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[a]Breed contra Beef: the making of the Piedmontese cattle

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[b]Introduction

In the spring of 2014, one of the authors (Paolo) was visiting the Green Market on Union Square, NYC, one of the most renowned farmers' markets in the United States, performing a direct connection between producers and consumers of food, allegedly alternative to the mass retail channel (Tiemann, 2008), but also promoting what Sharon Zukin terms, from a critical standpoint, 'the consumption of authenticity' (2008). Exactly in the middle of the square, a farmer from Pennsylvania displayed a sign to attract costumers claiming 'Piedmontese Only'. Less than half a mile away, on Madison Square, at Eataly – the sumptuous sanctuary of 'high quality' Italian food – the sophisticated New York consumer could already purchase a taste of Piedmontese beef at the butcher's counter and at the Manzo restaurant (literally 'beef' in Italian) since the opening of the food mall, on 30 August 2010.

The Piedmontese was officially recognized as a cattle breed in the 1850s. Today, it is the first presidium established by Slow Food in 1996 in Bra, Piedmont.¹ Its beef is now well renowned among gastronomists and listed in Michelin starred restaurants (NAPA, 2010, p.6) and it is Eataly's official beef in Italy and the US. But, which is, exactly, the link connecting these moments and places and which establishes a relationship between an apparently endangered cattle breed in the motherland of Slow Food and the sophisticated consumption practices of the world elites in New York City? *La Granda*, in its twofold role as a socio-cultural and economic actor, provides the most obvious nexus, which articulates the connection between the past

and present of the Piedmontese breed and the refined New York City cosmopolitan consumer.

La Granda is the name of the Slow Food presidium of the Piedmontese breed founded by veterinary Sergio Capaldo in 1996 to summon a small number of breeders to preserve the rearing of this apparently endangered cattle breed. *La Granda Trasformazione* is the meat-processing company, owned by Capaldo and Eataly's founder Oscar Farinetti, established in 2004 to supply the Italian branches of the food mall with premium Piedmontese beef directly from the Slow Food presidium (Colombino and Giaccaria, 2013a).² *La Granda*, rather obviously, does not directly supply the beef for Eataly New York. The beef sold at the butcher counter and used to cook at *Manzo's* is more simply called 'Piedmontese' and is supplied by North American companies. The breed is fact reared in the US since 1979.³ However, *La Granda* and its founder play a key role in maintaining the consortium's original quality conventions (Boltanski and Thevenot, 2006) – fixed and codified by the *disciplinare di produzione* (specifications of production), the document that establishes how exactly the cattle must be farmed, including strict rules on fodder and hygiene – by organizing workshops and training for Eataly's butchers. Importantly, as we claim in this chapter, *La Granda* is only the final outcome of a contested process, originated in the second half of the 19th century, which has radically modified the political ecology of the Piedmontese breed.

In this chapter, we 'follow' (Cook *et al.*, 2006) the Piedmontese starting with a peculiar event that took place in 1886 in Guarene d'Alba, a small locality in the province of Cuneo (in Piedmont, Northern Italy) and ending on the butcher's counter at Eataly, in contemporary New York City. In discussing some of the spatio-temporal trajectories of the Piedmontese, we bring to light the process that undergirds the

transformation of a specific morphological feature – known today as the ‘double muscle factor’, and appearing randomly in some animals of this bovine population in the second half of the 19th century – from a (monstrous) anomaly to be eliminated into a key trait to be preserved. Consistently with a political ecology/actor-network theory approach (Bennett, 2010; Latour, 1999), we show how the current status of the Piedmontese, as a cattle breed that produces what is marketed as premium beef, is not a reflection of the animal’s genetic characteristics (see Holloway *et al.*, 2011; Morris and Holloway, 2013). Rather, it is a matter of “natureculture” (Haraway 2008; see also Latimer and Miele, 2013), that is the result of the complicated negotiations amongst veterinaries, livestock technicians, farmers and butchers, which have taken place from the second half of the 19th century to the present day.

This chapter is structured into three parts. First, we follow the development of the making of the Piedmontese breed from 1886 until the late 1950s. We bring into light how an intense and heated debate between experts and breeders focused on the ‘nature’ of the breed. Second, we move on to discuss how this contested negotiation between academics and practitioners eventually ‘fixed’ the purpose and ‘nature’ of the Piedmontese as a breed for meat, through the inclusion in this bovine population of animals previously constructed as ‘anomalies’, and the exclusion of other animals beforehand considered as ‘normal’. The last part of this chapter deals with the shifting status of the Piedmontese breed from an apparently endangered local animal specie in the mid-1990s into a food specialty for the cosmopolitan consumer in contemporary New York.

