

International
Institute of
Social Studies



**Interspecies Relations in Peasant Animal Husbandry in the
Orvietano, Italy**

Exploring Collaborative Survival

A Research Paper presented by:

Maria Caracciolo

(Italy)

in partial fulfilment of the requirements for obtaining the degree of
MASTER OF ARTS IN DEVELOPMENT STUDIES

Major:

Agrarian, Food and Environmental Studies

AFES

Members of the Examining Committee:

Wendy Harcourt

Helena Pérez Niño

The Hague, The Netherlands
December 2023

Disclaimer:

This document represents part of the author's study programme while at the International Institute of Social Studies. The views stated therein are those of the author and not necessarily those of the Institute.

Inquiries:

International Institute of Social Studies
P.O. Box 29776
2502 LT The Hague
The Netherlands

t: +31 70 426 0460
e: info@iss.nl
w: www.iss.nl
fb: <http://www.facebook.com/iss.nl>
twitter: [@issnl](https://twitter.com/issnl)

Location:

Kortenaerkade 12
2518 AX The Hague
The Netherlands

Contents

List of Appendices.....	v
List of Figures	v
List of Acronyms.....	v
Acknowledgements.....	vi
Abstract.....	vii
Relevance to development studies	vii
Keywords	viii
Chapter 1 Introduction	2
1.1 Which debates are discussed in the RP?	3
1.2 Restorying collaborative survival	5
1.3 Methodology, Methods and Limitations	6
Chapter 2 Agrarian relations in the Orvietan animal husbandry system	7
2.1 Agrarian history of the Orvietano	9
2.2 Who are the farmers today?.....	10
2.3 Orvietan animal husbandry	13
2.4 Current squeeze in agriculture	14
2.5 Response to squeeze: repeasantization and animal husbandry	16
Chapter 3 Farm interspecies relations	18
3.1 Orvietan animal husbandry's farm interspecies relations.....	19
3.2 CAFOs' interspecies work relations	25
Chapter 4 Wildlife-farm relations.....	27
4.1 Questioning the 'wild'	28
4.2 Who are wildlife in the Orvietano?	29
External disturbance: informing ways of farming and interspecies relations	29
<i>Under the skin</i> : the 'wild' inside farm-animals.....	34
Diffuse embeddedness: wildlife contribution to a healthy ecosystem.....	36
4.3 Why is it important to accept and work <i>with</i> wildlife?	36
4.4 Accepting indeterminacy	39
Chapter 5 Conclusion: Food and ecological futures	40
5.1 Cellular agriculture: eliminating the animal, solving the 'problem of nature'	42
5.2 Cellular agriculture's vegan rationale under scrutiny	44
5.3 Conclusion: collaborative survival in Orvietan animal husbandry as ecological and food future.....	50
Appendices	52

Appendix A: Definition of key terms	52
Ecosystem:	52
Intensive and semi-extensive livestock farming systems:	52
Objectivity:.....	53
Appendix B: Interviewees table.....	53
Appendix C: Methods and limitations	55
Appendix D: <i>Mezzadria</i> system in the Orvietano	56
References	57

List of Appendices

Appendix A Definition of key terms

Appendix B Interviewees table

Appendix C Methods and limitations

Appendix D *Mezzadria* system in the Orvietano

List of Figures

Figure 1 Antonietta's fettuccine

Figure 2 Orvieto's Mount

Figure 3 Orvieto Scalo, the 'valley'

Figure 4 Neo-peasant house in a former sharecropper farmhouse

Figure 5 A *mezzadro* with his cow, a cow with its *mezzadro*

Figure 6 View from Orietta and Berit's farm

Figure 7 Chickens getting ready to feed on goats' parasites

Figure 8 Other-than-commodity goat cheeses

Figure 9 Hare repopulation project

Figure 10 Fox stealing a chicken

Figure 11 The rabbit *caselle*

Figure 12 Olive-chicken collaboration

Figure 13 Spontaneous *Geotrichum* forming in Salvatore's cheese laboratory

Figure 14 Goats grazing the forest

Figure 15 Gelsomina

List of Acronyms

ASF: African Swine Fever

ASL: Azienda Sanitaria Locale

CAFO: Concentrated Animal Feeding Operation

CAP: Common Agricultural Policy

EU: European Union

ISMEA: Istituto di Servizi per il Mercato Agricolo Alimentare [Institute of Services for the Agricultural Food Market]

ISTAT: Istituto Nazionale di Statistica [National Institute of Statistics]

IZSUM: Istituto Zooprofilattico Sperimentale dell'Umbria e delle Marche [Experimental Zooprophyllactic Institute of Umbria and Marche]

LEIDAA: Lega Italiana Difesa Animale e Ambiente [Italian Animal and Environment Defence Agency]

Acknowledgements

I want to thank first and foremost the peasants I encountered during field work. I owe so much to your infinite generosity. I am immensely grateful that you took the time to answer my questions, show me your farms, and introduce me to your farm-animals. Your dedication to your work and to making the world a better place is contagious and inspired me deeply.

A special thanks to Pietro, Valeria, and Marisa, who invited me to visit their farms more than once, and Salvatore, Raffaella, Orietta, and Berit, who accepted my clumsy help (or more realistically, accepted to teach me) by letting me work on their farms. You have a special place in this RP, getting to know you was lifechanging. I am hope to visit you soon.

Thanks to Salvatore's goats, Sibilla, Querida, Renetta... for quickly and curiously accepting my presence and collaboration during the ten days we spent together. I had the most fun with you.

Thanks also to the other RP collaborators, which helped me understand concepts and histories of the agriculture world. A special thanks to Antonietta, who opened her house and her story to me in such a caring way.

Thanks to Wendy and Helena, who have been supporting me throughout the whole MA program. When my confidence wavered, your guidance and encouragement was comforting and boosted me to commit myself until the end. Thanks, Helena, for trusting me and encouraging me to follow a political ecology (and agrarian populist) path, despite your fervent Marxist political economy approach. Thanks, Wendy, for your prompt availability, for our conversations, for your constant encouragement, for helping make sense of way-too-long-and-messy chapters. Working with both of you has been a true honour, and I will certainly miss it.

Thanks to my wonderful family. Your unconditional support and confidence in me spur me on to this master in the first place, and I am so grateful for it. A particular thanks to my grandmother, who has been cooking me delicious meals throughout the writing process, to my parents and sister, who have patiently comforted me throughout my RP mood swings and craziness. Vi voglio così bene.

Thanks to all my dear friends in The Hague, your presence filled this master with joy and love. Our talks, walks, cooking sessions, bouldering, library sessions, parties have been a fundamental of my learning (and unlearning). I hope you all come visit me in Italy! Thanks to the Climate

InterAction collective for the amazing and caring experience of collective thinking and organising, I love you so much.

Thanks also to my dear friends in Italy, who have patiently listened to me go on about animal husbandry and veganism for months. Your loyalty and sorority go beyond words. A special thanks to Marta, who brightened my writing days by always joining me in the library, to Iaia and Sofi, who helped me think and forge the RP arguments when I felt completely lost, and to Nina, who helped me translate legal language into regular Italian. I hope to reciprocate someday.

Abstract

Based on a research journey with Orvietan peasants and farm-animals, this research paper delves into the interspecies relations of the Orvietan animal husbandry system. I investigate the fundamental role that farm-animals, wildlife, and peasants play in making Orvietan animal husbandry a process of collaborative survival. I argue that because of these collaborative interspecies relations, peasant farms are more resilient to the agricultural squeeze, alienation, and commodification. In the midst of a political, economic, social, ecological ‘general crisis’ which calls for new political proposals, Orvietan collaborative survival offers a valuable naturecultural rethink, regrounding agriculture and humans in ‘nature’ and de-essentializing our relations with earth others. While vegan worlds are stuck in the human/nature divide and endorse a Eurocentric, capitalocentric, and anthropocentric food future, collaborative survival in the Orvietano is a situated glocal response which challenges narratives of progress and modernization. Through interspecies work relations and entanglements-contaminations with the broader ecosystem, peasant farms remind us about our ecological ontology and our collaborative interspecies history.

Relevance to development studies

Peasant agriculture is portrayed as backwards by development narratives (van der Ploeg, 2018b). Yet, Europe is witnessing a repeasantization wave, responding both to the squeeze in agriculture (ibid.) and to the search for meaningful life-work, in the case of neo-peasants. Although being financially and discursively supported by public institutions and the European Union, industrial agriculture fosters a myriad of socioecological crisis, including the depletion of soils, water contamination, biodiversity loss, etc. While its socioenvironmental toll has been repeatedly assessed, the industrialization of livestock farming is still celebrated as a development goal (Weis, 2010). To foster a sustainable future, then, it is necessary to recognize the Eurocentric, capitalist character of mainstream development, and move beyond it by regrounding agriculture in the ecosystem. For whom is development, and who decides about it? Rather than top-down universal recipes, as the ones by modernization and veganism, I argue for a regrounding of development projects in the context-specific ecosystem and its actants. In this RP, I show how animal husbandry, often integrated with other farming and non-farming activities, is an ecologically

grounded, interspecies response to the current threats to multispecies livability (Tsing, 2017). Rather than buying into the reductionist argument that *all* animal products are inherently unsustainable and unethical (Houzer and Scoones, 2021), this paper argues for a context-based approach to animal farming, where animal husbandry is not a *problem* but a possible solution to food and ecological crisis. Rather than technological fixes, I argue that a naturecultural rethink is necessary to mend the capitalist, human/nature crisis. Across the chapters, I show how Orvietan animal husbandry engenders this potential naturecultural rethink and offers a valuable insight in collaborative survival, beyond the boundaries of the Orvietano.

Keywords

interspecies relations, animal husbandry, peasant agriculture, collaborative survival, industrial agriculture, food and ecological futures, cellular agriculture, animal ethics, wildlife, political ecology

Chapter 1 Introduction

In July 2023, I visited an animal sanctuary¹ in Tuscany, where activists opened a debate on food futures and veganism. The sanctuary activists, all urbanites, promoted a vegan future-world as the *only* possible ethical and sustainable one. Replying to my question about non-industrial animal husbandry, one activist stated that peasants delusionally think to be engaging in collaborative and ethical relations with farm-animals, whereas they actually engage in animal oppression. “Non-industrial animal farms”, another activist added, “produce more greenhouse gas (GHG) emissions than their industrial counterparts.” When I asked what interspecies relations are deemed *ethical*, one stated: “the ones in which humans do not *use* animals.” In the sanctuary, animals’ lives are dedicated to idleness and leisure, or what the activists call ‘freedom’, while humans allow their lives without expecting anything in return. My suggestion of ethical reciprocal interspecies relations was vehemently rejected by a sanctuary activist who asserted: “at most, they reciprocate with a purr.” Upon visiting the ‘animal refugees’, I met a disabled boar who lived alone in a small, fenced space. While the activists felt sorry for him, they believed that *at least he is alive and free*, which is all that matters (for who, the activists or the boar?). The visit lingered in my thoughts during fieldwork, as I watched peasants engage with farm-animals and learned to do so myself. How to make sense of the reciprocity, collaboration and care I was witnessing then?

This RP explores my reverberating questions as a former vegan with various vegan-doubts. The journey of the RP goes hand in hand with my own journey, delving into the debates that have absorbed me for years. When I became a vegetarian at 14 years old, I was not aware of the dynamics of animal farming, overlooking the ‘moral aporia’ of being vegetarian, i.e., “[f]or there to be vegetarian, there must be meat eaters” who eat the ‘by-products’ (i.e., meat) of the dairy and egg industry (Porcher, 2020, p. 510). During my undergrad years, I joined Extinction Rebellion², which confronted me with this ‘moral aporia’. Rapidly I opted for a plant-based diet. Yet, the simplistic slogans circulating in my social environment puzzled me: how can pastoralist and semi-extensive animal husbandry be more environmentally harmful than intensive livestock farming? Can interspecies relations in peasant farms be reduced to ‘exploitation’? What is this narrative omitting? Hence, my RP looks at debates on animal husbandry and interspecies relations, as I explore the food-ecological futures put forward by semi-extensive animal husbandry. Throughout this RP journey, I have decomposed and recomposed my beliefs and practices again and again.

¹ Animal sanctuaries are an antispeciesist movement advocating for animal liberation and hosting ‘liberated animals’ in *sanctuaries*.

² International climate movement. Website: <https://rebellion.global/>.

While looking at interspecies relations in animal husbandry, I continually had to confront my own position as an urban environmentalist, as a vegan, and as a person concerned with animal ethics.

1.1 Which debates are discussed in the RP?

This RP engages in the interspecies debate, which reflects upon our relations with nonhuman beings, implicitly asking: what place should humans take in the ecosystem³? Which social – human and nonhuman – relations should we embark in? What relationality defines us? While animal-rights advocates have argued against animal abuse, there are differing opinions about which relations humans should, or should not, have with animals. Within the animal ethics literature, there are two general opposing stances. On one hand, the ‘welfarists’ argue for a more *humane* relation between animals and humans which makes animal farming less exploitative (Blattner, Coulter, Kymlicka, 2019). On the other, the ‘abolitionists’ believe humans should refrain from partaking in any relationship with animals since these are necessarily exploitative, also in animal husbandry and pastoralism (ibid.). Abolitionist scholars Francione and Garner (2010, cited in Blattner, Coulter, Kymlicka, 2019, p. 3) argue that for farm-animals, the *abolition* of relations translates into their “gradual extinction on the ground that they have been moulded through selective breeding to serve human purposes”. Moreover, disavowing human-wildlife interactions, they argue that wild animals are able to survive and thrive *if only* left alone by humans (ibid.). Abolitionists are fervent advocates of veganism and participate in the sanctuary movement.

Within the welfarist cohort there is a further bifurcation. While many endorse the ‘animal welfare’ discourse, others distance themselves from it by revealing its fallacies. Among the latter group, Porcher (2017, 2022a) argues that animal “[e]mancipation is about better attachment” (Despret, 2002, cited in Porcher, 2017, p. 6), not about interspecies detachment. Moreover, Porcher (2017) claims that in animal husbandry, animals and humans engage in respectful working relations, however, this is impossible in the context of industrial farming. Animal husbandry is a historically-shifting set of *interspecies work relations* between peasants and farm-animals based on partnership and collaboration, taking place in a semi-extensive⁴, or semi-wild, peasant farming system (Porcher, 2017). By contrast, the infiltration of capital in animal husbandry prompted its industrialization and a paradigmatic change in interspecies work relations, which are now predicated on ‘death-work’ and reduce farm-animals to machines (ibid.).

³ See Appendix A for full definition.

⁴ See Appendix A for full definition.

The global reach of ‘the industrial grain-oilseed-livestock complex’ (Weis, 2010) is expanding rapidly (Schneider, 2014). While the ‘meatification’ of diets⁵ is considered “an indicator of development” by modernization narratives (Weis, 2010, p. 142), concentrated animal feeding operations (CAFOs), or intensive farming systems⁶, represent the ‘technical arm’ of livestock farming modernization (Schneider, 2014). Because the industrial livestock sector is socio-environmentally unsustainable (Houzer and Scoones, 2021; Foster and Magdoff, 1998; Schneider, 2014; Weis, 2010), there is increasing consensus that we need a *diet* or *agri-cultural* rethink. While vegan activists, public institutions and capital are increasingly turning to ‘cellular agriculture’ as *the one-way* sustainable, ethical, modern, technical solution to animal production (Porcher, 2022b), this RP advocates for regrounding the solutions aimed at sustainability and animal ethics in situated ecological relations and collaborative survival, that is, patches of multispecies assemblages that make life possible for those involved (Tsing, 2015).

Fraser (2021, p. 95) has identified a global “*general crisis* [ecological, social, cultural, political] whose effects metastasize everywhere, shaking the confidence in established worldviews and ruling elites” and generating a “crisis of hegemony”. Consequently, “the political sphere is now a site of frantic search not just for better policies, but for new political projects and ways of living.” (ibid., p. 96). In fact, this RP grapples with the question: “What do you do when your world starts to fall apart?” (Tsing, 2015, p. 1), that is, how to live with and in precarity? In the midst of this *general crisis*, what can the Orvietano’s interspecies relations teach us about grappling with precarity and how to (re-)relate with earth others in a sustainable, ethical, and situated way? What ‘political project’ and ‘way of living’ are Orvietan peasant farms putting forward? I argue that rather than a protein transition⁷, we should *notice* interspecies relations in situated semi-extensive peasant farms to learn about collaborative survival. Interspecies collaboration is necessary for survival as no species has ever survived on its own: we need to help each other to make our lives possible (Tsing, 2015). While mainstream narrative teaches us about ‘human evolution’ as if isolated humans evolved in a sterile environment, stories of co-evolution are secretly weaved in centuries of collaboration. Humans have a long history of collaborative survival shared with sheep, dogs, goats, cows, etc. (Scott, 2011). As Scott Gilbert (cited in Tsing, 2015, p. 142) states, “[s]ymbiosis appears to be the ‘rule’, not the exception.”

The Orvietano, marked by its “unruly edges ... which escape being dictated by capitalism and the state, and predictability” (Tsing, 2015, p. 20), is an interesting place with regard to interspecies

⁵ The surge in meat consumption.

⁶ See Appendix A for full definition.

⁷ From animal to plant-based diets.

relations. The Orvietano is an informal agrarian region intersecting the Umbria and Lazio regions⁸ and centred around the city of Orvieto. Two primary factors motivate the focus on this region: personal familiarity and interest in the area, where my family owns a holiday house, and its relevance for interspecies collaborative survival, rooted in its modest industrialization and the persistence of peasant farming (Bevilacqua, 2013) shaped by interspecies entanglements.

