



Race and Process: Certifying Iberian Pigs and Invisibilising Humans¹

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Abstract

This article is based on on-going fieldwork in Extremadura, Spain and printed material produced by the producers' association: a producer's handbook, a guide to the genealogical registry, a trade journal, and current legislation. In a context of global market oriented commodity production, the Iberian Pig undergoes several processes of classification and certification, governmental as well as from the private sector, that aim to assure certain racial and processual characteristics of the finished products. In this article I analyse the mythical-historical, scientific, and legislative construction of the Iberian Pig breed. I ask, in the ever-widening distance between farm and fork, not only what the processes of certification bridge, but also what fails to make it through, as well as what these processes contribute towards concealing. I argue that, in an attempt at constructing it as natural, the process of certification renders invisible the agency of modern human intervention in the making of the Iberian Pig.

Keywords

Pata Negra, pigs, Spain, classification, certification, food

A puzzle of hams, shoulders, and labels

Iberian pigs are surrounded by a particular universe of ideas, expressed by different actors involved in its regulation, production, processing, distribution, commercialisation and consumption. They are also present in the marketing strategies of Iberian products like logos, advertising imagery, product labelling, pamphlets, websites, etc.. They tend to highlight mutually supportive aspects that can be summarily narrativised into what could be called the “myths of the Iberian pig”: Iberian pigs are autochthonous to the Iberian Peninsula, they live in the *dehesa*, their natural habitat, where they feed on acorns. Their rearing and processing practices are local, steeped in tradition, and their products are pure, natural, without preservatives or additives. Their by-products are superior, healthy, and exclusive. Such is, at least, one possible cohesive interpretation (what could be called the willed and inten-

1. Earlier versions of this article were presented as the keynote address to the Visual Anthropology of Food Symposium at the NAFA International Film Festival, Aarhus University, at the Faculty of Philosophy and Letters, University of Buenos Aires, and at the Anthropology department at NTNU.

tional *connotation*) of the messages sent on varying registers, which forms the backdrop of this article (see Simonsen, 2019).

During one of our first fieldtrips, in 2017, after visiting the offices of AECERIBER (the breeders' association that manages the process of certification, protection and promotion of the Iberian pigs), in Zafra (a city in Extremadura), we went to a large supermarket on the other side of the road where there was (as is common in Spain) a staggering variety of pork products for sale: cured legs hanging prominently on display, fridges and freezers with fresh and frozen cuts, shelves with vacuum packed sliced and whole pieces of cured meats and sausages. Each product displayed a variety of labels indicating type of product, price, quantity, origin, qualities and rearing conditions of the animal, etc.

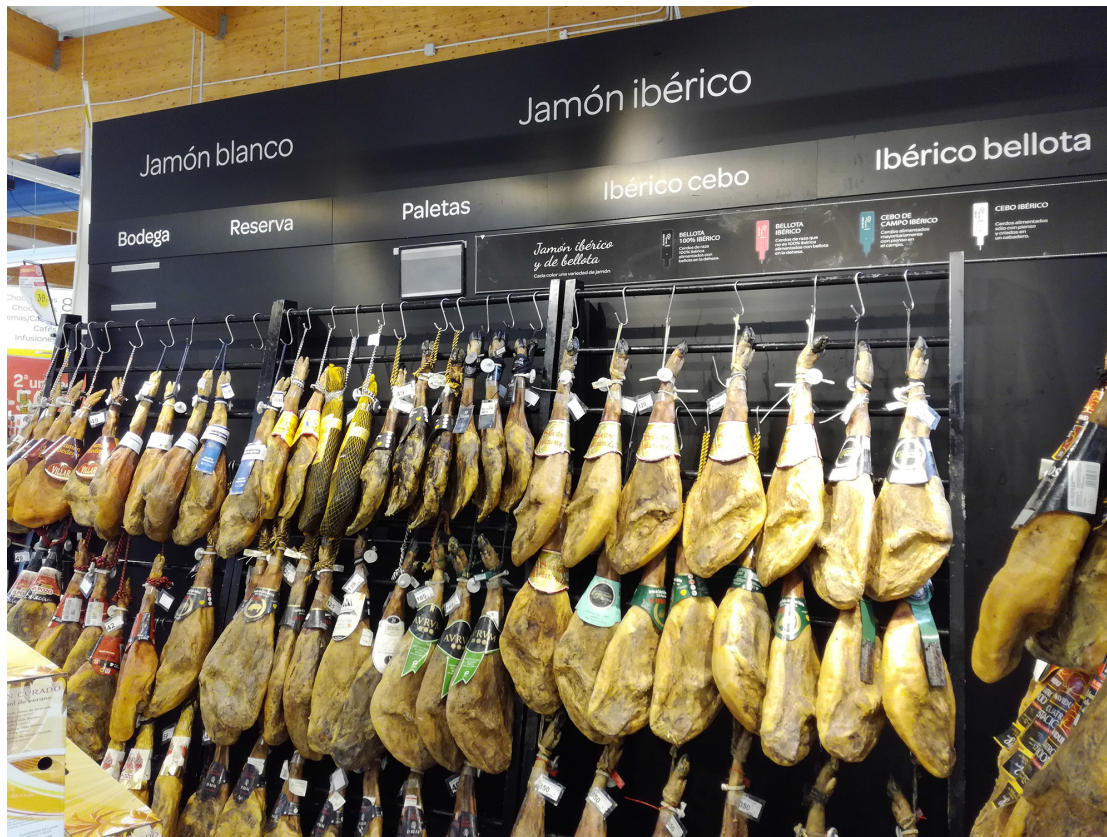


Fig. 1 Photo: Lorenzo Cañás Bottos

A black background with white lettering stands behind the black racks from which dozens of cured pig legs hang. “Jamón Blanco” (white ham) and “Jamón Ibérico” (Iberian ham) are the two most prominent and larger labels on top of the black background, the former taking approximately one third of the space and the latter two thirds. Underneath Jamón Blanco, and in slightly smaller type, is written “Bodega” and “Reserva” (which refer to different curing times), followed by “paletas” between the two ham categories; while under “Jamón Ibérico” there is clearly written “Ibérico Cebo” and “Ibérico Bellota”. In yet smaller fonts we see explanations of the ham subcategories (which also apply to the *paletas*). Two years later, the explanations for “Bodega” and “Reserva” have been removed. The newly incorporated explanation for “Jamón ibérico y de bellota” explains the meaning of the four colour coded strap-seal labels attached to the bones of each of the “ibérico” legs. This was the result of the implementation of the new law on the quality assurance of ham from 2014 (Ministerio de Agricultura Alimentación y Medio Ambiente, 2014). It had taken a few years between the passing of the law until its visibility in the market. These labels *denote* the certification of