[b]Breeding the monster? Negotiating survival and extinction: 1886-1956

What is scientifically known today as the ‘double-muscled Piedmontese cattle’ is the result of the breed’s specialization in meat production obtained through selection started towards the end of the 19th century and accelerated since 1960 with the institution of Anaborapi, the National Association of the Piedmontese breeders. Towards the end of the 19th century the Piedmontese bovine population was rather heterogeneous. In an 1872 book Domenico Vallada, professor of veterinary science, described five different varieties of bovines that can be associated to the contemporary Piedmontese (Coalvi, 2008). As we discuss in this chapter, the selection of the breed has contributed to the vanishing of these five varieties to privilege those animals that presented the *groppa doppia* (literally, ‘double back’, called ‘double muscling’ or ‘double muscle factor’ in English; see Arthur, 1995), which was the morphological trait randomly emerging in some Piedmontese animals at the end of the 19th Century, and which makes today of the Piedmontese an animal specialized in meat production. The *groppa doppia* is a characteristic of several breeds worldwide (most notably the Belgian Blue cattle breed) first documented by George Culley, a livestock observationist in 1807 (Kambadur *et al.*, 1997).⁴ In the case of the Piedmontese, the double-muscle factor was officially recorded in 1886 in Guarene d’Alba (Raimondi, 1956, p.6). In practice, the *groppa doppia* refers to a morphological mutation in the conformation of the animals presenting this trait and results into more muscular masses particularly in the hindquarter of the bovines.⁵

As we show in this chapter, the history of the Piedmontese breed from the beginning of the 20th century until 1960 is the tale of a struggle between different actors (breeders, veterinaries, livestock technicians, bureaucrats) who can be seen as the spokespersons for conflicting biological, morphological and racial taxonomies. What was at stake particularly during this period was the definition of the official

standard of the Piedmontese breed, which, in turn, concerned a definition of what was normal and what was abnormal, of the rule and the exception. Ultimately at stake was the relationship between the maximization of the production of the bovine breed's labour, milk and meat, and the reproduction of animal capital (Shukin, 2009), which had to be preserved and increased. More specifically, the negotiations about the status and destiny of the Piedmontese breed occurred through two different channels: the official discourse, in which veterinaries and livestock technicians kept claiming that the *groppa doppia* represented an anomaly and, ultimately, a threat for the breed itself;⁶ and the semi-official discourse,⁷ in which farmers and technicians collaborated as they were convinced that the *groppa doppia* animals could be improved and specialized in meat production.

As far as the official narration is concerned, the Italian scientific debate engaged in an intense dialogue with the European academic literature, sifting the different propositions about the aetiology of this mutation. Already in the 1920s, Vittorino Vezzani, director of the Istituto Zootecnico e Caseario per il Piemonte (Piedmont's Zootechnics and Dairy Sciences Institute), discarded the hypothesis of a teratological nature ('un fatto di ordine teratologico') of the *groppa doppia*, in favour of an explanation related to the mechanisms of Mendelian inheritance (Vezzani, 1927, p.13). Yet, some echoes of the teratological hypothesis survived when academics described the *groppa doppia* animals' problems: imperfections in the calves such as enlarged tongues and ambulation problems, rickets, small genitals, infertility and frigidity, calving and parturition difficulties – were amongst the main identified issues affecting the life and reproduction of these peculiar bovines (see Mascheroni, 1931, pp.77-78).

Figure 1 *Rickets in newborn calves*

The official, state-regulated, selection of the Piedmontese breed started in the 1930s. State veterinaries and livestock technicians excluded the animals with the *groppe doppia* from the breed improvement's programme because of the above-mentioned problems they could transmit to their progeny. In 1932, Turin's Ispettorato Compartimentale Agrario (Municipal Agricultural Inspectorate) started a 'rational and methodical selection of the breed' (Bonadonna, 1959, p.671). The best cows and bulls were selected amongst the 'normal Piedmontese cattle' (Raimondi, 1956 and 1958) and registered on the Herd Book. The opening of the Herd Book established a functional control over cows and bulls. The Ispettorati Provinciali dell'Agricoltura (Provincial Agricultural Inspectorate) of Alessandria, Asti, Cuneo and Turin were responsible for the selection. In 1935 the Ministry of Agriculture and Forests established the first standard of the breed, which aimed at making of the Piedmontese a bovine population comprising animals specialized primarily in work and then in milk and meat production (Esmenard and Dassat, 1948, p.3; MIAF 1935). The *groppe doppia* animals were still considered abnormal and therefore excluded from the selection units and ignored by the breed improvement practices established in the 1935 standard. It must be noted that, however, due to lack of funds, in the following years, the number of controlled and selected animals was very limited (Bonadonna, 1959, p.671). The lack of controls contributed to the spread of the double muscled cattle.

