
The taste of happiness: free-range chicken

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Abstract. Happiness is an elusive concept, it brings about ideas of ecstasy, contentment, delight but also health and strength, *pouvoir* and *puissance*... a state of mind and body that is precarious and contingent. How to give form and substance to an idea that is otherwise difficult to conceive? What is happiness for a chicken? What is it like to be a chicken today? Free-range certification offers a powerful interpretation of animals' happiness in the context of farming, and it does so by providing a particular translation of the 'natural' in the domesticated environment of farming. But it also offers a specific definition of materiality, in the form of the body of the animal, presented as an expression of her/his quality of life in the juiciness and other organoleptic qualities of her/his flesh or eggs. In this paper, I present the results of an on-farm assessment of the welfare of free-range chickens in the UK, carried out by adopting the Welfare Quality[®] protocol. This is a new evaluation of the on-farm welfare of animals that encompasses many aspects of animals' lives, including animals' negative and positive emotions. It suggests that animals' 'happiness' can be measured and can become part of an overall score of welfare, but it also addresses the complexities of the interpretation of the emotional states of animals. I propose that this case contributes to the debate on 'material politics' and the invention of animals' happiness can be seen as a political technique that affects human–non-human animal relations.

“The Edwardian period is often seen as a time of liberation, a throwing open of the shutters on the stifling...Victorian age that preceded it... and, [among other things,] childhood was invented. The Edwardians saw, in a way that the Victorians had not, that childhood was a distinct phase in human development, having its own challenges, demands and special requirements that were different from those of adulthood. (We are talking here, of course, of middle-class children; in the early 1900s the children of the working class suffered deprivation in their millions.) The Edwardians were sensitive, above all, to the middle-class child's need for play and for imaginative freedom.”

Elizabeth Lowry (2009)

Introduction

In this paper I propose that a similar invention has happened in our time with regard to farm animals. The invention I am referring to is of farm animals' emotional life, and it happened in the animal foods market with a proliferation of products presented either as 'cruelty free' or as produced by 'happy animals'. As Lowry might have put it, at the beginning of the 21st-century animals' emotions have been made 'visible' to a public of contemporary European consumers in the same way that the distinct phase in human development called childhood was seen by the Edwardians in a way that the Victorians had not.⁽¹⁾

⁽¹⁾ While a concern for animals' emotions can be found in Darwin's *The Origin of Species*, the acknowledgment of the presence and importance of emotions in farm animals is still a contested issue in animal science; for a review of this debate, see Veissier et al (2009).

I will argue that this invention is a means of engagement (Marres, 2009) with the life of farm animals, and it might work as a tool for opening up a space for better human–nonhuman animal relationships; a space where human–nonhuman animal relationships might be enacted differently than in current intensive animal farming (Law and Miele, forthcoming). Here my interest in the role of this ‘invention’ is inspired by the work of Gabriel de Tarde (1903; 1998), who, at the beginning of the last century, emphasized the role of ideas and invention in economic life, anticipating Joseph Schumpeter’s theory by many years (Barry and Thrift, 2007; Candea, 2010; Latour and Lépinay, 2009).

However, the work that this invention has set itself to do is difficult: the process of opening up a space for better human–nonhuman animal relationships is uncertain because of its ambivalence [the happiness of animals is most often presented as instrumental to the better taste of the meat they will produce (Miele et al, 2005)] and its precariousness (many welfare claims on products are not based on specifically developed animal-friendly standards of production). I propose that these ambiguities are better characterized by looking at the techniques and devices by which the life of farm animals is made visible to a distant public of city dwellers and supermarket shoppers. Then in the paper I explore two main techniques of visibility and their brokering devices. These devices produce what Morgan Meyer has defined as “brokered knowledge”, which is: “knowledge made more robust, more accountable, and more usable; knowledge that ‘serves locally’ at a given time; knowledge that has been de- and reassembled” (2010, page 123). The first one is a technique of the market: that is, how animals’ emotions are presented in marketing messages. Here the brokering devices are the welfare claims on labels of animal foods. The second technique draws on animal science, and it deals with developing scientifically validated measures of animals’ emotional states. In this latter case, the brokering devices are mainly the evaluation sheets used on farms and the scientific papers that they produce.

The two representations of animals’ lives generated by these techniques are brought together by a recent intervention of the European Union, which in its Animal Welfare Action Plan 2006–2010 has indicated the intention to develop (and funded research for) a European Animal Welfare standard (EC, 2006; 2009), based on scientifically validated measures, which could harmonize the way in which welfare claims are made on animal foods (Blokhuis, 2008; Blokhuis et al, 2010).