race and process involved in the production of the piece they are attached to. I will come back to what each of these labels means later. We must first focus on the classificatory work undergirding these certifications. For now, suffice to say that pigs present an opportunity to understand classifications that goes well beyond that of being an impure category in the Leviticus (Douglas, 1985). As Donald McDonnell (1978) shows, the underlying theory of a classificatory system can be found through the previous discovery of its “key”. Douglas finds the principle of purity operating in the Leviticus as the key behind the classification of animals, peoples, textiles, etc. On the one hand, and contradictory as it might sound, Mosaic values of purity also inform Spanish local understandings of the Iberian Pig, or rather, as we will see, purity as a value informs practices of classification and certification of Iberian pigs. It could be argued that the process of construction of the classification, standardisation and certification systems operating in the production of the Iberian pig is a clear case of the constant operation of the work of purification and hybridisation that according to Latour (1993) characterise modernity. However, I want to go beyond establishing an alignment with a theory. Here I focus on the classificatory work needed to make Iberian pigs, outlining some of the classificatory domains that Iberian pigs inhabit, looking for the keys that underline the different systems, the contradictions as well as the overlapping coherences. This classificatory work takes place within a complex assemblage of heterogeneous systems of knowledge and practice, traditions and history, and finds its way to stamp itself on processes of certification backed by private and public agencies (Busch, 2011). The Iberian Pig is made by bureaucrats and scientists, as well as farmers, butchers and business-people.

Bourdieu shows the processes by which States have become the ultimate source of certification and validation (1994). In addition, this function has been progressively coordinated globally through supranational organisations as well as intergovernmental ones. Their coordination allows, among other things, the flow of commodities (and the validity of their certifications) over the territorial borders of the certifying states. It has long been argued in anthropology that the overt claims to legibility and transparency of modern states and bureaucracies are undermined in their practice by strategies of illegibility, obscurity and irrationality (Cañas Bottos, 2015; Das, 2004; Scott, 1998). Anthropological efforts to understand processes of certification in agriculture support similar conclusions: systems of certification designed to render complex production chains, produce as much opacity as transparency when set in practice (Seshia Galvin, 2018a, 2018b). Here I want to push the argument further and show how opacity is not restricted to the practice, but integral to the design and logic of certification schemes, emerging from the keys and theories that underlie the classification systems. Certification simultaneously denotes, connotes, and obscures. And what it obscures in this case is the intervention of modern human agency.

This article is part of an on-going project carried out together with Jan Ketil Simonsen (NTNU) and Peter Ian Crawford (UiT). Throughout this article “we” refers to the team, while “I” to the observations, interpretations and explanations of the author. The project, designed within the parameters of visual anthropology, follows the social life of Iberian pigs, from conception to consumption. We aim to understand the cultural complex surrounding the Iberian pigs, an animal that is central in the Spanish folk imagination, and a breed of mythical proportions. We have been doing intermittent fieldwork in the comarca (administrative division) of Tentudía (in the province of Badajoz, in the Autonomous Community of Extremadura, Spain) since August 2017. Trips are organised in order to witness the significant moments in the social life of the pig: mating, birth, fang cutting, weaning, sterilising, certifying, *montanera* (the fattening period in the *dehesa*, an oak grove landscape

see Simonsen, 2019), sale, transportation, killing, butchering, and curing. We also follow the different sociocultural public events associated with pigs, such as “Matanzas”, the “Fiesta del Guarrito” in Montemolín and the International Agricultural fair in Zafra. We furthermore interviewed significant actors involved in the different stages, from breeders’ associations, fair competition judges, government officials, butchers, curers, merchants, etc. However, most of our attention is directed towards producers. We have developed a particular focus on three producers: a small-scale and “traditional” farmer, a small-scale farmer who deploys modern technologies, and a large-scale industrial producer who also deploys modern technologies.

The article starts by distinguishing the pig from the wild boar, showing how despite being part of the same biological species, they are actually thought and acted upon as if they were different. I then move to discuss the paradigm of pig breeds, where the contrast between improved and non-improved ones is discussed, and its consequences for the Iberian Pig as a breed somehow closer to nature due to its “non-improved” characteristics. Afterwards, I outline in further detail the institutionalisation, standardisation and certification of the Iberian pigs, the classification of farms, and the system of standardisation and certification of race and process.

Is that a pig or a wild boar?

The classificatory dilemma alluded in the introduction starts with the first step: trying to define what a pig is (and within that group, to identify the Iberian Pig). In Spanish folk culture (as in many other places), pigs and wild boars are generally considered (and behaved towards) as different species. This understanding is strengthened by the usage of distinct terms like *cerdos* and *jabalíes*, while in contrast with the English language the folk “species name” is formed by adjectivising the adult male. This folk distinction between the domestic and wild varieties, as though they were different species, can also be found in older zoological literature. In 1914, the Spanish zoologist (or more specifically mammologist) Angel Cabrera published his catalogue of Spanish mammals (Cabrera, 1914). In this work *jabalíes* and *cerdos* are separated according to the former being wild, the latter domesticated (and therefore in different sections of the book). In addition, Cabrera abstains from providing as much detail on domestic varieties as he does on wild ones due to the former being within the scope of a different discipline (*zootecnia*) – domestication not only creates species, it also creates boundaries between disciplines. Nevertheless, Cabrera distinguishes and describes five races of *sus scrofa domesticus* (the scientific name of the domestic pig) in Spain: *extremeña*, *balear*, *celta*, *alavesa*, and *ribajetana*. Cabrera uses the term “razas ibéricas” to cover all of them, but the term “ibérico” functions rather as a localising adjective than a proper noun to nominate the race collective. The “celta” and “balear” contemporary representatives appear to include the Gochu Asturcelta and the Majorcan Black Pig. The *extremeña*, on the basis of geographical spread and morphological description, seems to be the closest to the contemporary Iberian Pig. It looks as though the Iberian Pig in 1914, as a recognisably distinct breed, was either non-existent or, if it did exist, was not worthy of special mention.

In the modern western zoological taxonomy, *sus scrofa* is the wild boar, while domestic pigs are further divided into just over a dozen subspecies subsumed to *sus scrofa* (Wilson & Reeder, 1993) (Frantz et al., 2016). Since breeding between them tends to produce fertile descendance (Frantz et al., 2016; Groenen, 2016; Iacolina et al., 2018), they constituting a single species according to the standard biological definition coined by Ernst Mayr in 1942.

