

The Making of Modern Sheep. The New Pastoral Regime and Its Discontents

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ABSTRACT

Although pastoralism has a special place in Romanian history and national mythology, shepherds "occupy a complicated position" (O'Brien and Crețan 2019) in contemporary technoscientific capitalism (Birch and Muniesa 2020). As their age-old shepherding routes shrink (Săgeată et al. 2022), new devices need to be adopted and associated with traditional shepherding methods to meet the new market challenges and industrialised model of sheep farming. Opting for an approach that combines science and technology studies (STS) and anthropology, our paper examines how a New Pastoral Regime (NPR) was assembled with the help of a small piece of technology: the ear tag. EU norms, market imperatives, scientific innovation, financial subsidies, political interests, and technical devices become entangled in a political and scientific network of governing nature and the future that produces different kinds of sheep as techno-natural entities. By opening the black box of ear tagging technology our paper reveals what was left out, what was included, and with what consequences.

KEYWORDS

Shepherding; ear tags; assetization; New Pastoral Regime; improvementality.

Introduction

We must cease to always describe effects of power in negative terms: it "excludes," it "represses," it "buries," it "censors," it "abstracts," it "masks," it "hides." In fact, power produces; it produces the real; it produces domains of objects and rituals of truth. (Foucault 1995, 194)

In April 2019, a shepherd attended Agraria, one of Romania's most famous international exhibitions of agriculture, food industry and animal husbandry, held in Cluj County, to present his livestock to the public. As the farmer was ready to take the stage and show his rams, the farmers and other professionals present at the event began to raise vehement objections as he approached the ring. The spontaneous

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protest, sparked by the sight of the rams, was so intense that it led to the cancellation of the parade, despite the shepherd's attempts to de-escalate the situation. The show took an unfortunate turn. In the days that followed the event, the farmer tried to clarify his (and his rams) situation in a public statement:

As was the discussion at Agraria with my rams, the engineer explained to them ... what had happened. I brought all the documentation to the engineer. I also brought him sample ear tags from the vet that he had placed in the envelope for his records. He put them in the envelope, and I gave him a statement. Now, I was supposed to go into the ring with the rams, and that is why I was rejected because I had red ear tags (for the rams) when I went to Agraria. (Agroinfo 2019)¹

For any social interpreter trying to make actions explicit is never a simple task and often translates into the emergence of grey areas, new problems or controversies (Muniesa 2014), as it can easily be grasped from the above quote. In his attempt to clarify, the shepherd summoned documents, engineers, archives, declarations, veterinary, rams, ear tag samples, and what seemed to be the problematic red ear tags, adding more confusion and disorder to the story with each utterance. But on a closer look, despite his hesitations, the shepherd managed to describe in a nutshell how shepherding and sheep farming are carried out currently under the European Union's Common Agricultural Policy (henceforth CAP) frame. The entire arsenal of experts, artefacts, and norms messily strung together in his speech lies at the heart of the policies that aim to make the CAP a "smooth functioning single market."²

Agraria, like any other exhibition, is a stage for commodities, goods, and services with an important relational aspect, allowing face-to-face meetings between farmers, specialists, investors, and authorities in the agricultural sector. It is also a market cabinet of curiosities, loaded with devices meant to arouse, excite, and capture the public's attention (Cochoy



Sheep left at home, which didn't go to the mountains to graze, Sohodol village, Brasov county. The owners who keep sheep in this way are ironically called „hutman” [in rom. *cotețari*]. Photo credit: Răzvan Papisima.

2016). For shepherds, as in our case, taking part in such an event is a high stake—the chance to present their livestock to potential customers, persuade the public, and make themselves noticed. It is also a good occasion to publicly present the qualities of the flock, allowing for quick evaluations and comparisons between different breeds. In addition, the market based on licenced exhibitions represents a rare opportunity for farmers, as traditional local and regional fairs displaying living animals were gradually banned. The restrictions came in waves after the avian influenza outbreak in 2005, followed by the African swine fever epidemic in 2018. In this context, a shepherd may be banned from showing his carefully selected rams and excluded from the market because his animals were disqualified. This is rare and mainly the result of a lack of mandatory documents, breaking regulations related to animal health or hygiene, which was not the case here. However, there is another important actor in this scene: the ear tags attached to the rams. Ear tags have become so commonplace, discreet, and universal that they can easily escape the attention of the non-initiated. However, connoisseurs are very aware of them and can notice subtle differences related to colour or complexity. For example, while yellow ear tags are common and obligatory in most cases, red ear tags, signifying *duplicates*,



can rapidly become a point of inflexion, as happened in Agraria.

At the exhibition, for both the shepherd who was not allowed to show his rams and those who witnessed the event, the red ear tags became a sign of controversy, sufficiently imbued with meaning to trigger a small revolt and to reject the very existence of the rams. It is not too much to say then that the ear tags seem to have lost contact with their referent right in front of the attending participants.

Shepherding and pastoralism have a special place in Romanian history and national mythology, and shepherds occupy a complicated position in contemporary society (O'Brien and Crețan 2019). The importance of pastoralism in Romanian culture might be easily found in one of the most notorious cosmogonical Romanian myths, the pastoral ballad *Miorița* [The little ewe]. Moreover, it was and still is a significant socio-cultural and economic element in rural Romania. One of the most important Romanian traditional calendars is pastoral. It splits the year in half: winter and summer. Each half/season encompasses specific holidays and includes both positive and negative prescriptions that structure people's everyday lives. Pastoralism is a way of life as well as contributing to creating new ethnographic/geographic landscapes, a remarkable adaptation to environment. Based on extensive fieldwork research, Romulus Vuia (1964)³ found four types of pastoralism in Romania: local agricultural pastoralism (inside the limits of the households); agricultural pastoralism with sheepfolds in the mountains; pasture-based pastoralism; and pasture-based pastoralism between summer alpine pastures and wintering on the plains. Each type configures and generates specific environmental and cultural landscapes.