In fact, the animals with the *groppe doppia* turned out to be an excellent source of income for farmers who, throughout the entire 20th century, took on the risk of rearing cattle banned from the official reproduction of the Piedmontese livestock

(see Raimondi, 1962). Why were these ‘anomalous animals’ economically more advantageous than the normal Piedmontese cattle? It was observed that the animals with the *groppa doppia* had a different conformation from the normal Piedmontese: more muscles, especially in the hindquarters; poor accumulation of fat; smaller skeleton and internal organs and thinner skin, when compared to the normal Piedmontese. These factors determined a higher dressing percentage after slaughtering; namely, a larger amount of beef that butchers could sell. Furthermore, it was noticed that the beef of the *groppa doppia* animals was tenderer than the meat extracted from the carcasses of the normal Piedmontese.⁸

These characteristics were also well known across the whole value chain, from production to consumption. The butchers in Piedmont’s urban areas were eager to pay more money for purchasing the carcass of an animal with the *groppa doppia* (Vezzani, 1927; Raimondi, 1956). They could in fact earn more from these animals for three main reasons. First, they could extract more meat. Second, consumers preferred the meat of the *groppa doppia* animals, as it was tenderer and its colour paler than that of the normal Piedmontese. Third, because the *groppa doppia* animals’ beef was always tender and pale (*ibidem*), butchers could cheat consumers and sell it as if it were *sanato* (i.e. the specialty beef obtained from calves nourished with milk) and sell forequarters cuts as if they were hindquarters (these latter providing the most expensive cuts). In Vezzani’s words (1927, p.17), ‘as a matter of fact, butchers in Turin slaughter [and sell] only double muscled cattle’.⁹

Figure 2 *Adult Piedmontese specimen*

Therefore, particularly after the First World War, farmers who wanted to

increase the economic value of their livestock started to use the double muscled Piedmontese for reproduction and specialize this breed in the production of beef (Raimondi, 1956; Vezzani, 1927). This is the moment in which the *groppa doppia* was transformed from an erratic genetic mutation into a conscious, yet roughly managed, trait for the selection of the breed. The semi-official selection of the Piedmontese cattle breed took place thanks to the collaboration of those experts who, despite the official harsh critiques, recognized that the abnormal cattle could represent, especially in times of economic crisis, the main resource for the survival of farmers. In particular, some livestock technicians and veterinaries, who supported the selection and improvement of the cattle with the *groppa doppia*, established in Alba, on 12 March 1927, an association of the breeders of the Piedmontese with the local *cattedra ambulante di agricoltura* (Vezzani, 1927, p.19).

Since end of the 19th century, the *comizi agrari*, the *cattedre ambulanti di agricoltura* (institutions created in 1866 in Italy to support agriculture and disseminate techniques and innovations in agriculture amongst farmers) and the *esibizioni zootecniche* (agricultural fairs) played a crucial role for the selection of the Piedmontese breed, by encouraging farmers to use stud-farms for the reproduction of their livestock (cf. Dassat, 1949, p.12). As the animals with the double-muscle factor were more profitable for farmers, these latter tended to privilege mating their dams with bulls presenting this trait (Raimondi, 1956; Vezzani, 1927). This practice contributed to the homogenization of the breed towards a population that increasingly tended to present the *groppa doppia* feature (Raimondi, 1956, 1958 and 1962), despite official statements discouraging their reproduction (Raimondi, 1958). Until the establishment of Anaborapi in 1960, farmers have therefore been the main decision makers and bearers of risk in the process of breed selection, improvement

and specialization aimed at increasing meat production.¹⁰ The role of academic veterinaries, livestock technicians and practitioners has been nevertheless fundamental. On the one hand, academic discourses somehow mirrored the ‘official *versus* semi-official’ divide. Even those academics that praised the exclusion of the bulls with *groppa doppia* from the programmes of *reproduction*, such as Raimondo Raimondi, recognized the *production* value that these animals secured to the breeders and their households. On the other hand, some academic and professional veterinaries, such as Francesco Maletto and Attilio Bosticco, and many other anonymous local practitioners, became what we might term ‘vet-activists’, engaged in solving the problems inherent to the reproduction of the *groppa doppia* specimens. It is impossible to formulate a consistent hypothesis about these experts’ multifaceted attitude. Perhaps some of them felt to be trapped in-between the loyalty to formal academic understanding of the *groppa doppia* and the acknowledgment of its role in securing an income for family farms living in some of the poorest areas of Northern Italy. It is also likely that personal academic rivalries played a role in establishing divides and alliances. One of our interviewees, a retired professor of veterinary now in his late seventies, claimed that cattle with the *groppa doppia* were understood as ‘monsters’ during Fascism, thus suggesting that the ambience of the 1930s might have played a role in maintaining and fostering the teratological imagination about double muscled bovines.¹¹

[b]Normalizing the breed: 1956-1976

The years from 1956 to 1960 marked for the Piedmontese breed a fundamental turn in the process of negotiation between the rule and exception, between the production and reproduction of ‘animal capital’ (Shukin, 2009). We can make sense of this shift by

following a key actor in the debate, Raimondo Raimondi, deputy-director of Piedmont's Institute for Zootechnics and Dairy Sciences. In the 1940s Raimondi was a key figure moving in between the semi-official and the official discourse on the Piedmontese by publishing several academic papers and by participating to meetings with the farmers of the Piedmontese. On the one hand, he recognized the economic value of the *production* of double muscled calves and their social utility in sustaining farmers' household economy. On the other hand, Raimondi maintained that the *groppa doppia* was a deviation from the codified and desirable standards of the Piedmontese breed and that double muscled bulls had to be excluded from reproduction programmes.