1.2 Restorying collaborative survival

This RP tells a *different* story from the stories of capitalist and industrial destruction of ecosystems, climate collapse, depletion, Anthropocene, decay. While these stories are valid, they may be useless in fostering responses to the crisis. As Tsing (2015, p. 18) puts it, “[i]f we end the story with decay, we abandon all hope – or turn our attention to other stories of promise and ruin, promise and ruin [i.e., progress].” I join her and others who want to tell stories of collaborative survival rather than progress and decay. The main research question guiding this RP is: *How do interspecies relations determine and shape animal husbandry in the Orvietano, making it a process of collaborative survival?* I try to depart from narratives of modernization, technological fixes, and alienation, which are structurally entangled in the ‘general crisis,’ because “only once we imagine the worlds to be lively, vibrant, active, filled with [stories of collaborative survival], can we dedicate ourselves to making them so.” (Caracciolo, 2023a, p. 6). Stories wield earthmoving capacities, stretching the boundaries of our imagination and opening a space of hope and active response. By investing interspecies worlds, my attempt is to elude anthropocentrism, which “blocks attention to patchy landscapes, multiple temporalities, and shifting assemblages of humans and nonhumans: the very stuff of collaborative survival.” (Tsing, 2015, p. 20). Therefore, I set out to restory Orvietan interspecies relations as a ‘polyphonic’ story of entanglement and collaboration. The next paragraphs provide glimpses into the stories and questions I explore in and across the chapters.

In Chapter 2, I set out the agrarian relations of the Orvietan animal husbandry system. The guiding question is: *How do history and the current squeeze in agriculture influence identities, ways of farming, and interspecies relations in the Orvietano?* I investigate the local history’s legacies in the region, considering also the broader global/local issue of the current squeeze in agriculture. I show how integration of animal husbandry in multifunctional farms is an adaptive response by farmers to the squeeze specifically due to its collaborative interspecies relations.

Chapter 3 investigates: *How do the farm interspecies relations in the Orvietano foster interspecies collaboration and contamination?* I identify the mechanisms that make animal husbandry’s interspecies relations a

⁸ Central Italy.

process of collaboration, which has been key to peasant responses to the agricultural squeeze and their ability to resist alienation+commodification. To show how on-farm interspecies relations are collaborative, I delve into the relational dimensions of the collaborative labour relationship between farm-animals and peasants.

In Chapter 4, I explore: *What role do wildlife entanglements play in shaping the peasant praxis of animal husbandry and interspecies relations?* I continue the exploration of interspecies relations by bringing in ‘wildlife’ to investigate how this informs animal husbandry and collaborative survival. Exploring the ‘wild’ in the context of Orvietan animal husbandry, I tease out several ways in which wildlife interferes and contributes to animal husbandry. Finally, I contrast the ways Orvietan peasants and the industry-state alliance relate to wildlife through the case of the African Swine Fever (ASF).

Finally, in Chapter 5 I reflect on Orvietan interspecies collaborative survival by looking at the debates on food and ecological futures. I investigate: *What does Orvietan animal husbandry suggest for food and ecological futures in the face of increasing industrialization and alienation?* I delve into the rationale and implications of the industry-veganism nexus expressed in cellular agriculture. I contrast this alienated industrial future-world with collaborative survival of the Orvietan peasant farms, investigating different meanings of sustainability and animal ethics.

1.3 Methodology, Methods and Limitations

I use a qualitative research approach, adopting storying as main method. By weaving together the stories collected in the fieldwork and by “attach[ing] the objective⁹ to our theoretical and political scanners” (Haraway, 1988, p. 582), I give visibility to underrated interspecies relations among peasants, farm-animals, wildlife in the Orvietano. Storying from a situated epistemological position allows me to ground the stories of the RP in the Orvietano, while tapping into theoretical debates to explore the meanings and futures they generate. ‘Precarity’ (Tsing, 2015) is also part of my methodology, since I did not fully predetermine neither the questions nor directions of the RP, rather, ‘unpredictable encounters’ led my way through research. During the fieldwork, I encouraged open conversations with the research participants and together we reflected on the meanings of/for the research. In this attempt to make research more collaborative, I tried to practice deep listening and make space for the interviewees to feel safe, listened to, cared for. This was an attempt to practice ‘witnessing’ as a heuristic to *be/ become* in the ‘field’ (Mack and Na'puti, 2019, p. 349), seeking to re-center, within this RP, the voices of

⁹ See Appendix A for full definition.

peasants and animals. My purpose was to notice the emotions, relations, and entanglements which came in my way to try to story them through my embodied experience and positionality.

I conducted semi-structured and unstructured interviews¹⁰ with twenty-one farmers and eight people close to the world of agriculture and/or interspecies relations in the Orvietano. Of the twenty-one farmers, seven are cross-generational farmers, while the thirteen are neo-peasants; eight are women whereas thirteen are men. I also engaged in participant research and observation in Orietta's and Salvatore's farms. Conducting fieldwork during the summer restricted my ability to observe the seasonality of interspecies relations. Additionally, the absence of a 'natural science' perspective constrains the scope of this RP. Finally, my positionality as a middle/upper-class urbanite resulted in closer connections with neo-peasants than cross-generational farmers¹¹.

Chapter 2 Agrarian relations in the Orvietan animal husbandry system

How do history and the current squeeze in agriculture influence identities, ways of farming, and interspecies relations?

Figure 1: Antonietta's fettuccine



Source: Field work, August 2023.

¹⁰ Find 'Table of interviewees' in Appendix B.

¹¹ Additional explanation in Appendix C.

Antonietta was born in 1949, at the time of the mezzadria¹² system. We are sitting at her kitchen table in her apartment where she tells me her story. She grew up on the second floor of a farmhouse, as it was customary at the time. On the ground floor, the barn: chicken, cows, sheep, pigeons, geese, pigs. The same as everyone in the campagna tuderte¹³. She jokes: “Indeed, I am a bit of a beast myself!” Growing up, the only food her family could afford was bean soup. Her grandfather would grow the beans in the woods to escape the greedy hand of the padrone, the ‘master’. Once a year, her family would buy one small slice of veal for her brother, choosing the cheny scraps of the wealthy meat-eater class. Antonietta, instead, was given the scraps of her brother’s scraps: “I would chew on them like if it were chewing-gum”. Her grandparents, born in 1890 and 1897, just assumed the lot of being a peasant. Everyone in the family had to work on the farm. In the meanwhile, Antonietta starts piling up flour on the table, shaping it like a volcano and filling the crater with eggs. While her hands are intent on kneading the pasta dough, she laments that women used to work more than men: “on top of farm work, we would cook, clean the house, do laundry...” Animals were shared property with the master: half of the animals’ products were destined to the master’s palate, while the other half was sold by the peasants to urban butchers. Antonietta’s hands calmly twist and turn the dough, her mind going back to her youth while her hands repeat the movements she learned as a child. Back then, “few greedy masters owned the entire countryside”. Antonietta jokes, “people say this is the reason why Todi has been a communist town until the ‘70”. In the ‘70, mezzadria was legally abolished and many peasants turned to non-farming jobs. Antonietta quit farming at the age of 26, when she got married to her husband, a former peasant now turned into a construction worker. She found a job as a maid in the mansion of a rich urbanite. “Peasant life was a poor life”, she states. Talking about her relationship with these ‘beasts’, she tells me, “Cows were similar to peasants: we would live and work together”. The beasts loved her grandfather, waiting eagerly for his company. “All in all, they were good working beasts”, just like people. Antonietta folds the thin stretched dough on itself and starts cutting thin slices: “Today I eat fettuccine”, she smiles, “like I used to as a child on special occasions.”

In this chapter, I discuss the influence that the Orvietan agrarian history had on the current animal husbandry and interspecies relations. Antonietta’s story serves as an entry point to understand the legacies of the *mezzadria* in the Orvietano, as sharecropping was experienced throughout Umbria. I start with this local history to show how it is juxtaposed with global/local pressures prompting peasant farms to close and industrial farms to expand. This squeeze in agriculture is countered by the farmers’ adaptive responses, including the integration of animal husbandry. In describing these events, I show how the Orvietano is a specific place where historical, urban-rural, peasant-industrial, class, and ideological contaminations take place, informing meanings, identities, and practices of today’s Orvietan animal husbandry.

¹² Italian for ‘sharecropping’.

¹³ Countryside around Todi, south of Umbria.

2.1 Agrarian history of the Orvietano

Figure 2: Orvieto's Mount



Source: Wikimedia Commons, 2006 (Accessed: 05 November 2023)

Founded by the Etruscans in the IX century B.C.E., Orvieto was a flourishing medieval city (Bevilacqua, 2013). It came under the Papal State from 1450 until 1860, when Umbria was annexed to the nascent Italian state (Margheriti & Pernazza, 1983). From the Middle Age until the 1970s, the *mezzadria* was the agrarian system in the Orvietano¹⁴. While the peasant diet was almost vegan (ibid.), as in the case of Antonietta, the animals were of great help on the farm, working alongside their humans (Anselmi, 1990). Since farm-animals and peasants work was key to their respective survival, collaborative survival, I argue, was foundational to the lives of the *mezzadri*, and ultimately of the *mezzadria* system.

Umbria's economy remained predominantly agricultural throughout the XX century (Margheriti & Pernazza, 1983), until finally, national law n. 756 (Parlamento, 1964) abolished the *mezzadria* system as of 1974. Nonetheless, the abolishment of the *mezzadria* did not lead to industrialization as hoped. While the Po Valley¹⁵ has been undergoing an impetuous process of industrialization since the XVIII century (Sereni, 1961), Central Italy preserves a mixed landscape embodying peasant-industrial contaminations. Agrarian historian Bevilacqua (2013, p. 364) identifies the Orvietano as “an exemplary survival of the Italian *bel paesaggio*”¹⁶. Thus, while vineyards and olive groves dot the landscape, scattered vegetable gardens and animal barns remind the observer of

¹⁴ Additional explanation in Appendix D.

¹⁵ The Po Valley is a geographical region in Northern Italy characterizes by its floodplain.

¹⁶ The Italian *bel paesaggio* refers to “careful management of the countryside [started in the Middle Age].” (Agnoletti, 2013, p. 5).

the area's sharecropping heritage. However, the lack of both state support and generational renewal in farm work "threatens to favor the spread of intensive agriculture" (ibid., p. 379). Since former sharecroppers rush towards the cities, internal migration prompts the abandonment of the countryside (Agnoletti, 2013). In the Orvietano, the post-war period is characterized by a transition from agricultural to the construction or service sector, as exemplified by Antonietta's story. Additionally, since the 1970s, the Orvietan demographics changed with the arrival of upper-middle class urbanites in the countryside, installing their holiday houses or their farm in abandoned farmhouses (Bevilacqua, 2013), like that of Figure 4. Effectively, most farms I visited are surrounded by holiday houses and Airbnbs.

2.2 Who are the farmers today?

Cross-generational farmers: between entrepreneurial and peasant agriculture

Figure 3: Orvieto Scalo, the 'valley'



Source: OrvietoSi, 2016 (Accessed: 05 November 2023)

Whereas before the 1970s, "farming was not a choice", as Antonietta narrates, cross-generational farmers are those farmers who, following their roots, choose to continue working in agriculture. Among the remnants of the *mezzadria*, a sharecropper mindset persists, ranging from an obsession with private property, the idea that farming is geared at self-consumption and is a form of devotion for one's ancestors, the persistence of traditional products tied to the Orvietan

cultural identity. Moreover, the mindset is juxtaposed with a geographical – vertical – separation where former peasants live in the valley (Figure 3) while the upper-middle class and clergy occupy the Orvieto Mount (Figure 2).

Additionally, the sharecropper mindset has stirred farmers in both entrepreneurial and peasant directions. On one hand, cross-generational farmers often obey to market and subsidy logics. Many engage in ‘entrepreneurial agriculture’, which is “built upon financial and industrial capital ... and ongoing expansion”, “highly market-dependent”, while “[i]t entails a partial industrialization of the labour process” and “[p]roduction is highly specialized” (van der Ploeg, 2018b, p. 2) and dependent on external inputs as chemical fertilizers, pesticides, and GMO seeds, and increasingly shifting to monocultures. As Michela tells me, funds now orient what crop or animal one farms, with farmers spinning on Common Agricultural Policy’s (CAP) unpredictable roulette. This is the case of Federico, whose farm now encompasses 200 hectares. He takes farming choices depending on fluctuations in CAP funds, which make up 70% of total farm revenue, against 30% of harvest revenue. On the other hand, some cross-generational farmers maintain a peasant orientation. For instance, Annalisa and Elena remain firmly independent from CAP funds and embrace an agroecological way of farming which entails the collaboration between poultry and olive groves, pigs and forest. Their decisions about how and what to farm are taken according to seasons, land, animals, rather than the market or the CAP.

Yet, Federico and Giorgio’s farm opens a crack into binary thinking about entrepreneurial/peasant ways of farming. Specifically, they operate through a fully-fledged entrepreneurial logic in crop farming while simultaneously engaging in peasant animal husbandry. The latter is geared both at self-consumption and at the local market, yet profit calculations are marginalized, as explained by Giorgio. First, semi-extensive husbandry entails farming ‘wilder’ breeds which in turn means lower meat yields. Second, despite entailing a substantial profit loss, meat is sold to local rather than urban butcheries to enable locals to eat ‘proper’ meat. Third, animal husbandry entails greater precarity and less human control vis-à-vis its intensive counterpart, shown by the higher mortality rates of calves. Thus, cross-generational ways of farming engender a fluid contamination between entrepreneurial and peasant logics, where the different logics support, and sometimes allow for, one another. This contamination, I argue, is itself a legacy of the *mezzadria* system, bestowing cross-generational farmers with peasant reminiscences.

Urban neo-peasantry

Figure 4: Neo-peasant house in a former sharecropper farmhouse



Source: field work, July 2023

While in 1977 a first wave of urbanites started a hippy farming community called ‘Monte Peglia¹⁷ occupation’ (Polimeni, 1994), a second-wave scatteredly arrived in the Orvietano in the first decade of the 2000s. This latter wave is formed by the ‘neo-peasants’, mostly heterosexual highly educated couples with an upper-middle class background. Thanks to family capital, often coupled with EU Rural Development ‘first settlement funds’ and/or bank loans, they are able to start their own farm. I call them ‘neo-peasants’ since their way of farming is characterized by multifunctionality, family labour, reciprocity, production partly for the market and partly for reproduction, short decentralized market circuits, balance between production and reproduction, embeddedness in ecosystems, and low externalization of inputs (van der Ploeg, 2018b). Moreover, most practice agroecology and find creative ways to “*maximise* the presence and role of living nature in the process of production” (ibid., p. 20). Recurring motivations for rooting their lives in agriculture include the everyday politics of embeddedness in and alignment with the ecosystem and earth others, contributing to ‘a better world’, resentment for climate change inaction and capitalism, and desire to work with animals. Weary of the individualism and alienation of cities, neo-peasants are attracted by the countryside, which, in Orietta’s words, “is full and generous” and “fills you” precisely thanks to its relationality and connections. Thus, the

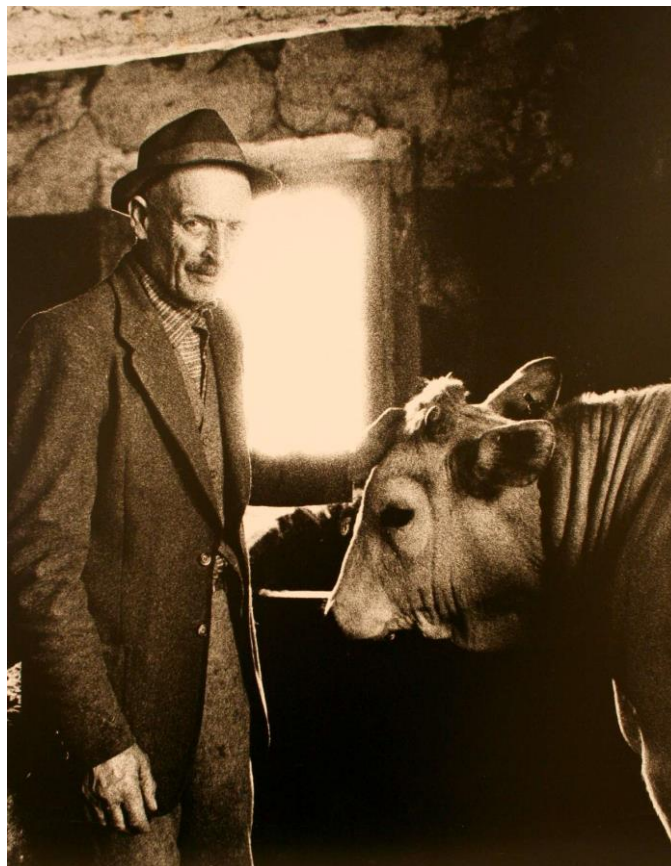
¹⁷ Mountain in the east of Orvieto.

push to engage in meaningful interspecies relationships and reground themselves in the ecosystem brings neo-peasants to enter farm lifeworlds of collaborative survival.

Finally, cross-generational farmers and neo-peasants are quite isolated from one another, participating into two separate worlds. In fact, class and ideological differences create a social rift, which is loosely kept together by distant politeness. Nonetheless, following different routes and motivations, both groups arrive at animal husbandry.

2.3 Orvietan animal husbandry

Figure 5: A *mezzadro* with his cow, a cow with its *mezzadro*.