Pastoralism in Romania used to be largely traditional. Be it sheep farming, transhumant shepherding and so on, it employed time-honoured techniques to manage and care for the flocks. The breed of large shepherd dogs (to cope with threats from wild animals and to help with controlling large herds), the grazing

rotation, sessional movement (nomadism) on long distances and/ or over different altitudes, and even the use of popular medicine against various diseases and external and internal parasites, shearing and making cheese and other dairy products, these all point to the complexity of Romanian pastoralism in terms of both immaterial and material culture. After Romania's EU accession, in 2007, new rules came in effect and new restrictions were imposed on shepherds, starting with the transport of livestock, the minimum sanitary conditions of the place in which the milk and dairy are processes—also known as the “cheese crisis” (Mihăilescu 2010, 193), restricting transhumance by new veterinary rules, reducing the allowed number of large dogs, the unequal distribution of pastures, the low price of milk and meat, and so forth, just to mention only few of them. This process gradually dislocated the traditional herding practices and created a new framework in which sheep, shepherds, pastures, a new sanitary discipline, various technologies, EU funding schemes, and political interests became entangled.

In effect, as their age-old shepherding paths shrink (Săgeată et al. 2022), new technologies need to be adopted and associated with traditional sheep rearing methods to meet the new market challenges and an industrialised model of sheep farming that is continuously searching to add and maximize value. Digitally monitored and precision agriculture, genetic engineering, pasture management, and control quality for dairy products represent significant adaptations. But devices like ear tags have become so important in this transition that sometimes they can be *more-than-a-device* and no less than irrefutable proof of the sheep's actual existence.

Jean Baudrillard once asserted that “the real is produced from miniaturized cells, matrices, and memory banks, models of control and it can be reproduced an indefinite number of times from these” (1994, 2) making the real no longer present. Baudrillard coined the term *simulacrum* to encompass such metamorphosis, meaning a copy of a copy,



always an effect and not a cause of some-thing. In contrast, and adding the potentiality of effect, Daniel Miller (2003, 68) argued that successes in the fields of audit and economic consultancy are the outcome of a representation that can suppress and supplant what they represent. This logic of abstraction, Miller adds, lies at the heart of *virtualism* (*Ibid.*, 72). In this way, Daniel Miller's *virtualism* ends up sharing some commonalities with Jean Baudrillard's *simulacrum*, as something that it is not real. However, both paths bring us to the old Platonic motive of the cave, forcing us to distinguish reality from appearance, abstract from concrete, the original from the copy, or the real sheep from the duplicate, and so on.

Here, we are not interested in making a new distinction between true or false conceptions of reality; instead, by adopting a pragmatist standpoint we will go around the reality/appearance divide, looking at different processes of *realisation*, by examining how something becomes real. Put bluntly, we change the focus to actions, practices, and power. Instead of looking at reality or value, as things *per se*, we look at the practices that make, discover and assign something called value, and how this value in turn shapes reality. How does the articulation of the concept of value—as it has evolved in CAP's sheep farming policies, regulations, and life sciences—affects the world we live in? This is an important question because what is considered valuable and what is not sometimes translates into practice as a choice between what should exist and what should not, what is known and worth knowing.

How does a ram with a red ear tag become less-than-a-ram? How does a sheep become valuable, an asset, an economic thing? What forms it takes once it enters the realms of valuation and with what consequences? How is value realised? These are the main questions we want to tackle.

In the first section we will provide an account of the methodology we employed in our research and then we will introduce the conceptual foundations of the New Pastoral Regime. Next, we will show how ear tags

played a crucial role in framing sheep as a *biotechnical asset*, cutting it out from its previous context, transforming it into pieces of data for continuous veterinary, genetic, and market-driven improvements based on different calculative devices. Finally, we focus on the emergence of new forms of contestation and subversion that emerge in this frame.



Some remarks on research methodology

Our methodology reflects our choices to transcend disciplinary boundaries linking Science and Technology Studies (STS), mainly valuation studies, and anthropology, while sticking to a pragmatic approach. In doing so, our perspective will oscillate between a material-semiotic approach while we pay attention to non-humans, in general, as in multispecies relations. We focus on *contact zones* (Harraway 2008), spaces where lines separating nature from culture and science from politics have broken down. In this way, we are able to follow the trajectories of the sheep as an economic thing and how this is framed by CAP, uncovering in this process the effects of ear tagging by *reverse engineering* the facts.

However, the methodology we employ here is hybrid as evidenced by the focus on both living beings and non-living things as research subjects, but also in terms of the spatial and temporal dimensions of the research. Hence, a good formulation would be a multi-sited and multi-timed ethnography (Asdal and Huse 2023, 8), while a more accurate one would be *patchwork ethnography*, a term recently coined by Günel and Watanabe (2023). In other words, this article is not the fruit of a so-called traditional fieldwork method frequently predicated on the assumption that researchers ought to separate “the field” from “home” and immerse themselves completely in the research setting for extended periods. “Patchwork ethnography” acknowledges that such a model is not always feasible or reflective of



the conditions under which many researchers work today by emphasising that ethnographic research is often carried out amid intersecting personal and professional obligations, rather than through the idealised model of unbroken, uninterrupted fieldwork in a distant location.

The geography of our research is diverse, some data was collected during periods of extensive ethnographic fieldwork, mostly during the summers starting with 2017, in various rural sites throughout Romania, including Braşov County (Răzvan Papasima and Alexandru Iorga), Hunedoara County, and parts of the Danube Delta, Tulcea County (Alexandru Iorga), in the vicinity of protected areas. In 2018, we were part of a team of six anthropologists who mapped the intangible heritage elements in Bran, Moieciu, and Fundata (Braşov County), aiming to provide a comparative and emic view of the practices and customs specific to agro-pastoral communities in the area.⁴ Even if such an experiment, closer to Dimitrie Gusti's sociological monograph and the Bucharest School of Sociology is still uncommon in anthropology, it may not be singular.⁵ Our endeavour proved extremely fertile, especially in terms of raw data collection, but also as a reflexive encounter with our work. Some data gathered during these periods, including recorded and unrecorded interviews, field notes and observations have remained archived and have not been considered until now. Other data was collected over the past nine months, as we narrowed down the topic we discuss in this paper. For this purpose, we combined fieldwork with digital ethnography, following shepherds for clues in the digital space, in their interactions in groups created on social networks such as Facebook, TikTok, and YouTube, on subjects related to subsidies, sheep sales and purchases, and ways of caring for animals. We also followed the official pages of various shepherd associations and spoke with their representatives on the phone. We took notes from the press conferences organised by some of these associations, or their leaders, some of them via the YouTube channel, as well as the video archive of news

related to shepherds' protests created in recent years on this platform. Such observations gave us important clues in many cases especially when our principle *follow the actor* led us increasingly into grey areas, somewhere at the border between legality and illegality.