His 1956 article represents the turning point in the process of the breed's normalization and therefore deserves proper attention. Raimondi was then aware that the 'battle' against the *groppa doppia* was a lost one. What had started as a random mutation appearing in the second half of 19th century was at those times spread across the Piedmontese bovine population: the animals with the *groppa doppia* largely outnumbered the 'normal Piedmontese cattle' (Raimondi 1956, p.8). Raimondi recognized that the collaboration between breeders and vet-activists contributed to solving most of the 'teratological issues' associated with the *groppa doppia* (*ibidem*, p.6 and p.12). He admitted that the socio-economical and technological change taking place in Italy after the Second World War made obsolete the breed's triple specialization of the 1935 standard, and that both milk and meat production had to be improved through selection in the reproduction process (pp.12-13). He recognized that the most likely and profitable choice would have been further fostering the usage of double-muscled dams in combination with selected bulls with *groppa doppia* (*ibidem*, pp.14-16). He even envisaged the possibility of experimenting the

reproduction of some animals by using double muscled bulls at the Zootechnics Institute where he was working in Turin (p.12).

Yet, Raimondi supported a different solution. First, he highlighted the existence of what he termed ‘una situazione paradossale’, a paradoxical situation:

*the production of double muscled Piedmontese calves is exclusively a matter of butchery.*¹² Today more than a few agree that without the providential birth of these calves, it is likely that the Piedmontese breed could not be economically sustainable. As a consequence, the following paradoxical situation emerged: the ‘double muscling’ phenomenon represents an undeniable economic resource for our breeders; yet, at the same time, it is also considered as a possible means for the close out of the breed. (p.9, emphasis in the original)

In writing about the ‘close out of the breed’ (*liquidazione della razza*, in the original Italian text), he was referring to the normal Piedmontese, as it had been codified in the 1935 standard. The teratological prejudice was somehow still at work, as the double-muscled cattle were considered (not without contradictions)¹³ infertile and, when generating life, only capable of delivering faulty animals destined to die (cfr. Mascheroni, 1931).

Raimondi, a few pages later, envisioned an alternative policy for the Piedmontese breed, identifying what he called the ‘bovino Piemontese migliorato’ (literally, ‘improved Piedmontese bovine’), an evolution of the normal animal. His policy advice is somehow surprising, as it evokes the Slow Food presidia credo (i.e.

the safeguard of small traditional agricultural productions from industrial agriculture and homologation) thirty years earlier the birth of the movement:

[w]e think that [...] it would be urgent and of the greatest importance to define within each province [...] the zones to be preserved and allocated predominantly to reproduction, and in which, therefore, the provincial commissions for the approval of bulls should, in general, allow only the use of subjects of the normal type. (Raimondi, 1956, p.19, emphasis in the original)

It must be noted that Raimondo Raimondi was an experienced academic who acted as a spokesperson for the Ministry of Agriculture and Forest's position when presenting to the farmers the second standard for the Piedmontese breed approved in 1958 (Raimondi, 1958). The new ministerial directive (MIAF, 1958) established that the improvement of the breed had to target first the increase of milk and, secondly, beef production, thus discarding the work attitude included in the 1935 standard (see also Anaborapi, 2005 and 2008; Bonadonna, 1959, pp.687-688). Raimondi's support of the second standard was perhaps his final attempt to protect the normal Piedmontese livestock from the spread of the double-muscle factor, literally the last bulwark against the *groppa doppia*. Therefore, the authorities represented by official experts such as Raimondi encouraged farmers to collaborate and avoid using for reproduction double-muscled bulls and dams. As Sartore and Chiappone note, 'until 1960, bulls which were characterized by muscular hypertrophy were officially *banned* from reproduction' (1982, p.461; our emphasis). In commenting on the 1958 standard,

Raimondi launched his final call for the enrolment of farmers against the *groppa doppia* deviation:

the work for the breed's reconstruction cannot longer wait, at stake is the downfall of the breed itself [...]. *Yet, only with farmers' collaboration will the implementation [of the new breed's standard] be possible. Piedmontese breeders must and cannot back out of the responsibility of saving this breed; a breed on which their farms' income depends. Therefore it is indispensable that, even with some sacrifices, namely, giving up some beef calves, everybody gives its own contribution.*

(Raimondi, 1958, p.13, emphasis in the original)

Unfortunately for Raimondo Raimondi, times were not ready for conservation projects and preservationist feelings, which were underlying his plan to establish conservation zones for the normal Piedmontese. Italy, in the late 1950s, had just entered its amazing economic growth, known as the 'boom years', and the policy-making concern was oriented towards production, rather than reproduction.