I address these issues through the presentation of a specific case study of animals’ emotions: (the invention of) chickens’ happiness, how it is presented in marketing messages of free-range chickens, and how it is assessed through scientific measures with the Welfare Quality[®] protocol.

The paper unfolds in this way. First, I locate it within the current debates in geography and in science studies on ethical consumption practices. Then I introduce the first technology of visibility, by outlining a recent development in the market for chicken meat and eggs, where many products are characterized by the appearance of claims of animals’ happiness through labels and other associated marketing strategies, such as television adverts. This market differentiation has been welcomed by many (for example, see Singer and Mason, 2006) as a new approach to improving animal welfare by means of stimulating consumer demand for animal-friendly products.

Subsequently, I address the welfare problems associated with the changes in chicken production in the last forty years, and the rise of intensive and indoor systems of animal farming. The diffusion of intensive systems of production led many animal rights/animal welfare NGOs and animal scientists to voice specific welfare concerns for farm animals living in confined systems all year round, and to suggest the concept of ‘free range’ as a possible solution.

In the third part of the paper I present the second technology of visibility and I describe a visit to a free-range chicken farm and a new method for assessing the welfare of farm animals—the Welfare Quality® protocol. Finally, I will argue that the invention of the happy chicken is not only ambivalent but also precarious: the welfare claims on food achieve only partial visibility and many important areas of animals' lives remain opaque; even when they are made more reliable by a new technology of visibility, they remain fragile. However, notwithstanding all these shortcomings, I will conclude by suggesting that the invention of animals' happiness has produced important effects that might suggest better chicken–human relationships.

Ethical consumption, consumption practices, and the performativity of objects

In recent times there has been a burgeoning of literature in geographies of food on the role of food standards for promoting the involvement of consumers in ethical choices. It has been argued that this 'ethical turn' has challenged the postmodernist approach to consumption that dominated the 1980s and the 1990s, and is closely aligned with an agenda of reconnection between consumers and producers, in both cartographical and cognitive senses, for promoting better consumer practices (Eden et al, 2008, page 1045).

These analyses have contributed greatly to revealing both new opportunities—as in the case of fair trade, for example—for improving the livelihood of small farmers in poor countries (Goodman, 2004; Ponte and Richey, 2011) and some of the limits associated with the emergence of consumer-oriented food standards, such as the class dimension of consumption of organic, local, typical, and animal-friendly products (Guthman, 2003; Jackson et al, 2010, page 164). However, in this paper I propose to look at the emergence of these new consumption practices from another perspective: one that focuses on the performativity of objects and on their role as tools of public involvement. This perspective has been developed especially in relation to environmental issues and, as Noortje Marres has pointed out:

“Social researchers and theorists have written extensively on the merits of things like stoves, strawberry fields, and rubbish bins to enable different modes of relating to, and enacting, issues of sustainability (Hawkins, 2006; Verbeek, 2005). This line of work tends to involve a particular normative commitment, in that it tends to be affirmative of the role of objects as means of involvement. That is to say, this work on objects can be seen as part of a much wider project in social, cultural and political studies, namely the project to establish embodied practices as alternative sites of engagement, and thus to move beyond the narrow preoccupation with linguistic interaction that has long marked the social sciences (Thrift, 2008)” (2009, page 123).

By shifting the attention to the performativity of the objects, I do not intend to deny the role or significance of all those issues addressed in the literature on ethical consumption (issues of justice, the limited effectiveness of many of these new initiatives, and so forth); on the contrary, I am interested in exploring how these new consumption practices, with all their limits and opportunities, emerge out of the interplay of many heterogeneous elements (ideas, technologies, artefacts, bodies, spaces) and distributed agency (Michael, 2006).

Technique of visibility 1: animals' emotions on the label or on packaging

A recent retail audit⁽²⁾ (Roe and Marsden, 2007; Roe et al, 2005) conducted in six European countries looked at animal products carrying animal welfare claims on their labels or on their packaging. This survey underlined the high presence of such claims in the most popular retailing outlets: almost 60% of the nearly 300 animal products surveyed in the ten most popular retailing outlets of each country were communicating to consumers some aspects of farm animals' lives or the production methods adopted. However, almost half of the surveyed products carried welfare claims that were not supported by any specific welfare-friendly production standard (Roe et al, 2005).