Source: Guerrini, n.d. (Accessed: 05 November 2023)

While I have identified contaminations between entrepreneurial and peasant ways of farming, it is important to note that peasant agriculture in the Orvietano continues especially via animal husbandry (Bevilacqua, 2013). While the peasant way of farming is neo-peasants' ideological goal, I advance the hypothesis that cross-generational animal husbandry resisted the increasing industrialization of agriculture for two reasons. Firstly, CAP funds are only designed for land, not livestock, thus farmers can independently breed animals following their traditional peasant way and escaping the “changing moods of CAP funding” (Agnoletti, 2013, p. 15). Secondly, according

to Antonietta's story, the *mezzadri* used to have profound relationships with their 'beasts', considering them as co-workers (Figure 5). The tradition of respecting farm-animals is accompanied by a deep knowledge about their habits and needs, which informs the decisions about how to live-work with them. It is, ultimately, these interspecies relations which resist the commodification of farm-animals (see Chapter 2). Thus, as I established that both cross-generational farmers and neo-peasants engage in peasant animal husbandry, in the following chapters I will mostly refer to both groups as *peasants*.

2.4 Current squeeze in agriculture

A study by ISTAT (2022) reveals the national squeeze in agriculture: while small-scale family-run farms close down, the industrialized farms increase their extension and production. From 1982 to 2020, "almost two out of three farms disappeared" while "the average size of farms has more than doubled"¹⁸, from approximately 7 to 14,5 ha (ISTAT, 2022, p. 1-2). While this trend contributes to the "growing gap between large and small farms" (Agnoletti, 2013, p. 15), it is worsened by the lack of generational renewal expressed in farmers' age demographic, where only 13% of farm managers are under the age of 44 (ISTAT, 2022, p. 15). Yet, it is merely a question of size, rather, of industrialization and specialization (*ibid.*). The experience of Umbria reiterates the validity of this national trend. Between 2010 and 2020, 25,6% of farms shut down, moving from 36,244 to 26,956 farms (*ibid.*). Specifically, farms specializing in *one* particular product risk closure. Many peasants I interviewed are concerned about the constant closing down of neighbouring farms, while large-scale farms are gaining ground in the Orvietano (Lucia, Paolo). Moreover, this trend is particularly evident in the entrepreneurial livestock farms, where farmers are struggling the most (Federico). In the 2010s, for instance, there were approximately 15 dairy companies reunited under Orvieto's milk cooperative. However, in 2021, Federico and Giorgio's farm, the last milk bastion in the area, was forced to close because of the incessant declining of prices. Finally, the lack of generational renewal is rampant, with the younger populations escaping to the cities. Tommaso's case is striking: although he has been looking for someone to take over his well-established bee farm for years, he has not yet found anyone interested. Now I turn to how this situation came about, by teasing out the main causes behind the squeeze.

First, according to van der Ploeg (2018a), the squeeze in agriculture is a consequence of the modernization project started in the 1950s. This project stems from a linear historical narrative which brands the peasantry as backwards and industrial farming as modern (*ibid.*). The

¹⁸ My translation.

modernization ideology foresaw that “the number of farms should be substantially reduced and the redundant agricultural labour force would happily move work in to urban industries.” (ibid., p. 237). With the explicit goal of infiltrating capital in agriculture, industrialization is discursively and financially assisted by supranational organizations. Through deregulation and globalization of agricultural markets and the heavy hand of supranational organizations, specifically the EU, the European peasantry’s resistance has been repeatedly put to the test (ibid.). Moreover, “agricultural modernization coincided with new forms of governance” such as CAP (ibid., p. 236), which has indeed sorted the desired modern effects, marking today’s ‘fewer yet larger farms’ trend (ibid.).

Second, the ‘infamous bureaucracy’ also participates in kicking peasant farms out of agriculture. Among what peasants refer to as ‘bureaucracy’, one needs to discern the legal and sanitary systems at play. The legal equalisation between small- and large-scale, peasant and industrial farms, combined with the fact that animal husbandry is legal but not regulated (Classyfarm, 2023), translates into the institutional failure to recognize the difference between the industrial livestock sector and animal husbandry. As a result, distribution of funds and sanitary controls and compliances are equivalent for semi-extensive farms and CAFOs. Sanitary controls set the rules for farming and become one of the main institutional ways to control and squeeze peasant farms out. These controls are operated mainly by the ASL¹⁹ and respond to a national and supranational ‘bio-security’ framework, which is modelled after the industrial livestock sector (ibid.). Thus, the ‘yes’ and ‘no’ boxes contained in the ASL sheets systematically exclude the nuances of animal husbandry (Pietro). Furthermore, the ASL exerts power over farms in a double way. First, through the high costs of the frequent controls, weighting up to 5% of a farm’s total revenue (Orietta) and taking up great amounts of time, e.g., 10 to 15 workdays a year (Pietro). Second, the ASL can easily find discrepancies between the myriad sanitary regulations and the practices of (especially peasant) farms, thus often charges farms with costly fines²⁰. As a result of these legal and sanitary constraints, Annalisa and Elena had to stop selling eggs. Paradoxically, their farm should have supposedly complied with the same legal and sanitary requirements expected from Amadori²¹. Additionally, the ever-changing character of regulations further complicates legal and sanitary barriers, determining farmers’ forced dependence on unions, accountants, and veterinaries to negotiate legal voids with institutions in order to preserve their farms. Valeria speaks for many when she affirms: “Bureaucracy is the hardest part of the job”. The

¹⁹ ‘Azienda Sanitaria Locale’, i.e., ‘Local Sanitary Agency’, the ASLs are public bodies in charge of sanitary controls in a specific locality.

²⁰ Pietro was fined 2000 euros in the month of August because the chickens were grazing freely in the olive groves.

²¹ Amadori is one of Italy’s largest poultry operations, situated mainly in the Po Valley. Website: <https://www.amadori.it/>

modernization narrative, then, is evidently embedded in the described regulations. As I illustrated, whereas the spread of CAFOs is legally and financially facilitated, animal husbandry is not even legally acknowledged, let alone supported.

Third, the squeeze deepens due to the rising costs related to farming, including the dramatic increases in loan rates and gas prices in Italy (Valeria, Raffaella, Marisa). In fact, “while farm gate prices stagnate, or are even reduced, thus exerting a strong downward pressure on agricultural incomes” (van der Ploeg, 2018b, p. 92), the foundations of several farms I visited are shaking. A survey by ISMEA (2022) found that in 2022 the morale was at an all-time low among Italian farmers. Mistrust in future prospects of agriculture is particularly accentuated in the livestock and dairy sectors (ibid.; Federico). For ISMEA (2022), the main causes of this deterioration reside in the “rising costs, but also adverse weather conditions, problems in finding personnel”²² (no page).

Fourth, the effects of climate change add to the push towards farm closures initially propelled by modernization narratives and capitalism. What ISMEA (2022) reluctantly calls ‘adverse weather conditions’ is actually the exacerbation of climate change effects. In the Orvietano, many peasants I met were baffled by this problem. Tommaso, for example, started a successful organic honey farm in 1982, however, since the early 2000s, the situation has changed dramatically. “The problem,” he explains, “is not so much the heat, but the irregularity of climate change, and especially the unusual spring frosts.” In fact, because the spring frosts kill the spring flowers, bees are left without their main nourishment. Similarly, Fabrizio relates that while agriculture is precarious and unpredictable by nature, climate change is now intensifying these dynamics.

2.5 Response to squeeze: repeasantization and animal husbandry

Neo-peasants are partially cushioned from the squeeze in the Orvietan countryside. The reason resides in their practice of peasant agriculture, i.e., relative independence from (input and output) market circuits, practice of “farming economically”, diversification of income and multifunctionality, pluriactivity, centrality of labour, “regrounding agriculture upon nature”, local cooperation, “craftmanship”, etc. (van der Ploeg, 2018b, p. 93-96). A study by ISMEA (2022) finds a repeasantization trend at the national level. While trying to rely less on external inputs (ibid.), diversification is becoming key for farms’ survival (ISTAT, 2022), by making them less vulnerable to climate change and external pressures (Altieri and Nicholls, 2020). In the Orvietano, I observed two main trends that engender a response to the squeeze. Firstly, both

²² My translation.

neo-peasants and cross-generational farmers increasingly rely on farmer networks and markets for direct sale and circuits of sharing. Secondly, peasants are moving gradually towards diversification and multifunctionality, for example converting into agritourisms and/or educational farms. Fabrizio believes that farmers are slowly rebelling against the precepts of the Green Revolution, which promised that specialization and modernization would be the key to the future. Rather, he argues, farmers are understanding that diversity of breeds, crops, genetic makeup, activities is key to stay afloat in the midst of a politico-economic and climate squeeze. Particularly, farmers are ‘un-specializing’ by integrating crop farming with animal husbandry. This trend is confirmed by ISTAT (2022, p. 11), according to which in Central Italy the number of farms with animals²³ grew by 10,6% between 2010 and 2020. Thus, the Orvietano is witnessing a double movement: on one hand, animal farms are closing due to the squeeze (CIA, 2023), on the other, there is more and more integration of animals in farms. Federico, for instance, closed his milk production, dependent on global price markets and supermarket arrangements, ultimately embedded in entrepreneurial ways of farming, to start a semi-extensive cow husbandry. Thus, polyvalent repeasantization, particularly through animal husbandry integration, is becoming a key response to the current squeeze in agriculture. Collaborative interspecies survival, I argue, is becoming a key response to the squeeze in agriculture. The reason resides mainly in the type of interspecies relations it entails. In the next chapter I explore further interspecies work relations.

²³ I.e., engaging in animal husbandry *and* other farming or non-farming activities.

Chapter 3 Farm interspecies relations

How do the farm interspecies relations in the Orvietano foster interspecies collaboration and contamination?

Figure 6: View from Orietta and Berit's farm



Source: Field work, July 2023

Etna arrived at Orietta and Berit's farm when Aurora was a 10-year-old kid eager to ride her. Found in a riding school, she was in poor health when she arrived, having been malnourished because she was too old to be rideable/profitable. After an initial phase of riding Etna, the horse angrily hurled Aurora on the floor. Feeling ashamed, Aurora changed her way of relating to animals. Now she tries to feel-notice the animals' energies, seeking their "consent" to approach or "contrast" to withdraw. Etna finally "granted [Aurora] moments of forgiveness and trust", when Aurora would place her head in the hollow between Etna's throat and jaw, waiting for the horse to fall asleep and rest her head on the human's, entering "a magical symbiosis".

In Chapter 2 I argued that the combination of animal husbandry with other farming and/or non-farming activities is particularly fit to resist the politico-economic and climate pressures on agriculture specifically due to its collaborative interspecies relations. In this chapter, I analyse the role of work in forging interdependent collaborative relations, identifying the specific dimensions that make animal husbandry's interspecies relations a process of collaboration. I show how the interspecies work relations of Orvietan animal husbandry are structurally different from those of CAFOs, marking Orvietan peasant responses to the agricultural squeeze and their ability to resist alienation+commodification.

Positioning myself in the broader Political Ecology (PE) literature, in this chapter I place “emphasis on the ways socionatures elide capitalist control and follow autonomous paths” (Moore and Robbins, 2015, p. 154). My interest here is in the different dimensions of interspecies work relations in the Orvietano. We are used to agricultural practices detaching from and subjugating ‘nature’, so that humans are able to alienate and commodify ‘it’. It is through alienation that commodification takes place. In fact, alienation, or “the ability to stand alone, as if entanglements of living did not matter” (Tsing, 2015, p. 5), turns things into exchangeable, standard commodities able to circulate in capitalist markets (ibid.). Alienation+commodification is the paradigm of CAFOs, which “[tear animals] from their lifeworlds” (ibid., p. 121), cut all ecological relations off them, throw them in enclosed factories, and use them as machines. Working animals are thus turned into lively commodities, i.e., – alienated – ‘mobile assets’ (ibid.) whose value is determined by their liveliness (Barua, 2017). Conversely, I argue, animal husbandry’s interspecies relations are resistant to this dual process of human/nature disconnect and of alienation+commodification of animals precisely by virtue of the interdependency and contaminations they entail. Accordingly, in this chapter I show how farm interspecies relations make animal husbandry a process of collaborative survival.

3.1 Orvietan animal husbandry’s farm interspecies relations

Before going into more detail on interspecies relations, let’s first consider: who are the farm-animals embedded in these working relations? The species of these nonhuman inhabitants of the farms I visited vary greatly. Most farms were home to various species at once. Bees, cows, pigs, sheep, dogs, goats, chickens, donkeys, horses, pigeons, cats, rabbits, geese. They and other ‘wild’ living entities (see Chapter 4) are the nonhuman protagonists of this RP.

Work as farm interspecies relation/collaboration

I use the category of animal work to move “beyond the language of rights and welfare that has largely dominated animal ethics” (Wadiwel, 2020, p. 184), to focus instead on animals as actants in production and reproduction processes geared at collaborative survival. While van der Ploeg (2018b) highlights the importance of recentring human labour in the process of repeasantization, I argue that *animal labour* is just as important. In fact, it is the dual work of humans *and* nonhumans that makes animal husbandry’s autonomy and resilience to the agricultural squeeze. “Work is the hyphen (-) which unites the human-animal partnership” (Porcher., 2017, p. vii). Through work, peasants and animals enter each other’s worlds (ibid.). I conceptualize ‘work’ in

animal husbandry as involving several concomitant relational dimensions, namely the co-becoming, ecological, ethical, and economic. I argue that these relational dimensions make farm Orvietan interspecies relations a case of collaborative survival, making them in turn resistant to alienation+commodification. In these survival strategies, nonhumans and humans collaborate in a “life-work relation” (Ludovico) where life and work are inextricably entangled. Sheep live-work by grazing the hills, sheepdogs by protecting their sheep companions from wolves’ attacks, chickens by eating parasites off goats’ backs (Figure 7), pigs by eating whey residues. I now turn to the relational dimensions of these interspecies work relations.

Figure 7: Chickens getting ready to feed on goats' parasites



Source: Field work, August 2023

Co-becoming: everyday contaminations

Animal husbandry’s life-work relations result in interspecies co-becoming, which entails the co-construction of living beings and lifeworlds. In other words, animal husbandry is embedded in relationality, whereby interspecies worlds merge and contaminate. Tsing (2015, p. 28) argues that “[c]ollaboration means working across difference, which leads to contamination.” Thus, our interspecies collaborative history does not only make our lives possible, but it also shapes who we

are/become. In peasant farms, nonhumans and humans shape one another through work, that is, a process of collaboration – contamination. Thus, work is not exclusively about production, but also about co-becoming and co-creating lifeworlds (Porcher, 2022a). Interspecies co-adaptation and contaminations prompt peasants to question the distinctive individualism of Western society. The dimension of co-becoming, then, is *foundational* of animal husbandry, for this latter is based on *collective* life-work. Embodied learnings and relationships show how work in animal husbandry spurs this relationality.

Ecological dimension: embodied relationships

Embodied learnings and relationships reveal the interspecies collaboration-contamination dynamic. I propose that these embodied relationships return peasants their ‘ecological bodies’, or ‘ecological ontology’ (Plumwood, 2012). In fact, Western society is concerned with inscribing the body as a place of difference, where body and mind stand in hierarchical and binary opposition (Oyěwùmí, 1997). Establishing that “the Other is a body”, the body – assigned to women, nature, people of colour, the poor, etc. – is hierarchically subjected to the mind, which in turn is elevated to being *the* place of reason, prerogative of white, heterosexual men (ibid., p. 3). The human/nature divide, then, intersects the Cartesian mind/body binary, resulting in the opposition between embodied animals and human “walking minds” (ibid., p. 6). In field work, I observed a reversal of this binary. Through interspecies work relations, peasants first remember to *be a body*, and secondly, they re-embed their bodies in the ecosystem.

Pietro remarks that everyday interactions with farm-animals changed his own perception of his body. ‘Learning to be affected’ (Latour, 2004, in Roelvink, 2015), he notices the gradual changes in his *body* since he moved to the countryside and started farming twenty years ago. Re-embedding his body in the ecosystem and interlacing relationships with earth others was key to sharpening his sight and smell. He is now able to see in the dark; in the forest, he has learnt to recognize the scent of nearby wild boars. These embodies connections to earth others via scent, sight, touch and smell mark peasant relationality. Firstly, peasants learn to weave profound relationships to earth others through mediums other than verbal language. Salvatore, for example, remarks that milking goats by hand strengthens his relationship with them. The physical contact embodies knowing and caring for each other. Additionally, through work, animals’ and peasants’ rhythms are conflated, whereby peasants change their routine adapting to that of the farm-animals, and vice-versa (Pietro, Alberto). Farm-animals’ and peasants’ emotions also get contaminated. For instance, Salvatore plays music in the speakers in the goats’ barn, with the intention is to relax the human workers, which in turn has the spillover effect of relaxing the goat

workers. Thus, everyday embodied interactions inform and conflate farm-animals and peasants lifeworlds, contaminating one another's rhythms, feelings, senses. These embodied learnings and relationships restore human ecological bodies, that is, remind peasants that their bodies are embedded in an ecological web of relations.

Ethical dimension: reciprocity and respect

The ethical dimension of farm interspecies relations is connected to meanings of 'respect' and 'good life'. Particularly, the affectivity between farm-animals and peasants prompts spirals of "give-receive-return" relations (Caillé, 2000, in Porcher, 2017). Each peasant I met was moved by farm-animals' generosity, to the point they were all concerned with the issue of reciprocity. To respect an animal, for many peasants, is to 'give back' a 'good life'. For Pietro, his "emotionally participated" relationship with farm-animals ineludibly entails "respect for their nature and needs", which translates into giving animals "the best possible life". Yet, how do peasants assess animals' 'nature and needs'? How are the meanings of 'good life' established? Referring to her relationship with her pigs, Orietta believes respect is "reciprocal" insofar they both care for each other and work together across their *difference*. By noticing their preferences and routines, Orietta understands their 'nature and needs' and adapts her work "to make them feel good" in the way they seemingly indicate.