Only two years later, in 1960, in Turin, a handful of breeders of Piedmontese cattle, led by Francesco Maletto, professor of veterinary sciences at the University of Turin, founded Anaborapi, the National Association of the Piedmontese Cattle Breeders. The establishment of this association – soon to be recognized by the Ministry of Agriculture and Forests as *the* (official) *Institution* for the Piedmontese breed – was the formal attempt of a takeover in the 'world of the Piedmontese', imposing the *groppa doppia* as the key-feature to be targeted by the – soon to be

approved – new standard for the Piedmontese breed. Anaborapi became the ‘spokesperson’ at the Ministry of Agriculture for the Piedmontese breeders interested in increasing meat production (cf. Bosticco, 2010). It became also responsible for managing the Herd Book and implementing the genetic selection and improvement of the livestock (*idem*). The fact is that Anaborapi completely ignored Raimondi’s call for the ‘reconstruction of the [normal] breed’, as it implemented reproductive programmes involving bulls and dams with the *groppe doppia* trait. As a consequence of Anaborapi’s activities, in 1966 the Ministry modified again the breed standard: selection had to increase both milk and meat production. However, and importantly, the new standard established that increasing the production of meat, rather than the production of milk, was the most important aim to achieve through selection. The 1966 standard, therefore, represented the first official step towards the transformation of the Piedmontese in a beef breed (Coalvi, 2008, p.55).

In the meanwhile, Anaborapi’s technicians and veterinaries continued their efforts to enhance the double muscled variant of the Piedmontese. In particular, reproductive traits were selected through progeny tests targeted to establish the genetic value of the bulls through the exam of their offspring. Nowadays the whole process lasts a few months. Yet, during Anaborapi’s early steps, it took ten years to successfully accomplish the first progeny test and to set the correct procedures and protocols.¹⁴ The first cycle of the progeny tests with double muscled bovines was in fact completed in 1970 and this success paved the road to the approval of the new, the last and current, fourth breed standard.

The 1976 standard established that, whilst milk production had not be neglected by selection, the Piedmontese was primarily a breed for meat production.¹⁵ De facto, after a long negotiation and struggle about what the Piedmontese breed had

to be, the fourth standard fixed a renewed notion of normality, defining that the *groppa doppia* was the rule and not the exception, subsequently bridging the divide between production and reproduction.¹⁶ As we have shown, this struggle had been playing for more than seventy years on different tables, entailing and assembling heterogeneous cultural, scientific, economic, ideological elements into long series of technological, scientific, normative canons. Since 1976, the fourth standard guides contemporary Anaborapi's practices of genetic selection and improvement. Anaborapi's technicians, today, basically operate to create an animal with no, or as little as possible, 'imperfections' (i.e. enlarged tongues and ambulation problems in calves, and parturition difficulties in dams), and able of producing large amounts of beef (thanks to the inclusion of the *groppa doppia* as valuable and 'normal' trait of the Piedmontese in the 1976 standard of the breed).¹⁷

[b]Saving (again) the breed? 1976-2014

The Piedmontese breed's way to success was apparently paved and smooth. A few years later the approval of the fourth standard, Anaborapi wrote a new chapter in the history of the Piedmontese, by dispatching one bull (named Brindisi) and four dams (called Banana, Biba, Bisca and Binda) to Saskatchewan, Canada, in the autumn of 1979. The following year, five more bulls (Captain, Champ, Corallo, Camino and Domingo) were shipped to Canada. Subsequently, in the early 1980s three bulls (Istinto, Imbuto and Iose) and two cows (India and Gazza) were exported again from Italy to the United States.¹⁸ These animals supplied the original genetic base for the Piedmontese breed in North America. Today, there are livestock of Piedmontese in several countries: China, Argentina, New Zealand, Australia, Great Britain, Ireland, Denmark, Germany, the Netherlands, Mexico and Switzerland (see Bosticco, 2009

and 2010). It must be noted that the Piedmontese breed attracts international attention as it can be used for crossbreeding and improving ‘meat yield, meat tenderness and feed efficiency’ (Arthur, 1995, p.1507). Farmers and companies in the meat industry are interested into the Piedmontese because they can produce tender and lean beef with ‘more quality cuts than other breeds’ (Natural Farms).¹⁹ Furthermore, it ‘offers great potential to lean beef marketing programs’ (*ibidem*). The Piedmontese fills, especially in the USA, a niche market where it is advertised as premium and ‘healthy’ beef as this latter has very little fat and it is tender (Certified Piedmontese®).²⁰ With an increase of the demand for leaner meat, interest for the Piedmontese has grown in different parts of the world (Arthur, 1995, p.1494).

The Piedmontese’s current fortune is directly linked to the genealogy we highlighted in this chapter. The success of the *groppe doppia* beef among the Pennsylvania breeders and the sophisticated NYC consumers purchasing Piedmontese beef at Eataly also relies on the same factors that seduced producers and consumers in Piedmont since the early 20th century: high dressing percentage and tender, lean and tasteful meat. However, we still cannot put an (happy) end to the (success) story of the Piedmontese by stopping at the establishment of Anaborapi and the 1976 breed standard. What is still missing, and must be clarified, are the reasons why in the 1990s a debate arose in the emerging Slow Food movement about the need of a presidium to protect specifically the Piedmontese breed.