Claims of 'animal friendliness' were most likely to be found in quality retailing outlets and on quality products and, in the vast majority of the cases, they were bundled with other quality specifications (eg, better taste, higher safety, or environmental friendliness). The same study underlined how many claims of animal friendliness focused on animals' emotions and spoke to the social life of animals:

"The Devonshire Red™ is a slow growing chicken that has been specially selected for our West Country Free Range Chicken. They are reared using traditional farming methods on small West Country, family run farms. They have access to tree-planted fields, which encourages them to roam and show natural foraging behaviour such as scratching, preening and dust bathing. This allows the chicken to live a fuller, more active and enriched life. The methods and their natural diet produces tasty, succulent meat rich in flavour" (Roe and Marsden, 2007, pages 15 – 16).

Another explicit example of this new attention to animals' emotions can be found in the promotion of the new UK-based egg brand called the 'happy eggco' (figure 1). As the company claims on its webpage, what they attempt to do is different from other producers because they strive to create the perfect environment in which hens can be happy:



Figure 1 [In colour online.] Packaging and logo of the happy eggco.

⁽²⁾This study was conducted in six European countries: the UK, Netherlands, Italy, Sweden, Norway, and France. The audit sought to identify as broad a range as possible of products and labels, in order to comparatively analyze the marketing of welfare claims on product packaging.

“We want to make sure all our hens are as happy as can be! That’s why all our farms not only have wide open spaces and trees, the hens can also scratch around the sandpit, go for a ride on the swing or perch up on the play set ensuring every egg is as tasty as the next!” (<http://www.thehappyegg.co.uk/happy-eggs-in-the-media.html>).

This new attention to farm animals’ emotions indeed resonates with the Edwardian invention of childhood in several aspects: the (middle-class) child’s need for play and for imaginative freedom is somehow echoed in the need for play (or positive emotions) and imaginative freedom in marketing messages and welfare claims of free-range chickens, and it speaks to changing sensibilities of animals as social agents.⁽³⁾

In these marketing messages the free-range systems of production are presented as inherently more friendly than the more common, indoor, intensive systems because they offer more ‘freedom’ to the birds. At the same time, most of the same animal friendliness claims neglect to mention other parameters of animals’ lives, such as mortality and health, absence of hunger or thirst, absence of injuries, absence of stress, and good human—animal relationships. Recent studies of the welfare experienced by free-range hens pointed out that the birds kept in these systems are subjected to the same or even higher welfare risks than the ones living in conventional indoor systems (Whay et al, 2007). While it is widely acknowledged that outdoor systems might offer the birds a better chance of good welfare (Fraser, 2008), in many cases they do not score well when assessed by using scientific parameters. These systems require higher management skills and new technological innovations in the form of appropriate feed, enriched range, and, especially, dedicated breeds of more rustic birds that are able to survive and take advantage of the opportunities offered by the more natural, but also more dangerous, environment. The characteristics of contemporary chicken farming bring about some fundamental questions. What happened in the recent history of domestic chickens that made life outdoors so risky? What is welfare or happiness for contemporary chickens? And, more pointedly, what is it like to be a chicken today?

What is like to be a chicken today? Live fast, die young⁽⁴⁾

The major milestone in 20th-century poultry production was the discovery of Vitamin D (named in 1922), which made it possible to keep chickens in confinement year round. Before this, chickens did not thrive during the winter (due to lack of sunlight), and egg production, incubation, and meat production in the offseason were all very difficult, making poultry a seasonal and expensive proposition. Year-round production in confined systems lowered costs, especially for meat chickens and rapidly became the most widely adopted method of rearing: currently in the UK about 840 million chickens are reared for meat production annually,⁽⁵⁾ about 94% of them are kept in confined intensive systems, 6% are free range, and only 3% (ie 50% of free range) are certified organic. Consumption of chicken meat increased from one bird per person per year in the UK about fifty years ago, to 23 kg per person per year (Millstone and Lang, 2003) with rapid growth in the demand of free range and

⁽³⁾The changed sensibility towards nonhuman animals echoes current trends in Western culture as identified by many authors in animal studies: Erica Fudge (2000) has addressed the effacing of nonhuman animals from human history; Vinciane Despret (2004; 2008) and Donna Haraway (2008) have traced the emergence of animal subjectivity in animal science practices; Susan McHugh (2010) has traced the emergence of animals’ agency in films and narrative; Steve Baker (2000) and Cary Wolfe (2009), among others, have emphasized the emergence of posthuman attitudes in many forms of contemporary art engaging with, and involving, nonhuman animals.