The story of Aurora's relationship with Etna shows the relational nature of respect. Aurora's learning to respect Etna was a teaching Etna herself offered, revealing how meanings of respect and good life are not predetermined or human-led, rather, they emerge relationally. Furthermore, respect for farm-animals can also be seen in breeding. Particularly, the choice of wilder breeds, as Alpine brown cows, rather than extremely domesticated breeds, as Friesian cows, is associated with respect insofar wilder animals can take semi-autonomous decisions by virtue of being resistant to outdoors conditions and having stomachs that allow them to graze. Despite Alpine brown cows produce less meat or dairy than their Friesian counterparts, peasants opt for the former due to their respect for the breed. For this reason, the great majority of farm-animals I encountered were 'wilder', ancient local breeds.

Economic dimension: peasant rationality

Van der Ploeg (2014, p. 15) argues that the peasant farm "is not grounded on a capital-labour relation" thus is not a capitalist unit of production. If we understand 'capital' in the Marxist sense, i.e., as a relation, then "there is no capital" in peasant agriculture (van der Ploeg, 2018b, p. 9). Many academics in critical agrarian studies, specifically the 'agrarian populists' or Chayanovians, have argued that the 'peasant economy' abides by a different economic rationality than that of

capitalism. The peasant farm is an organic, self-regulating unit tied to a ‘moral economy’ where subsistence farming aims at families’ and communities’ needs (van der Ploeg, 2014). By contrast, Marxist agrarian studies proponents criticise this approach by pointing at the essentialization of categories of analysis such as ‘peasant economy’ and the undifferentiated ‘peasant farm’, which ultimately “downplays or denies the presence and effect of class differences and struggles” (Brass, 2015, p. 198).

Building on this debate, I argue that the Orvietan animal husbandry indeed engenders a *peasant* economic rationality, whereby the economy is not geared at accumulation, but rather at collaborative survival. For instance, whenever it rains, Pietro rejoices as he knows the rainwater, by travelling through the healthy soil he, his farm-animals and microorganisms have collaboratively worked on, will turn into drinking water for others. The economic rationality of animal husbandry, indeed, is *other than profit*. It first and foremost rests on the needs of farm-animals and peasants, but it goes beyond, ultimately contributing to the health of the ecosystem. If the economy – from Ancient Greek, ‘*household management*’ – of animal husbandry is geared at collaborative survival, then it necessarily transcends the farm, encompassing the peasant ‘household’, that is, the broader ecosystem (see Chapter 4)²⁴. Thus, the peasant economic dimension of interspecies work is substantially different from that of CAFOs.

One of the reasons why interspecies collaborative work makes farm-animals’ and peasants’ lives possible is that peasant agriculture is a co-production process. Co-production, as conceptualized by van der Ploeg (2018b), is the process of interaction between humans, land, and I add, farm-animals. In fact, peasant agriculture relies on the ‘*maximisation*’ of “the presence and role of living nature in the process of production” (ibid., p. 20). Nonhumans and humans co-participate in the making of peasant agriculture through work. Therefore, peasant agriculture decentralizes humans from being the *only* actor involved in agriculture by recentring farm-animals, land, and ultimately ecological relations.

²⁴ It is important to note that this *diverse economy* does not deny that animal husbandry is embedded in a capitalist economy or, for instance, the role that capitalist accumulation held in *making* neo-peasants. Conversely, I am interested in showing that the Orvietan animal husbandry’s economic logic recentralises animals and the ecosystem.

Figure 8: Other-than-commodity goat cheeses



Source: Field work, July 2023

As a consequence of co-production and interspecies relationality, I suggest that farm-animals are other-than-commodities, i.e., “do not have ... value in use or commodity exchange” but have “value through [their] social relationships” (Tsing, 2015, p. 122). Moreover, since living farm-animals are not commodified, I argue that their animal products mostly remain other-than-commodities²⁵. In fact, Orvietan peasant animal products are often *directly* sold in farmers markets or through *Gruppi di Acquisto Solidale*²⁶, implying that buyers are choosing *that* specific animal product because of the ethical, ecological, affective relations it had in life. When friends visit Orietta’s and Berit’s farm, they always offer them some cheese (Figure 8). The cheese symbolizes their work, the goats’ work, their interspecies lifeworld, and the hope for a more sustainable and ethical world. Each cheese, I discover, is unique, depending on a variety of factors, being a product of unpredictable encounter, carrying its own story and *raison d’être*. Peasant animal products, thus, are not alienated nor commodified even when they become a product.

²⁵ There are exceptions, especially when animal products are sold to restaurants where they usually become commodified products with no history nor relationships.

²⁶ ‘Solidarity Purchasing Groups’, a grassroots movement of peasant farmers delivering produce to organized urban buyer groups.

3.2 CAFOs' interspecies work relations

In this section, I explore the life-work of farm-animals in CAFOs. I argue that life-work relational structures in CAFOs are utterly different from those of peasant farms, especially due to CAFOs immersion in capitalist relations. The presence or absence of capital discriminates between the two ways of farming (van der Ploeg, 2018b), with capital playing a key role in CAFOs' interspecies work relations.

CAFOs standardizes animal life-work insofar it ontologises animals as machines. Animal husbandry's playfulness, relationality, and care are replaced with suffering, high stress levels, and violence. The ideology of mastery justifies the complete subjugation of animal lives to production goals, allowing only the productivist rationality of work to emerge (Porcher, 2017). Animal labour, then, is utterly dictated by capital's rhythms of accumulation (Weis, 2010). In fact, it is because of the "industrial organization of work" that CAFOs involve "systemic violence" against farm-animals (Porcher, 2022a, p. 49). Every aspect of the animal's life is geared at profit accumulation. Breeds show this pattern, insofar as historically selected breeds, such as Friesian dairy cows, *embody* profit and productivity enhancements, with the 'side-effect' of generating dependency on humans and lack of autonomous capacities such as grazing. CAFOs' farm-animals are lively commodities, i.e., "commodities whose value derives from their status as living beings" (Barua, 2017, p. 274), where "life itself has become a locus of accumulation" (Haraway, 2008, in Barua, 2017, p. 274). Additionally, animals are "alienated from the things they make", i.e., their bodies or kin, "allowing for those things to be sold without reference to their makers" (Tsing, 2015, p. 122). In CAFOs animal labour is self-evidently "unfree labour". Brass' (2011) 'deproletarianization theory' argues that not only unfree labour relations are compatible with capitalism, but also that they might become its favourite kind. If labour-power is "a specific kind of property, one that in a capitalist system is owned and personally commodified by a worker, who can and does sell it to an employer", then unfree labour is defined by the incapacity of the worker to own and commodify their labour-power (Brass, 2011, cited in Caracciolo, 2023b, p. 7). Evidently, CAFOs employ unfree animal labour. Even more, "the peculiar nature of farm animal labour counters the Weberian prediction that, due to the costs of maintaining the workers, unfree labour is too costly" (Brass, 2011, in Caracciolo, 2023b, p. 7). Since "the reproduction costs of animals are nothing else but the production costs", unfree animal labour becomes the preferred labour relation between capital and farm-animals (Caracciolo, 2023b, p. 7).

Summary:

Looking at Orvietan animal husbandry, interspecies work relations are central elements to avoid dependence on external inputs, CAP funds, global price fluctuations, etc. Regrounding agriculture in ‘nature’ and interspecies work, in other words, means regrounding agriculture in co-production and, ultimately, in collaborative survival. Recentring animals as semi-autonomous life-work partners allows peasants to *farm economically*, that is, to resist dependence on external inputs and thus reduce farming costs (van der Ploeg, 2018b; see Chapter 4). In order to make animals semi-autonomously live-work, peasants need to give up *control* and welcome *collaboration*. The relational dimensions of interspecies collaboration build a barrier to commodification, in that the farm interspecies interdependency and contaminations impede alienation of farm-animals and, often, animal products. By re-embedding humans in ecology and mending the division between ecology and ethics (Plumwood, 2012), animal husbandry is able to supersede the human/nature dichotomy, an important precondition for collaborative survival. Thus, through the concomitant dimensions of interspecies work relations, farm interspecies relations become symbiotic relations geared at collaborative survival.

In this chapter, I identified four relational dimensions of farm interspecies work relations. I argued that collaborative survival emerges from these everyday interspecies work relations on farm. Moreover, I showed how the peculiar structure of Orvietan peasant work relations differs from CAFOs’. This structural difference, mostly rooted on the presence or absence of capital, explains respectively the tendency or resilience to alienation+commodification. In Orvietan animal husbandry, interspecies work relations are geared at collaborative survival, thus are resilient to alienation+commodification processes, making peasant farms resilient to the agricultural squeeze. I now turn to how wildlife-farm interactions shape animal husbandry and collaborative survival.

Chapter 4 Wildlife-farm relations

What role do wildlife entanglements play in shaping the peasant ways of farming and interspecies collaborative survival in the Orvietano?

Figure 9: Hare repopulation project



Source: Confortini, 2019 (Accessed: 06 November 2023)

Costantino, recently retired from the Forestry Agency for the Umbria Region, worked primarily in ‘repopulation projects’. For decades, he explains, the Umbria Region has been funding the repopulation of wild hares and pheasants for hunting purposes. Costantino’s team would annually breed thousands of pheasants and hares in a large aviary on Monte Peglia, releasing them shortly before the start of the hunting season. These species were once common inhabitants of the Orvietano, until hunting deregulation eventually prompted their near extinction in the 1980s. The Umbria Region, at that point, decided to intervene, not through preventive measures, rather, by reiteratively putting a loose plaster on the open wound that hunting has become. In fact, the regional intervention was not aimed at restoring autochthonous wildlife, rather, at restoring the conditions for hunting. In Costantino’s words, “the goal of nature [biodiversity] never took off.” Abundant predators continually threatened hares and pheasants, prompting their constant reproduction and reintroduction, and establishing a yearly cycle of wildlife farming. Costantino considers this task as delicate: requiring care for wild animals while avoiding human contact to maintain their ‘wildness’. Costantino also reveals an even more controversial repopulation project. In the 1960s, roe deer had disappeared from the Orvietan forests. While the Regione Umbria (2004) states that roe deer has

spontaneously reappeared because of the human abandonment of the countryside, Costantino presents a different story. The Regional Forestry Agency was entrusted with the task of repopulating roe deer for both hunting and biodiversity conservation purposes. Over four years, Costantino's team would release six specimens in the Orvietan forest. Initially perceived as a failure, the project surprised Costantino a decade later. Roe deer not only survived, but also proliferated with the unintended consequences of becoming overpopulous and causing countless problems for farmers.

Wildlife and the ecosystem play an important role in the Orvietan animal husbandry, as they contribute to shape farm interspecies relations and ultimately collaborative survival. I show how wildlife-farm entanglements produce peasant adaptive responses and contribute to shaping farm interspecies relations in three ways. First, through 'external disturbance'; second, nesting 'under the skin' of semi-wild animals; finally, through the 'diffuse embeddedness' of peasant farms in the ecosystem. I compare, then, CAFOs' and Orvietan peasant farms' responses to the ASF outbreak, underscoring the resilience of peasant interspecies relations to proliferation and their embeddedness in unpredictability. Thus, I show how a focus on wildlife is necessary to fully grasp the complexity of peasant farms and to shed light on their contaminated diversity.

4.1 Questioning the 'wild'

To begin with, what does 'wildlife' mean? In an attempt to understand "how and when do such essentialist categories become hegemonic and to whose benefit" (Moore and Robbins, 2015, p. 159), I briefly explore the discourse and material implications of 'wildness'. I argue that wildness is not a thing or a state, but a *relation* (Wapner, 2014), specifically a relation between 'nature' and 'human' in the context of the human/nature divide. 'Nature' here can be a place (wilderness), an animal (wildlife), or a human population (uncivilized, wild people), which Western humans try to oppress, exploit, or control (Plumwood, 2012). Wildness defines a relationship of otherness, whereby 'nature' is defined as other to 'human'. It is a discourse employed by humans to disentangle themselves discursively and materially from nature. Ever since the capitalist economy took off, the aim has been to mark a distance whereby the 'wild' could be considered an exploitable resource (Oelschlaeger, 1991). Moreover, domestication and civilization are both the oppositional, thus definitory, terms of wildness. On one hand, domestication works as a mechanism of un-wilding, prompting 'stuff' to move from nature to culture. Civilization, on the other, is related to humans only and grows as oppositional term of 'wild' (Plumwood, 2012). In 'civilized' societies, 'wild' is "often associated with unruliness, disorder, and violence" (Snyder, 1990, p. 5), thus morally degraded and uncivilized. The moral character of this relationship

produces the legitimacy for humans to control, exploit, and conquer wildlife and nature in general. Furthermore, the wildness relationship is informed by the narrative of progress, insofar the 'wild' is premodern whereas the 'civilized' engenders progress. While wildness is primarily a discourse, it unfolds into a variety of material consequences. One of them is the attempt at physically separating wildlife from lands inhabited by humans, for example by enclosing them in national parks. Moreover, since the end of the nineteenth century 'conservation' became the paradigm to think about and relate to wildness (Oelschlaeger, 1991). Simultaneously, the turn towards the discourse and practice of 'ecosystem management' reveals (unsuccessful) human attempts at performing *control over* and ultimately 'un-wilding' *everybody*, as shown by the Umbria Region repopulation projects.

4.2 Who are wildlife in the Orvietano?

Costantino's story shows that in the Orvietano 'wildlife' is a contested concept, whereby human control over the reproduction of wildlife fades the boundaries between wildlife and domestication. Having established that the wildness relation dynamically forges the category of wildlife, I maintain that wildlife is not an inherent category, rather, its meanings shift with history and context. Thus, in the context of animal husbandry in the Orvietano, who is wildlife? How does it relate to and inform peasant farms? If wild is who resists control by humans, then it is necessary to extend wildlife's boundaries beyond 'wild animals' to encompass all wild living beings. By stretching the definition, I show how also microorganisms are important 'wild' actants on farming practices. Thus, wildlife is quite literally all *life* that is *wild*.

External disturbance: informing ways of farming and interspecies relations

During field work, the phenomenon of wildlife shaping on-farm interspecies relations emerged as a regular pattern. While peasants unveil the ways in which wildlife interacted with the farm lifeworld, the responses to this interaction show the ways in which wildlife shapes animal husbandry. All peasants need to somehow respond to wildlife disturbance, which is not necessarily bad. By employing sheepdogs, electric fences, and/or shifting interspecies relations, peasants modify their way of farming in response to the increasing disturbance. Firstly, I introduce the case in which peasants respond by enclosing animals, moving from a semi-extensive to a (semi-)intensive farming setting. Then, I analyse the cases where peasants either introduce new species, namely sheepdogs, or combine multiple species to contrast the wildlife disturbance. Finally, I argue that wildlife disturbance is sometimes *necessary* for peasant agriculture.

Figure 10: Fox stealing a chicken



Source: Battisti, 2016 (Accessed: 03 October 2023)

Figure 10 shows the outcome of the encounter foxes and chicken, which sometimes propels the enclosure of the latter. Encounters between wolves and sheep produce similar outcomes. Since the 1990s, wolves have been repopulating the Orvietano hills and mountains (Paolo, Filomena²⁷). While the return of the wolf is celebrated for enhancing biodiversity and balancing off the overpopulous wild boar and roe deer, they inflict great losses on sheep pastoralism, and less frequently on goat and cow husbandry. To protect the sheep, the most common solutions are the introduction of sheepdogs or enclosures. A few years back, Giorgio's herd was attacked by wolves. They killed several sheep and traumatized most of the herd: many aborted, others died of stress starvation, and still others lost their milk production. Since he cannot have sheepdogs, as his farm is adjacent to a hiking trail and they would pose a threat to passers-by, Giorgio resorts to enclosing his sheep. While his grandfather raised the sheep in a semi-extensive pasture arrangement, Giorgio is obliged to resort to intensive farming uniquely because of the threats posed by wolves. Thus, because of wildlife disturbance, interspecies life-work relations have changed. Due to the enclosure, the sheep's decision-making semi-autonomy gradually slips away, while their life increasingly depends on Giorgio's care. Their work is no longer centred on grazing, but on staying alive. Most importantly, this material change impinges on the way Giorgio considers and relates to his sheep, who go from being considered as semi-independent co-worker, to beings whose lives depend on him. This, I fear, results in a gradual commodification of the sheep, whose life is now completely geared to human interests.

²⁷ Filomena conducted research for the Università di Perugia in 1999/2000, revealing the renewed presence of wolves in the Orvietano area. I interviewed her over the phone.

Figure 11: The rabbit *caselle*



Source: Dreamstime, n.d. (Accessed: 06 November 2023)

Rooted in the more distant past, the case of rabbits further elucidates this point, allowing us to better grasp the current effects of responding to wildlife disturbance with enclosure. In the Orvietano, all the cross-generational farmers I met raise rabbits in *caselle*, i.e., small individual cages (Figure 11), despite advocating for semi-extensive farming for other farm-animals. In the case of rabbits, similarly to the sheep, the shift to intensive farming was brought about many decades ago by the realisation that “rabbits are everyone’s prey” (Giorgio) and semi-extensive farming was nearly impossible. If the movement from semi-extensive to intensive farming stems from the lethal threat of wildlife, the materiality of intensive farming has in turn affected rabbit-peasant relations. When I visited Gervasio’s farm, we found a dead rabbit in a cage. Gervasio was not at all surprised. It was probably killed, he explained, by another rabbit who had gnawed and broken through the grid separating the *caselle*. In this intensive interspecies arrangement, rabbits’ lives are reduced to staying alive to produce their bodies and reproduce their kin. Thus, I argue that, over the decades, the material necessity of enclosing rabbits translated into the idea, and even feeling, that rabbits are lively commodities, producing and reproducing themselves uniquely to feed humans.

