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UNIVERSITET

# **Do butchers dream of post-animal beef?**

A discourse analysis of the protein transition in Spain

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Department of Human Geography  
SGEMo8 Master's Thesis  
Spring 2024

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## **Abstract**

Currently, multiple environmental crises threaten to irreversibly alter the living conditions that humanity has enjoyed on Earth for millennia. One of the main activities that contribute to these worrying environmental issues is the production and consumption of meat, which also poses serious public health and ethical concerns. In order to tackle these issues, a strong case has been made for the need of a protein transition in high-income countries, which could be aided by the emergence of alternative protein innovations. Previous research on the protein transition has shown that meat incumbents' behaviour is contradictory, varying from a neutral adoption of alternative proteins to a staunch opposition against them. Therefore, using Spain as a novel case study for the protein transition, this thesis departs from a multi-level perspective framework and, through an analysis of the discourses voiced publicly by actors from the meat and the alternative protein sectors, seeks to answer the following research question: How can discursive struggles around alternative proteins reveal (a) the socio-technical reconfigurations that are happening in the meat sector, and (b) the landscape factors that are affecting these reconfigurations? After performing the discourse analysis, the answers show (a) that the incumbents that more staunchly resist the upscaling of alternative proteins are livestock farmers, while meat processors are more keen to engage with these technologies; and (b) that the meta-discourses of ecological modernisation and livestock exceptionalism have a strong influence on the protein transition. The thesis thus also contributes to sustainability transition research more broadly, by calling for a more nuanced consideration of incumbents' heterogeneity in re-configuration processes and for an increased attention towards the relevance of landscape level meta-discourses.

**Keywords:** protein transition; alternative proteins; meat industry; livestock farming; sustainability transitions; multi-level perspective; discourse analysis; ecological modernisation; agricultural exceptionalism

**Word count:** 19,908

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# 1. Introduction

## 1.1 The urgent need for a protein transition

These days, societies around the world are facing several increasingly complex and interrelated issues in what has been recently termed as a situation of ‘global polycrisis’ (Lawrence et al., 2024). Some of the most dire problems of this polycrisis refer to the multiple environmental issues that threaten the living conditions that the Holocene has enabled for humanity during more than 10,000 years. The new epoch that we are now entering, or arguably started entering half a century ago, has been commonly named as the Anthropocene (Beacham, 2022) – although alternative terms are also used to emphasise other factors, such as Capitalocene (Brenner & Katsikis, 2020). In order to measure the Earth’s ability to sustain the living conditions of the Holocene, a widely accepted framework within the scientific community is that of planetary boundaries. And so far, the limits of six of the nine discovered boundaries have potentially been reached (Richardson et al., 2023). One of the sectors with the highest impact on the transgression of these boundaries is the agri-food industry, and within it particularly the sector dedicated to the production of animal-sourced foods (Ritchie et al., 2022).

The industrial livestock sector, then, has been shown to have important negative impacts on five planetary boundaries: climate change, biogeochemical flows, land use change, freshwater use, and biodiversity loss (Bowles et al., 2019). The geographer Tony Weis (2016) suggested the term ‘ecological hoofprint’ to emphasise the environmental impacts that surround this industry, which he refers to as the industrial grain-oilseed-livestock complex. He also coined the term ‘meatification’ to name ‘the shift of meat from the periphery of human diets to the centre’ (p. 206) that was enabled by an industrial force that turned agricultural landscapes into ‘oceans of monocultures and islands of concentrated animals’ (p. 207), evoking a striking picture of the scale of the issues caused by industrial animal farming, particularly those related to land use change. On top of these environmental issues, public health concerns surrounding meat and livestock exist as well. The increased risk of non-communicable diseases triggered by a diet high in red and processed meats has been well documented (Qian et al., 2020), as it has been the increased risk of epidemics being triggered by intensive livestock farming activities (Rulli et al., 2021).

Finally, ethical considerations regarding the harm inflicted on farmed animals are also a cause of concern (Ritchie et al., 2023). Arguments on this topic range from a mainstream con-

sensus on the right of these animals to be treated with some minimum well-being standards, to political positions like veganism that aim for complete animal liberation. Although these debates and arguments have existed for many decades, the ongoing rapid advancements in the studies of animal cognition and behaviour are providing further scientific ground for human societies to rethink their relationships with other animal species (Andrews et al., 2024).

As a way to tackle all these issues that the breeding and consumption of animals have for human and planetary health, then, the urgent need for a global shift to a plant-based diet has been argued (Willett et al., 2019). In line with other much needed sustainability transitions, the term ‘protein transition’ has been coined to refer to this intended shift from animal-sourced protein foods to proteins that come from plants, or other non-animal sources (Aiking & de Boer, 2020). However, calls for this protein transition have not been exempt from criticism, such as those signalling the fact that it might sideline other wider and more structural inequality issues affecting the global food system, particularly in low- and middle-income countries; or the fact that it might obscure traditional and non-harmful ways of rearing livestock in regions where food security is threatened and where shifts to plant-based diets are unfeasible and far from being a local priority (Herzon et al., 2023; Scoones, 2023). It is hard to argue, however, against the need for a protein transition to happen in high-income countries, which are responsible for the majority of the worldwide meat production that is causing all the aforementioned issues, and which have the resources to drive it down.