⁽⁴⁾Compassion In World Farming (CIWF), http://www.ciwf.org.uk/farm.animals/poultry/meat_chickens/default.aspx

⁽⁵⁾In 1953 production stood at 5 million chickens a year; between 1986 and 1988 total average production was 590 million; between 1994 and 1996 this increased to 778 million (Defra, 2005).

organic in the last few years, accounting for 12% of the UK market (CIWF). This remarkable increase in consumption has been sustained by, as well as promoted by, a series of technological innovations that lowered the cost of production and especially the final price for consumers compared with other types of meat. In the first four months of 2010 in the UK, the retail price of chicken meat was on average 288 pence per kg, a decrease of 5% compared with January 2009 prices (Defra, 2010).

The history of the technological innovations in chicken production in the last forty years recalls a series of interventions on the chicken's body that made *him* (because most chickens reared for meat production are males) unfit for living outdoors. These interventions, especially breed selection, changed his lifespan dramatically (from 4–6 years in wild chickens to 35/58/81 days in conventional, free-range, and organic systems of production, respectively) and his bodymass, since the breeds currently used for conventional broiler chickens have been selected for ever larger breasts, a higher muscle-to-bone ratio and rapid growth. The current estimate of the number of chickens reared for meat production worldwide is 40 billion per year. Three breeding companies—Aviagen, Cobb-Vantress, and Merial—supply almost 80% of the world's chicks to a handful of vertically coordinated companies that dominate world chicken production.

As proudly announced on the company's webpage, the white-feathered Cobb is the Arnold Schwarzenegger of the chicken world, with a broad chest and large feet to support the weight of its mighty drumsticks. These chickens are kings of the intensive broiler system (therefore most likely to be found on the supermarket shelves) because they have been bred with a ferocious appetite and a rate of growth of about 80 g/day, required for them to reach a saleable size of 4½ pounds in five weeks (the breeds used forty years ago would reach the same weight in ten–twelve months).

These impressive productive results have been coupled with severe welfare risks for birds in intensive systems of production. A study on breed selection carried out by Julian in 1998 pointed out that,

“Over the last 40 yr, genetic selection for rapid growth and improved feed efficiency has been very effective in meat-type poultry... growth rate has more than doubled. The effect of genetic selection... causes significant mortality from cardiovascular disease. In the chicken, sudden death syndrome (flip-over) and pulmonary hypertension syndrome resulting in ascites are the most important” (page 1773).

And the list of welfare problems has increased over time: high stocking density might prevent animals from walking and reaching the feeders and drinkers, especially towards the end of the production period when they are heavy and up to seventeen birds can be cramped into 1 m². Leg deformities and bones breaking in the case of rough handling of birds, especially at the end of production when chickens are caught and placed in crates for transport to abattoirs by ad hoc catching crews, are other risks affecting birds in intensive systems of production. There are also intrinsic genetic problems: for example, highly productive breeds have not been selected for good social behaviour and they can engage in feather pecking to a level at which they may injure or kill each other (Grandin and Johnson, 2010, pages 207–235). Recent studies of chickens' welfare have also pointed out that health risks are associated with emotional risks:

“Selection for high productivity is associated with high prevalence of health problems such as lameness in broiler chickens and bone fractures in laying hens. While we can measure the effects of such conditions on mobility and musculoskeletal pathology, there is currently no simple way to determine how painful they are. Previous work at Bristol found evidence that lame birds preferentially consumed food containing analgesic, suggesting that lameness causes pain and that chickens are capable of complex decision-making processes involved in regulating their own analgesia” (Hothersall et al, 2010, page 1).

The outdoor systems of production that were prevalent before the 1950s have been rediscovered in more recent times and proposed to address some of these welfare problems. Nowadays, free range is a dynamic concept associated with many successful brands that use animal welfare as one of their main selling strategies. There are different types of free-range systems and each specification makes reference to the resources made available to the birds. However, currently, there is little reference to the specific breeds suitable for these systems—only a generic recommendation of ‘slow growing’.

There are several definitions of requirements for free-range chicken production in the UK, as summarized in table 1.