Figure 12: Olive-chicken collaboration



Source: Field work, August 2023.

While I showed how responses to wildlife disturbance involving enclosures risk provoking a process of commodification of the enclosed farm-animals, I now illustrate how the introduction of other species or the shift in interspecies arrangements can help maintaining the semi-extensive husbandry system of interspecies life-work collaboration.

In 2013, Ludovico's sheep experienced a wolf attack with dire consequences. After that, Ludovico received the **sheepdogs** that the Terni Province²⁸ provided free of charge to shepherds to contrast the wolves. Since then, his farm no longer experienced wolf attacks. Although the possibility of having sheepdogs is contextual and does not always apply, as in the case of Giorgio, the sheepdog-sheep collaboration is explicative of how peasants, whenever possible, choose to introduce new species in their farm in order to foster new interspecies collaborations to tackle wildlife disturbance. The reaction to wildlife disturbance, thus, can result in new and modified on-farm interspecies relations.

The olive-chicken and hazelnut-chicken collaborations represent yet other relevant example where virtuous interspecies relations are brought into play as a response to wildlife disturbance.

²⁸ Orvieto was under the Terni province administration until 2014, when Provinces were abolished.

In fact, the *Bactrocera oleae* (olive bug) and *Gonocerus acutelongatus* (hazelnut bug) prompted olive-chicken and hazelnut-chicken farming collaborations respectively. In the first case, the olive bug – *mosca olearia* – inserts its larva inside the olive, which slowly begins to gnaw on its pulp. Pietro explains that olive trees can feel when their olives are being eaten by bugs. Since their goal is to produce attractive fruits for animals to eat in order to propagate their seeds, they stop investing energy in the spoilt olives. By sending them ethylene, the trees cut their umbilical cord with the bug-eaten olives and cause them to fall on the ground. If this situation is left to its own devices, the fallen olive feeds the larva until it becomes a new fly that, if not contrasted by wild birds, deposits another larva in fresh olives, progressively exacerbating the situation. Since wild birds are gradually disappearing from the Orvietano (Franco, Fabrizio), Pietro has placed chickens in the olive groves to agroecologically prevent this vicious circle. Chickens feed on a variety of parasites, including the olive bug and its larva. This combination proves doubly successful; firstly, olive flies are extirpated, secondly, chickens get to roam freely in an environment full of protein food. If chicken were not helping Pietro extirpate the bug, he would probably need to recur to pesticides. Thus, chicken-olive collaboration, initiated by the presence of wild olive bugs, is an interspecies agroecological substitute for pesticides. The same applies to the collaboration between chickens and hazelnut trees in response to the hazelnut bug.

Figure 13: Spontaneous *Geotrichum* forming in Salvatore's cheese laboratory



Source: Field work, August 2023

Finally, whereas the above examples depict wildlife disturbance as a threat to farming, wildlife disturbance can also positively interfere with peasant agriculture. In this case, wildlife directly collaborates with peasants. The case of mould – fungal bodies – is explicative. Mould is essential for cheese-making, working in collaboration with humans in dairy laboratories. As Salvatore elaborates, bacterial and fungal processes ‘colonize’ cheeses under the guidance of humans. Hence, Salvatore prefers to collaborate with spontaneously growing moulds rather than applying industrial mould products to his cheese. As Ilaria puts it, in his farm cheese is made “by feel”, that is, by feeling and noticing microbiological processes and acting accordingly, redirecting them if needed.

In conclusion, the external incursion of wildlife can produce either the degradation of farm interspecies relations or new entanglements in the interspecies work relations. Whenever enclosure is the only possible response to wildlife disturbance, farm-animals’ are progressively commodified, while their working conditions deteriorate. Conversely, when possible, peasants create new interspecies entanglements to mediate, and ultimately extirpate, the wildlife threat. Finally, wildlife incursion is not necessarily a threat, as in the case of moulds, where wildlife-peasant collaboration is needed to produce cheese.

Under the skin: the ‘wild’ inside farm-animals

I use ‘domestication’ “as control over reproduction” (Scott, 2011, p. xii). In *Against the Grain*, Scott (2017) questions: who domesticated who? He argues that domestication shaped fire, plants and animals as much as humans (ibid.). By stretching his conceptualization of domestication to include more prominently interspecies contaminations and co-becoming, I understand domestication as an embodied transformative contamination. As mentioned, in the human/nature binary domestication works as a mechanism of un-wilding. In fact, Costantino’s story shows how ‘wild’ and ‘domesticated’ are considered two separate and oppositional attributes. This binary stipulates farm-animals belong to the cultured human world while wildlife belongs to the natural world.

Figure 14: Goats grazing the forest.



Source: Field work, Prodo, July 2023.

By contrast, I claim that domestication and wildness are not oppositional terms. I want to specifically make the point that wildness and domestication not only co-exist in the same body, but that their co-existence is *necessary* for animal husbandry. Peasant farm-animals, I suggest, embody wildness and domestication simultaneously. Especially ancient breeds, preferred by peasants, are considered ‘semi-wild’, as opposed to breeds confined in CAFOs. The grazing goats in Figure 14 are Alpine breeds: among other characteristics, their microbiota remains knowledgeable about what food to choose in a forest (Provenza, 2018), while their rumen is still able to process forest foods. In the Orvietano, ‘semi-wild’ breeds are the keystone of animal husbandry. In other words, the kind of animal work and interspecies relations enabled by the contamination between wildness and domestication lays the foundations of animal husbandry. Domestication is not simply added to wildness, rather, the two become enmeshed in original genetic codes and bio-social behaviours. Semi-wild animals embody the capacity to live-work semi-autonomously. In fact, the domestication-wildness contamination allows animals to engage in interspecies co-production, by grazing, calving, establishing their own social relations, etc. The animal work enabled by this contamination exempts, on one hand, peasants from a total reliance on external inputs, such as animal feed, LED lights, heating, chick hatcheries, powder milk... allowing them to *farm economically*. On the other, farm-animals are more independent and can take

semi-autonomous decisions with regards to their reproduction and everyday life. Thus, the wildness-domestication contamination enables a kind of animal work based on reciprocity and respect, geared at collaborative survival, and resilient to the agricultural squeeze and alienation+commodification.

Diffuse embeddedness: wildlife contribution to a healthy ecosystem

This last section depicts wildlife's contribution to a healthy ecosystem and its impact on animal husbandry. The *diffuse embeddedness* of peasants, farm-animals, wildlife in the Orvietan ecosystem shapes their bonds and dependency, whereby the actions of one potentially influence the others. While the human/nature divide strives to disentangle humans from their ecosystem, the peasants I met all revealed a sophisticated understanding and acceptance of their embeddedness in the ecosystem and socioecological relations with wildlife.

Wildlife interactions with peasants do not happen only on the farm, but also in the forest, meadows, soil, rivers. The realisation of being embedded in and interdependent with the ecosystem makes peasants grateful for wildlife's role in keeping the ecosystem healthy. In fact, wildlife-farm collaboration produces, among others, "soil fertility, pest and disease regulation, and pollination" (Altieri and Nicholls, 2020, p. 205). Pietro defines himself as "an ally of wildlife", being grateful for their work, particularly "for keeping the ecosystem tidy, clean and healthy". While wolves are annoyingly interested in his sheep, he acknowledges their fundamental role in containing the incursions of roe deer and wild boars on his fields, or in preventing boars from destroying forest newborn trees, important in some farm-animals' diets. Similarly, Orietta believes "one must learn to coexist with the wolves." While wildlife often hinders farming, peasants acknowledge their importance for the ecosystem, accept the damages and *work with them*, by adapting to their activities. Since humans "are hardly the only species to modify the environment to our advantage" (Scott, 2011, p. 68), ecosystem actants relationally shape the possibilities and lifeworlds of one another.

4.3 Why is it important to accept and work *with* wildlife?

Animal husbandry and the industrial livestock sector relate to wildlife in a starkly different way. While the first works with *difference*, the latter is founded on *simplification* – of species, genetics, work. In fact, whereas peasant farms accept their embeddedness in the 'wild', industrial agriculture is constantly concerned with its expulsion. Alienation+commodification are key in industrial agriculture insofar they allow the capitalist production of standardized agricultural

products. Indeed, “fixed-field agriculture is often imagined as the antithesis of the wild” (Tsing, 2017, p. 52). Industrial agriculture presents ‘nature’, i.e., pristine pockets of wilderness and wildlife, in contrast with agriculture, i.e., human control and domestication of biophysical processes and lives which are made as ‘unnatural’ as possible. While (human) ‘ecosystem management’ has become the paradigm to *control* ‘nature’, as shown by Costantino’s story, CAFOs need to keep ‘it’ out at all costs. In fact, the ‘problem of nature’ (Boyd, Prudham and Schurman, 2001), namely “the fact that crop plants and animals are unpredictable, unruly and lively” (Rezvani, 2019, p. 1), is considered a major threat to industrial agriculture. Indeed, this rationale informs the relationship between wildlife and CAFOs, resulting in the dual removal of the ‘wild’ from animal breeds, which become more and more domesticated, and from CAFOs’ isolated perimeters. This narrative promises that enclosed “animals are supposedly less likely to be affected by viruses carried by wild animals (because nature is the enemy of animals)” (Porcher, 2022a, p. 49). Unfortunately, this unconvincing narrative runs rampant in national and international fora, branding peasant ecological rationale as dangerous, even regressive. Yet, wildlife continuously proves the theory wrong, showing up in the most sealed-off enclaves, as in the case of ‘wild’ ASF.

I use the case of ASF to shed light on CAFOs’ understanding of and relationship to wildlife, to show how, consequently, these are unprepared to respond to its disturbance, as opposed to peasant farms. Finally, the goal is to reflect upon how animal husbandry better responds to wildlife disturbance and what we can learn from the peasant practices of the Orvietano.

Bruno, head of ASF containment operations for the Umbria Region, believes that animal husbandry’s interaction with the forest is the main cause for ASF proliferation in Italy. In other words, the healthy contamination between forest and farm-animals, foundational for animal husbandry, is negatively deemed *the* vehicle for pest proliferation. In this paragraph, I confute this distorted narrative by showing how animal husbandry is not the cause, but rather, an obstacle for ASF. ASF, Bruno explains, is transmitted exclusively between *suidae*, especially from wild boar to pigs. Critically, the pest can only be eradicated through the elimination of all those infected. Whereas the overpopulous boars have been causing costly damages to small-scale peasant agriculture²⁹, the Italian state has only recently decided to act upon the invasive allochthonous species in light of the recent spread of ASF. In fact, ASF has reached Italy in 2022, quickly causing gigantic economic losses in the pig industry (IZSUM, 2022). In 2023, the National plan

²⁹ For an aggregate of 120 million euros in the period between 2015 and 2021 (Ispra, 2023).

for the surveillance and eradication of African swine fever³⁰ was approved (Ministero della Salute, 2023) with the aim of preventing the pig industry to plummet. In fact, ASF is a huge threat for factory farms specifically. Here, intrinsically sick pig bodies succumb to the lethal ASF. Tsing (2017) argues that modern efforts to disentangle agriculture from ‘nature’ and wildlife produce and intensify proliferations. In fact, “plantations³¹ are incubators, then, for pests and diseases” (ibid., p. 59) since they consistently eliminate diversity in their quest to achieve a standardized, controllable homogeneous product. Diversity, in turn is *the* barrier for pests, as these struggle to adapt and reproduce through diverse genetics and population dynamics and slowly lose their virulence (Altieri and Nicholls, 2020). Since CAFOs “discipline organisms as resources by removing them from their life worlds” (Tsing, 2017, p. 59), the isolation of pigs and the simplification of breeds produce the conditions for the proliferation of ASF.

Yet, while ASF’s proliferation is reinforced by CAFOs’ plantation ecologies, peasant farms are painted as main propagators and suffer the cascading consequences. In fact, peasants work with healthy and diverse semi-wild pigs who are more resistant to the ASF than their industrial counterparts. Peasant pigs, indeed, are usually taken to pasture, sharing the woodlands with boars and increasing the likelihood of ASF contamination (Bruno). Hence, the national policy accuses peasants of propagating the ASF and obliges them to enclose their pigs (Ministero della Salute, 2023), as is the case of Orietta and Pietro. Nevertheless, the enclosure of peasant pigs is not aimed at their safety or that of peasant farms, but rather at preventing the pig industries to close. Yet, as Pietro argues, peasant pigs’ mortality rate is reduced by their resistance to external conditions and diverse – contaminated – genetics, that is, their diverse bodies impede severe proliferation. In fact, “[b]iological diversity is the key to ecosystem health, as it serves as an absorptive barrier, providing protection from environmental shocks” and pest proliferation (Pretty *et al.*, 2009, p. 101). Therefore, Pietro believes that his pigs could simply undergo “a software update” rather than being enclosed, while peasants could endure the loss of *some* of their pigs – not all as in CAFOs. Finally, peasant pigs are not pest propagators, but barriers to pest: their genetic diversity withstands and pushes back the pest, producing its gradual mitigation.

³⁰ My translation.

³¹ Tsing (2017, p. 52) uses extensively ‘plantation’ as “simplified ecologies designed to create assets for future investments”, thus, CAFOs can be considered plantations.

4.4 Accepting indeterminacy

What can we learn from the Orvietano peasants in the face of today's drives towards alienation and plantation ecologies?

In peasant farms, 'nature' is not a problem because it is not separated from humans and the farm. In fact, it is often the opposite of a problem: it is collaboration. As I have repeatedly shown, the Orvietan peasant farm is firmly embedded in the ecosystem, and most importantly, accepts to be so. The farm and forest constantly contaminate one another through everyday interactions, including wildlife disturbance, the farm-animals dependency on forest foods (Figure 14), the impact of farming on the forest, prey-predator relations... Accepting their ecological ontology, peasants engage in interspecies relations geared at collaborative survival. To accept their ecological ontology, though, peasants need to first accept indeterminacy. "If survival always involves others, it is also necessarily subject to the indeterminacy of self-and-other transformations." (Tsing, 2015, p. 29). Collaboration between farm-animals, wildlife, and farmers is *unpredictable*. Despite the routinary nature of most farm-animal species, humans 'lose control' when working with animals. Goats can refuse to be milked, or get hurt or sick, or even take advantage of a moment of distraction to eat all the lupins (Alberto). Unpredictable encounters, for better or for worse, inform interspecies relations and collaborative survival. Nevertheless, as opposed to CAFOs or cellular agriculture (see Chapter 5), peasants embrace this precarity. It is the indeterminacy of encounter between farm-animals, farmers, fungi and bacteria that makes animal products, and ultimately lives. Therefore, rather than tackling 'the problem of nature', peasants *work with 'it'*. Instead of viewing 'nature' as a passive source of accumulation, peasants participate in the ecosystem multispecies assemblage. The previous example of mould formations in the dairy lab comes in handy again. Mould is formed through unpredictable encounters between moisture, appropriate temperatures, mould 'food' and travelling mould spores (FSEC, 2023). Mould plays a fundamental role in lifecycles acting as a breakdown nutrient 'recycler'. Although lyophilised moulds – deprived of water, thus life – are industrially produced, packaged, and delivered to farmers, Salvatore trusts moulds to form spontaneously and then adapts to their rhythms and flows. The encounter between mould and milk, then, creates unique cheese, far from its standardised industrial counterparts. The peasant way of farming, thus, is not of control over, rather, of *collaboration with* – in this case, mould.

Chapter 5 Conclusion: Food and ecological futures

What does Orvietan animal husbandry suggest for food and ecological futures in the face of increasing industrialization and alienation?

Figure 15: Gelsomina



Source: Agripunk, 2023b (Accessed: 26 October 2023)

The Agripunk sanctuary (2023b, no page) describes on Instagram the death of a liberated sheep by posting: “the friend in the photo [Figure 15] has fallen asleep forever.”³² The term ‘dead’ is too unbearable, perhaps even offensive, to be mentioned explicitly. Similarly, their website (Agripunk, 2023a) states that the industrial livestock sector, animal husbandry and pastoralism are not all that different: they share the fundamental aspect of killing. By contrast, Pietro argues that “death is a human construct”. He kills three pigs a year with a small-gun, in accordance with Italian law. Despite letting the pig die in front of the other pigs, he creates no emotional distress among them. While gorging on delicacies, the pig slowly gets used to the touch of the gun of his forehead; suddenly, Pietro shoots the pig while it is bent on the gun, and the pig falls on his side, immediately dead. The other pigs smell the dead body, assess its death, then go away heedless. Pietro explains: “Animals are not scared of death, rather, they fear suffering”³³.

³² My translation.

³³ Exception: when death involves a mother or their unweaned kids, then death becomes emotionally distressful.

In worlds hunted by increasing inequalities, climate change, hunger, environmental destruction, genocide of humans and nonhumans, mental health crisis, etc., a *general crisis* is proliferating in the political space (Fraser, 2021). In this ‘crisis of hegemony’ (ibid.), I believe it necessary to search for alternative political projects to the industrial grain-oilseed-livestock complex, mainstream development-modernization narratives, technofixes. Veganism’s ‘alternative’ political project is gaining popularity in Italy (Eurispes, 2022) by proposing a deontological *one-way* ethical and sustainable world. Entering field work with one foot in vegan deontology and one foot in vegan-doubts, I was challenged by what I learned from Orvietan peasants. Their generosity, collaboration, care towards farm-animals revealed the depth of their relations and the naturecultural rethink they operate everyday through these interspecies relations. I now fear the assumption underlying a vegan future, namely the possibility of severing our ecological ontology, is a historical misunderstanding, implicitly positing narratives of progress which portray humans as an independent – superior – species and technofixes as solutions to structural crises. By contrast, Orvietan animal husbandry whispers a different story, one of collaborative survival, non-anthropocentrism, interdependency, and embeddedness in ecosystems. I believe that the situated Orvietan interspecies relations can teach us something about how to relate with earth others, to think outside-beyond capitalism, to be sustainable and ethical in a *collective* and *ecological* manner, beyond the boundaries of the Orvietano.