## 1.2 The potential of alternative proteins

A protein transition could then potentially be achieved, contrary to other urgently needed sustainability transitions, without the need to develop new disrupting innovations and technologies. For instance, by shifting land and other resources dedicated to livestock farming towards the cultivation of protein crops, and switching consumption patterns to plant-based diets where animal-sourced foods are absent or very reduced in favour of traditional legumes. In other words, by simply shifting towards traditional plant-based diets like vegetarianism. But meat is, however, much more than a food from which people get protein and other nutrients from (Hansen et al., 2023). The protein transition thus faces important socio-cultural barriers on the consumers’ side (Mylan et al., 2019; Tziva, 2022) that are less prominent in other studied sustainability transitions.

In order for the consumer resistance towards the protein transition to be lower, technological innovations in the production of meat analogues could be fundamental as enablers, because they appear to be key to appeal to flexitarians and regular meat consumers (Hoogstraaten et al., 2023). These meat analogues have been baptised by its own emerging industry and advocates under the umbrella term of ‘alternative proteins’ (Simon, 2023), and will be henceforth referred to as alt-proteins. Alt-protein innovations are mainly aimed at making products that are as identical to meat as possible in terms of visual appearance, taste, texture, smell, cooking properties, and protein content – but do so through ingredients and technologies that do not



require the use of animals in the process. By avoiding the use of animals in their production, the environmental impact of these alt-proteins can potentially be much lower, while they also address the ethical concerns related to the use of sentient beings for food production.

The alt-protein industry therefore refers to an emerging sector in the food industry that started emerging circa 2010 in the US and quickly spreaded to Europe (Roland Berger, 2021). Because it encompasses a wide variety of continuously evolving technological innovations and products it is difficult to categorise them (FAIRR, 2022). But as a broad overview, currently they tend to be categorised into three main groups<sup>1</sup> based on the technologies and raw materials they use: plant-based, fermented, and cultivated. Plant-based meats are those that are manufactured using vegetable protein ingredients (mainly derived from legumes like soy or peas), which are then subjected to physicochemical processes that give them meat-like textures. This technology group is the most developed and established one, and as such most alt-proteins currently available for consumers belong to it. Fermented proteins are produced via the cultivation of microbial organisms, and can be divided in two subgroups: biomass fermentation and precision fermentation. Biomass fermentation uses microorganisms with high protein content (mainly fungi) that can reproduce quickly and thus produce protein in large volumes. This technology is not as popular as the plant-based ones, but is also available for consumers – with Quorn being the most established brand that uses it. Precision fermentation uses microorganisms that produce specific ingredients to be used in the manufacturing of alt-proteins (e.g., enzymes, flavour molecules, pigments, fats). This technology is well established in the pharmaceutical and food industries (e.g., to produce insulin for diabetics or vegetarian rennet for cheese-making), and is now being researched for its alt-protein applications. Finally, cultivated meat – the most popular product of cellular agriculture – uses a sample of animal cells (obtained from a biopsy performed to a living animal) to ‘cultivate’ these in a bioreactor that enables a cell growth that replicates the cell tissue structure of meat. This technology therefore has the capacity to produce ‘real’ meat, in the sense that it will be identical to an animal-sourced meat at the molecular level. It is thus the most novel and less established technology: although it was first presented to the public more than a decade ago (Mead, 2013), to this day its industrial production capacity remains very limited. Furthermore, due to its novelty and the controversies it has kindled, so far its commercialisation has only been allowed in a very limited geography – Singapore and the US approved it in 2020 and 2023 respectively, and the Netherlands partially did the same in 2024.

As previously mentioned, however, alt-protein meats are likely to become increasingly hybrid products, through the use of two or more of the aforementioned technologies and ingredients in their manufacturing process (FAIRR, 2022). So although alt-protein companies often

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<sup>1</sup>Depending on the source, more food groups are considered alt-proteins as well. Insects, for instance, are considered as such by some (Pyett et al., 2023) due to them being an efficient way of producing protein. However, the fact that they are still animals makes other alt-protein advocates reject them for the aforementioned ethical reasons. Furthermore, their production at industrial scales could pose novel biosecurity risks and, although they are a traditional food in many societies worldwide, cultural barriers to introduce them in other gastronomies are very high. Another potential source of alt-proteins is molecular farming (Wolf, 2023), although this is a very novel technology that has not popularised much to this date, and that will likely come with its own set of bioethical concerns when it does.

rely in very different technologies and products, currently they are considered part of the same emerging food sector or industry, namely one that seeks to produce meat analogues that function as alternatives to the traditional protein-rich animal-sourced foods. According to their proponents, these innovations could be helpful in accelerating the protein transition, by offering a variety of less environmentally damaging meat analogues that facilitate the reduction of meat consumption by flexitarians and others unwilling to give up the experience of eating meat.