Free-range chickens incur severe welfare risks as well: some similar to the ones experienced by the chickens in intensive, year-round, indoor systems, others specific to these systems of production. As shown in table 2, the currently available slower-growing breeds for free-range chickens reach the same size as the chickens in intensive systems in 58–60 days, while the ones used for organic require about 81 days. These chickens might have a slower growth rate than the birds in intensive systems of production, but still they are way distant from the 4–6 year lifespan of wild chickens. Moreover,

Table 1. Free-range systems for meat chickens in the UK (source: http://www.bbc.co.uk/food/food_matters/chicken.shtml).

Free-range: the maximum indoor stocking density is 13 birds per m² (and not more than 27.5 kg/m²); in addition, each bird, for at least half its life, should have continuous daytime access to open-air runs with a maximum density of 1 bird per m².

Traditional free range: the maximum indoor stocking density is 12 birds per m² (and not more than 25 kg/m²); continuous daytime access to open-air runs should be given from the age of six weeks, and these runs should allow at least 2 m² per chicken; poultry houses shouldn't contain more than 4800 chickens. Slow-growing varieties of chicken should be used, with a minimum slaughter age of 81 days.

Free range—Total Freedom: in addition to the criteria for ‘traditional free-range’ chickens, these birds should have open-air runs of unlimited area.

Organic: chickens are free range and slower grown. They are slaughtered at 81 days, given organic feed and no routine antibiotics. They are kept in smaller flocks, with more space to move about inside and out.

Table 2. Welfare issues in intensive and free-range chicken production (source: Citizen Juries Comparative Report, Welfare Quality Report N.13, forthcoming).

Measure	Intensive	Free range ^a
Stocking density (birds/m ²)	17	13 (10)
Flock size	40 000	15 000
Breed	Ross	slower growing
Food conversion rate	1.7	2.6 (3.0)
Length of life (days)	35–40	56 (81)
Welfare issues:	high stocking density	feed restriction
	feed restriction	leg deformities
	leg deformities	fast growth
	fast growth	cardiac problems
	cardiac problems	barren range environment
	genetic	genetic

^aThe figures in parentheses refer to free-range organic.

“the reality in modern commercial flocks is that few chickens actually range. A median of 30% of laying hens used the range in 25 UK flocks (Whay et al, 2007). All surveys have found the larger the flock, the fewer birds range outdoors. Research effort is concentrating on making the range more attractive to the birds with vegetative cover more akin to the jungle environment of their ancestors. But is this what the birds want? Rather, are they expressing the natural instincts of self-preservation and choosing thermal and physical comfort over exposure to the often hostile outdoor conditions? Mortality rates, feather pecking and cannibalism are often very high in free-range flocks compared with other husbandry systems. This meets neither the needs of the birds nor the expectations of consumers” (Weeks, 2009, page 1).

What is a good life for a chicken and how to measure the quality of that life?

Chickens, like the postmodern pigs described by Giovanni Aloï, have evolved in a deterritorialized existence and, significantly, they ask the question of their own identity.

“[This] reminds us of a specific closeness to the animal, one that stands in a different relation to the encounter with the wild animal. This encounter carries with it a sense of anxiety unearthing a number of pivotal questions. Questions of a political kind; questions of ecological and social division and not last of epistemological critique” (2010, page 10).

I want to address some of these issues, starting from an epistemological and political question: how do we give an account of the quality of life experienced by chickens reared for food production?

And then I will move on to what I have called the second technique of visibility, by narrating the experience of an on-farm assessment of the welfare of free-range chickens in Devon, in the south of England. Through the unfolding of this visit, I illustrate how a concern for giving an account of animals’ emotions, especially positive emotions, has led to the development of new measures that have become an integral part of a new welfare-assessment protocol for domestic chickens: the Welfare Quality[®] protocol (Botreau et al, 2009; Keeling, 2009).

It is a novel evaluation of the on-farm welfare of animals that encompasses many aspects of animals’ lives, including animals’ negative and positive emotions. It suggests that animals’ ‘happiness’ can be measured and can become part of an overall score of welfare. However, it also illustrates the complexities of the interpretation of the emotional state of animals and how it might contribute to an overall evaluation of welfare.

Technique of visibility 2: animals’ emotions on the recording sheet

The day starts at 5am with a train journey to Bristol to join Paul and Claire, the animal scientists of the Bristol University Veterinary School who are going to conduct a trial of free-range chickens’ on-farm welfare assessment. The farm that we are going to assess has been suggested by one of the largest chicken production companies in the UK, the Hook2Sisters group. This farm is part of the South West Free Range Growers Group and is located in Devon. It is also part of the Freedom Food Assurance Scheme, which has been promoted by the Royal Society for the Prevention of Cruelty to Animals, a major animal welfare NGO that certifies chickens for some of the UK’s major supermarkets.