Slow Food’s very notion of presidium is grounded in the fact that there is an agri-food production threatened by extinction unless an urgent action is undertaken. This was not the case for the Piedmontese cattle breed. Since its foundation in 1980, Coalvi, the consortium for the valorisation of the Piedmontese breed,²¹ has been

promoting the consumption of Piedmontese beef, coordinating the work of more than 1,400 breeders, about 85 slaughterhouses and nearly 200 butchers.

It cannot be forgotten that exogenous factors do play a role in the fortunes of a commodity. In the case of the Piedmontese, exogenous threats came in early 1980s from the diffusion of large-scale retail, reducing the profitability of a breed like the Piedmontese that, despite its high dressing percentage, needs more time for fattening. As a consequence, many breeders redeveloped their business replacing the Piedmontese with French cattle breeds, such as the Limousin and Charolais, which could be fattened using mass feeding techniques and, eventually, bootleg hormone injections. Also the EU's Common Agricultural Policy played a role. Its large-scale development plan, enforcing a spatial division of labour among European countries, acted as an incentive to shift from meat to milk production in Italy, further reducing the diffusion of the Piedmontese in favour of the Holstein Friesians cattle. These changes in both the market conditions and public policies brought about a breakneck decline in the number of Piedmontese heads of cattle (Cumino, 2012; Ponzio, 2012; Quaglino and Albera, 2012; interviews). While after Second World War there were about 700k Piedmontese cows and bulls (Dassat, 1949, pp.10-11; see also Raimondi 1962: 1), the number fell to less than 200k heads in 2004 before inverting the trend and reaching the 260-265k units in the current period (Anaborapi, 2013, p.6).

These external shocks somehow proved that Raimondo Raimondi's concerns were well grounded: the drive towards the selection and improvement of the *groppa doppia* saved the Piedmontese breed but, at the same time, exposed it at a risk. As mentioned above, since 1960 Anaborapi drove the selection of the breed towards meat production and, with the approval of the 1976 standard, the improvement of milk productivity was nearly abandoned. As Raimondi noticed in 1962, when it comes to

milk, the productivity of the double-muscled Piedmontese is about 20% lower compared to the normal cattle (1962, p.42). The issue was even more complex and brings us to the very heart of the genealogy that is central to our narration. On the one hand, the selection and improvement that Anaborapi carried out since 1960 transformed the Piedmontese into a truly ‘meat machine’. As Vezzani figuratively reported, ‘in these [double muscled] calves, the butchers say “the leg is in each part [of the animal] and each part is leg”. Others significantly argue that these calves have the leg also in the head’ (1927, p.11). On the other hand, Coalvi (the consortium that promotes the commercialization of the Piedmontese beef) implemented an inclusive policy towards the Piedmontese breeders, setting loose production standards and regulations.

Coalvi’s commercial discourse was (and still is) clear: the Piedmontese’s characteristics (low fat, tenderness, delicate taste, pale colour, texture) are embedded in the genetic uniqueness of the breed, are ‘natural’ and hence there are not significant beef quality variations between breeders. The combination of two discourses – Anaborapi’s technical and Coalvi’s commercial discourse – produced in the 1990s what we called the ‘phylogenetic narrative’, connoting the Piedmontese’s beef quality as genetically determined, as an objective matter of fact (Colombino and Giaccaria, 2013b). The paradoxical consequence is that small-scale breeders and vet-activists transformed the *groppe doppia* from an anomaly into the standard, saved the Piedmontese breed by encouraging farmers to keep rearing it, but at the same time waived farmers’ agency and handed it to Anaborapi and Coalvi, which became the official spokespersons, the gatekeepers respectively of the Piedmontese genetic assets and of the commercial valorisation of the breed. In fact, the ‘phylogenetic discourse’ that sustains Anaborapi and Coalvi’s idea of beef quality (epitomized by a Coalvi

manager's statement 'the breed makes the quality') relies almost exclusively on the genetic substrate of the breed. The practical consequence of this 'truth' articulated by the phylogenetic discourse is that *anyone* can rear the Piedmontese and obtain high quality beef (Scaglia, 2012, interview). In Anaborapi's and Coalvi's discourses and practices even the fattening depends on the animal itself, as its genetic character dictates the proper feeding (see Colombino and Giaccaria, 2013b, pp.147-149). The typical Coalvi breeder receives the proper semen from Anaborapi, feeds the cattle with the right, standardized, diet, and, finally sells it to the butchers associated with Coalvi.

This is the context that partially explains Slow Food's decision to enforce a presidium for the Piedmontese cattle, despite the fact the livestock was not numerically endangered.²² What was in danger of extinction, according to the Slow Food discourse, were the traditional skills and knowledges of the breeder. Once again, in the mid-1990s, a non-academic vet-activist, Sergio Capaldo played a pivotal role in gathering a handful of young breeders around a Slow Food presidium, willing to experiment old practices of feeding and fattening their cattle.