While this ‘re-meatification’ approach to achieve a reduction in meat consumption through meat analogues has been criticised (see [Hansen et al., 2023](#)), others have argued that the urgency of the protein transition requires strategies that go beyond just promoting a shift from meat to traditional and minimally processed legumes (see [Gray & Weis, 2021](#)). The case for alt-proteins, then, argues that stopping society’s craving for meat products and increasing its appreciation of traditional legumes would require more time and effort than simply redirecting that craving towards meat analogues that can provide virtually the same *meat experience* as traditional animal-sourced foods. Due to their potential for the protein transition, alt-proteins have generated a notable interest among social scientists in the last lustrum. In the next section I will present an overview of this literature to highlight a research gap that this thesis will try to address.

### **1.3 Research gap: meat incumbents’ behaviour towards alt-proteins**

As previously stated, the alt-protein industry has recently started to catch the attention of social science researchers, mainly in high income countries. It has been mostly researched in the Netherlands (e.g., [Bulah, Negro, et al., 2023](#); [Hoogstraaten et al., 2023](#); [Tziva et al., 2020](#)), arguably because of the serious nitrogen contamination issue the country faces in its soils, caused by its national intensive animal agriculture ([van der Ploeg, 2020](#)). However, it has also been researched in other countries like Denmark, the US, the UK or Austria ([Aschemann-Witzel et al., 2023](#); [Dueñas-Ocampo et al., 2023](#); [Hundscheid et al., 2022](#); [Mylan et al., 2019](#)). All this research employs a socio-technical transition lens to explore the phenomenon, since it is a well suited approach to study sustainability transitions.

At the same time, other researchers have studied the alt-protein industry from political economy and critical geography, taking a more global and sceptic approach to it (e.g., [Béné & Lundy, 2023](#); [Jönsson, 2020](#); [Sexton, 2020](#)). These have noted, among other things, that the companies producing innovative alt-proteins are often backed by the same multinational corporations (MNCs) and venture capitalists (VCs) that comprise and support the global meat sector and agri-food system.

What emerges from all this literature is a seemingly contradictory phenomenon. Several meat incumbents are engaging with the alt-protein sector, albeit in different degrees. These incumbents range from modest national meat processors ([Hoogstraaten et al., 2023](#)) to MNCs who control the majority of the global meat market ([Glufke Reis et al., 2023](#); [Guthman et al.,](#)

2022; Mylan et al., 2023). If such powerful actors within the meat regime are already engaging with the alt-protein industry, it would be reasonable to think that barriers to the protein transition should be dwindling. However, this is not what is happening. The protein transition still faces fierce contestation from powerful incumbent actors within the meat sector, which oppose it both at discourse and policy levels (Clare et al., 2022; Moreno & Almiron, 2021). This apparent contradiction or tension within the meat sector is perhaps well reflected in a comment made by an incumbent meat processor, which later entered the alt-protein market: '[t]he meat lobby perhaps can feel threatened, but we continue to do it' (Incumbent 2, respondent #6, as cited in Hoogstraaten et al., 2023, p. 8).

Some research suggest that the reason for some meat incumbents to engage with alt-proteins is their lack of sunk costs and investments in the meat sector. As Mylan et al. (2019, p. 234) argue, 'large intermediary incumbent actors are also less locked-in to upstream technological production regimes when compared to electricity or transport, and consequently have more flexibility to switch to alternatives if they see strategic opportunities'. Although they are referring specifically to the dairy and plant-based milk industries, it is reasonable to assume that there will be similarities between dairy and meat industrial sectors' behaviours, due to their interrelatedness. Their conclusion, furthermore, adds to what most literature on incumbent engagement in sustainability transitions suggest, namely that the less an incumbent actor has to lose, the more likely it is to engage in a transition, and vice versa. However, most recent research seems to dispute this, suggesting that even actors with high sunk costs in meat engage with alt-proteins. As Bulan, Tziva, et al. (2023) explain:

[W]e see that once retailers enter the plant-based industry, prominent meat processors – who have high sunk investments in meat-processing technology and machinery – quickly followed. This also triggers interesting future research avenues around the question which industry- or sector-specifics can explain differences between incumbents' responses. (p. 16)

Therefore, if the protein transition is to be accelerated, disentangling and understanding the main factors that generate these seemingly contradictory behaviours from incumbent actors within the meat industry is key. To this day, public policies specifically aimed at promoting the protein transition are virtually non-existent<sup>2</sup>, and thus research on the alt-protein field has been mainly concentrated in the private sector (Mylan et al., 2023, p. 5). It is fundamental, then, than when these policies start being implemented, they can draw from a robust understanding of the interactions between the meat and alt-protein industries.