Moreover, we sometimes found ourselves involved in fieldwork in Bucharest, the city we live in, taking notes after short talks with shepherds present at various product fairs or in neighbourhood markets while, at the same time, we carried out our domestic chores. This often made the distinction between home and fieldwork unnoticeable, not unlike the feeling of being *followed home by our field*.

As Asdal and Huse (2023) remind us, following John Law (2010), research methods serve as instruments that enable us to scrutinize and make sense of the intricacies of social reality, but as we employ these methods and embark on the process of constructing our descriptions of reality, we simultaneously, and unintentionally, bring into being different realities of our own. We are aware that in the act of "tracing" the trajectories of the sheep, we may have designed a field that links certain spaces, interests, locations and actors while others were left outside. These limitations are exclusively our responsibility.



What is an ear tag?

John Law and Annemarie Mol (2008) answered a similar question in their work about the Cumbrian sheep. Amid the foot-and-mouth disease crisis in 2001 in the United Kingdom, Law and Mol took the Cumbrian sheep as their prospective agent and uncovered four versions of it as veterinary, epidemiological, economic, and farming entities. They argued that these versions that entail complex practices enact the sheep as a "sheep multiple" (Law and Mol 2008, 64), a passive-active actor. These novel entities popped up from interfering webs of relations or different institutional arrangements that



make up socio-technical assemblages and their specific practices. Law and Mol's work on the Cumbrian sheep as actor-enacted entity is still relevant here, but with a twist: our prospective agent is the ear tag attached to the sheep, a technology that at that time was not as ubiquitous as it is today. In fact, a sheep wearing an ear tag is different from a sheep without one, because the tag enables the sheep to move in and out of the associations that make up the sheep-market under the CAP frame.

Electronic tags are used almost everywhere these days, attached to goods to track equipment, vehicles, animals, and even people. Tags are used in stores, attached to clothing, or used in the natural environment to monitor living things, from ants to whales. The standard description of a tag, including an ear tag, is as an identification device, an ID carrier. They are generally made of plastic and have a unique number (code) inscribed on them to make it easier to identify the thing to which they are attached. Some are simple, with no built-in technology, while others are electronic, containing microchips that can be read by those interested in tracking them, using special portable devices based on magnetic communication. Various models of ear tags for sheep are commonly available on the market, but their trading is regulated by EU standards and national authorities such as the Romanian National Sanitary Veterinary and Food Safety Authority (ANSVFSA). Producers must comply with international standards, and the cost of these devices is supported entirely by sheep farmers.

Fourcade and Healy (2017, 10) remind us that Max Weber saw that capitalist markets and bureaucratic organisations share an affinity for the systematic application of rules and measures that make the world legible so it can be acted upon. This is an important observation for our case, as the role of the CAP is precisely the creation of such frameworks where bureaucratic organisation and capitalist market intermingle. The implementation of mandatory tagging schemes is not just a simple market condition, it is also a political



A curious sheep, somewhere near Bran. Photo credit: Răzvan Papisima.

and technoscientific challenge, linked with the emergence of a biogovernance regime (Broz et al. 2021). We call this normative frame crystalized at the intersection of genetics and veterinary sciences, political-economic interests, technological innovations and conservation discourses with the aim to increase the efficiency and welfare of the ovine sector, the New Pastoral Regime (NPR). Similar effects are sometimes linked with the emergence of a biogovernance regime or a “veterinarization” logic (Broz et al. 2021), aiming to manage interactions between humans and wildlife, but less attention has been given to the intricacies of human-domestic animal relationships, the role of technology and market making. We describe here, however incompletely, how the ear tag became a crucial tool for the success of NPR, by following the ear tags as a “double integration” device (Foucault 2007, 88): one is related with treating future loss as a risk, or “technologization” (Collier et al. 2004, 5), and the other with the *rationalisation of probabilities*. The first binds ear tags with sheep individualization, meaning here breaking it down into information units that can be managed and modified; the later acts as an accounting device, enabling the sheep to perform and unlock its value. Both share the aim of calculating nature, but they do this in different ways and with different outcomes.

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The ear tag as an individualization device

The shepherd is someone who keeps watch ... the shepherd counts the sheep; he counts them in the morning when he leads them to pasture, and he counts them in the evening to see that they are all there, and he looks after each of them individually. (Foucault 2007, 172–3)

Michael Foucault's (2007) concept of *pastoral power* is less employed, although it was central and the source of *governmentality*, a more widely known and used concept, developed in his courses at the Collège de France in the 1970s. In his analysis of biblical and religious texts, Foucault saw Christian pastoralism as a "prelude" to modern technologies of human population governance, and his findings may find fertile ground here. If ruling still resembles exercising power over a flock, as Foucault argued, then perhaps we should look back at how the flock is composed and de-composed, made up and broken down, as *governmentality* and *pastoral power* seem to exchange properties with one another. It is ironic in a way that we need to return to Foucault's pastoral power, this time in a literal sense, rather than in a metaphorical one, in order to understand how new forms of individualisation emerge, how animals are shaped by calculated means, and how humans are shaped in turn.⁶ The individualization is a twofold process: one related to the creation of data and the other to sheep breed improvement (*ameliorarea rasei*).

Individualization here is nothing but an operation of breaking down the flock in small pieces of information, which allows for the accumulation of individual data to achieve the ideal of precision in livestock farming. It consists in the gradual introduction of various methods of registration and data collection, the issuing of certifications, standards, and technologies to improve transparency and herd management practices with the aim of mitigating potential zoonotic risks. To achieve this goal the CAP's main rationale behind

the introduction of ear tag regulations was to establish a comprehensive traceability system that could provide accurate and verifiable information about the origin of the animals and the authenticity of the breed, thereby promoting confidence in the marketed products. In Romania's case the animal identification and registration systems appeared as a requirement for EU accession in 2007, a precautionary action meant to reduce the risk of disease transmission between animals and from animals to humans. Scrapie, the archetype transmissible spongiform encephalopathy (TSE), and foot-and-mouth disease virus (FMDV) were at that time the main zoonotic diseases that had shown their devastating potential in the 2001 crisis in the United Kingdom that threatened the animal welfare and the global economy simultaneously.