I started this RP wondering: *how to live with and in precarity?* In this chapter, I contrast two answers, or food and ecological futures, to this question: first, ‘cellular agriculture’, based on alienation and control; second, collaborative survival in Orvietan animal husbandry. While cellular agriculture is portrayed as *the* ethical and sustainable alternative to animal farming, it appears to be the – even more modern – continuation of CAFOs, similarly founded on the human/nature divide. I argue that the disavowal of the difference between animal husbandry and CAFOs by mainstream climate discourse and vegan abolitionists, as showed by the Agripunk sanctuary (2023a), is precisely why cellular agriculture is appealing to an increasing number of people concerned with animal ethics and/or climate change. I challenge the alleged ethics and sustainability of cellular agriculture by examining the assumption that such food is inherently sustainable and/or ethical. I then suggest that animal husbandry puts forward a food-ecological context-based future which better responds to the current crisis, able to engage in rethinking naturecultural relations which I consider necessary to mend the crisis.

I show how competing ideas of ‘nature’ generate competing food and ecological futures, which in turn impact everyday food choices, policy decisions, investments, and research directions (Sexton, Garnett, and Lorimer, 2019). Vegan abolitionists assume the human/nature divide

which promotes ideas of ‘pristine nature’ to “stay ‘untouched’ and ‘be protected at all costs’” in contrast with the human world (Ejsing, 2023, p. 327), where food production is firmly confined. Conversely, the Orvietan peasants working in animal husbandry do not buy into the deontological assumption that humans must ‘leave nature alone’, rather, they co-manage ecosystems with earth others. Understanding humans as entangled in natureculture, they advocate for a collaborative interspecies food+ecological future, fostering a context-based, ethical, and sustainable diet. This narrative battleground sets the stage for the following discussion about food futures. I start by outlining current trends in cellular agriculture. I then turn to the critique of its rationale and proposed food future. Finally, I contrast cellular agriculture with the food+ecological futures based on collaborative survival proposed by Orvietan peasants.

5.1 Cellular agriculture: eliminating the animal, solving the ‘problem of nature’

Cellular agriculture refers to ‘animal-free’ animal products “created either through culturing stem cells outside (in vitro) animal bodies, or through the genetic modification and fermentation of yeast cells.” (Sexton, Garnett, and Lorimer, 2019, p. 48). I focus on ‘cultured *meat*’ to simplify the discussion, despite other animal products – leather, cheese, eggs... – also being involved in this ‘technofix’ (ibid.). Cellular agriculture produces ‘cultured meat’, variously called ‘cultivated’, ‘lab-grown’, ‘in vitro’, ‘synthetic’ (Moyano-Fernández, 2022). Though barely commercialized yet, it garners fervent support from vegan abolitionists as it promises to reduce the ecological toll of animal farming, simultaneously eliminating animal suffering and slaughter (Moyano-Fernández, 2022; Porcher, 2022b). Driven by the belief that *all* animal products are major GHGs emitters, Western food policies are increasingly inclining towards the ‘protein transition’ (Houzer and Scoones, 2021). On the rare occasions when vegan advocates do differentiate among livestock operations, the (semi-)extensive systems are “particularly criticised for their assumed low production efficiency, high per-animal methane emissions and the large extent of land use” (ibid., p. 6). In contrast, vegan abolitionists champion plant-based alternatives that promise lower GHGs emissions and reduced land use, making space for conservation and afforestation (ibid.). Most importantly, vegan abolitionists endorse cellular agriculture because it avoids animal exploitation and slaughter. This cohort believes that *all* livestock operations are inherently unethical. In Francione’s (2022a, p. 45) words, “[h]owever ‘humanely’ these animals are treated ... they all suffer [because they are killed].” This argument, rooted in the lack of necessity to eat animals and in interspecies equality (i.e., antispeciesism), deems it ethically unacceptable to farm,

kill and consume animal products (ibid.). Thus, cellular agriculture becomes *the sustainable and ethical replacement* of animal farming.

While vegan advocates endorse this industry, public investments have also multiplied, with the European Union funding start-ups researching cellular agriculture (Porcher, 2022c). However, “the majority of these ventures have involved private companies, especially the business models of the Big Tech”, investing billions of dollars (Sexton, Garnett, and Lorimer, 2019, p. 48). The reason for capital’s endorsement of cellular agriculture is not its alleged sustainability or animal ethics, but its profitability. Indeed, cellular agriculture’s “conceptual origin is the same as the one that prevailed in the industrialization of animal husbandry, ... the idea that farm animals serve to produce animal matter and profits” (Porcher, 2020, p. 514). This endorsement, then, demonstrates that animals have stopped being useful for capitalist production, so “[t]hey can leave work and be advantageously replaced”³⁴ (Porcher, 2022b, p. 16). Firstly, production processes for cultured meat take less time and are more ‘efficient’ than for animal meat (Porcher, 2020). Secondly, the complete *control over* the processes of production and reproduction, due to the elimination of the animal, enhances profitability. In fact, cellular agriculture *resolves the ‘problem of nature’*: since “it involves cultures of stem cells in a *controlled* environment” (ibid., p. 513, my emphasis), the unpredictability inherent to interspecies work vanishes. In other words, cellular meat accomplishes what CAFOs have been unsuccessfully trying to accomplish: the removal of ‘nature’ and unpredictability from the production of animal products.

Start-ups, investors, and vegan abolitionists hope consumers will buy into the idea that “cultured meat *is* meat” (Porcher, 2020, p. 513). Yet, meat entails first and foremost the *life* of farm-animals. As Porcher (2020, p. 515) aptly recognizes, if cellular agriculture “avoids the death animals, ... this is only because it avoids life.” Cultured meat, then, is “the living-dead” (ibid., p. 514), a mobile, alienated, standardized asset. “Through alienation, people and things become mobile assets; they can be removed from their life worlds” to become exchangeable (Tsing, 2015, p. 5). Industry, as Tsing (2017, p. 58) illustrates, is “an instance of the reorganization of the living world into assets, that is, resources for further investment.” If “[o]rganisms are removed from their native ecologies to keep them from interacting with companion species” (ibid., p. 59), ‘cultured meat’ is an extreme case of removal of *cells* from their companion bodies. These cells are then isolated, controlled and (re)produced under the mastery of human technicians. No interspecies collaborative relations: rather, complete alienation in a sterile, profit-oriented laboratory. Agriculture – exclusively human – becomes a place of alienation, rather than a place of

³⁴ My translation.

contaminations. The envisioned food future is a “vegan world ... focused on humans, on the power of biotechnologies to redesign nature and ‘eradicate’ death”. In other words, “[a] world deprived of alterity”³⁵ (Porcher, 2022b, p. 15) and collaborative survival.

5.2 Cellular agriculture’s vegan rationale under scrutiny

In this section, I confute the assumption that animal products are inherently *unethical* and *unsustainable*. I argue that vegan abolitionists’ main resistance to animal husbandry is predicated on fear+refusal of death, which distorts their imaginary of interspecies (non)relations and serves as the ethical rationale for cellular agriculture. Through the discourse of ‘killing’, they portray *all* animal farming as ‘unethical’. Because vegan abolitionists abide by the life/death and human/nature divides, they are unable to discern between CAFOs and animal husbandry. Then, through Orvietan peasants’ approach to ethics and ecology, I demonstrate that animal products are not inherently unethical. I suggest that only after re-embedding life and death in ecology it is possible to differentiate between animal husbandry’s lifeworlds and CAFOs’ deathworlds. Finally, I challenge the alleged unsustainability of *all* animal products.

Fear+refusal of death and ecology/ethics disconnect

Western society demonizes death to the extent that ‘death’ becomes the antithesis of ‘life’. This fear+refusal of death manifests in various ways, including opposition to abortion, euthanasia, rejection of ageing, etc. I argue that vegan abolitionism is yet another expression of this fear+refusal. In fact, in most accounts of why to go vegan, vegan activists and academics focus on the issue of ‘killing’. How we deal with our own death influences our understanding of other species’ death. Through her confutation of the ‘happy meat’ thesis, for instance, Gillespie (2011) argues that, regardless of the conditions of animals’ lives, life becomes ‘unhappy’ because of the violent death that ends it. LEIDAA (2021), an animalist Italian NGO, is “firmly convinced that all animals ... have the right to live their life until *natural death*”³⁶ (no page, my emphasis). But who decides about what is ‘natural death’? The definition of ‘natural’ death is juxtaposed with ‘violent’ death, i.e., imposed by humans. For instance, a wolf killing a sheep is ‘natural’, thus outside the realm of ethics, thus justified, whereas a human killing a boar is ‘cultural’, thus ‘unnatural’, thus unethical (Marvin, 2006).

³⁵ My translation.

³⁶ My translation.

Human ‘killing’ of animals is painted with war terms like ‘slaughter’, ‘massacre’, ‘carnage’. Vegan activists are portrayed as “fighting a battle between who defends life and who defends death”³⁷ (Progetto Cuori Liberi, 2023), showing the assumption underlying vegan arguments, namely the stark opposition between life and death. Vegan abolitionists rarely question what death means for animals. Rather, they justify this universal – nonhuman and human – fear+refusal of death as a matter of “having a morally significant interest in continuing to live.” (Francione, 2022a, p. 46). However, what if life and death enable one another? Plumwood’s (2012) critique of ‘Ontological Veganism’ sheds light on the life/death dualism. Veganism, she argues, perpetuates the Western belief that “humans are above embodiment” and stand “outside and above the food web” (ibid., p. 80-81). “Upon death the human essence is seen as departing for a disembodied, non-earthly realm, rather than nurturing those earth others who have nurtured us.” (ibid., p. 81). Veganism maintains a sharp division between humans – ontologised as inedible – and nature – ontologised as edible –, yet they move animals to the human inedible riverbank (ibid.). Thus, “only things that are not morally considerable can be eaten.” (ibid., p. 83). Accordingly, Francione (2022b, p. 54, author’s emphasis) argues that “[t]here is *no* scientific evidence that plants have *any* sort of mind that prefers, desires, or wants to continue to live”, revealing the abolitionist vegan rationale that, first, ethics are tied to the *mind*, prerogative of humans and animals; second, that the human/nature divide implies a division between *ethics*, or the inedible realm of the mind, and *ecology*, namely the edible, bodily worlds of plants.

By separating life and death and concentrating merely on the latter, vegan abolitionists disregard animals’ lives and make generalised claims about animal ethics which apply to *all* types of animal breeding *everywhere* in the world, blurring the differences between animal husbandry and industrial livestock sector. However, when life is considered, the difference becomes apparent. Given the structurally different life-work relations underscored in Chapter 3, it is evident that, in CAFOs, being killed is not the worst experience humans reserve to animals, as vegan abolitionists advocate. Rather, it is life-work under capitalist industrial relations. Thus, I argue that CAFOs deathworlds are starkly different from animal husbandry’s lifeworlds. Vegan abolitionism’s narrow focus on animal death rather than inseparable life-death “fails to provide philosophical guidance for animal activism that would prioritize action on factory farming over less abusive forms of farming.” (Plumwood, 2012, p. 78).

³⁷ My translation.

Animal husbandry's life-death: Critical breakdown

Orvietan peasants acknowledge that working with animals – allowing one another to live – necessarily entails the killing of some. This is described as the founding pact of animal husbandry, a deal between peasants and animals, which stems from the fact that life and death allow one another. Through farming, Pietro understood that “life and death go hand in hand”. This understanding is confirmed by the expression ‘*letting die*’ (Orietta; Porcher, 2022a), intended as *letting* the possibility of death, ever-present due to the founding pact and the life-death connection, slide in and take over one’s life. Life-death becomes a place of reciprocity since peasants are aware they too will ‘return to the ground’ to become food for others (Pietro). Life and death, thus, are connected and together nourish the ecological lifeworlds of the Orvietan farms and ecosystem. Only once life and death are understood as two sides of the same coin, it is possible to stop narrowly focusing on ‘killing’ and start discerning between peasant farms and CAFOs.

Puig de la Bellacasa (Social Science Research / University of Amsterdam, 2021) restories *breakdown* as major lifecycle actant. Breakdown of matter, and ultimately of life, is fundamental to the rebalancing of matter excess and the cycling of nutrients, challenging “the [hegemonic Western] imaginary [which] reduced life on earth to a linear dimension of creation, production, growth and attainment of a relative enduring form”. Critical breakdown emphasizes the importance of decomposition of nutrients, matter, bodies while simultaneously re-embedding life in ecological relations. Nevertheless, Western culture’s discomfort with breakdown – fear+refusal of death – persists, as this reveals “the vulnerability of people, things, structures, relationships” (ibid.) Critical breakdown offers insights into the life-death debate. In human and nonhuman terms, breakdown of matter translates into breakdown of bodies, i.e., death and bodily decomposition. Protecting dead bodies all the way to the enclosed grave, Western culture reifies life and refuses to recognize the biodegradability and edibility of the human body. Acknowledging the biodegradable and edible nature of all bodies is essential for re-embedding humans and, in the case of veganism, animals within ecological relations. Rather than embracing veganism’s “rejection of the ecological world” (ibid., p. 89), animal husbandry entails that “human culture is embedded in ecological systems and dependent on nature” while non-human animals are also embedded in culture (ibid., p. 85). Critical breakdown underscores that “all embodied beings are food and more than food, that is, with an ecological ontology” (ibid., p. 89), ultimately contributing to collaborative survival. Finally, re-embedding ourselves in ecological relations transforms us into *collective* beings engaged in reciprocal relations, where one’s death

enables another's life. Thus, the death of individuals nourishes and enables the survival of collectives of species.

(Un)Sustainability: Changing the questions

By measuring the environmental impact of *food*, vegan proponents elude the relevance of the *ways* and *context of production*. Houzer and Scoones (2021) tease out the assumptions behind the vegan reductionist narrative that *all* animal products are 'bad for the planet'. They show that most studies demonising animal products universalise findings from the Western intensive livestock sector to *all kinds* of livestock systems *everywhere* in the world (ibid.). Moreover, by using life cycle assessments, they miss out the "[w]ider environmental benefits offered by extensive livestock systems to ecosystem services, landscape protection and carbon sequestration" (ibid., p. 3). Thus, Houzer and Scoones (2021) confute vegans' argument that *all* animal products are inherently unsustainable.

Understanding the *how* and *where* – systems and contexts – of agricultural production is necessary to fully grasp its ecological impacts (ibid.). Pietro holds that "if you want to do without meat, you can do without the cow; but if you want to produce vegetables, you need the cow!" Legumes and vegetables are not stand-alone resources, but outcomes of entangled animal-human-plant collaborations, often overlooked in diet-transition debates. Pietro believes the major problem of modern agriculture, shared by veganism, is asking misleading *questions*. By asking: "what food is sustainable?", these contend that planting cereals and legumes all over the world is *always the* sustainable solution. This rationale considers *land* as a passive, undifferentiated resource, where humans sow their interests. By contrast, Pietro *notices* what the land can support. He asks: "what can *this particular land* produce and sustain?" and "how can we increase biodiversity in this land?". In other words, "what agricultural practices and interspecies collaborations can we foster *in this context?*". To assume that cereal or legume cultivation is inherently better than fodder cultivation is misleading for two reasons. Firstly, sustainability is *context*-dependent. Secondly, the vegan narrative, like the CAP funding system, assumes that fields can support only one type of agricultural operation, whereas Pietro's agroecological farm shows that fields can support an intermeshing of legumes, cereals, chickens, cows, and insects. Thus, peasants challenge the placelessness and puritanism of pre-determined and universal plant-based transition recipes by regrounding their solutions in the land, farm-animals, seeds, and ecosystem.

Food/ecology divide: How to (re-)relate to nature, the wild, and the ecosystem?

A food future based on cellular agriculture feeds into the human/nature divide. Vegan abolitionists, CAFOs, and cellular agriculture share the conviction that ‘nature’ is and should remain starkly separated from ‘culture’ – the human realm. They contend that a world based on alienation, that is, without interspecies contaminations, is *possible* and *preferable*. Yet, they bolster the human/nature binary in different ways and for different reasons. On one hand, alienation is geared towards profit accumulation and happens in sealed-off factory farms or laboratories. On the other, alienation is geared at animals’ liberation and takes place in ‘untouched nature’. Cellular agriculture, then, merges CAFOs’ and vegan abolitionists’ rationales. While it resolves the problem of nature and enhances profits and productivity, it severs all interspecies relations making animals ‘free’ and agriculture an alienated exclusively-human process. ‘Cultured meat’ – modern, ethical, alienated – is starkly opposed to ‘natural meat’ – regressive, unethical, connected. By separating ecology from food, cellular agriculture proposes a *food* future without *ecology*.

Cellular agriculture’s food future is ecologically unacceptable. It assumes independence between species, rather than their entanglements and contaminations. The paradigm of control-alienation enforces the separation of ‘human’ and ‘natural’ worlds, exemplified by the contrast between cellular agriculture and/or CAFOs on one side, and pristine nature controlled by human-driven ecosystem management and conservation programs on the other. Yet, the vegan abolitionist and modern delusion of ‘leaving nature untouched’ perpetuates the human/nature divide by failing to recognise humans as ecological actants and by essentialising animals. To understand species as independent, stripping them of their history of collaborative survival, is only possible by referring to their *essence*, or their ‘nature’. This essentializing narrative dismisses the history and potential for respectful and reciprocal interactions between the ecosystem, humans, animals, plants, soil, and more.