Although all classificatory systems are cultural, and therefore all scientific taxonomies and definitions of species are sociocultural products, what we have with the pig is that the fact of domestication has been used as a species diacritic (overriding the biological definition of species), and this cultural diacritic is active in both scientific and folk culture. It is beyond the scope of this article to rewrite the “otherwise” history of the domestication of pigs (Swanson, Lien, & Ween, 2018); however, the contemporary processes of standardisation, certification, production and reproduction described below can be seen as the enactors and maintainers of not only the particular breed, but of the *sus scrofa* as *domesticus*. This enactment of the distinction between the wild boar and the domestic pig, by eliminating the “wild” variety from the species paradigm, allows a potential position for a particular variety of domestic pig to take its place as the one closer to nature.

Paradigmatic breed relations

Now that the boundary between pigs, wild boars and other species has been clarified, we can move onto exploring the Iberian Pig breed. I start doing so in terms of its paradigmatic relation with other breeds. That is, what an Iberian Pig is, is the result of its contrast with the other breeds, and the labour put into such differentiation; or, in Barthian terms, the process of boundary construction between ethnic groups (and in zoology the term *ethnicity* is often used to denote race) (Barth, 1969). Here I highlight how modern human intervention is rendered invisible in order for the “local”, “native” and other contrasting characteristics to shine through to connote an idea of “naturalness”. This is achieved first by classifying the *cerdo blanco* as significant other. By obscuring the artificial improvements the Iberian Pig has been subject to, it symbolically constructs it as the closest variety to nature, while the *cerdo blanco* becomes the product of mass industrialisation.

As the supermarket display shows, there is a broad and clear distinction between *Cerdo Blanco* and *Cerdo Ibérico*. From the perspective of the *ibérico* producers we worked with, *cerdo blanco* is a residual category for everything that is not *ibérico*. Deemed axiomatically inferior, it is not even worth looking too much into it, although if pressed, *Duroc* and *Duroc-Jersey* breeds would be mentioned as varieties of “white” but also as synonyms of large-scale, mass-produced and quantity rather than quality-oriented product. The opinion of our research participants in Extremadura is generalisable not only to Spain (even the breeders’ handbook of the *Gochu Asturcelta*, another Spanish autochthonous breed, starts the discussion of breeds with a nod to the ample recognition in Spain of the high quality of *ibérico* by-products) (Argamentería Gutierrez, 2012), but also to the European pig-producing landscape, where the meat of native breeds was found to be of higher quality, but at the expense of yield, speed, and food efficiency in comparison with the conventional “improved” genotypes (Bonneau & Lebret, 2010).

Breeds like Iberian Pig, or the Hungarian Mangalitsa, Black Spotted Jabugo, or Ossabaw Island, and others, are usually characterised as “non-improved” and classified together as “local”, “native”, or “heritage” breeds (Alves, Ovilo, Rodriguez, & Silio, 2003; Amaya Corchuelo, 2013; Benitez Ortiz & Sánchez, 2001; Esteve-Codina et al., 2013; Iacolina et al., 2018; Lopez-Bote, 1998; Pugliese & Sirtori, 2012; Weiss, 2011, 2012, 2016). These stand in contrast with those like *Duroc*, Large White, *Petrain*, *Landrace*, which are prominent in large-scale production systems and are labelled as “industrial” (Iacolina et al., 2018; Remme, 2018), “international” (Esteve-Codina et al., 2013) “cosmopolitan” (Alves et al., 2003) “improved” (Lopez-Bote, 1998; Pugliese & Sirtori, 2012) “high performing”, or “conventional” (Bonneau & Lebret, 2010). However, far from being exclusive labels, they actu-

ally reinforce each other, emphasising different characteristics of contemporary industrial-scale pig farming, and their usage stems from the immediate interest at hand of each author:

The term “improved” generally refers to the cosmopolitan pig breeds that have undergone genetic improvements aimed at enhancing their productive performance, according to industrial criteria.

(Pugliese & Sirtori, 2012: 512).

Therefore, “improvement” becomes the dominant category that directly and indirectly subsumes the labels above. The “improvements” include previous mixing with Asian varieties of pigs (White, 2011) and (among others) long-term selective pressures aimed at increasing productivity. Asian genomic indicators are absent in the Iberian Pig (Alves et al., 2003; Esteve-Codina et al., 2013). In this landscape of encroaching industrialisation taking over “local”, “natural”, “traditional” breeds: “The Iberian is one of the few traditional pig breeds that still thrive and resist the threat of replacement by improved breeds” (Hadjikoumis, 2012: 354). Along the same lines, Lopez-Bote starts the abstract of his article with the following characterisation: “The Iberian pig is one of the scarce non-improved swine breeds which survives the modern techniques of pig production based on improved genotypes” (Lopez-Bote, 1998: 17). Two pages later, this lack of improvement is contradicted: “With the purpose of improving these characteristics, the Iberian Pig have [sic] been crossed with other breeds, although special attention has been paid not to lose one of the main characters of identification of great importance in the marketing of hams: the pigmentation of the hooves.” (Lopez-Bote, 1998: 19). *Pata Negra* (black foot) is the alternative popular name of the Iberian pig and is its distinctive mark. He concludes that the crossings have resulted in increased prolificity, growth rate, feed efficiency and lean content (Lopez-Bote, 1998: 19). Furthermore, the “Ibérico (...) can be considered the best example of the strong cooperation between public institutions, producers and scientists. Thanks to this synergy, Iberian pig products are renowned throughout Europe” (Pugliese & Sirtori, 2012: 512). Human intervention not only “improved” the breed to achieve recognition but the very survival of the breed can be attributed to human action (Hadjikoumis, 2012: 354). It should be noted that the Spanish governmental concern with breeds in Spain is not unique to the Iberian Pig, but rather due to its belonging to a group of breeds of different species deemed autochthonous, and legally recognised as such by the Spanish state and therefore subject to state regulation aimed at its preservation, improvement and promotion (the latest relevant legislation is Ministerio de Agricultura Alimentación y Medio Ambiente, 2019; Ministerio de Agricultura Pesca y Alimentación, 2019). The definition of the racial prototype of the individual breeds is delegated to the breeders’ associations (Ministerio de Agricultura Alimentación y Medio Ambiente, 2019: article 8), which must submit improvement and breeding programmes, including information on the “race characteristics of the racial prototype, together with (if it exists) the morphological evaluation”. The management of the “Libro Genalógico” – that is, the registry of approved animals – is also delegated to such associations, as is the process of certification, verification and traceability. Having shown the paradoxical relation between the Iberian pig and human-driven processes of improvement, it is now time to move on to how the breed is produced and reproduced.