The first control measures were taken in 2005, when non-electronic tags became compulsory and involved implanting ear tags to mark the livestock (sheep, goats, cattle, pigs, and horses). The procedure also introduced a variety of inscriptions into the shepherding landscape. On the one hand, the vet was supposed to fill in a standard ID paper containing the address of the animal, the breed, and the owner. Later, the vet had to issue a veterinary certificate for each individual farm. On the other hand, a digital database was created, and the entire identification process was digitalized. Some veterinary offices were equipped by the state with computers connected to the internet, allowing veterinarians to upload identification data and to create a National Database. Afterwards, in 2012, double ear tagging of sheep (the non-electronic ear tag on one ear and the electronic ear tag on the other) was required, mainly for farmers who aimed to access subsidies and to sell their livestock on foreign markets. The utilization of electronic identifiers, using radio frequency tags (RFID) or microchips, also had an impact on the decision-making process in animal husbandry by providing relevant data regarding suitable periods for mating, the time of gestation,



distance covered by animals on pastures, and so on.

The double tagging operation can be made by veterinary doctors at an additional cost or by the shepherds themselves; however, the veterinary must check and register the new-born sheep in maximum 180 days from birth. Whenever an animal was born, sold, or it disappeared, the ear tag had to be either attached, registered with the new owner or destroyed, depending on the situation, and the animal added to or removed from the National Database. Moreover, farmers who have their sheep registered at ANSVFSA and rams registered in the newly created Register of breeds (*Registrul Genealogic*) are qualified to participate in local auctions organised by the local authorities to secure the pasture land needed for livestock feeding. In this way, individualization enables the efficient coupling of two networks that together are intended to provide all necessary information that a consumer may need: Food Traceability System (FTS) integrated within a Food Supply Chain (FSC). The ear tag acts as an embedder of the sheep in these two networks.

Ear tags are an active entity in the construction of this classificatory architecture that allows the market under CAP to control which animals can be bred, where they can be sold, by whom, to whom, and when. More than a tracking device, the ear tag becomes an instrument of knowledge through which the market has learned to “see” (Fourcade and Healy 2017), and, we might add, to *foresee* new ways of profit extraction. The fight with viruses is at the same time a fight with scarcity, it is a measure to avoid a zoonotic and an economic crisis. For this reason, sheep individualization through ear tagging must be combined with the continuous work of improving sheep breeds to unlock the sheep’s inner value. This objective is perfectly illustrated in the first paragraph of the Animal Breeding Regulation adopted by the EU Parliament in 2016, which mentions “encouraging the use of purebred breeding animals ... of recorded high genetic quality” (Animal Breeding Regulation 2016, 1).

This legal framework governs the regulations applicable to the breeding, trading, and introduction of breeding sheep (and other four different species), as well as their germinal products. In the document expressions such as “breeding value” and “genetic value” are frequently used along with “genetic evaluation,” sometimes followed by “performance testing.”

Added value, evaluation, testing are the big-tech economics *magic formulas* that recall the iterations of a software development, in their struggle to meet the users’ expectations, to innovate, to simplify operations, and to improve an existing programme. For the resemblance to be more relevant, the sheep also enters a *breeding program*. That translates firstly into a document certifying that the rams or sheep are recorded in a breeding book or registry, which includes information on their genealogy (*Registrul Genealogic*). Depending on the objectives of the breeding program, the animals may undergo performance testing or other evaluations to assess their traits in relation to the program’s goals. If specified in the program, genetic evaluation is conducted to estimate the animals’ breeding value, which in turn can be used to rank them accordingly. Consequently, the genealogical data, along with the performance test results provide the foundations for further breeding and selection decisions.

Secondly, farmers who want to access subsidies such as the coupled livestock support (SCZ) must meet two preconditions: the sheep must have ear tags and be registered in the Breed Register.⁷ All registered purebred breeding sheep, whether male or female, are accepted for breeding purposes, but not all individuals can perform breed improvement. Purebred breeding ewes are eligible for ova and embryo collection and use; purebred breeding rams are allowed for artificial insemination and semen use, but only if they have undergone performance and genetic value assessment tests that can identify their “genetic merit.” For example, for a farmer or shepherd to have access to subsidies, they



must purchase purebred rams to improve their flock. Each purebred ram earns the farmer a sum of money, and the amount they receive is multiplied by 35 ewes, which are supposed to be allocated to the ram. Depending on the number of sheep, a smaller or larger number of rams can be acquired, which may or may not cover the entire stock. A ram must pass the official breeding test to determine whether its breed is pure or not, the test enabling the unlocking of its genetic and financial value. The operation is carried out as follows:

Rams testing takes place either at a Breeding Society (*Societate de ameliorare*) or at the stud farm and starts with the selection of rams to participate in breeding. Let's say we choose a ram, we prepare it in advance, about a month, to become productive, and then it enters an adaptation period of maximum 10 days with 35 ewes. This is also the norm according to which the SCZ subsidy is given for a homebred ram and for 35 ewes. After this period is over, the gestation period of 150 days follows, and then the lambing starts. Each individual offspring is registered, weighed, kept for two months, the suckling period, and then they are weaned. Next, test batches are chosen. This period takes about a month, and it is decisive because we can tell from various individual measurements, taken at the beginning of the test and at the end of it, the average daily gain or growth rate. All this data about

the gain scores is collected by a special program, a genetic evaluation software, and the average daily score achieved for each ram is calculated per batch. The differences between them, resulting from certain calculation formulae, determine their genetic value: one can be a meat improver, whereas the other must be excluded. In this way, some of the offspring considered the best from a scientific point of view are selected. A similar procedure is used to evaluate the quantity of milk, meat, and wool produced. The sheep are tested and measured, and at the end it is decided which is in and which is out. (An expert from a Romanian Breeding Society)