Before we set off, Paul and Claire check that all the equipment needed for the farm visit is in the car and in good order. The equipment is quite simple: it consists of a catching pen, which is a three-part, foldable plastic restraining frame made by Paul to fit in his car boot. This pen is for catching small groups of birds in order to check if they have lesions, and for cleanliness and gait scoring. Then there is a luxmeter for measuring the light level,

an A4 sheet of black paper for measuring the level of dust, an instrument called a Kitagawa or Drager apparatus for measuring the level of ammonia in the litter, a 10 m ruler, for measuring the dimension of the birds house, one 'novel object' (a stick with colourful adhesive stripes), clean scoring sheets, pencils and a clipboard, a bucket for carrying all these tools, and clean, appropriate clothing and footwear (overalls, clean boots, plastic boot covers, mouth masks, and sterilizing wet wipes for us).

When we reach the farm, we stop first for a chat with the farmer. Paul and Claire go through the questionnaire and they ask if there are (or have been) any specific problems with the chickens. 'No there have not.' This is a trial visit and there is also a questionnaire developed by the sociologists in the project team, who want to get an understanding of the farmers' attitudes towards the chickens. When Claire asks if he likes touching the birds, or what is the task that he likes better regarding his daily dealing with the chickens, the farmer looks at us a bit puzzled ('What sort of question is this one!?', he seems to ask, and Paul apologises and murmurs: "These questions must have been introduced by the sociologists"). No, he does not really like to touch the birds and the best/only thing he likes is 'a fresh litter', the new chicks when they arrive on the farm at the beginning of the production cycle.

Then Paul asks when the catching crew will come to collect the chickens to take them to the abattoir. He needs to plan when he has to come back to assess how the catching crew handles the birds, as well as to assess the actual slaughter at the abattoir. Some body measures are taken at the slaughterhouse, as in the case of the assessment of 'prolonged hunger', which is measured by evaluating the carcasses of the birds. We learn that the catching crew should arrive the day after, at 5am. The journey to the slaughterhouse will take about two hours.

The Welfare Quality[®] protocol, based on four welfare principles, twelve criteria and about forty measures for broiler chickens (table 3), indicates that the assessment needs to be done as close as possible to the end of production, just one or two days before the chickens are taken to the slaughterhouse, because this is the most risky time

Table 3. Principles and criteria for good welfare of the Welfare Quality Assessment protocol for poultry.

Principle	Welfare criterion	Measure
Good feeling	Absence of prolonged hunger	This criterion is measured at the slaughterhouse Drinker space
	Absence of prolonged thirst	
Good housing	Comfort around resting	Plumage cleanliness, litter quality, dust sheet test Panting, huddling Stocking density
	Thermal comfort	
	Ease of movement	
Good health	Absence of injuries	Lameness, hock burns, foot pad dermatitis On-farm mortality, culls on farm This criterion is not applied in this situation
	Absence of disease	
	Absence of pain induced by management procedures	
Appropriate behaviour	Expression of social behaviours	As yet, no measure has been developed Cover on the range, free range Avoidance distance test Qualitative Assessment Behaviour
	Expression of other behaviours	
	Good human–animal relationship	
	Positive emotional stage	

from an animal welfare point of view: the birds have reached their saleable weight, and they are more likely to be lame and to experience pain and difficulties in walking, which might prevent them from reaching the feeders or drinkers.

After the talk with the farmer we go to the chicken shed. The chickens live a bit distant from the house; there are nine chicken sheds on the farm, each of them hosting 7500 birds. On the way, we come across some of the other animals living on the farm. There is the farmer's dog, who follows us, competes with the chickens, gets the affection of the farmer, who likes to stroke him, and actually lives in the same house as the farmer. There are some cows grazing in the field near the house. These are other 'competitors' of the chickens: they compete for the fields and especially for the time of the farmer. We learn that the farmer can spend only one hour (at most) every day with the chickens: he walks the shed and checks if the birds are OK. If some of them are crippled or injured then he has to kill them (by breaking their necks), to avoid prolonged suffering. The incidence of bird mortality is noted on the shed's door and it is the first piece of data recorded by Paul.