## 1.4 Research question

As showed in the previous section, the literature on the protein transition shows that meat incumbents are engaging with and contesting alt-proteins at the same time. This indicates not

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<sup>2</sup>Recently, a pioneering 'protein transition masterplan' termed EPPIC was proposed in the Netherlands (Enter, 2023), but failed to get funding from the Dutch government.

only that these technological innovations are causing frictions and reconfigurations to happen in the meat sector, but also that there might be fundamental differences between incumbents within the meat sector that go beyond them having more or less sunk costs and investments on the meat industry. This thesis therefore focuses on Spain as a novel case study for the protein transition, and through a socio-technical transition lens aims to illuminate these ongoing reconfigurations and the factors that drive it through an analysis of the discourses employed by entrant and incumbent actors in the protein sector (which encompasses both the meat and the alt-protein sectors).

Thus, the research question that this thesis aims to answer is the following, which can then be divided into two more specific sub-questions:

**How can discursive struggles around alt-proteins reveal (a) the socio-technical reconfigurations that are happening in the meat sector, and (b) the landscape factors that are affecting these reconfigurations?**

- What are the discourse coalitions being formed around the topic of alt-proteins by actors from the protein sector?
- What do the discourses of these coalitions reveal about the deep-rooted values and assumptions that drive these actors?

By answering this double question, the thesis hopes to build on the sustainability transition research in three ways. First, by revealing the ongoing reconfigurations, to dive deeper into the differences between meat incumbents' behaviour towards alt-protein technologies, thus contributing to answer the calls for a better understanding of incumbents' heterogeneity (Kungl, 2024; Turnheim & Sovacool, 2020). Second, by revealing the relevant landscape factors, to dive deeper into the social structures that enable and hinder the protein transition's potential, thus contributing to the understanding of how the socio-technical landscape level influences transitions, usually neglected in transition studies that tend to focus on the niche level (Geels & Schot, 2007). Third, by analysing the protein transition in Spain, where it has not been studied before, thus contributing to increase the number of case studies that can add geographically nuanced empirical evidence to this field of study. However, methodological nationalism (Fuenfschilling & Binz, 2018) will be avoided, acknowledging that both meat and alt-protein industries in Spain, as part of the global food system, are inherently international and multiscalar (Truffer et al., 2015).

The remaining of the thesis is structured as follows: In [Chapter 2](#), the theoretical framework that guides the thesis is explained, along with its relevant concepts. In [Chapter 3](#), first a reflection on the ontological and epistemological underpinnings of the thesis is made; second, relevant concepts of the chosen approach to discourse analysis are explained; third, the steps followed during the analytical process are laid out; and fourth, positionality and methodological limitations are discussed. In [Chapter 4](#), a brief explanation of the Spanish meat and alt-protein sectors is given, including a historical overview of their recent development, in order to contextualise the case study of the thesis. In [Chapter 5](#), the discourse analysis is presented, divided in

subsections according to the main storylines identified in each sector's discourse. In [Chapter 6](#), the two research sub-questions are answered based on the results of the analysis. Finally, in [Chapter 7](#), a summary of the findings of the discourse analysis is given.

## 2. Theoretical framework

### 2.1 Socio-technical transition theory

Transition studies attempt to study and explain the way in which socio-technical systems reconfigure over time. These systems are comprised of several socio-technical configurations, which are defined as associations of actors, institutions and technologies that align to fulfil a specific societal function (like the provision of foods, water, energy or mobility) (Madsen et al., 2022). Actors include, but are not limited to, relevant companies, industry associations, universities, government agencies, and non-governmental associations. Institutions are usually referred to as multifaceted, durable social structures, made up of symbolic elements, social activities, and material resources.

According to the multi-level perspective (MLP) framework, transitions can be conceptualised as happening through the interaction of three analytical levels of structuration: the niche, the regime, and the landscape (Coenen et al., 2012; Simoens et al., 2022). Although these are often nebulous concepts, in this thesis they are understood as follows. The niche is understood as the place where radical innovations can develop without pressures from the regime (Sengers et al., 2019). These innovations are aimed at providing the same societal function through other (arguably more sustainable) socio-technical means that, if upscaled, can end up toppling the regime. The regime is understood as the dominant institutional logic of a socio-technical system (Fuenfschilling & Binz, 2018). The landscape is understood as the external environment that surrounds the two previous levels, and that influences and gets influenced by them (Coenen et al., 2012). The complexity of this environment is usually conceptualised in megatrends and other variables that can affect the stability of the regime (Dueñas-Ocampo et al., 2023), for instance by diminishing its legitimacy and increasing that of the niche innovations.

However, the niche-regime dichotomy of the MLP framework has been recently criticised as too rigid to properly conceptualise the complexity of socio-technical transition processes (Heiberg et al., 2022). Transitions are instead better understood as changes in the socio-technical configurations that conform a system (i.e., as reconfigurations). These configurations will become more or less institutionalised, depending on how close they are to the regime or the niche levels of structuration, and the reconfiguration process will change this by de-institutionalising existing configurations and institutionalising novel ones. In line with this, I argue that conceptualising the protein transition as an interaction between a meat regime and

an alt-protein niche provides a very limited framework to study the process. Instead, conceptualising this transition as an ongoing reconfiguration of several socio-technical configurations is more precise, and allows to make more nuanced assessments of incumbents' role in them. It is still useful, however, to visualise these configurations in relation to how close they are to a regime (i.e., how established they are) or a niche (i.e., how emergent they are), understanding these concepts as opposed reference points in a structuration level spectrum (Simoens et al., 2022).