Phylogenesis of the Iberian Pig

In practice, the definition the *Iberian Pig*, and how to identify individual animals as such, is the product of a complex public-private assemblage of producers’ associations, scientists,

and different state institutions that regulate (and delegate) the definitions, applications and processes of certification that result in product labelling. With such a diversity of actors and interests at stake, it is not surprising that the definitions of this breed, its meanings, and the landscape it inhabits, are diverse and often contradictory. The “Program for the improvement of the Iberian Pig Breed”, a document jointly authored by the Iberian Pig breeders’ association and the Spanish Ministry of Environment opens with a paragraph that characterises the Iberian Pig in the following way:

The Iberian pig is an autochthonous race of the Iberian peninsula. Limited until recently to the southwest of the peninsula, where its production system has been traditionally associated with the production of high-quality cured products, obtained thanks to the natural resources of the dehesa ecosystem characteristic of those extended areas

(all translations from Spanish sources are the author’s *Departamento de Mejora Genética Animal Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria & AECERIBER, 2011: 1*)

In this paragraph, nature is both denoted (through natural resources) and connoted (through autochthony and tradition). It not only stabilises, but also reifies the breed and its relationship to a particular place, and a particular relationship with humans. However, this stable definition conceals a much more fluid reality. Let me quote at length some of the most cited authors on Iberian pigs regarding their origins (they are presented in chronological order). From an anthropological perspective, I take these as narratives of origin that can easily become retrospective myth-making for the purposes of legitimising a present situation, even despite (or maybe because of) the fact that their authors are writing them as part of their professional competence and capacity while working for scientific institutions, producers’ associations or publishing with the United Nations Food and Agriculture Organization.

The Iberian Pig is a native breed that has populated the Iberian peninsula from times immemorial on a Mediterranean forest territorial base: La Dehesa (...) The term Iberian pig defines a racial grouping of native pigs from the Iberian peninsula originated from *Sus Mediterraneus* (Aparicio, 1960; Dieguez, 1992) (...) The production of Iberian pig is deeply bound to the Mediterranean ecosystem. It is a rare case in the world of swine production where the pig collaborates significantly in the preservation of the ecosystem.

(Lopez-Bote, 1998: 18)

The Iberian pig is a racial grouping of native pigs originating from *Sus scrofa meridionalis* which has been maintained for centuries in large areas of the southwestern Iberian Peninsula. They constitute the largest of the surviving populations of the Mediterranean type, which is one of the three ancient types of domestic pigs (the others are the European/Celtic and Asian types). The characteristic habitat of the Iberian pig is the Dehesa, which are sparse Mediterranean woodlands composed mainly of evergreen oaks (*Quercus ilex*), cork oaks (*Quercus suber*), and other *Quercus* species.

(Toro, Rodrigañez, Silio, & Rodriguez, 2000: 1844)

The Iberian pig is an autochthonous animal of the Iberian peninsula, the evolutive result of the *S.s. mediterraneus*, historical antecedent of African origin (...) *S.s. mediterraneus* invaded Spain in ascending direction, or rather, from the coasts of the Mediterranean sea towards the centre...

(Hernández, Ferrera Claramunt, Vázquez Cisneros, Menaya Moreno, & García Casco, 2001: 71) (the second part of the quotation can be found verbatim in an earlier source Dieguez Garbayo, 2000: 8)

The relationships with ancestors, and with geography, are the dominant interrelated themes, while the relationship with humans is ignored. The first group of disagreements is that of the ancestor, and issues of indigeneity/autochthony: while some authors claim the *Ibérico* is a racial grouping descendant of the wild *sus scrofa meridionalis* (Toro et al., 2000: 1844), others assign ancestry to the *sus scrofa mediterraneus* (Diéguez Garbayo, 2000; Hernández et al., 2001; Lopez-Bote, 1998). Yet, according to the race database hosted by the Spanish Ministry of Agriculture, Fisheries and Food, it is an “indigenous race evolved from the *sus scrofa ferus*” (Ministerio de Agricultura Pesca y Alimentación, 2019).

The two that mention African origins couple it with the term “invasion”, which is then followed by an evolutionary process that renders them autochthonous. Taking into account that domesticated pigs revert to a wild state rather quickly, the absence of humans that might have brought or accompanied them through those migrations, and later autochthonisation, contributes to concealing human agency in their development (and potentially “improvement”).

The claimed deep historical continuity opens two issues. First is the fact that in 1914 the breed was not mentioned explicitly by one of the most important Spanish mammologists of the time. Second, the fact is ignored that all species and all varieties can be traced down some sort of lineage to ancestors immemorial; so, although it is true, it is not really significant, other than providing a rhetorical building block to the argument of autochthony, and therefore the “naturalness” of its belonging to that particular place. This is done explicitly: the association between a race, a geographical area (the Mediterranean), together with the highlighting of a (near mythical) deep historical continuity. It also gives the idea that the dehesa, its landscape and ecology has remained unchanged, and again the human hands that have shaped this landscape through centuries are being rendered invisible, presenting the dehesa as the space of the natural (see Simonsen, 2019). In short, the non-uniqueness of the deep historical roots of the breed is hidden, while simultaneously the history of its landscape is denied, consolidating an image of a stable unchanging natural product steeped in an unchanging natural environment.

The earliest national regulation (that I could find) on the definition of the racial prototype of the cerdo ibérico dates from 1979 (Ministerio de Agricultura, 1979). The arguments provided include the need for a zootechnic and sanitary ordering, in addition to special measures, to promote the sector (Ministerio de Agricultura, 1979). It establishes the creation of genealogical registers (Libro Genealógico) and the registration of male and female reproducers to preserve and improve the genetic patrimony of the breed. These animals must belong to previously registered producers, conform to the racial prototype included in the annex, and lack defects. A side-by-side reading comparison with the current prototype (Ministerio de Agricultura Alimentación y Medio Ambiente, 2007) reveals few significant changes save from the wording describing the colours of the coats. However, there are significant changes in the way animals are marked (iron branding, tattooing and ear piercing in the old legislation are replaced with electronic and plastic ear tags in the newer one) as well as in the herdbook registration and management, with the creation of additional differentiated registers for higher quality animals, and the establishment of different categories of “merit”. This regulation was consolidated and republished by AECERIBER (2012) and distributed among its members.

The racial prototype is a textual description of the main outwardly visible characteristics of the animal. It proceeds from a general description of the animal to that of the different parts, and even its behavioural traits. Certifiers use this prototype as a guideline for grading each individual animal in order to arrive at a judgement of inclusion/exclusion in the breed,

and to the attribution of “improvement points” for the reproducers if appropriate. Here I provide a sample of said descriptions:

“General aspect. Mid-sized animals, subconcave forenasal profile, mid proportions, or lightly elongated and dark pigmentation. As a whole, they appear as harmonious examples, with a light bone structure, alive and free facial movements, with clear marks of the sex they belong to.”

