the Wellcome Trust as part of her Wellcome Trust Research Fellowship in Humanities and Social Science [219799/Z/19/Z] and is hugely grateful for Wellcome's ongoing support. Emily Morgan is employed by Iowa State University. Versions of this article were presented at the 2021 conference of the UK Association for Studies of Innovation, Science and Technology (AsSIST-UK) and at the Centre for the History of Science, Technology, and Medicine (CHSTM), University of Manchester. The feedback received at these conferences has been extremely helpful in shaping and improving the article. Finally, special thanks are due to the companies that agreed to give us the rights to publish their images, and to the two anonymous peer reviewers for their insightful comments. No competing interests declared. Both authors were involved in conceiving, researching, and writing the article.