At the beginning, the *La Granda* presidium gathered seven breeders and 78 heads of cattle. Capaldo's intuition was to refresh the sources of the success of the *groppe doppia* across the 20th century; namely the profitability of animal capital and the quality of the beef. Double-muscled animals used to be about 30% more profitable for breeders than the normal Piedmontese (Raimondi, 1962, pp.54-56). Yet, the diffusion of large-scale retail impacted on small breeders' profits, and even Coalvi's retail network was not able to guarantee to farmers any longer the previous returns (Giordano, 2012, interview; Quaglino and Albera, 2012, interview). As a consequence, Capaldo concentrated his efforts in repositioning the presidium's beef at

the top end of the market. This required harsh bargaining with retailers, caterers and butchers, in order to secure to his associates an average surplus of 25% more than the price paid on the market (Capaldo, 2012, interview). In turn, this strategy – which is encapsulated in *La Granda*'s specification of production (which relies on the use of 'natural' and possibly local fodder and 'traditional' rearing techniques), turned out to be successful in enhancing – according to food critics, gourmet and gastronomists – the quality of the presidium's beef. In order to do so, Capaldo basically empowered the breeders' agency by returning to them the know-how and the competences of 'properly' feeding and fattening their cattle (see Giordano, 2012, interview). The original group grew slowly from seven to 65 farmers by sharing 'good practices' and social capital, which contributed to enabling them to produce the premium beef that has captured food connoisseurs, chefs and, later, important economic actors in the world of food culture and gastronomy such as Eataly's founder Oscar Farinetti (Sartorio, 2008). Again, external factors played a key role: the mad cow disease in the late 1990s-early 2000s, the new popular concern with health and obesity and the birth of the food mall Eataly in 2007 contributed to creating the conditions for the international success of *La Granda* and, more precisely, of the Piedmontese cattle breed. Of course, also Anaborapi's dissemination action, 'mobilizing bulls and cows' and commercializing semen for artificial insemination across the world, contributed to making the Piedmontese breed's international success possible. Yet, the work of a vet-activist and of a few dozens of breeders was essential to transform a local beef into an international commodity, sold in New York City, the heart of cosmopolitan food consumption.

The presence of the Piedmontese beef in a stall at New York's Green Market cannot simply be explained with a direct causal relationship between Slow Food's

success and influence in affecting foodies' sophisticated consumption practices and the strategic location of Eataly – which materializes gastronomes' fantasies for 'high quality' food and specialties – in New York City. Neither it can be explained as a reflection of the animal's and beef's intrinsic qualities, nor it can be justified by telling a story of the Piedmontese that constructs it as an endangered breed, which, as in the case of many Slow Food presidia, immediately turns into a food specialty. The commercial success of the Piedmontese in the niche market targeted to international food connoisseurs and cosmopolitan urban elites can be better explained when considering this breed complicated and centennial genealogy. A series of struggles, negotiations, tensions, imaginaries have been pivoting on the characters of the breed in order to set its standard and define the balance between production and reproduction of its animal capital. All these elements are still interacting in a dialogical tension, in the interplay of a plurality of stakeholders: there is not such thing as an end in the interaction of heterogeneous actors.

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¹ Slow Food presidia are an evolution of a project started in the 1990s, originally called *Arca del Gusto* (literally ‘arc of taste’), which were officially presented in 2000 at the *Salone del Gusto*, the ‘glocal’ food fair that Slow Food organizes every autumn in Turin, Italy.

² In this chapter, unless otherwise specified, by *La Granda* we refer indistinctly to the presidium and the meat processing company.

³ More specifically, Eataly’s Piedmontese beef is supplied by Pat La Frieda, a New York-based luxury meat retailer and by farms working for Great Plain Beef (see www.eataly.com/nyc-butcher-counter/ and www.greatplainsbeef.com, accessed 7 October 2014).

⁴ This trait is termed in different national contexts after the morphology of the cattle, which visually recalls horses’ backs’ silhouettes, as in the French *veau à cul de poulain* and the Italian *vitello a groppa di cavallo*, or refers to the hypertrophic muscles of the hind leg, as in the German’s *Doppellender* and the different Italian denominations *vitello della groppa doppia* or *vitello della coscia*.

⁵ Today we know that the double muscling is the result of a spontaneous mutation of the myostatin gene (Wheeler et al. 2001). This mutation has caused a malfunctioning of the myostatin, a protein responsible for controlling muscular growth and which causes the growth of muscular masses (hypertrophy, the increase of the volume of muscular fibres), and an increase of the numbers of muscular fibres (hyperplasia). This mutation is considered at the origin of the two main factors that determine the higher economic value of the animal: the higher dressing percentage (i.e. more meat after slaughtering) compared to other beef cattle breeds, and the tenderness of the meat (see Albera, 2006; Fiems, 2012). As we show in this chapter, these are two factors that farmers, butchers, veterinaries, and livestock technicians knew well since the beginning of the 20th century (see e.g. Mascheroni, 1931, pp.68-78).

⁶ Until the late 1950s, the main argument against the use of *groppe doppia* animals for reproduction concerned the supposed infertility of the cows and the incapacity of delivery healthy calves (Raimondi, 1958).