## 2.2 The meat sector as a socio-technical system

In this thesis I understand the engagement of the meat sector with alt-proteins as a (potentially sustainable) socio-technical transition. This then begs the question of what societal function does the meat sector<sup>1</sup> – understood henceforth as a socio-technical system – provide as part of the wider agri-food sector. Does it provide protein, as the concept of 'protein transition' suggests? While from a technical or nutritional perspective it can be argued that meat fundamentally provides proteins (among other nutrients), the same can be argued from legumes. However, these are, albeit related, different sectors within the agri-food system. They are also perceived differently by society, who does not see foodstuffs as interchangeable objects from which to get the same nutrients. Food has huge socio-cultural dimensions, and thus meat and other animal-sourced protein foods like fish, dairy and eggs cannot be understood just as nutritional objects, but as socio-cultural ones. Does the meat sector provide meat, then? The reality is that the ontology of animal-sourced foods has started to become contested precisely with the irruption of alt-proteins in the market, and thus the lines of what can and cannot be considered meat are becoming blurry (Jönsson et al., 2019).

Therefore, I argue that it is more useful to think of the meat sector as the socio-technical system that provides *protein through meat experience*. Historically and up to this day, the provision of this societal function has been done through the breeding and sacrificing of animals. Since the third agricultural revolution that started the mid-20th century (also known as the Green Revolution), in industrialised countries this animal farming process has been done in increasingly more intensive ways (Gunderson, 2011; Neo & Emel, 2017). Farmed animals are commonly referred to as livestock ('ganado' in Spanish) to differentiate them from other animals that are not used in the meat sector as food providers, like wild and companion animals. If we understand the socio-technical regime as the dominant institutional logic of a socio-technical system, we can then argue that in the case of the meat system it is the livestock regime what underpins it. The livestock regime, therefore, is the dominant logic within the meat sector, which is comprised of a series of livestock-based 'configurations that work' (Rip & Kemp, 1998, as cited in Heiberg et al., 2022, p. 1), in this case to provide the aforementioned protein through meat experience. Meat incumbents can then be defined as the actors that are part of these established

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<sup>1</sup>The term meat in this thesis is also understood to encompass other related terrestrial animal-sourced protein foods like dairy and eggs, since these are provided by very interconnected sectors and are also imitated by alt-proteins. The fishing sector is left aside in this thesis due to its particularities, although notably the alt-protein sector also seeks to produce seafood analogues.

socio-technical configurations. And it is this societal function of protein through meat experience what the alt-protein niche configurations are also attempting to provide through technological innovations: non-animal-sourced and protein-rich products that mimic this experience of buying, cooking and eating meat.

### **2.3 Meta-discourses as key landscape factors**

Meta-discourses refer to widespread deeply rooted values and assumptions that remain mostly unchallenged and are thus perceived as common sense in more than one socio-technical system. They are strongly fixed abstract ideas that set the broader context where the discursive struggles sparked by socio-technical transitions happen. As such, ‘meta-discourses shape the external context and directionality of the emergence and development of socio-technical systems’ (Simoens et al., 2022, p. 1844). They can therefore be understood as a key dimension of the socio-technical landscape, and exposing them through discourse analysis can provide a more critical understanding of the way transitions are enabled and hindered. This, in turn, can help to highlight which of those values and assumptions need to be changed in order for a sustainability transition to be successful.

An example of a relevant value that a meta-discourse could highlight would be the logic of capitalism. Capitalism can be understood as a historically specific form of social and economic organisation of society, whose most fundamental dynamics relate to the imperative of capital accumulation. Summarising David Harvey’s take on capitalism, Feola (2020) explains that ‘strategies for capital accumulation include the externalization of costs, the lowering of labour costs, and the search for surplus value through the penetration of capitalist relations (commodification) in biophysical and human bodily and emotional life spheres’ (p. 242). He therefore argues that research on sustainability transitions should account for the influence of the capitalist socio-economic system in which the studied socio-technical transitions are embedded in, because the prevailing imperative of capital accumulation can have fundamental impacts in the way these transitions develop. This could be especially true in the case of the current market-driven protein transition, considering that capitalism has substantially penetrated the agriculture and livestock sector in industrialised countries (Gunderson, 2011), and that virtually all the alt-protein-related technological innovations are being developed by private (or public-private) biotechnological companies and institutes (Sievert et al., 2022).



# 3. Methodology

## 3.1 Ontological and epistemological underpinnings

This thesis is underpinned by a critical realist ontology and a post-positivist epistemology. In this section, I explain the rationale behind choosing them by engaging in an axiological reflection, namely on a reflection on my values as a researcher (O'Reilly & Kiyimba, 2015, p. 22).