The trade in breeding animals and their germinal products along with sheep individualization aim to "improve resource efficiency," to "enhance resilience" and "robustness of animals." In contrast with natural selection which is a mechanism of evolution, the *scientific selection* of sheep is a politics of production aiming to increase the quantity of meat, milk or wool, depending on the economic interest in play, and at the same time to eliminate and reduce the susceptible alleles that make them vulnerable to diseases and to enrich the resistant alleles. In the search for animal traits considered viable (and valuable) in an insecure future, these modes of *qualculation* (Cochoy 2019) made by valuation techniques and discursive formulae are material and semiotic assemblages that perform what Tania Murray Li called "the will to improve" (2007). The program designed as a tool for mitigating bioeconomic risks is an attempt to prevent what economists identify as the phenomenon of scarcity by finding a point of support in the processes of scarcity themselves (Foucault 2007). As Michael Foucault argued, instead of trying to prevent scarcity, or the causes of the occurrence or the spread of diseases, the designers are trying to "make other elements of reality function in relation to it in such a way that the phenomenon is cancelled out, as it were" (*Ibid.*, 88). This is exactly the meaning that Foucault gives to the verb "to provoke," that

Local man moving hay with his 4X4 car. Photo credit: Răzvan Papasima.



is to make a reality happen by performing it, in our case to construct a market able to respond to needs in such a way that can make future threats manageable. In other words, to extract from plenty of sheep a “sheep of plenty” for the common benefit of *homines* and *ovinus*. In this *improvementality* setting, if we are allowed to use this peculiar word, ear tags play a haptic role for policymakers and scientists allowing them to manage not only zoonotic risks, but also the uncertainties of an unstable future.



The ear tag as an accounting device

The institution of ear tags enabled the proliferation of inscriptions, from documents related to subsidies to pedigree or certificates of origin for the trade in breeding animals and their germinal products. This accumulation of papers paved the way for a calculated sheep that made its way up into the balance sheet. Ear tags became an obligatory passage point (Callon 1984) in the sheep farmers journey to obtain EU subsidies, a mediator between the sheep, the veterinary, the bureaucrats, and the farmers in their search for eligibility (Iancu and Stroe 2016). Tracing the sheep in the balance sheet will allow us to uncover how sheep is understood and managed as a monetary investment. In other words, how the sheep becomes an asset.

A sheep farmer can access, if they meet all the criteria, three types of subsidies: coupled livestock support (SCZ), transitional national aid (TNA), and payments for agricultural practices beneficial for the climate and the environment, in the case of pastures. These subsidies are part of CAP’s wider policy on environmental protection in which pastoralism is seen as a form of “high nature value” (HNV) agriculture.

All these types of financial support are subject of International Accounting Standards, specifically IAS 20. The standard offers a working definition of subsidy for accountants

as “assistance by government in the form of transfers of resources to an entity *in return for past or future compliance* with certain conditions relating to the operating activities of the entity” [our emphasis]. In the case of sheep and goats, subsidies are further classified as “asset-related,” meaning that these are government grants whose primary condition is that an entity that qualifies for them must acquire, construct or purchase assets on a long-term basis, if “the entity will comply with the conditions attaching to them.”⁸ Moreover, another standard (IAS 41 Agriculture) prescribes the accounting treatment, presentation of financial statements, and disclosures relating to agricultural activity.⁹ PricewaterhouseCoopers (PwC), the biggest audit and consulting company in the world seeking to bring more clarity to accounting standards, describes IAS 41 “Agriculture” in a report as follows:

[A] small standard with a wide scope and a significant impact on those entities within its scope. It applies to most (but not all) entities that grow or rear biological assets (livestock or live plants) for profit. The principle of the standard is that increases in value are recognised as the *asset grows* and not solely on harvest or sale. (PwC 2009, 2)

In the same publication there are also two other important definitions that we need to pay attention to because they frame the sheep from an accounting angle. The first refers to agricultural activities considered to be defined by that they manage *biological transformation* and can measure the change in the quality and quantity of biological assets (*Ibid.*). The second refers to management of biological transformation understood as an activity aimed to

enhance, or at least stabilise, the conditions necessary for the process of growth, degeneration, production and procreation that cause qualitative or quantitative changes in a biological asset to take place. (*Ibid.*, 3)¹⁰



To put it simple, a sheep is redefined as an asset, and the sheep in turn redefines the shepherd as the guardian that must stabilize the continuous accumulation of value by it, or the asset growth, as the accounting standard names it. As asset, the value of a sheep is represented by *fair value*, a concept that differs from *market value* by encompassing the “measurement of an asset or a liability using a present value technique” (IRFS13 2011, 14).¹¹

A farmer active in an improvement breeding program translates this vision into practice as follows:

Improving my breed, increasing its genetic value from year to year, brings added value. It's not easy to do directed breeding, because it's an extra cost, but if you put in a flock a high-performance breeder, you'll certainly have much more high-performance offspring and, generation after generation, you'll see the effects.

In economic terms, bio-assets, such as livestock, often experience initial losses when they are purchased, as the cost of the asset is typically higher than its *fair value*. This is because in accounting any transaction expenses create a loss, an *exit price*. Conversely, initial gains on biological assets are considered to rise when new assets are generated, such as when a lamb is born. In the above quote the farmer depicts the sheep as a thing that accumulates value in time, and the loss as the *extra cost* of his investment. But this is just one aspect of cost valuations. The value of a sheep as bio-asset typically increases due to growth, reproduction, and rising prices, but may decrease due to degeneration, diseases, and lower prices. Here, the Janus-faced ear tag looks both forward and back. While the nitty-gritty calculation of subsidies anticipates the continuous value creation, another formula discounts it in the present. The latter is related to a formula that makes the task of economists overlap with that of veterinarians: *animal disease costs*. The calculation of animal disease costs is carried out using Discounted

Cash Flow (DCF), a specific formula applied in public or private investments. That is because in an accounting context, expectations are acknowledged in the accounts of the firm, and future risks must be taken into consideration. As such, the method uses various assumptions to discount the future value of the sheep and bring it into the present. For example, if a Scrapie epidemic breaks out in the next 10 years, to estimate the future cost to the EU economy, the epidemic must be brought into the present and calculated at today's values. Following Liliana Doganova's argument, we may say that physically it is the sheep that produces the income (as fixed capital), but it is the value of the income that produces the value of the sheep (Doganova 2024). Consequently, the value of the sheep asset is no longer determined neither by the market nor by fair value, but it is reduced by estimating the impact of diseases in the future net cash flows. In other words, the sheep is attached to a discounted value of the anticipated payments. DCF represents the “principle of capitalization,” as it was formulated by North American economist Irving Fisher in the 1920s, “a singular combination of temporality and valuation that produces the universalizing ambition to describe all things” (Doganova 2024, 16-8). In Fisher's words: “just as soon as these anticipated future services melt away, the present value melts away too; and the valuation must be written off or reduced” (1930, 609). Fisher argues that one of the primary responsibilities of accountants is to do this work of writing off or revising original valuations (*Ibid.*).