⁷ We write ‘semi-official’ and not ‘unofficial’ because some exemplars of the cattle with the *groppe doppia* were exhibited and received prizes at important national events such as the *Mostra Zootecnica* (livestock exhibition) at Milan’s Fair (Vezzani, 1927, p.19).

⁸ Today we know that the tenderness is also the result of the genetic mutation of the myostatin, which causes muscular hyperplasia; that is, more muscular fibres, which are poor of connective tissue (collagen), which translates into tender beef (see Arthur, 1995; De Stefanis, 2012).

⁹ Translations from sources in Italian are our own.

¹⁰ Possible risks in using the double muscled bulls for reproduction could include the death of the dam for parturition difficulties and the birth of calves with severe health problems.

¹¹ The fact that some German and French academic veterinaries (e.g. Putsch and Dechambre cit. in Vezzani, 1927) strongly supported the teratological hypothesis, might be a factor to be taken into account (see *ibidem*, p.13). However, more archival work on technical and historical documents is needed to offer a sound answer to this question, and to crosscheck and integrate the arguments formalized in the academic articles and position papers we could collect to so far.

¹² By ‘matter of butchery’, Raimondi meant that the Piedmontese animals presenting the *groppe doppia* trait were and had to be used only for the production of beef and not for the reproduction of the herd.

¹³ If the *groppe doppia* characters implied infertility, impotence and rickets, how does it come that fifty years of tentative reproductive programmes, semi-officially managed by breeders and vet-activists, made the double muscled specimens the majority of Piedmontese cattle?

¹⁴ Today from each bull brought to Anaborapi’s Genetic Station semen doses are collected and then used on dams registered on the Herd Book. After delivery, calves are examined to determine the genetic potential of the bulls. After this evaluation, before being qualified for artificial insemination, the bulls are tested for their sexual functionality. This stage implies the training of the bulls in the ‘artificial service’ (*monta artificiale*) and the exam of the quality of the semen. If the bull has a good libido, its semen is tested (for appearance, volume, concentration, motility of the spermatozoa). If the bull has a good semen production then it qualifies for being an A.I. bull and, after a sanitary inspection, it is then moved to the Centro Tori (Artificial Insemination Station) where the semen is produced, controlled, stored and then sold nationally and internationally.

¹⁵ According to the 1976 standard the improvement of the Piedmontese must target: precocity (the early achievement of the age for slaughtering); growth rate; feed conversion index; dressing percentage; the characteristics of the carcass; beef quality; fertility; and longevity (see www.anaborapi.it/index.php?option=com_content&view=article&id=44:statuto&catid=5:piemontese-presenta&Itemid=7, accessed 7 October 2014).

¹⁶ Our account of the Piedmontese cattle breed finds a theoretical echo in Biermann and Mansfield’s (2014) recent paper about the biopolitical nature of conservation biology. More specifically, our findings support their claim that ‘decisions [made by conservation biology on which life forms should live and which should be allowed to die] rely on distinctions between normalcy and aberrance, between biological advantages and threats. [...] The division between what must be maximized, or made to live, and what must be diminished, or allowed to die, is based not on inherent value of an organism but rather on its supposed relation to the population’ (Biermann and Mansfield, 2014, p. 261).

¹⁷ In order to create the ‘perfect animal’ through selection, today Anaborapi employs genetic markers and Estimated Breeding Values (see Holloway *et al.*, 2011). It must be noted that the affirmation of genetics markers and Estimated Breeding Values in livestock rearing is truly *biopolitics*, which deeply penetrates into the reproduction of animal capital. This is because ‘such practices involve not just the insertion of animal bodies into farming assemblages involving technologies, human beings, land, architectural spaces, and so on for the purposes of changing and “maximizing” those bodies, but also

the selection of individuals and populations as the bearers of particular traits to suit the particular ends of capitalist enterprise. What we have here, in other words, is not just the operation of a new “norm” but one whose benchmarks presuppose the production and sale of animal food products *as a commodity for profit*’ (Wolfe 2014, pp.35-36, original emphasis).

¹⁸ It is worthwhile to notice that the denomination of the bulls and cows follow the genealogical naming typical of pets’ pedigree.

¹⁹ www.naturalfarms.com/e-p-s-p-ranch/the-piedmontese-story/, accessed 7 October 2014.

²⁰ ‘The healthier beef option’, www.piedmontese.com/about_healthier-option.aspx, accessed 7 October 2014.

²¹ It is important to notice that the original denomination of Coalvi is ‘Consorzio di valorizzazione della Piemontese sottorazza Albese’ (consortium for the valorisation of the Alba’s Piedmontese sub-breed). The reference to the Albese sub-breed is probably the last mirroring of the harsh debate that brought the *groppe doppia* specimens, whose selection started originally in Alba’s area, to become the ideal-type of the Piedmontese breed.

²² According to a Slow Food manager we interviewed, in the mid-1990s there were about 300.000 heads of stock of Piedmontese cattle.