“Thorax: Strong, with arched but not so deep ribs, which contributes to a well developed body”

“Hams: Long, descended and full”

(AECERIBER, 2012: 20 & ff; Ministerio de Agricultura Alimentación y Medio Ambiente, 2007)

The prototype includes very precise indications (subconcave forenasal profile, arched ribs), but consists mostly of guidelines for judgement that presume knowledge or a sense of what is being defined (“mid-proportions”, “harmonious examples”, “not so deep”, “well-developed body”, and “long”). It therefore operates along the lines of a fuzzy logic (where borders between classes are not crisp) that first assumes previous knowledge of what it is trying to define, and second, is in contrast with the “crisp” results of the attribution of belonging/not belonging to the breed of the animal in question (and the consequences that it carries, most notably the price premium lost due to not being certifiable and thus its products being excluded from carrying protected labels that signify added value in the market).

The racial prototype is followed by a characterisation (done along the same lines and style as the prototype) of the different varieties of the race (*Retinto*, *Lampião*, *Entrepelado*, *Torbiscal*, and *Manchado de Jabugo*) (AECERIBER, 2012: 23 & ff). At the moment, this classification of varieties remains within the production/reproduction spheres and is neither carried on nor marked on the final products. It would be interesting to see if in the future, the trend of market-driven differentiation (Busch) leads to the transference of the boundaries between these varieties to the marketplace.

In addition to the morphological definition of the racial prototype, ample efforts are made by AECERIBER to genetically characterise and define both the ibérico and its varieties. Their trade journal, *Solo Cerdo Ibérico*, covers a wide range of topics including race, genetics, reproduction, health, legal framework, productivity, management, etc. More precisely, in a recent special edition for the 25th anniversary of the journal, the first group of articles were published under the denomination: *Raza, Genética y reproducción* (race, genetics and reproduction). These were concerned with the definition of genetic indexes for the selection of Iberian pigs, the genetic variation and characterisation of the varieties, as well as with the impact of different genetic markers on productive issues from improved yields, cohort sizes, and identification of racial origins of cured meats.

In stark contrast with the initial characterisations of the Iberian Pig as an unimproved breed, we have here an institutionalised scientific body of knowledge oriented towards both, the identification and characterisation of the Iberian Pig and its varieties, and the communication to breeders of scientific knowledge of potential interest to contribute to the management and improvement of their herds.

Classifying Farms

The Spanish state differentiates two types of farms according to size and feeding practices, regulating them differently: *extensivo* (Ministerio de Medio Ambiente y Medio Rural y Marino, 2009) and *intensivo* (Ministerio de la Presidencia, 2000). Farms can be classified as

extensivo if they remain below a particular animal/surface ratio, and if these animals feed mostly from the available natural resources, with the possibility of additional fodder at the time of fattening (Ministerio de Medio Ambiente y Medio Rural y Marino, 2009). Meanwhile, farms are classed as *intensivo* when animals are fed in the same installations in which they live, and therefore their feeding regime is wholly dependent on fodder (Ministerio de la Presidencia, 2000). This classification thus establishes two regimes differentiated along a double axis: quantity (or density) of animals, and their access to different types of foods. Entering an *intensivo* farm is like entering an animal factory. The pigs are at the centre of the whole range of modern technologies that are applied to them, from artificial insemination and vaccination, to controlled administration of fodder. The pigsties, normally equipped with some sort of climate control, are built on a grille on top of a pool to where the slurry naturally falls, and which facilitates its cleaning. During birth and lactation, sows are housed in individual cages designed so they cannot crush the piglets, giving the impression of being cyborgs attached to a pig management machine. A heated pad attracts the piglets to sleep away from the mother when they are not suckling. This was called the *sistema danés* (Danish system) by our informants. Recent ethnographic analysis of Danish pig farms (Anneberg, Vaarst & Bubandt, 2013) (Anneberg & Vaarst, 2018) are largely applicable to these production units.

In contrast to this, the *extensivo* farms might be considered more traditional due to the older technologies and infrastructures available: old pigsties, built of stone, masonry or adobe, with vaulted ceilings resembling a cave, an opening on each side and a middle passageway between side rows of rectangular enclosures, each one housing a sow and its piglets. Each enclosure also includes a small exit for the piglets to leave (but through which the sow cannot pass). The thick walls maintain a constant cool temperature in summer and warmth in winter. Every single day, as the animals are brought out in the morning to their daily pasture, the pigsty has to be manually cleaned.

In addition, regulations establish a further classification of both production regimes according to their “zootechnic orientation”. That is, the production of animals for reproductive purposes, what could be termed the production of reproducers, and the production for the slaughterhouse. Both categories have several subcategories and specialisations that go beyond the focus of this article. It is important to note the differing scale of dependency/independence of these two types of farms on seasonal variations and weather patterns that can affect the natural cycle of the oaks and the acorns.

Standard Pigs (race and process)

After a day in the pigsties, we picked up a few wild asparagus on the way back to the farmhouse. When we got to the kitchen, the two visual anthropologists focused their cameras on the farm owner, who started cracking some eggs to make a *revuelto* (omelette) with the asparagus, and his *porquero* [farmhand specialised in keeping pigs], who pulled out his “salmonero” knife (originally a Norwegian salmon filleting knife that has found its way into the arsenal of many professional ham cutters). As he cleaned and cut the ham, he explained the different cuts, colours, flavours, and uses of the ham and the relationship between meat and fat. “Do you want to know when a ham is a true *ibérico*?” he asked. “Look at how cold it is, and how the ham is already sweating”, while pointing to the glistening fat, liquefying when in contact with the air and lying like tiny droplets on the surface of the ham and the blade that had just cut across it. “That is the proof, a white ham will never do that.” The yellow fat was disposed and swiftly cleaned from the blade lest it contaminates the flavour of the rest of the

piece. Some pink fat was saved for a soup (which, in the words of the farm owner, “would wake a dead man from his tomb”); white fat (for rendering) and red meat ended up in the *revuelto*, while the thin and marbled bite-sized slices were beautifully arranged, following the circular contour of the plate, to be had as a starter. The *porquero* then explained current misconceptions of misinformed consumers that only focus on the “red” part of the meat to the detriment of the “white” fatty parts, which carry most of the flavour. Once he gave a 100% Iberian ham as a gift, which was dismissed by the recipient for it containing too much fat, as this was considered a sign of poor quality. Pure Iberian pigs can build up more fat than Durocs, while hybrid Iberian x Duroc produce (*caeteris paribus*) leaner by-products. The current preference for leaner by-products emerging from a vilification of animal fats is at loggerheads with the preference for “pure” products like 100% Iberian ham.

There are two parallel systems for the certification of Iberian Pigs and by-products. A national, centralized one based on the “Norma de Calidad del Ibérico” (National Quality Standard) (Ministerio de Agricultura Alimentación y Medio Ambiente, 2014), and another one, delegated to the officially recognised entities that manage the controlled denomination of origin (DOC) for each of the *dehesas* in Spain (Dehesa de Extremadura, Los Pedroches, Guijuelo, Jabugo). The labelling for both systems is harmonised and follows the same colour scheme for labels. This legislative framework (Ministerio de Agricultura Alimentación y Medio Ambiente, 2014) forms the basis for certification and labelling, and defines the racial characteristics and productive processes that each label certifies.