This is a good illustration of the fact that not only the sheep but also its value adapts: it changes shape, it mutates, adjusts, and requires active work from both humans and things to achieve this metamorphosis (Muniesa et al. 2017).

Such assessments can be made for a variety of different scenarios related to future risks in general, and economists even try to create models by which they can obtain the total expected value of the costs associated with the occurrence of a disease. These

types of calculations, which are increasingly prevalent, have become so influential that the Food and Agriculture Organization of the United Nations (FAO) developed an Excel-based tool called OutCost-Rum in 2022 for assessing the economic costs associated with any transboundary animal disease affecting ruminants and its control at the regional or national level (Casal et al. 2022). In fact, as the interrelationship between humans, animals, viruses, and the environment, between nature and culture, becomes more and more evident and produces more and more radical effects, the economic solution increasingly separates these entangled entities, while reducing the value of any-thing in an unstable and recalcitrant future, and even of the future as whole.

It is nothing special about the fact that it made its way in the shepherding economy, it is just a part of a larger process of *assetization* (Birch and Muniesa 2020) that is turning things like a life form, a patent or a bodily function into a revenue stream. In other words, anything that can be controlled, traded, and capitalized to generate income. In this process, ear tags represent just a primary device, an entry point, required in the construction of a sheep as a thing that can be monetized and capitalized, firstly through subsidies, secondly through investments in breeding. At the same time, they are a tool that limits the sheep movements (and its access), becoming an intermediary, just like a fence or a paywall, especially for the farmers that do not aim to improve their livestock with rams that are qualified for breeding purposes. Finally, ear tags enable fine grain calculations and assessment of the value due to the limited access and based on future earnings (e.g., discounted cash flow formula). This is how sheep take an asset form. It is another example, we may argue following Callon (2005), that when significant scientific, technological, and institutional investments are made to change the mountain into a farm and the sheep into a modern technoscientific entity, the foundation has been laid for the construction of a *single market* where shepherds can be transformed into modern economic agents. The ear tag

enacts the modern sheep, which enacts the emergence of the farmer who is expected to thrive and perform under the NPR.



The ear tag as “paper sheep.” A Gogolian turn

Our politicians have no idea what it means to raise a sheep and get nothing. Have you ever seen a shepherd politician? Is there a shepherd senator? Is there a shepherd in Parliament? No, they are all hunters! (Shepherd from Sohodol village)



In recent years the Romanian pastoral landscape has been a hotly contested terrain, although the voice of shepherds and small farmers has hardly been heard in the public space. However, especially since 2015, there have been various protests, linked to the gradual imposition of rules that have restricted their freedom to operate as they did before EU accession. Out of these discontents new alliances have emerged between shepherds and sheep farmers, new forms of organisation and action, and new leaders, more or less known. These new modes of organisation that have crystallised acted as an important collective actor in the negotiations with policymakers over the past few years, although with limited success. In our encounters with shepherds and farmers, however, they voiced their accumulated discontents without restraint, hoping to be heard. From these accounts we have been able to get an emic understanding of how NPR has impacted pastoralism in everyday life. We were surprised to find that the shepherds’ main concerns were not about the introduction of new technology, such as ear tags or other types as these are perceived as unnecessary and a loss of animal recognition skills. This is an important aspect that distinguishes between being a shepherd and what they sarcastically call an amateur (*cotețar*). This distinction reverberates on multiple levels, including how shepherds

understand their role in breed improvement, how subsidies and pastures are distributed, and how profit is being accumulated.

In a village near Bran lives T. R., a highly respected shepherd with decades of experience in sheep farming. Although he looks and feels like an old-fashioned shepherd, T.R. drives to his sheepfold in his SUV and instead of a staff, when we met, he held his mobile phone in his hand. Because we kept hearing the word *săbaș* in the area, and we didn't know very clearly what it meant we asked him to explain it to us.

What is *săbaș*?

The sheep's face, that's what *săbaș* is. When people got dumber, animal tagging was invented, and [animals] were accounted for according to their number. And sheep became like inmates, they are numbered. Before not knowing your sheep was shameful. I knew people who were able to recognise one thousand sheep. If you showed him this sheep now, "look at it." He'd have a look. And you'd show it again next year, "put it in a different flock." And he would tell you, "That's the one you showed me last year." (M. Z, Sohodol village)

When it comes to productivity lower results are never associated with the lack of qualities or genetic traits of the sheep but are rather linked with the need to improve the qualities of the shepherd that are seen as lacking. Sheep is valued in relation with the shepherd's value (understood as skills), not as a thing that needs to be worked upon to improve its qualities.

In the old days it was said that one sheep gave 10 kilos of cheese. Now they've gotten to the point where they give [back to the livestock owners] four kilograms. It's been getting smaller and smaller. Between May 1 and October 1. Before they used to give seven or eight kilos. Then they introduced a tax, the mountain owner had to give cheese to ICIL, there was a quota, he had to give three kilograms per sheep, during Ceaușescu's time. From 10 kilograms it went down to seven.¹² After that to six, and so on, and now it's down

to 4. That's all I give. It's true that there are no longer shepherds who graze them in such a way that a sheep can give 10 kilos of cheese. There aren't any left. (M. Z.).

In other cases, the productivity problem is directly related with the environment; a bad spot where the sheep has been grazing, a barren place, may simply decrease milk yield or it can even make the sheep sick. An excerpt from an interview with an elderly shepherd and former "master of the mountain"¹³ perfectly illustrates this relationship between land and sheep influencing one another.