Leaving nature alone is not an option (Wapner, 2014). “Recognizing this, however, does not mean that wilderness protection should be about mastery.” (ibid., p. 45). Since wildness is a relationship, we need to choose and learn how to (re-)relate with earth others. For Wapner (2014, p. 46), “wilderness protection involves attuning ourselves to the hybrid [i.e., naturecultural] character of ecosystems and helping to shape them in ways in which the human voice is deliberately one among others in fashioning socio-ecological arrangements.” A virtuous example of this is the Orvietan peasant agroecological farms, which aim “to develop agroecosystems that support healthy ecosystems” (Altieri and Nicholls, 2020, p. 205) that make human and nonhuman lives possible. In this perspective, all living beings – humans, farm-animals, wildlife,

plants – are ecosystem actants, relationally creating a healthy ecosystem, that is, producing and reproducing the conditions of life for all species involved. In other words, collaborating for survival. Collaborative survival means “learning to live with bees [and other earth others] and to respect them as co-creators of space that are essential to the healthy functioning of ecosystems, rather than as commodities” (Ellis *et al.*, 2018, p. 455). For Pietro, “the goal is regeneration rather than extraction”. He stopped trying to dominate the climate and the seasons, and now seeks ways to adapt and “follow their flow”. Collaborative survival and ecosystem co-management are inherently context-specific and thus cannot be universally applied as a technical recipe for all contexts.

Comparing animal husbandry with cellular agriculture futures

Having established that animal products are not inherently unethical or unsustainable, I suggest that the vegan discourse that portrays cellular agriculture as *the* ethical and sustainable alternative is Eurocentric, assuming Western findings and ideas are universal; anthropocentric, by reinforcing the human/nature divide; capitalocentric, considering farm-animals as mere commodities in *all* farming systems. By mending the division between ethics/ecology, life/death, and human/nature, the Orvietan animal husbandry generates a food-ecological interspecies future. Whereas the paradigm of cellular agriculture is *control* and *alienation*, the paradigm of animal husbandry is *unpredictability* and *collaboration*. Whereas cellular agriculture is *profit*-oriented, animal husbandry is geared at *interspecies survival*. Whereas cellular agriculture is a *technical* response to the general crises, animal husbandry is a *naturecultural* response, acknowledging that we need an agroecological *and* cultural rethink of how humans relate to and fit in the ecosystem. Whereas cellular agriculture is a *food* future, animal husbandry suggests a *food* and *ecological* future. Thus, what is competing, here, are firstly ideas of ‘nature’, and secondly food and ecological futures. On one side, a world where humans have no relation with earth others (if that is even possible); food is sourced from a profit-oriented human-*humane* laboratory; human survival – under our exclusive control – is a human affair only. On the other, a world based on collaborative survival where we acknowledge the interdependency between species, our embeddedness in the ecosystem, that we are only one of many ecological actants, that life is about living and dying in cycles of reciprocity and breakdown.

5.3 Conclusion: collaborative survival in Orvietan animal husbandry as ecological and food future

In conclusion, I ask, *in the midst of the general crisis, what can Orvietan peasant farms teach us?*

Figure 3: Sheepdog-sheep collaboration



Source: Field work, July 2023

While Antonietta's story shows how collaborative survival was foundational to the *mezzadria*, I argued that it is also foundational to today's Orvietan animal husbandry's, making it resilient to the current agricultural squeeze (Chapter 2). This resilience stems from the concomitant dimensions of farm interspecies work relations (Chapter 3) and wildlife-farm interactions (Chapter 4). The interdependency embedded in collaborative survival creates a barrier to alienation+commodification (Chapter 3). Moreover, Orvietan peasants are embedded in the ecosystem: by accepting to *work with* wildlife and contaminated diversity, rather than shutting them out as CAFOs do, their farms are more resilient to external shocks (Chapter 4). Acknowledging that they are ecosystem *co-managers*, peasants do not engage in (fallacious) anthropocentric ecosystem management, as the Umbria Region in Costantino's story, rather, they relinquish control and welcome *collaboration* (Chapter 4). Finally, vegan abolitionism proposes a supposedly sustainable and ethical alternative to the political projects that have led to the crisis, yet it remains structurally embedded in development-modernization, progress, Eurocentrism, capitalocentrism, human/nature divide, remaining incapable of providing the necessary

naturecultural rethink to mend the crisis (Chapter 5). Conversely, Orvietan animal husbandry teaches us a valuable lesson. By collapsing ecology and ethics, Orvietan peasants accept and work in and with the precarity of contaminations and unpredictable encounters in the making of interspecies lifeworlds, and ultimately collaborative survival.

Since “the planet does not have enough surface area for extensive livestock rearing to sustainably supply current trends in [meatification of] diets” (Hayek *et al.*, 2020, cited in Moyano-Fernández, 2022, p. 23), there is need for a Western diet rethink. Yet, the rethink must move beyond mere dietary transitions. Whereas cellular agriculture and “livestock industry is a technique and a business” (Porcher, 2017, p. 4-5), Orvietano’s animal husbandry is a peasant process of collaborative survival. In “an epoch in which multispecies livability has become endangered” (Tsing, 2017, p. 53), a technofix is inadequate since it does not structurally address the crisis. What is needed, I propose, is a naturecultural response that addresses the problems of capitalism, human/nature divide, climate change by posing the fundamental question: how do we want to relate with earth others and the ecosystem? “As long as we block out everything that is not human, ... we lose track of the common work that it takes to live on earth for both humans and nonhumans.” (Tsing, 2017, p. 61). In the search for a sustainable, ethical, and context-based future, Orvietan peasant farms propose interspecies collaboration as possible response to the crisis. By assuming that *all* animal farming systems “are imposing suffering for reasons of pleasure, amusement, or convenience”, not of necessity (Francione, 2022a, p. 45), vegan abolitionists argue that interspecies collaboration is unnecessary. By contrast, I argue that, in the Orvietano, interspecies collaboration makes peasant multispecies assemblages resilient to climate change, the impact of the agricultural squeeze, and alienation+commodification. If we establish that collaborative survival is necessary, we need to ask: necessary for *whom*? In this RP, I showed how Orvietan interspecies collaborative survival is necessary for *both* farm-animals and peasants, and *beyond* – wild-domesticated plants, for instance, also necessitate the concerted work of manure, soil microorganisms, farm-animals, peasants.

Appendices

Appendix A: Definition of key terms

Ecosystem:

Defining an ecosystem as “the complex of a community of organisms and its environment functioning as an ecological unit”, the Merriam-Webster Dictionary (2023) captures the inherent relationality presupposed by ecosystems, while it remains somewhat ahistorical and fails to grasp the affectivity involved in such relations. However, why are affectivity and history relevant here? Ecologies are relational webs tying organisms together and embodying the need for interspecies collaboration. Yet, I argue that this collaboration is not only the result of mere ecological processes, but also of affective contaminations. The risk of reading ecosystems merely through a ‘natural science’ lens is biological determinism, i.e., essentializing social (human and nonhuman) relationships as ‘naturally’ predetermined. Rather, affectivity, ecology, and history entail one another and are enmeshed in ecosystems. In other words, collaborative survival conflates emotional and biological processes by dynamically reshaping naturecultures. In the context of animal husbandry, indeed, neither peasants nor farm-animals collaborate merely because of their biological need to reproduce themselves. Moreover, historicizing ecosystems is relevant insofar it points at the indeterminacy of encounters and their ever-shifting dynamism (see Chapter 4). Indeed, collaborative survival is historically, emotionally, and ecologically determined.

Ecosystems, then, can be defined as ever-shifting socioecological assemblages. I use Tsing’s (2015, p. 23) understanding of ‘assemblages’ as ‘polyphonic’ “open-ended gatherings” which result in the production of lifeways and lifeworlds greater than the sum of the parts, or participants. Contamination, indeed, is the very ‘stuff’ of assemblages. Projected on the context of the Orvietano, animal husbandry is a multispecies assemblage resulting from the spillovers and interactions between farm-animals, farmers (see Chapter 3), wildlife (see Chapter 4), technologies, external pressures, ideologies, etc. In peasant farms, mutual worlds conflate into historically shifting assemblages which make and remake those involved.

Intensive and semi-extensive livestock farming systems:

Intensive and semi-extensive livestock farming systems are different according to input, concentration, grassland, and labour/capital intensity. On one hand, intensive livestock operations, or CAFOs, are capital- and input-intensive (Nemecek *et al.*, 2011), they concentrate

animals in warehouses, while feed is sourced off-farm. On the other, semi-extensive operations, are low-input (ibid.), labour (both human and nonhuman)-intensive, involve grazing and free-ranging. Semi-extensive animal husbandry is called in Italian *semi-brado*, which loosely translates as ‘semi-wild’. In the Orvietano, semi-wild animal farming often translates into silvopastoralism.

Objectivity:

Borrowing from Haraway (1988, p. 581), “[f]eminist objectivity means quite simply *situated knowledge*.” The RP stories are objective in a feminist methodological sense in that they are ‘partial, embodied, situated knowledge’, that is, they are specific and stripped of the pretension of ‘transcendence’. This objective knowledge is not “from everywhere, so nowhere” (i.e., universal), reductionist, relativist and from above (ibid., p. 590), but is from somewhere and someone: an embodied, responsible, locatable knowledge. Location, or the Orvietano, becomes the means for questioning the reductionist and universal vegan claims on animal farming and interspecies relations.

Appendix B: Interviewees table

1. Farmers

Who? 1) Name 2) Age 3) Gender	Relations to other interviewees	Background 1) Farming (since) 2) Studies	Farming and non-farming work	Farm	Interview(s)
Alberto 40s Man	Working for Raffaella & Salvatore	Neo-peasant (2017) + agricultural worker Graduate	Goat & chicken husbandry Cheese-making Beekeeping Olive oil	3 ha Rent	1 interview
Annalisa Not disclosed Woman	Elena’s sister Costantino’s daughter	Cross-gen. Not disclosed	Chicken & pig husbandry Olive oil Agritourism	4 ha Property	1 interview
Berit Not disclosed Woman	Orietta’s sister	Neo-peasant (2006) Graduate	Goat husbandry Cheese-making	Not disclosed Property	1 interview
Elena Not disclosed Woman	Annalisa’s sister Costantino’s daughter	Cross-gen. Not disclosed	Chicken & pig husbandry Olive oil Agritourism	4 ha Property	1 interview
Federico 42 Man	Giorgio’s uncle	Cross-gen. Primary school	‘Earthmoving’ (diggers) for third parties Crop monoculture Cow husbandry	200 ha Property & rent	1 interview
Gervasio 60s	X	Cross-gen. Not disclosed	Horticulture Chicken &	0,5 ha Rent	1 interview

Man			rabbit husbandry		
Giorgio 24 Man	Federico's nephew Franco's grandson	Cross-gen. High school	Crop monoculture Cow husbandry	200 ha Property & rent	1 interview
Goffredo 64 Man	X	Aristocrat 'farmer' (landowner) Graduate	Educational farm Former milk enterprise	300 ha Property	1 online interview
Ilaria 30s Woman	Working for Raffaella & Salvatore	Neo-peasant (2020) + agricultural worker Not disclosed	Goat & chicken husbandry Cheese-making	Not disclosed	1 interview
Lucia 55 Woman	Paolo's partner	Neo-peasant (1992) Graduate	School teacher Horticulture	3/4 ha Property	1 interview
Ludovico 44 Man	X	Cross-gen. Graduate	Olive oil Sheep pastoralism	67 ha Rent/Squat	1 interview
Luigi Not disclosed Man	Marisa's partner	Neo-peasant (1987) Not disclosed	Cow husbandry Sheep pastoralism	7 ha Collective property	1 interview
Marisa 56 Woman	Flavio's partner	Neo-peasant (1987) High school	Cow husbandry Cheese-making Sheep pastoralism Social agritourism	7 ha Collective property	2 interviews
Orietta Not disclosed Woman	Berit's sister Aurora's mother	Neo-peasant (2006) Graduate	Goat & pig husbandry Agritourism	Not disclosed Property	Co-working (5 days)
Paolo 64 Man	Lucia's partner	Neo-peasant (not disclosed) Graduate	Horticulture Chicken husbandry	3/4 ha Property	1 interview
Pietro 43 Man	Valeria's partner	Neo-peasant (2003) Graduate	Cow, sheep, goats, chicken, rabbit husbandry	60 ha Property	4 interviews
Raffaella Not disclosed Woman	Salvatore's partner	Neo-peasant (2007) Graduate	Farm sales & communication	15 ha Property & rent	1 interview
Riccardo 68 Man	Antonietta's brother	Cross-gen. Primary school	Subsistence farming Pigeon & chicken husbandry	0,25 ha Rent	1 interview
Salvatore Not disclosed Man	Raffaella's partner	Neo-peasant (2007) Graduate	Goat husbandry Cheese-making	15 ha Property & rent	Co-working (10 days)
Tommaso 70s Man	X	Neo-peasant (1979) Graduate	Beekeeping	10 ha Property	1 interview
Valeria 43 Woman	Pietro's partner	Neo-peasant (2003) Graduate	Agritourism Agrirestaurant Farm sales & communication	60 ha Property	1 interview

2. Others

Who? 1) Name 2) Age 3) Gender	Relations to other interviewees	Occupation	Specialization	Interview(s)
Antonietta 74 Woman	Riccardo's sister	Maid Former peasant	X	2 interviews
Aurora 18 Woman	Orietta's daughter	High school student	X	1 interview
Bruno Not disclosed Man	X	Wildlife & hunting technician (Umbria Region)	Umbria's African Swine Fever head of operations	1 online interview
Costantino Not disclosed Man	Annalisa's and Elena's father	Retired employee Umbria Forestry Agency	Repopulation projects	1 interview
Fabrizio Not disclosed Man	X	Food sovereignty activist and NGO worker tied to La Via Campesina	Peasant agriculture Diversification	1 online interview
Filomena Not disclosed Woman	X	Biology researcher (University of Perugia)	Wolf population	1 online interview
Franco 85 Man	Giorgio's grandfather	Retired construction worker Hunter	Hare hunting	1 interview
Michela Not disclosed Woman	X	Professor & researcher	Critical agrarian studies	1 interview

Appendix C: Methods and limitations

Methods:

The interviews were usually carried out in the interviewee's farm. I met farmers in farmers markets or contacted them through their website or Facebook page. Finally, I found some farmers through snowball sampling, helped out by the first farmers I met. Because often not on the internet, cross-generational farmers were more difficult to identify, thus I was helped by some key contacts. The selection of farmers privileged a sample which was representative of gender (although there was a lack of non-CIS-gender people), age, background (neo-peasant or cross-generational farmer), and the variety of animal husbandry activities present on the territory.

Since my goal was not to completely predetermine the research focus(es) in order to make space for what unpredictability, and what farmers themselves felt was relevant, in most cases the interviewees chose autonomously the topics they preferred discussing. This openness resulted in the discovery of topics I would have not researched myself, but that have been central to the RP's argumentation. The length of the interview varied between 1,30 to 4 hours, depending on the interviewee. Not all interviews were individual, although the great majority was. Moreover, a few interviews were online (as stated in the interviewees' table).

Finally, engaging in participant observation helped me *notice* the relations and details, either too awkward or too small, to be formulated in questions or answers. The example of the mould, for example, could only transpire through observation. In those farms in which I have spent more time, then, observation and questions worked hand in hand to allow a deeper comprehension of the dynamics of the farm.

Limitations:

Since seasons dictate work rhythms, animal productivity, market demand, products possibilities (e.g., meat or cheese), etc., this RP consequently shows a moment in the year of the interspecies relations. Moreover, while studying agrarian worlds through a social sciences lens has a lot of benefits, the division between 'social' and 'natural' sciences, however, reflects the binary between 'society' (human) and 'nature' (nonhuman) and compromises the reach of this RP. Finally, this RP is embedded in my own experience as an Italian 23-year-old woman from the urban middle/upper-class. As I undertook field work, I saw both my difference with cross-generational farmers and similarities with the neo-peasants. Being myself from the city and studying in higher education, I would more easily understand the 'language', imaginaries, and motivations of the neo-peasants, which in turn seemed more comfortable with my presence. On the contrary, my 'differences' with cross-generational farmers have often translated in a difficulty to go deep into the researched questions.

Appendix D: *Mezzadria* system in the Orvietano

Central Italy is an emblematic case of the diffusion and persistence of sharecropping (Byres, 1983), with most of its landscape fragmented by family farming (Enciclopedia Agraria Italiana, 1952). The sharecropping family worked on a plot of about 10 hectares, under the master's directives (Anselmi, 1990). The *mezzadria* contract provided for the equal division of produce between the landowner and the sharecropper (ibid.). Yet, this presumed equality was only apparent, as evidenced by Antonietta's story. Due to *mezzadria*, traditional pastoralism was

gradually replaced by animal husbandry, where animals are raised semi-extensively (Sereni, 1961). However, until the end of the 1800s, the masters usually owned all the farm-animals (Margheriti & Pernazza, 1983).

References

Agnoletti, M. (2013) 'Italian Historical Rural Landscapes: Dynamics, Data Analysis and Research Findings' in Agnoletti, M. (ed.), *Italian Historical Rural Landscapes: Cultural Values for the Environment and Rural Development*, Dordrecht: Springer, pp. 3-87. doi: [10.1007/978-94-007-5354-9](https://doi.org/10.1007/978-94-007-5354-9).

Agripunk Onlus (2023a) *Rifugio Agripunk*. Available at: <https://www.agripunk.com/> (Accessed: 14 October 2023)

Agripunk Onlus (2023b) 'Mercoledì scorso siamo stati chiamati dalla nostra asl intorno a mezzogiorno per recuperare...' [Instagram]. 25 September. Available at: https://www.instagram.com/p/CxmvS-lto8v/?utm_source=ig_web_copy_link (Accessed: 26 October 2023).