Every shed has a range, which the chickens share with llamas. The farmer tells us that the llamas are friends of the chickens; they are good for keeping away the foxes and the chickens are not afraid of them (moreover, they produce wool, and the farmer can realize what economists would call an economy of scope). Today we are going to visit shed number 3. Once we reach it, the farmer and his dog leave us. Before we enter the shed, Paul and Claire try to estimate the percentage of birds outside in the range, and they assess the quality of the range (the percentage of range that is covered by trees, deep vegetation, or artificial shelter that might offer protection to the chickens from predators). There are not many chickens in the range, which is not surprising as it is winter and it is cold, and the range is only partially covered. Before we enter the shed we need to disinfect our boots. This is compulsory for biosecurity reasons; bacteria and other microorganisms of the chickens need to be left outside. Paul knocks on the door, he explains to me that we need to tell the chickens that we are entering the shed. Chickens are prey animals and will be scared when they see us, as they would be scared by anything unusual. Once we enter the shed I can hardly see inside: there is very little light even though the pop holes are all open. It is dusty and there is an unbearable smell of ammonia: the birds' faeces accumulated in the litter during the 56 days that they have lived there. At first Paul and Claire stand still and let the chickens get used to our presence. Then Claire places the A4 black sheet of paper on a high location where the chickens cannot reach it. It will be collected at the end of the assessment to calculate the level of dust. The assessment should take about two hours.

Claire starts to collect samples of the litter from different locations, especially under the drinkers and near the pop holes, to check the humidity and the level of ammonia: this is one of the measures for calculating the 'comfort around resting' criterion. Paul observes the birds from different locations for signs of 'panting' or 'huddling', which are measures of thermal comfort (presence of panting and huddling is actually a measure of thermal discomfort). Then, Paul and Claire carry out the other measures for assessing the 'comfort around resting' together: these are free-range birds, of the Hubbard breed, and they are more mobile than the ones who live indoors. Paul and Claire need to pen small groups of birds to catch them and check the cleanliness of their plumage, and check the number of hot burns and foot pad dermatitis for the criterion 'absence of injuries'. This operation is repeated several times, at different locations in the birds' house. After this, Paul walks slowly through the shed and he observes how the chickens walk, whether they are lame or not, and he assesses for each sampled bird the level of lameness. He then writes the lameness score for each bird on the scoring sheet. This is in order to calculate the gait score. Finally, they start the

assessment of positive emotions, by adopting the Novel Object test and the Qualitative Assessment Behaviour (QBA). The novel object (the stick with colourful bands) is placed on the litter and the number of birds that approach it every 10 seconds within a time interval of 2 minutes is recorded. This is repeated in several locations. This test should give an indication of the birds' activity and curiosity. The QBA should provide an indication of the full range of birds' moods. It has been developed to assess the expressive demeanour of animals in interaction with their surroundings, using terms such as 'agitated', 'anxious', 'relaxed', 'content' (Wemelsfelder, 2007). It is performed by looking at the flock or herd of animals for a period of time, variable per species, and it is repeated on farm with different groups of animals. The observations are then annotated on a recording sheet where the quality and the degree of the intensity of the various animals' moods are visually assessed by the assessor.

The terms used for the QBA broiler assessment try to grasp the range of different moods that the birds can experience, as indicated in the sample recording sheet in figure 2. This is the final measurement, after filling in the last recording sheet with the QBA evaluation, Paul and Claire collect all the tools, the A4 black sheet of paper, and we leave the chickens' shed.

Active	Min.....	Max
Relaxed	Min.....	Max
Comfortable	Min.....	Max
Fearful	Min.....	Max
Agitated	Min.....	Max
Confident	Min.....	Max
Depressed	Min.....	Max
Calm	Min.....	Max
Content	Min.....	Max
Tense	Min.....	Max
Unsure	Min.....	Max
Energetic	Min.....	Max
Frustrated	Min.....	Max
Bored	Min.....	Max
Friendly	Min.....	Max
Positively occupied	Min.....	Max
Scared	Min.....	Max
Nervous	Min.....	Max
Happy	Min.....	Max
Distressed	Min.....	Max

Figure 2. Qualitative Behaviour Assessment: qualitative measures (example of the recording sheet).

The data generated by the forty (or so) measures collected on farm and at the slaughterhouse (both body measures and environment measures) will be analyzed with dedicated software. They will be integrated to produce 'criterion-scores', which, in turn, will be integrated into 'principal-scores' and then into the overall assessment that will allocate farms to four classes characterized by the level of welfare achieved by the animals: 'excellent', 'enhanced', 'acceptable', and 'nonclassified' (Botreau et al, 2009). It is expected that the on-farm assessment should be repeated once a year, which means, in the case of the free-range chickens, once every six production cycles.