You must know the sheep's diet, where to take them, because there are plenty of bad spots and dairy sheep break if you put them in a bad spot, they flip. Their udder breaks. They run out of milk. The place, the land, the soil is bare, it's a barren place. Once I had a sheep that used to leave the herd and go higher on a [different] strip, I've seen it and told the guys: you won't milk that one tomorrow. And it was like that because it got broken. It slept on that strip there on the bad spot and that was it, it lost the milk. (I. P., Sohodol village)

In both descriptions the sheep seems to be embedded in a mode of production in which extrinsic factors, the knowledge and skill of the shepherd or different elements in the environment determine productivity, rather than intrinsic ones according to the NPR design. Moreover, the misfires and discrepancies between policy and practice take a more radical turn when it comes to financial incentives. The farmers see subsidies that encourage genetic sheep improvement and the trade and rearing of purebred rams as sources of conflict that intensify competition and make way for *paper diversions*.

...the money that comes from the European Union, instead of distributing it for production, they ended up distributing it for papers. Certificates of origin are issued without having clear documents, certificates





Rams at a fair attracting the eyes of the visitors. Photo credit: Răzvan Papisima.

of origin that are put on the market, without assessment reports, everyone knows this. The presidents of associations and federations are interested in breed papers, certificates of origin, they are no longer interested in production. They are no longer interested in quality. (G. C. shepherd from Argeş County)

Problems related with the documentation of purebred rams, or the certifications required to access subsidies reveal more than a few shortcomings of the NPR. A latent conflict seems to lie at its very heart. Shepherds trying to mix traditional practices with European policies feel stuck as they encounter contradictions and point to the difficult challenges they face in their struggle to navigate this technocratic realm. If the traditional transhumance practiced by pastoralists implied a seasonal circuit of herdsmen in which managing ovine livestock was based on juggling climate and environment, mountain and plain, today the access to pastures is bound to ear tags and juggling the paperwork needed for the participation in pasture auctions. A shepherd describes what happens when policy interventions become entangled with the processes they aim to regulate and improve:

In the mountains there is no pasture left. They no longer give us the right to manage them; they rent them out to others. Why not give subsidies to all farmers? They have divided us. Let's all be equal, if I have 300 sheep or another

500 sheep, let everyone take accordingly, not based on certificates of origin, *on papers*. *Often the papers confuse us*, and can be bought with money. (G. C.) [our emphasis]

and he continues:

State-subsidised rams are smaller—the type of ram the state subsidises is much smaller than normal rams. For small rams, but with a certificate of origin, you receive a 25-euro subsidy, while large rams, but without papers, receive a five-euro subsidy. You must slaughter the big rams to buy small rams with a certificate of origin, that's how you perform. But with these small rams, we don't get ahead, we go backward years. They don't want these rams to be sold with assessment papers to eliminate the trick of changing rams. These rams have spread all over the country and with them the diseases.

The transformation of sheep into assets by channelling subsidies can, however, take forms that are not easily anticipated by bureaucrats or accountants. One shepherd painted a strange picture of Romania as the world's largest breeder of “paper sheep.”

Where are the sheep, we have millions on paper, but I tell you that in reality there are much fewer. We have big problems with animal health, entire farms are being sacrificed



Fig 10. Yellow and red ear tags (duplicates) at a sheep farmer, near Chilia Veche. Photo credit: Alexandru Iorga.

because of diseases. It's a disaster with sheep farming today... Oh yes, on paper everything is going well, production is increasing, the number of sheep is increasing, but in reality, it is decreasing. All the sheep farmers know this, I'm not telling you anything new. It's an old problem. Sheep that no longer exist, but they receive money from the coupled livestock support, and even sheep that have never existed. (S. T., Bran)

In almost every discussion we had with either farmers or shepherds, such references to paper sheep cropped up, reminding us of the unusual novel *Dead Souls* written by the founder of realism in Russian literature, Nikolai Gogol. In Gogol's story, Chichikov, a mysterious stranger, goes from place to place buying the names of serfs that have died, but are still registered as being alive because the census was conducted infrequently, thus saving their owners from paying taxes on serfs that were no longer alive. Chichikov's goal is to use these "souls" as collateral to obtain credit and get rich. This is the Gogolian turn in shepherding, as it was revealed to us by the shepherds. From their point of view, it is not the sheep, but papers that are meticulously cared for, the ear

tag becoming the irrefutable proof of the rams' existence up to the point that it has taken their place.

The biggest paper sheep breeder is Romania. We slaughter the rams, and we have papers breeding instead. Papers don't get sick. It's all about coupled support [SCZ subsidy]. We want to keep the tradition, to keep the sheep, to keep what we have to keep. Not on paper, not in papers, not with ear tags in the bag, not politically. (S. T. is a shepherd leader from a village in Sibiu County)

And he goes on equating those receiving subsidies with Gogol's antihero, Chichikov:

These people who receive European money (subsidies), they are not interested in production. They come and show their sheep around fairs raised only on grain and pellets and say they are real sheep. They do not even know how to clip their nails, and they're making fools of a whole country that does not know what a sheep is anymore. (S. T.)

Ear tags whether "in bags" or "duplicates" or any other jingling form are considered a quite effective method of turning sheep into papers, which in turn becomes a subsidy-based capitalization technique. For this reason, red ear tags that represent duplicates are seen by shepherds as a direct threat to their business if not to their way of life. This was also the reason why the shepherd present at the Agraria exhibition was not allowed to show his rams. A large number of rams wearing red ear tags are a signal that those might not be the rams they claim to be, and the shepherd may not be an honourable shepherd. We won't go into more detail on this issue here, although it deserves to be dealt with separately, but the shepherds' testimonies seem to be linked to a wider phenomenon that eventually convinced the authorities to change the way subsidies were granted. This important change was announced by the Romanian authorities at the time of writing, at the end of 2023, and it concerns

the removal of the conditionality of granting subsidies based on the registration of rams in the Breed Register. “Paper sheep” may seem to be the zenith of NPR. But an important step seems to have been taken to bring home the sheep that has gone astray.