At the slaughterhouse, after controlling for paperwork and the matching numbers of the ear tags, a colour-coded strap-seal label (colour coding explained below) will be attached to each extremity of the animal. This is the “indicator” (Busch, 2011: 52) that will bear witness through the rest of the chain of the racial profile and feeding regime the animal was subject to. The carcass is then dismembered, and the different pieces will take different paths to the supermarket display.

The labels code for race (in text) and process (in colour). There are three process categories: “De bellota”, “De cebo de campo”, and “De cebo” (the denomination of origin certifies only the first two). These are combined with a racial designation: “100% Ibérico”, “75% Ibérico” and “50% Ibérico”. Applying combinatory logic, this would provide nine theoretical different categories; however, this materialises in only four certifying strap-seal labels (Article 9). The underlying logic is not fully consistent. The black label (the “top of the line”) codes for both bellota and 100% racial purity. Then follows, in decreasing purported/expected quality and pricing, red for “bellota” under 100%, green for “cebo de campo”, and white for “cebo”. Each label must in turn indicate the percentage of racial purity.

Racial purity is based upon the requirement that all pigs must come from pure 100% Iberian sows, which are then crossed either with pure Iberian hogs (for 100%) or with a 100% certified Duroc hogs for 50% Iberian products; the 75% subcategory requires a pure Iberian sow and a hybrid (Iberian x Duroc) hog. In all cases all reproducers must have been certified by their respective breeders’ associations. Certification through denomination of origin is more restrictive, only available for animals of 100% or 75% of purity.

The feeding and breeding conditions and processes to which pigs must have been subject to in order to qualify for the “de bellota” label include yet another process of certification. The feeding grounds of the pig lot must be registered in a specific governmental register (SIGPAC) that regulates suitable areas and qualifies them, establishing a maximum carrying capacity for each *dehesa* according to the number of trees per hectare. In addition, the fields are to be officially certified annually, evaluating the quantity and quality of expected acorns to determine the quantity of pigs that can be fattened in said productive

unit. In this way it establishes a maximum number of animals that might be certifiable with the “de bellota” label.

The “standard” (Busch, 2011: 52) for qualifying for the “ibérico 100% de bellota” denomination includes: Pigs must enter a certified *dehesa* (complying with its load-carrying capacities) between October 1st and December 15th, with an average weight between 92 and 115kg. They must stay in *montanera* for at least 60 days, and put on at least 46kg. Slaughtering must take place between Dec 15th and March 31st. The age of the pig at the time of slaughter must be at least 14 months and the weight of each carcass 115kg, except 100% Iberian pigs, where the minimum weight is lowered to 108kg. The pig must be slaughtered after coming out of *montanera* without receiving any additional fodder. Pigs that make use of the *montanera* have a more varied diet based on their own foraging, while roaming through the *dehesa* under the watchful eye of a *porquero*, who uses a *vara* (rod) to fall the acorns forcing them to walk from tree to tree. The combination of the acorn-based diet (which contributes to the development of oleics in the fat) with the exercise, which infiltrates the fat in the tissue (but also means they take longer to put on weight), is what gives this pig its characteristic flavour and texture.

The intermediate category of “cebo de campo” accepts the possibility of *montanera*, but does not present it as a requirement. Each animal must have access to 100 square metres for at least 60 days during the fattening stage (the regulation does not specify type of outdoor space, so a large pen and artificial fodders are allowed). Minimum age at slaughter is 12 months, with minimum weights equal to “bellota”. Although there are farms that specialise in products at this level, this category is usually also used as a fall-back option for “bellota” producers for animals that had issues in the certification process, such as not achieving the desired weight on time, or when the load carrying capacity of the *dehesa* is lowered due to seasonal variations. The lowest quality denomination is the “cebo”, which means that pigs have been fed mostly (and I dare say almost exclusively) on fodder, and is the product of *intensivo* farms. There is a 2 square metre free surface requirement per animal in the fattening stage, and a 10-month minimum age at slaughter. Animals from *intensivo* farms fall into this category, and are thus indistinguishable (except for the breed) from industrialised pigs.

It is beyond the scope of this article to cover the many “tests” (Busch, 2011: 52) – that is, the instances where the different agencies evaluate in the field, the compliance of breeders/producers, with the standards in order to issue the appropriate certifications. Suffice to say here that breeders must report regularly at different stages of the production process (insemination, birth, deaths, sale, transportation, etc.) while also being subject to different evaluations and inspections, some scheduled, and some with very short notice. The application of those tests (as well as the strict following of all relevant regulative frames) is a contested issue in the field, and one cannot assume an unproblematic application.²

The legislation prohibits the explicit use of terms, signs names and symbols that might allude to the acorns or the *dehesa* in products that are not certified as “de bellota”. On the one hand, this is an attempt at preventing the proliferation of connotations and thus protecting the certified products. It should be noted at this point that although this label certifies a certain access to the *dehesa*, pigs only have access to it for a little over two months of their approximately 18 months of existence, or just over 10% of their lifetime. The connotation of the label “de bellota” (of acorns, or made of acorns) thus metonymically transfers the

2. Our research participants had similar reactions to the regulatory frameworks imposed on them by regional, statal and supra-statal institutions, not unlike those reported by Anneberg and Vaarst (2018) in Denmark.

montanera into the everyday life of the animal, obscuring the fact that the animal has been receiving different types of fodder for much of its life prior to the fattening.

When this certifying scheme is looked at as a paradigm, the “de bellota” label, although denoting access to the *montanera*, and connoting the lack of access to such for the animals under the other two categories, simultaneously and metonymically transfers its qualities to them (“de cebo de campo” and “de cebo”), by virtue of existing in the same paradigm. Meanwhile the existence of a tripartite division allows the avoidance of a dichotomization that would highlight the connotation (lack of access) of the certification.

Certification of pigs and the invisibilisation of modern human agency

Throughout this article I have explored some of the classificatory worlds as well as a fragment of the complex socio-cultural assemblage that the Iberian pig inhabits. From the unstable fuzzy boundary with wild boars, where the pig is defined as a species due to the fact of domestication, but whose phylogenetic history is told in a way that renders its domesticators invisible, to the crisp certification process of an Iberian pig destined for the market.