It is important for researchers on sustainability transitions to reflect on their ontological and epistemological stance, so that their research becomes a useful driver of change (Hazard et al., 2019). In this case, I am aware that a fundamental motivation for selecting this topic for my thesis comes from a key a priori assumption: I am accepting the naturalist ontology and positivist epistemology of natural sciences as valid. As shown in this thesis' introduction, I consider that environmental issues like climate change are an objective reality that exists regardless of our subjective perceptions, cosmologies and beliefs; a reality that is the result of crossing several biophysical planetary boundaries (Richardson et al., 2023). I assume that decades of rigorous scientific research have generated an accumulated knowledge that reflects this reality imperfectly, but with a degree of certainty and consensus that makes it justified to take urgent action to avoid dire impacts on Earth's habitability.

Therefore, I am assuming a critical realist ontology. Critical realism understands that 'science is a product of the social – moulded by a range of social, ideological and political conditions – “but the mechanisms that it identifies operate prior to and independently of their discovery”' (Bhaskar, 1998, as cited in Alvesson & Sköldbberg, 2018, p. 49). Its deep ontology postulates three levels of reality, from concrete to abstract: the 'empirical', events that are observed and experienced; the 'actual', causal mechanisms that generate events; and the 'real', entities and structures with enduring properties and causal powers (Geels, 2022). I consider that this middle ground approach, halfway between positivist and constructionist approaches, is the most coherent one with my way of understanding reality. As Alvesson & Sköldbberg (2018) put it:

In its emphasis on underlying patterns, neorealism [and thus critical realism] shares some tangential points with hermeneutics and critical theory; in its searching for some kind of scientific laws, and in its view of the commonality of social science and natural science research, critical realism shares ground with positivism. (p. 20)

It has also been argued that critical realism is best suited to address socio-technical transitions (Geels, 2022). From this, it then follows that post-positivism, the epistemology of the critical realist ontology, is the most coherent epistemological home I can be in. Post-positivism mainly argues that objective reality exists, but accepts the problematic nature of trying to apprehend it, acknowledging that it can only be done imperfectly due to individual and socio-cultural values and biases that are unavoidable. It argues that research has to focus on explaining the underlying causal mechanisms of social phenomena. This orientation also has a radical vein that resonates with me and with sustainability transitions, because it considers that ‘what is important is not just to explain the world but also to change it’ (Alvesson & Sköldbberg, 2018, p. 48).

\*This post-positivist position has subsequently informed the methodological choice of discourse analysis for this thesis. According to Hajer (1995), discourses express not only the values and assumptions of actors through language (i.e., how structures enable and constrain agency), but also their practices, how they mobilise biases and attempt to institutionalise ideas (i.e., how the structure-embedded agency is exerted). Therefore, critical realism sees the ‘meanings, beliefs, values and intentions held by participants as just as real as physical phenomena, and as playing a causal role in individual and social phenomena’ (Maxwell, 2012, as cited in Geels, 2022, p. 3). Thus, a discourse analysis, by showing which are these underpinning values (previously established as meta-discourses), illuminates the causal mechanisms and structures that enable and constrain discursive agents in a sustainability transition. Discourse analysis is therefore a solid methodological choice to help in understanding the processes of stability and change in socio-technical systems and their transitions (Simoens et al., 2022).

### **3.2 Discourse analysis**

The qualitative discourse analysis was performed inspired by the argumentative approach of Maarten Hajer. He explains that a discourse can be understood as ‘a specific ensemble of ideas, concepts, and categorizations that is produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities’ (Hajer, 1995, p. 60). As argued by Heiberg et al. (2022, p. 3), discourses ‘provide useful proxy measures for identifying patterns, dynamics and strategies through which socio-technical configurations may develop, align, stabilize or get challenged’.

As previously mentioned, a socio-technical system consists of a series of configurations (i.e., associations of actors, institutions and technologies) that align to fulfil a societal function. When novel niche technologies emerge (e.g., alt-proteins) they affect the existing configurations of that system, risking to change them (i.e., to reconfigure them). This in turn causes a critical moment in which different incumbents of that system feel pushed to voice publicly their opinions on the niche technology, usually with the intention of either legitimising or – more frequently – delegitimising it (Heiberg et al., 2022). In order to do this and to confer acceptability and legitimacy to their positions, these actors’ discourses draw from deep-rooted values and assumptions within

a society which, as previously explained, are perceived as common sense and can be conceptualised as ‘meta-discourses’ (Simoens et al., 2022, p. 1844).

Therefore, I depart from the idea that analysing the discursive struggle in which the actors of the established and emerging configurations of a system engage in can answer the two research sub-questions of this thesis, that is, (a) the ongoing reconfiguration dynamics and processes that occur in them, and (b) the landscape meta-discourses that enable and hinder these reconfigurations. In other words, observing how entrants and incumbents position themselves discursively around the niche technology can help to reveal both the institutional and technological changes that are happening within a socio-technical system, as well as the deeply rooted societal values that the niche technology endorses and challenges. Landing this approach on this thesis’ case study, I argue that the public discourses around the highly debated topic of meat and alt-proteins can thus be a useful way to identify the ways in which the reconfiguration processes in the protein sector are happening, as well as to identify the structures that are enabling and hindering the protein transition.