Conclusions: marketing as means of engagement, science as dealing with uncertainties

The recent innovation of the 'happy chicken' suggests questions about the role of food marketing as a means of engagement with the life of farm animals and, more generally, about the role of objects as participants in social actions (Bennett, 2001; 2004; Latour, 2005, page 77).

As pointed out by Marres, there is a growing interest in the role of objects as mediators of social, political, and increasingly moral relations in social studies of science and technology:

“In recent years, sociologists, anthropologists and philosophers have directed attention to the affordances of technological and scientific objects to enable involvement, both in the sense of human sociability...and in the moral or political sense of engagement with matters of collective concern” (Marres, 2009, page 123).

In the case of the happy chicken, the recent emphasis of the marketing messages on animals’ emotional states, on animals’ activities, curiosity, happiness, call for an empathic relation between the potential consumer and the animal. By bringing to the foreground the life of the animals and leaving in the background the quality of the food, these marketing messages might act as subjectifiers (Latour, 2005) for promoting a stronger involvement of consumers into the life of farm animals, and for expressing a form of care for farm animals (Miele and Evans, 2010). However, many of these marketing messages are ambivalent since the happiness of the animals is presented as instrumental in the better taste of the food. Therefore, they may also attract more materially concerned consumers. In both cases, however, the caring and materially concerned consumers are collected or associated together (Latour, 2005, page 78) by the invention of the happy chicken, which allows different modes of relating to, and enacting of, issues of animal welfare.

In this paper I have argued that the invention of the happy chicken is not only ambivalent but also precarious: welfare claims on food achieve only partial visibility and many important areas of animals’ lives remain opaque. Therefore, it raises the question of how and to whom those representations of happy animals’ lives are made accountable. Temple Grandin and Catherine Johnson argue that farms and slaughterhouses should have glass walls or webcams to make visible to everybody what the quality of life (and death) of farm animals is (2010, page 228). The case presented here of the on-farm welfare assessment does not achieve such far-reaching visibility. More modestly, however, it suggests that it is possible to make accountable the claims of happiness. And here as well we can see the ‘happy chicken’ intervening, this time challenging animal science’s traditional concerns and methods. For a long time, animal science has focused its attention on animal suffering as the main concern for intensive systems of production. Now it has been led to engage also with the identification of measures of the positive emotions of animals on a farm. This is a new territory and it is more uncertain, more difficult to interpret. However, it also opens up another space, in animal science, for a material politics of human–nonhuman animal relationships; it opens up a space of research for thinking about chickens and chickens’ lives enacted differently. As John Law and Annemarie Mol argue:

“‘Politics’ is often linked to debate, discussion, or explicit contestation. Alternatively, it is sometimes seen as being embedded in and carried by artefacts, like the sleeping policemen. The version of politics presented here is less visible than public debates on animal welfare and weaker than many artefacts (like the sleeping policemen)” (2008, page 143).

Even if the ‘happy chicken’ might be seen as a weak invention, fraught with ambivalence and ambiguities, it has achieved important effects: it has suggested a more complex moral relationship between human and nonhuman animals, a search for different intimacies between humans and chickens. Paraphrasing Mike Goodman (2004), we might say that the happy chicken has shown that chickens’ lives could be better and it has shouted that it should be better. And it has also shown many other powers: the power of affecting a growing number of both caring and material consumers; the power to move animal science in exploring chickens’ positive emotions:

the power to enrol free-range farmers, quality retailers, certifying bodies, breeding companies and part of the industry in a search for innovations in chicken production. Then, if we ask what has been invented here, we might agree with de Tarde that:

“The thing which is invented, the thing which is imitated, is always an idea or a volition, a judgement or a purpose, which embodies a certain amount of belief and desire. And here we have, in fact the very soul... of industrial achievements or of artistic processes. Desire and belief: they are the substance and the force, they are the two psychological quantities which are found at the bottom of all the sensational qualities that they combine; and when invention and then imitation takes possession of them in order to organise and use them, they also are the real social quantities” (1903, pages 145–146, emphasis in original).

And from all this work done by the ‘happy chicken’, from this desire and belief in better human–chicken relations, some examples might emerge of

“chicken–human lives that are attentive to complex histories of animal–human entanglements, fully contemporary and committed to a future of multispecies naturalcultural flourishing in both wild and domestic domains” (Haraway, 2008, page 273).

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