I have highlighted how mythologies of origin, in their quest to provide deep historico-archeological legitimations, while disagreeing in the attribution of ancestors, coincide in the objective of providing a narrative for the transformation of an allochthonous (even invading) species, into a local, native, autochthonous variety through a process of tight association with an ahistorically conceptualised landscape, the *dehesa*. In such *dehesas*, under traditional forms of human agency, the Iberian pigs incorporate nature while freely roaming and eating acorns, thus becoming natural products. In this mythology, the non-uniqueness of the deep historical roots of the breed is hidden, while the human history of its landscape denied, consolidating an image of a stable unchanging natural product steeped in an unchanging natural environment. In doing so, it constructs the myth of the Iberian pig as natural and traditional, despite the fact that the pig, the landscape and their relationship have been all subject to modern human agencies, like industrialisation, genetic selectivity, standardisation and certification. Furthermore, the certification (itself a manifestation of modern industrialised human agency) that denotes race and process, degrees of purity and feeding regimes, also connotes “nature” while simultaneously obscuring, and dare I say alienating the modern industrial human agency that produces the pigs, its landscape, as well as the certification process itself. If industrialisation has brought about, through *techne*, a higher level of independence from nature, nature is brought back, *connoted*, in the standardisation and certification of pigs.

This narrative complements the paradigmatic relationship of the Iberian Pig with both other native, local, unimproved breeds in contrast with the cosmopolitan, international, and improved breeds, the products of industrialisation. In said contrast, the Iberian Pig (and so other “local” breeds) appear simultaneously local and unimproved, denoting the absence of influence of the agency of modern industrialised humans, suggesting being as much as a part of nature, and concealing the high levels of improvement, certification and control they have been subject to. Indeed, the “stabilisation” and later certification of these “local”, “unimproved” breeds involves the mobilisation of a complex of socio-cultural assemblages. The certification process highlights a characteristic (access to the *dehesa*) that only exists for a brief period in the life of a reduced number of animals, only to then metonymically extend it to its whole life, and to the rest of the categories in the paradigm. Therefore, the Iberian pig is a walking paradox: simultaneously local and invasive, natural and

improved, and while the domesticating hand may be recognised, the one that industrialised the Iberian pig must not.

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References

- AECERIBER. (2012). *Raza porcina Ibérica: Reglamentación específica del Libro Genealógico y Programa de mejora*. Badajoz: AECERIBER.
- Alves, E., Ovilo, C., Rodriguez, M. C., & Sileo, L. (2003). Mitochondrial DNA sequence variation and phylogenetic relationships among Iberian pigs and other domestic and wild pig populations. *Animal Genetics*, 34(5), 319–324. <https://doi.org/10.1046/j.1365-2052.2003.01010.x>
- Amaya Corchuelo, S. (2013). Conflict and power among social actors in the patrimonialization process of iberian ham. *Boletín de Antropología*, 28(46), 100–123.
- Anneberg, I., & Vaarst, M. (2018). Farm animals in a welfare state: Commercial pigs in Denmark. In H. A. Swanson, M. E. Lien, & G. Ween (Eds.), *Domestication gone wild: politics and practices of multispecies relations* (pp. 94–116). Durham: Duke University Press.
- Anneberg, I., Vaarst, M., & Bubandt, N. (2013). Pigs and profits: hybrids of animals, technology and humans in Danish industrialised farming. *Social Anthropology*, 21(4), 542–559. <https://doi.org/10.1111/1469-8676.12049>
- Argentería Gutierrez, A. (2012). *Manual del Gochu Asturcelta*. Spain: ERIDA (Servicio Regional de Investigación y Desarrollo Agroalimentario).
- Barth, F. (1969). *Ethnic groups and boundaries : the social organization of culture difference*. Bergen: Universitetsforlaget; London: Allen & Unwin.
- Benitez Ortiz, W., & Sánchez, M. D. (Eds.). (2001). *Los cerdos locales en los sistemas tradicionales de producción*. Roma: Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO).
- Bonneau, M., & Lebreton, B. (2010). Production systems and influence on eating quality of pork. *Meat Science*, 84(2), 293–300. <https://doi.org/10.1016/j.meatsci.2009.03.013>
- Bourdieu, P. (1994). Rethinking the State – Genesis and Structure of the Bureaucratic Field. *Sociological Theory*, 12(1), 1–18. <https://doi.org/10.2307/202032>
- Busch, L. (2011). *Standards: recipes for reality*. Cambridge, Mass.: MIT Press.
- Cabrera, A. (1914). *Fauna ibérica; mamíferos*. Madrid: Museo Nacional de Ciencias Naturales.
- Cañas Bottos, L. (2015). Assemblages of sovereignty and anti-sovereign effects on the Irish border. *Focaal: journal of global and historical anthropology*, 2015(71), 86–99. <https://doi.org/10.3167/fcl.2015.710108>
- Das, V. (2004). The signature of the state: the paradox of illegibility. In V. Das & D. Poole (Eds.), *Anthropology in the margins of the state* (pp. 225–252). Santa Fe, NM: School of American Research Press; Oxford: J. Currey.
- Departamento de Mejora Genética Animal Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria, & AECERIBER. (2011). Programa de mejora de la raza porcina Ibérica.
- Diéguez Garbayo, E. (2000). La Raza Porcina Ibérica. *Sólo Cerdo Ibérico*, 1(5), 7–36.
- Douglas, M. (1985). *Purity and Danger. An analysis of the concepts of pollution and taboo*. London: Ark Paperbacks.
- Esteve-Codina, A., Paudel, Y., Ferretti, L., Raineri, E., Megens, H.-J., Silió, L., . . . Pérez-Enciso, M. (2013). Dissecting structural and nucleotide genome-wide variation in inbred Iberian pigs. *BMC Genomics*, 14(1), 148. <https://doi.org/10.1186/1471-2164-14-148>