In order to perform this analysis, actors can be loosely grouped into discourse coalitions, based on whether they have a positive (legitimising) or negative (delegitimising) discourse towards alt-proteins. Hajer (1995, p. 65) defines these coalitions as ‘the ensemble of (1) a set of storylines; (2) the actors who utter these story-lines; and (3) the practices in which this discursive activity is based’. Actors can encompass, among others, scientists, politicians, activists or organisations that represent them. He also states that discourse coalitions

are unconventional in the sense that the actors have not necessarily met, let alone that they follow a carefully laid out and agreed upon strategy. What unites these coalitions and what gives them their political power is the fact that its actors group around specific storylines that they employ whilst engaging in environmental politics. (Hajer, 1995, p. 13).

A storyline can be understood as ‘a condensed statement summarising complex narratives, used by people as “short hand” in discussions’ (Hajer, 2006, p. 69) and in order to give meaning to physical and social phenomena (Hajer, 1995). Discourse coalitions, then, can be useful as proxies or indicators of the socio-technical reconfigurations that are happening in the protein sector. And examining the storylines each of these coalition is built on can also provide an insight into the landscape meta-discourses that are enabling and hindering the transition.

### **3.3 Analytical process**

Before the discourse analysis, a desk research was performed to map the relevant actors along the supply chain of the meat and alt-protein industries at the Spanish level. This consisted on searching in Google the main companies and industry associations of both sectors, and then using the ‘snowballing’ technique to find more relevant actors mentioned in their websites. However, the multiscalarity of the two of these sectors soon became evident, and thus relevant in-

ternational actors linked to the Spanish context – particularly at the EU level – were mapped as well. The aim of this was to get an initial broad snapshot overview of the relevant actors and institutions that are currently present in the protein sector of the food industry, particularly those within or related to the Spanish geography. As part of this desk research, a review of alt-protein-related events was made as well, focusing on those that happened in the Spanish context. The aim of this event analysis was to complement the initial snapshot and posterior discourse analysis with a historical overview of the emergence and evolution of the Spanish meat and alt-protein sectors, and of how they have interacted up to this day. This event analysis consisted of two steps.

First, Good Food Institute’s (GFI) [alternative protein company database](#) was consulted to retrieve an updated list of those founded in Spain. GFI is one of the main international associations dedicated to the promotion of alt-proteins, so it can be considered a trustworthy source for information regarding this sector. This helped to draw a timeline of the emergence of alt-protein companies in Spain, as well as to get an overview of the type of company they are and of the type of alt-protein products they focus on.

Second, ProQuest’s [European Newsstream database](#) was consulted to collect articles mentioning events related to the alt-protein sector and the engagement of the meat sector with it. This database was deemed appropriate since it includes the four most popular generic Spanish newspapers (barring sports- and regional-themed ones) that cover a reasonable part of the spectrum of mainstream political views – both conservative and progressive – within the country: [El País](#), [El Mundo](#), [La Vanguardia](#), and [ABC](#) (Statista, 2023). However, to compliment this newspaper database and gather as many relevant events and opinions as possible, two of the main sectorial news websites and magazines that cover the Spanish meat industry were also included, namely [Cárnica](#) and [Eurocarne](#). The following search string was used, with the aim of covering the majority of terms used to refer to alt-proteins in Spain:

```
"proteína* alternativa*" OR "proteína* vegetal*" OR "carne* vegetal*"
OR "carne* cultivada*" OR "carne* de laboratorio" OR "carne* sintética*"
OR "carne* artificial*" OR carne NEAR/3 laboratorio OR "plant-based"
OR "transición proteica"
```

This search initially retrieved around 350 articles, whose titles were then reviewed and saved if they met the three following criteria:

- The article was not a duplicate of a previous article
- The title made some reference to an event related to alt-proteins or the protein transition
- The content mainly revolved around the topic of alt-proteins or the protein transition (i.e., alt-proteins are not just mentioned anecdotally in the text), such as business-related events (e.g., meat incumbents’ incursions into alt-proteins), or advocacy campaigns promoted by these sectors

This filtering resulted in 72 articles that met the criteria, which were then reviewed to recreate a timeline of the evolution of the alt-protein sector in Spain, and of other related international events that were collected in the Spanish media and that were considered relevant. In summary, this initial desk research drawing from different sources was used to provide context and background for performing the discourse analysis. The results of this desk research are presented in [Chapter 4](#). Furthermore, those articles that contained relevant declarations from either meat or alt-protein actors were saved to also be used as the corpus of the discourse analysis presented in [Chapter 5](#).