Altieri, M. A. and Nicholls, C. I. (2020) 'Agroecology: Challenges and Opportunities for Farming in the Anthropocene', *International Journal of Agriculture and Natural Resources*, 47(3), pp. 204–215. doi: [10.7764/ijanr.v47i3.2281](https://doi.org/10.7764/ijanr.v47i3.2281).

Anselmi, S. (1990) 'Mezzadri e mezzadrie nell'Italia Centrale', in Bevilacqua, P. (ed.), *Storia dell'agricoltura italiana in età contemporanea, Vol. II: Uomini e classi*, Venezia: Marsilio.

Barua, M. (2017) 'Nonhuman Labour, Encounter Value, Spectacular Accumulation: The Geographies of a Lively Commodity', *Transactions of the Institute of British Geographers*, 42(2), pp. 274–288. doi: [10.1111/tran.12170](https://doi.org/10.1111/tran.12170).

Battisti, A. (2016) *In bocca al ... alla volpe!* Available at: <https://hybridwildlife.com/2016/12/20/in-bocca-al-alla-volpe/> (Accessed: 03 October 2023).

Bevilacqua, P. (2013) 'Umbria' in Agnoletti, M. (ed.) *Italian Historical Rural Landscapes: Cultural Values for the Environment and Rural Development*, Dordrecht: Springer, pp. 363-383. doi: [10.1007/978-94-007-5354-9](https://doi.org/10.1007/978-94-007-5354-9).

Blattner, C. E., Coulter, K. and Kymlicka, W. (2019) 'Introduction: Animal Labour and the Quest for Interspecies Justice', in Blattner, C. E., Coulter, K. and Kymlicka, W. (eds), *Animal Labour: A*

New Frontier of Interspecies Justice? First edn. Oxford: Oxford University Press, pp. 2-27. doi: 10.1093/oso/9780198846192.003.0001

Boyd, W., Prudham, W. S. and Schurman, R. A. (2001) 'Industrial dynamics and the problem of nature', *Society and Natural Resources*, 14(7), pp. 555–570. doi: 10.1080/08941920120686

Brass (2015) 'Peasants, academics, populists: Forward to the past?', *Critique of Anthropology*, 35(2), pp. 187-204. doi: [10.1177/0308275X15569853](https://doi.org/10.1177/0308275X15569853)

Brass, T. (2011) *Labour regime change in the twenty-first century: unfreedom, capitalism, and primitive accumulation*. Leiden: Brill (Studies in critical social sciences, v. 35).

Byres, T. J. (1983) 'Historical Perspectives on Sharecropping', *The Journal of Peasant Studies*, 10(2-3), pp. 7–40. doi: 10.1080/03066158308438195.

Caracciolo, M. (2023a) Assignment for 4229, MA. Development Studies, International Institute of Social Studies of Erasmus University Rotterdam. Unpublished.

Caracciolo, M. (2023b) Assignment for 4240, MA Development Studies, International Institute of Social Studies of Erasmus University Rotterdam. Unpublished.

CIA - Agricoltori Italiani (2023) 'Zootecnia: Cia Umbria, crisi eccezionale che rischia di mettere ko gli allevatori' [Zootechnics: Cia Umbria, exceptional crisis that threatens to put breeders out of business], 12 January. Available at: <https://www.cia.it/news/notizie/zootecnia-cia-umbria-settore-ko-causa-dei-rincari/> (Accessed: 05 November 2023).

Classyfarm (Ministero della Salute) (2023a) *Veterinario Ufficiale*. Available at: <https://www.classyfarm.it/index.php/vet-ufficiale-it> (Accessed: 13 November 2023)

Confortini, I. (2019) 'Ripopolamento e cattura della fauna selvatica', *Caccia Magazine*, 11 July. Available at: <https://www.cacciamagazine.it/ripopolamento-e-cattura-della-fauna-selvatica/> (Accessed: 06 November 2023).

Dreamstime (n.d.) Conigli di allevamento. Available at: <https://it.dreamstime.com/fotografia-stock-conigli-di-allevamento-image19286202> (Accessed: 06 November 2023)

Ejsing, M. (2023) 'Living with Others: On Multispecies Resurgence in the Altered Forest Landscapes of the Anthropocene', *Journal of Political Ecology*, 30(1). doi: 10.2458/jpe.5224.

Ellis, R. A. *et al.* (2020) 'From a Free Gift of Nature to a Precarious Commodity: Bees, Pollination Services, and Industrial Agriculture', *Journal of Agrarian Change*, 20(3), pp. 437–459. doi: 10.1111/joac.12360.

Enciclopedia Agraria Italiana (1952) Roma: Ramo editoriale degli agricoltori

Eurispes (2022) *Rapporto Italia 2022*. Available at: <https://eurispes.eu/ricerca-rapporto/rapporto-italia-2022/> (Accessed: 13 November 2023).

Francione, G. L. (2022a) ‘Animal Welfare and Society—part 1, the Viewpoints of a Philosopher’, *Animal Frontiers*, 12(1), pp. 43–47. doi: 10.1093/af/vfac006.

Francione, G. L. (2022b) ‘Animal Welfare and Society—part 3, Response to Jocelyne Porcher’, *Animal Frontiers*, 12(1), pp. 53–54. doi: 10.1093/af/vfac007.

Fraser, N. (2021) ‘Climates of Capital’, *New Left Review*, 127 Jan/Feb, pp. 94–127. Available at: <https://newleftreview.org/issues/ii127/articles/nancy-fraser-climates-of-capital> (Accessed: 11 November 2023)

Foster, J. B. & Magdoff, F. (1998) ‘Liebig, Marx, and the depletion of soil fertility: relevance for today's agriculture’, *Monthly Review*, 50 (3), no pages. Available at: link.gale.com/apps/doc/A21031831/ITOF?u=erasmus&sid=oclc&xid=2e7b5239. (Accessed: 30 March 2023)

FSEC (2023) *Mold Growth: What is Mold?* Available at <https://energyresearch.ucf.edu/consumer/buildings/building-science-basics/mold-growth/> (Accessed: 24 October 2023).

Gillespie, K. (2011) ‘How Happy Is Your Meat? Confronting (dis)connectedness in the ‘alternative’ Meat Industry’, *The Brock Review*, 12(1), pp. 100–128. doi: 10.26522/br.v12i1.326.

Guerrini, M. (n.d.) *Toscana Novecento, Museo della Mezzadria senese*. Available at: http://www.toscananovecento.it/custom_type/al-museo-civico-di-montepulciano-il-racconto-per-immagini-della-vita-di-campagna/ (Accessed: 05 November 2023).

Haraway, D. (1988) ‘Situated Knowledges: The Science Question in Feminism and the Privilege of Partial Perspective’, *Feminist Studies*, 14(3), p. 575.

Houzer, E. and Scoones, I. (2021) *Are livestock always bad for the planet? Rethinking the protein transition and climate change debate*. Brighton: PASTRES. Available at: <https://whylivestockmatter.org/resources/report-are-livestock-always-bad-climate> (Accessed: 16 October 2023).

ISMEA (2022) *Ultime Notizie: Fiducia ai minimi in agricoltura, mai così bassa nemmeno durante il Covid* [Lastest News: Confidence at lowest in agriculture, never so low even during Covid], 9 June.

Available at: <https://www.ismea.it/flex/cm/pages/ServeBLOB.php/L/IT/IDPagina/11815>
(Accessed: 23 October 2023).

Ispra (2023) 'Presentati in un evento di Confagricoltura i risultati dell'indagine nazionale di ISPRA sulla gestione del cinghiale in Italia nel periodo 2015-2021' [Presented at a Confagricoltura event the results of ISPRA's national survey on wild boar management in Italy] Available at: <https://www.isprambiente.gov.it/it/istituto-informa/comunicati-stampa/anno-2023/presentati-in-un-evento-di-confagricoltura-i-risultati-dell2019indagine-nazionale-di-ispra-sulla-gestione-del-cinghiale-in-italia-nel-periodo-2015-2021> (Accessed: 08 October 2023)

ISTAT (2022) *7° Censimento generale dell'agricoltura: primi risultati. Meno aziende Agricole (ma più grandi) e nuove forme di gestione dei terreni* [7° General census of agriculture: first results. Fewer (but larger) farms and new forms of land management], 28 June. Available at: https://www.istat.it/it/files/2022/06/REPORT-CENSIAGRI_2021-def.pdf (Accessed: 23 October 2023).

IZSUM (2022) *Peste Suina Africana* [Swine African Fever] Available at: <http://www.izsum.it/IZSUM/Common/pages02/wfContentLista.aspx?IDMAP=512>
(Accessed: 29 October 2023).

LEIDAA (2021) *Specie Protette* [Protected species]. Available at: <https://leidaa.info/specie-protette/> (Accessed: 30 October 2023).

Mack, A.N and Na'puti, T.R (2019) 'Our Bodies Are Not Terra Nullius': Building a Decolonial Feminist Resistance to Gendered Violence', *Women's Studies in Communication*, 42(3). doi: 10.1080/07491409.2019.1637803.

Margheriti, D. and Pernazza, C. (1983) *Contadini in Umbria tra '800 e '900: un territorio, una storia*. [Peasants in Umbria between '800 and '900: a territory, a history] Foligno: Editoriale Umbria.

Marvin, G. (2006) 'Wild Killing: Contesting the Animal in Hunting', in The Animal Study Group (ed.), *Killing Animals*. Urbana: University of Illinois Press, pp. 10-29.

Merriam-Webster (2023) 'Ecosystem'. Available at: <https://www.merriam-webster.com/dictionary/ecosystem> (Accessed: 25 October 2023).

Ministero della Salute [Ministry of Health] (2023) *Piano nazionale di sorveglianza e eradicazione della peste suina africana* [National plan for the surveillance and eradication of African Swine Fever]. Available at:

<https://www.salute.gov.it/portale/pesteSuinaAfricana/dettaglioContenutiPSA.jsp?id=5956&area=pesteSuinaAfricana&menu=vuoto> (Accessed: 30 October 2023).

Moore, S. A. and Robbins, P. (2015) 'Nature's Diverse Economies: Reading Political Ecology for Economic Difference', in Roelvink, G., St. Martin, K., and Gibson-Graham, J. K. (eds.) *Making Other Worlds Possible: Performing Diverse Economies*. Minneapolis (MN): University Press of Minnesota, pp. 153-172.

Moyano- Fernández, C. (2022) 'The Moral Pitfalls of Cultivated meat: Complementing Utilitarian Perspective with eco-republican Justice Approach', *Journal of Agricultural and Environmental Ethics*, 36(23), pp. 1-17. doi: 10.1007/s10806-022-09896-1.

Nemecek *et al.* (2011) 'Life cycle assessment of Swiss farming systems: II. Extensive and intensive production', *Agricultural Systems*, 104(3), pp. 233-245. doi: 10.1016/j.agsy.2010.07.007

Oelschlaeger, M. (1991) *The Idea of Wilderness: From Prehistory to the Age of Ecology*. New Haven: Yale University Press. Available at: <https://www.jstor.org/stable/j.ctt1cc2krg> (Accessed: 31 October 2023).

OrvietoSì (2016) *Orvieto scalo, un quartiere da riqualificare. La parola ai cittadini e operatori*. Available at: <https://orvietosi.it/2016/02/orvieto-scalo-un-quartiere-da-riqualificare-la-parola-a-cittadini-ed-operatori/> (Accessed: 05 November 2023).

Oyèwùmí, O. (1997) 'Visualizing the body: Western theories and African subjects' in *The Invention of Women: Making an African Sense of Western Gender Discourses*. Minneapolis: University of Minnesota Press, pp. 1-30.

Parlamento (1964) *Legge 15 settembre 1964, n. 756. Norme in materia di contratti agrari*. Roma: Gazzetta Ufficiale. Available at: <https://www.normattiva.it/uri-res/N2Ls?urn:nir:stato:legge:1964-09-15;756> (Accessed: 04 November 2023).

van der Ploeg, J. D. (2014) *Peasants and the art of farming: A Chayanovian manifesto*. Warwickshire, UK: Practical Action Publishing.

van der Ploeg, J. D. (2018a) "From De-To Repeasantization: The Modernization of Agriculture Revisited," *Journal of Rural Studies*, 61, pp. 236–243. doi: 10.1016/j.jrurstud.2017.12.016.

van der Ploeg, J. D. (2018b) *The new peasantries: rural development in times of globalization*. Second edn. Abingdon, Oxon: Routledge (Earthscan food and agriculture). doi: 10.4324/9781315114712.

- Plumwood, V. (2012) 'Animals and ecology: Towards a better integration', in Plumwood, V. & Shannon, L. *The Eye of the Crocodile*. Canberra, ACT: ANU E Press, pp. 77-90.
- Polimeni, P. (1994) *Le Comunità Agrarie del Monte Peglia*. [The agrarian communities of Monte Peglia] MA thesis. Università degli Studi di Roma "La Sapienza". Unpublished.
- Porcher, J. (2017) *The ethics of animal labor: a collaborative utopia*. Cham, Switzerland: Palgrave Macmillan. doi: 10.1007/978-3-319-49070-0.
- Porcher, J. (2020) 'Meat—the Enemy Within', *Review of Agricultural, Food and Environmental Studies : A journal of the French National Institute for Agriculture, Food and Environment (INRAE)*, 101(4), pp. 509–516. doi: 10.1007/s41130-020-00128-6.
- Porcher, J. (2022a) 'Animal Welfare and Society-Part 2, the Viewpoints of a Sociologist', *Animal frontiers: the review magazine of animal agriculture*, 12(1), pp. 48–52. doi: 10.1093/af/vfac005.
- Porcher, J. (2022b) 'Une monde végane : pour quoi et pour qui ?' [A vegan world : for what and for whom?], *Études rurales*, 210, pp. 8-17. doi: 10.4000/etudesrurales.30244
- Pretty, J. *et al.* (2009) 'The Intersections of Biological Diversity and Cultural Diversity: Towards Integration', *Conservation and Society*, 7(2), pp. 100-112. Available at: <https://www.jstor.org/stable/26392968> (Accessed: 01 November 2023).
- Progetto Cuori Liberi ODV (2023) *Untitled*. [Instagram]. 15 September. Available at: https://www.instagram.com/reel/CxN4g6hohUW/?utm_source=ig_web_copy_link&igshid=MzRlODBiNWFlZA%3D%3D (Accessed: 26 October 2023).
- Provenza, F. (2018) *Nourishment – What animals can teach us about rediscovering our nutritional wisdom*. London: Chelsea Green Publishing.
- Regione Umbria (2004) *Il Capriolo in Umbria* [Roe deer in Umbria]. Available at: <https://provincia.perugia.it/il-capriolo-umbria> (Accessed: 06 November 2023)
- Rezvani (2019) *Plants and their peasants: a more-than-human approach to plant breeding and seed politics in Brittany, France*. MA thesis. International Institute of Social Studies. Unpublished.
- Roelvink, G. (2015) 'Performing Posthumanist Economies in the Anthropocene', in Roelvink, G., St. Martin, K, and Gibson-Graham, J. K. (eds.) *Making Other Worlds Possible: Performing Diverse Economies*. Minneapolis (MN): University Press of Minnesota, pp. 225-243.

- Schneider, M. (2014) 'Developing the Meat Grab', *The Journal of Peasant Studies*, 41(4), pp. 613–633. doi: 10.1080/03066150.2014.918959.
- Scott, J. C. (2017) *Against the grain: a deep history of the earliest states*. New Haven: Yale University Press (Yale agrarian studies).
- Sereni, E. (1961) *Storia del paesaggio agrario italiano*. [History of the Italian agrarian landscape] Reprint. Bari: Laterza, 1996.
- Sexton, A., Garnett, T. and Lorimer, J. (2019) 'Framing the future of food: The contested promises of alternative proteins', *Environment and Planning E: Nature and Space*, 2(1), pp. 47-72. doi: 10.1177/2514848619827009.
- Snyder, G. (1990) *The Practice of the Wild*. San Francisco: North Point Press.
- Social Science Research / University of Amsterdam (2021) *Thinking through the Crises | Critical Breakdown | María Puig de la Bellacasa*. 7 April. Available at: <https://www.youtube.com/watch?v=sb8-6wqnQ94> (Accessed: 17 September 2023)
- Tsing, A. (2015) *The Mushroom at the End of the World: On the Possibilities of Life in Capitalist Ruins*. New Jersey, Princeton: Princeton University Press.
- Tsing, A. L. (2017) 'A Threat to Holocene Resurgence Is a Threat to Livability' in Brightman, M. and Lewis, J. (eds.) *The Anthropology of Sustainability: Beyond Development and Progress*. New York: Palgrave Macmillan, pp. 51–65. doi: 10.1057/978-1-137-56636-2_3.
- Wadiwel, D. J. (2020) 'The Working Day: Animals, Capitalism, and Surplus Time', in Charlotte E. Blattner, Kendra Coulter, and Will Kymlicka (eds), *Animal Labour: A New Frontier of Interspecies Justice?* First edn. Oxford: Oxford University Press, pp. 181-209. doi:10.1093/oso/9780198846192.003.0009.
- Wapner, P. (2014) 'The Changing Nature of Nature: Environmental Politics in the Anthropocene', *Global Environmental Politics*, 14(4), pp 36-54.
- Weis, T. (2010) "The Ecological Hoofprint and the Population Bomb of Reverse Protein Factories," *Review (Fernand Braudel Center)*, 33(2-3), pp. 131–152. Available at: <https://www.jstor.org/stable/23346879> (Accessed: 02 April 2023)

Wikimedia Commons (2006) *Orvieto Panorama*. Available at: https://commons.wikimedia.org/wiki/File:Orvieto_panorama.jpg (Accessed: 05 November 2023).