Conclusions

The shepherding economy was never a *locus amoenus*, an Eden that came under the forces of the market (you may call it CAP or NPR), i.e., the *locus terribilis*. It has always been the site of an ongoing struggle with harsh weather, geography, predators, viruses, price fluctuations, etc. It has also been the place of hard-earned profits, rather by surrendering to the bare necessities of life than to a competitive advantage. In this sense, pastoralists were closer to what Paine called “rudimentary capitalists” (1971), and not to the ancient Greek god Pan who sits on top of the mountain, blowing his pipe in Arcadia, the unspoiled land of unspoiled shepherds and shepherdesses imagined by Romanian national mythology. Robert Paine drew his conclusion based on the fact that reindeer pastoralists controlled the herd reproduction, enabling herd expansion or *basic pastoral value* (*Ibid.*, 168–70). Up to a point this was true for Romanian shepherds too, but under NPR this was precisely what they lost—their own capitalization technique, taken away, improved and multiplied by an epistemic community.

The modern sheep exists: the bureaucrats, the vets, the accountants have discovered it, this is our claim. It has been realised in the uncontrollable proliferation of the consequences of its discovery (Stengers 2001) after Romania’s accession to the European Union in 2007, with the help of a small piece of technology: the ear tag. In this new frame, a socio-technical network that we call the New Pastoral Regime, a program of ongoing improvement, is launched to meet the performance criteria of the EU’s Common

Agricultural Policy. While old herding practices became increasingly fragmented, and their elements disconnected as a scattered mosaic with pieces strewn across different terrains, small new pieces began to be assembled, aligning shepherding with wide political and economic interests: to improve the qualities and increase the value of the sheep. For good reasons, one might add. Sheep, shepherds, viruses, ear tags, magnetic frequencies, pastures, vets, embryos, alleles, computers and databases, accountants, calculation formulas, funding schemes, pastures, and political interests became entangled to ensure the CAP’s transition from “compliance to performance” and the construction of a single (safe) market. This setting dominated by what we have called the *improvementality* logic led to a long series of exclusions of both sheep and shepherds. Genetic selection of the best (meaning resistant and productive) sheep traits included some breeds while others were eliminated because they did not fit the new frame. At the same time, an economic selection operated among the farmers through subsidies. The ear tag as an obligatory passage point (Callon 1984) became one with the sheep, like a third horn grown unnaturally, as in the curious case of the Devonshire sheep that was born with a huge horn growing out of its neck presented alive to the Royal Society (Parsons 1775–1776). Sheep and ear tag, a single calculated entity that works towards building a single market and a disease-free future. As a result, while the ear tag multiplied as a regulatory, scientific, accounting entity and even as a product of trial and error, the sheep was reduced, homogenised, and ended up being captured by the ear tag itself.

As products of human creativity, ear tags are abstract “creatures,” as Whitehead (1978) famously put it, they may enact or activate some things, but also they may *deact* or deactivate other things.¹⁴ In our case, this was a direct result of NPR’s misfires or of the discrepancy between policies and practices, between the kind of shepherding economy that is designed and the one realised, on one hand, and the way in which shepherds see this realization, on the other. The Gogolian “paper sheep” is the final



result of ear tag proliferation and NPR inner contradictions. But the “paper sheep” do not belong to fiction, as one might think. They are not copies of reality. Instead, they are a way in which the ear tag slips off and rejoins the assemblage to affect its creators.

By uncovering the work of morphing sheep into assets, we hope to have opened

the way to broader questions about the valuation of life and the world we live in, in the context of technoscientific capitalism. But ultimately, finding ways to reconcile traditional shepherding practices with market imperatives may be the only way out of this impasse.



NOTE

1. For sheep the obligatory electronic ear-tags are yellow, but if they are damaged or lost, for various reasons, they are replaced by red ones, representing a duplicate.

2. In the CAP presentation, the full formulation is: “By facilitating the smooth functioning of the single market, the CMO (i.e., Common Market Organisation) ensures the diversity, availability, affordability and safety of agricultural products.” For all Market-related measures (first pillar) see: <https://www.consilium.europa.eu/en/policies/cap-introduction>, accessed 13 September 2024.

3. A well-known Romanian geographer and ethnographer.

4. Documenting local practices, representations, expressions, knowledge, and skills that constitute the intangible heritage of the Braşov County area took place over two research residencies between March and November 2018. Data was collected through in-depth interviews and participatory observation. Photographs, audio, and video recordings were taken to illustrate as comprehensively as possible the elements of interest identified. The research was funded by National Cultural Fund Administration (NCEA). For more info about the research, see also: <https://dincolodeporti.ro/>.

5. For more details on the sociological monograph method and the Bucharest School of Sociology, see Zoltán Rostás (2020).

6. In Michael Foucault’s terms, *individualization* is a particular way of dividing up the multiplicity.

7. SCZ is a type of financial assistance that involves a single coupled production payment per eligible animal.

8. IAS 20 – 2021 Issued IFRS Standards (Part A) - Accounting for Government Grants and Disclosure of Government Assistance, <https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2021/issued/part-a/ias-20-accounting-for>

government-grants-and-disclosure-of-government-assistance.pdf, accessed 18 December 2023.

9. IAS 41 – 2021 Issued IFRS Standards (Part A) - Agriculture, <https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2021/issued/part-a/ias-41-agriculture.pdf>, accessed 18 December 2023.

10. PricewaterhouseCoopers – A practical guide to accounting for agricultural assets. https://www.pwc.com/gx/en/ifrs-reporting/pdf/a_practical_guide_to_accounting_for_agricultural_assets.pdf, accessed 20 December 2023.

11. IFRS 13 Fair Value Measurement, <https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2022/issued/part-a/ifrs-13-fair-value-measurement.pdf?bypass=on.pdf>, accessed 18 December 2023.

12. The milk collection and industrialization enterprise (ICIL) was a state enterprise in socialist Romania, dismantled during privatization in the 1990s.

13. In Braşov County, public auctions are held for renting out a mountain or a part of it for a predefined period of time with the purpose of using its pastures. According to Papasima (2018), “master of the mountain” is the name given to the person who gathers all the sheep and cows in the village and goes with them to the mountains during the summer, thus taking care of much of the community’s wealth. In return for this service, the “master of the mountain” is paid a sum of money per head of animal by the owners, and the master in turn pays them in products (cheese, butter) according to the milk measurements made in the spring (see also Footnote 4).

14. The word *deact* does not exist in English. We borrowed the concept from Computer Science (Dastani et al. 2004) to denote the opposite meaning of the word *enact*.

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