- Frantz, L., Meijaard, E., Gongora, J., Haile, J., Groenen, M. A. M., & Larson, G. (2016). The Evolution of Suidae. *Annual Review of Animal Biosciences*, *d4*(1), 61–85. <https://doi.org/10.1146/annurev-animal-021815-111155>
- Groenen, M. A. M. (2016). A decade of pig genome sequencing: a window on pig domestication and evolution. *Genetics Selection Evolution*, *48*(1). <https://doi.org/10.1186/s12711-016-0204-2>
- Hadjikoumis, A. (2012). Traditional pig herding practices in southwest Iberia: Questions of scale and zooarchaeological implications. *Journal of Anthropological Archaeology*, *31*(3), 353–364. <https://doi.org/10.1016/j.jaa.2012.02.002>
- Hernández, J. B., Ferrera Claramunt, J. L., Vázquez Cisneros, C., Menaya Moreno, C., & García Casco, J. M. (2001). El cerdo ibérico: el poblador de la dehesa. In W. Benitez Ortiz & M. D. Sánchez (Eds.), *Los cerdos locales en los sistemas tradicionales de producción* (pp. 71–94). Roma: Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO).
- Iacolina, L., Pertoldi, C., Amills, M., Kusza, S., Megens, H.-J., Bălteanu, V. A., . . . Stronen, A. V. (2018). Hotspots of recent hybridization between pigs and wild boars in Europe. *Scientific Reports*, *8*(1), 17372. <https://doi.org/10.1038/s41598-018-35865-8>
- Latour, B. (1993). *We have never been modern*. Cambridge, MA: Harvard University Press.
- Lopez-Bote, C. J. (1998). Sustained Utilization of the Iberian Pig Breed. *Meat Science*, *49*, 17–27. [https://doi.org/10.1016/s0309-1740\(98\)00072-2](https://doi.org/10.1016/s0309-1740(98)00072-2)
- McDonell, D. J. (1978). Classification and their keys. *Knowledge Organization*, *5*(1), 3–7. <https://doi.org/10.5771/0943-7444-1978-1-3>
- Ministerio de Agricultura. (1979). Resolución de la Dirección General de la Producción Agraria por la que se establece el Registro Especial de Ejemplares Selectos del Cerdo Ibérico. Boletín Oficial del Estado, BOE-A-1979-162, 142–143. Retrieved from [https://www.boe.es/eli/es/res/1978/11/30/\(1\)](https://www.boe.es/eli/es/res/1978/11/30/(1))
- Ministerio de Agricultura Alimentación y Medio Ambiente. (2007). Orden APA/3376/2007, de 12 de noviembre, por la que se aprueba el Reglamento del Libro Genealógico de la Raza Porcina Ibérica. Boletín Oficial del Estado, APA/3376/2007, 47908–47911. Retrieved from <https://www.boe.es/eli/es/o/2007/11/12/apa3376>
- Ministerio de Agricultura Alimentación y Medio Ambiente. (2014). Real Decreto 4/2014, de 10 de enero, por el que se aprueba la norma de calidad para la carne, el jamón, la paleta y la caña de lomo ibérico. Boletín Oficial del Estado, 4/2014, 1569–1585. Retrieved from <https://www.boe.es/eli/es/rd/2014/01/10/4>
- Ministerio de Agricultura Alimentación y Medio Ambiente. (2019). Real Decreto 45/2019, de 8 de febrero, por el que se establecen las normas zootécnicas aplicables a los animales reproductores de raza pura, porcinos reproductores híbridos y su material reproductivo, se actualiza el Programa nacional de conservación, mejora y fomento de las razas ganaderas y se modifican los Reales Decretos 558/2001, de 25 de mayo; 1316/1992, de 30 de octubre; 1438/1992, de 27 de noviembre; y 1625/2011, de 14 de noviembre. Boletín Oficial del Estado, APA 45/2019. Retrieved from <https://www.boe.es/eli/es/rd/2019/02/08/45/con>
- Ministerio de Agricultura Pesca y Alimentación. (2019). Raza Porcina IBÉRICO. Retrieved from <https://www.mapa.gob.es/en/ganaderia/temas/zootecnia/razas-ganaderas/razas/catalogo/autoctonafomento/porcino/iberico/default.aspx>
- Ministerio de la Presidencia. (2000). Real Decreto 324/2000, de 3 de marzo, por el que se establecen normas básicas de ordenación de las explotaciones porcinas. Boletín Oficial del Estado, BOE-A-2000-4447. Retrieved from <https://www.boe.es/eli/es/rd/2000/03/03/324/con>
- Ministerio de Medio Ambiente y Medio Rural y Marino. (2009). Real Decreto 1221/2009, de 17 de julio, por el que se establecen normas básicas de ordenación de las explotaciones de ganado porcino extensivo y por el que se modifica el Real Decreto 1547/2004, de 25 de junio, por el que se establecen las normas de ordenación de las explotaciones cunícolas. Boletín Oficial del Estado, BOE-A-2009-12937, 66585–66597. Retrieved from <https://www.boe.es/eli/es/rd/2009/07/17/1221>
- Pugliese, C., & Sirtori, F. (2012). Quality of meat and meat products produced from southern European pig breeds. *Meat Science*, *90*(3), 511–518. <https://doi.org/10.1016/j.meatsci.2011.09.019>

- Remme, J. H. Z. (2018). Pigs and spirits in Ifugao: A cosmological decentering of domestication. In H. A. Swanson, M. E. Lien, & G. Ween (Eds.), *Domestication gone wild: politics and practices of multispecies relations* (pp. 50–71). Durham: Duke University Press.
- Scott, J. C. (1998). *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. New Haven, CT: Yale University Press.
- Seshia Galvin, S. (2018a). The farming of trust. *American Ethnologist*, 45(4), 495–507. <https://doi.org/10.1111/amet.12704>
- Seshia Galvin, S. (2018b). Interspecies Relations and Agrarian Worlds. *Annual Review of Anthropology*, 47(1), 233–249. <https://doi.org/10.1146/annurev-anthro-102317-050232>
- Simonsen, J. K. (2019). Skogbeitets konge, 100% naturlig og menneskets respektfulle hånd: Om industrialiseringen av iberisk svinekjøtt og kulturelle konfigurerer av grisen og eikeskogsbeitene i sørvestlige Spania. *Norsk Antropologiske Tidsskrift*, 30(3–4), 234–257. <https://doi.org/10.18261/issn.1504-2898-2019-03-04-05>
- Swanson, H. A., Lien, M. E., & Ween, G. (Eds.). (2018). *Domestication gone wild: politics and practices of multispecies relations*. Durham: Duke University Press.
- Toro, M. A., Rodríguez, J., Sillio, L., & Rodríguez, C. (2000). Genealogical Analysis of a Closed Herd of Black Hairless Iberian Pigs. *Conservation Biology*, 14(6), 1843–1851. <https://doi.org/10.1046/j.1523-1739.2000.99322.x>
- Weiss, B. (2011). Making Pigs Local: Discerning the Sensory Character of Place. *Cultural Anthropology*, 26(3), 438–461. <https://doi.org/10.1111/j.1548-1360.2011.01106.x>
- Weiss, B. (2012). Configuring the authentic value of real food: Farm-to-fork, snout-to-tail, and local food movements. *American Ethnologist*, 39(3), 614–626. <https://doi.org/10.1111/j.1548-1425.2012.01384.x>
- Weiss, B. (2016). *Real pigs: shifting values in the field of local pork*. Durham: Duke University Press.
- White, S. (2011). From Globalized Pig Breeds to Capitalist Pigs: A Study in Animal Cultures and Evolutionary History. *Environmental History*, 16(1), 94–120. <https://doi.org/10.1093/envhis/emq143>
- Wilson, D. E., & Reeder, D. M. (1993). *Mammal species of the world: a taxonomic and geographic reference* (2nd ed. ed.). Washington: Smithsonian Institution Press.