To further build this corpus, additional documents and articles were searched in the websites of a selection of key actors (namely associations representing companies from both sectors), which were considered to have a relevant discursive agency in the debates surrounding meat and alt-proteins:

- From the meat sector: INNOVACC, ANICE, Somos Ganadería/European Livestock Voice, Coordinadora Europea Vía Campesina, Plataforma por la Ganadería Extensiva y el Pastoralismo
- From the alt-protein sector: Vegetales

The choice of these associations was based on the knowledge and documentation gathered from the initial desk research, and further information and context about them is provided in [Chapter 4](#). The websites of these associations were scoured using their search engines to find articles and documents mentioning alt-proteins. The same keywords used during the desk research were used in these searches. No time-frame was set for this data collection, as this is a relatively recent topic, and texts prior to 2017 were not found. This is consistent with what the initial desk research showed; namely that it was in 2017 when the first round of Spanish alt-protein start-ups was born, and thus when alt-proteins started to popularise in the Spanish market and started to spark public comments from meat incumbents. The imbalance between the quantity of sources for each sector is justified by the fact that the meat sector is much bigger and more complex than the emerging alt-protein one. As such, there are notably fewer associations and platforms that voice the views of the latter. On top of that, a bigger quantity of meat sector sources is necessary to capture nuances and variations in the discourses of different incumbents. In summary, an analysis of all the collected articles and documents, along with the ones saved from the desk research, should cover the majority of storylines that are being used in the discursive struggle of the protein transition, or at least all of the most prominent ones.

The corpus was then manually coded using ATLAS.ti, a computer-assisted qualitative data analysis software. The coding followed an inductive approach, following the suggestions of Skjott Linneberg & Korsgaard (2019). I thus performed an initial inductive coding cycle, not based on pre-defined categories but instead on summarising the opinions and declarations around alt-proteins that I found in the corpus. These declarations were also mapped to the corresponding actors that expressed them. I then performed a second coding cycle, more theoretically-laden, to refine the initial coding process and extract the main storylines from them. The coded storylines were then separated into two groups, based on whether they legitimise or delegitimise

ise alt-proteins (i.e., whether they portray them in a positive or negative manner). This process helped to identify the two main discourse coalitions that are to be found around the topic of alt-proteins, and the actors that comprise them. This was then used to (a) tentatively explain the reconfigurations that are happening in the meat socio-technical system as a result of the irruption of alt-proteins in it, and (b) reveal the landscape meta-discourses that hinder and enable the protein transition.

### **3.4 Positionality and limitations**

The positionality of the researcher implies that the chosen topic, the decisions made during the research process and the interpretations drawn from its outcomes are always unavoidably biased and subjective. This thesis is primarily motivated by the reasons given in the introduction, that point to the urgency of addressing the multiple ongoing environmental crises. In this regard, I consider alt-proteins as technological innovations with huge potential to address these environmental issues. Nonetheless, I approach the topic with what Sexton et al. (2022) – citing Gibson-Graham’s politics of possibility approach – refer to as a cautious openness of food geographies to explore ‘the political possibilities that Big Veganism is creating’ (p. 618). During my discourse analysis I have, however, made a conscious attempt to leave aside as much as possible my pre-existing personal opinions on the topic of the protein transition and on the different actors from meat and alt-protein sectors.

There are several limitations to this discourse analysis. The first one is that the discourse analysis could have also benefited from semi-structured interviews. Although the key associations were contacted with this regard, they were unable to provide interviews. This can be understood by the fact that these are business associations that might prefer to abstain from providing opinions on what for them is a sensitive or contentious topic. Particularly the associations from the meat sector were noticeably weary of engaging with the topic of alt-proteins possibly because, as will be shown during the discourse analysis, it currently generates strong frictions within the sector itself. I argue that the lack of interviews, however, is partially compensated by the fact that alt-proteins are in a critical moment, with growing attention from media and the meat sector, so relevant actors (especially incumbents) provide plenty of public opinions to draw from (Heiberg et al., 2022). The second limitation is that the corpus of the discourse analysis is mostly limited to the declarations of industry actors, thus leaving aside possible storylines from non-firm actors or ‘generalised others’ that might also have an interest in the protein transition (Fuenfschilling & Binz, 2018). This has not been intentional, and I argue that it can be explained by the fact that this transition in Spain is being pushed almost exclusively by firm actors, as in most other countries. In fact, currently there is little to zero debate among politicians or civil society actors regarding the protein transition, which itself remains an unheard concept for most. In fact, it has so far only tangentially entered the debate in discussions between advocates of veganism and advocates of extensive livestock farming (El Salto, 2021).

## 4. Historical context

### 4.1 The Spanish meat sector

Meat consumption in Spain has been historically lower than in other European countries, although fish consumption was higher (P. Delgado, 2023). Meat was viewed as a food for special occasions up until the 1960s, when Spain began aligning with the rest of Europe and adopting a more Westernised diet. In the next decades, meat consumption raised quickly, particularly poultry and pork. This has been attributed to the lower prices that these meats were able to offer, thanks to the particularly quick intensification and standardisation of these livestock sectors. This consumption kept rising until the 1980s, when it stagnated. However, the production of this cheap meat continued intensifying as Spanish meat companies started exporting their surpluses to other countries. This process of intensification is still ongoing, especially with the pork, poultry and beef industries (ANICE, 2024a). The pork industry is the most relevant in the country – Spain is the world’s third largest producer after the US and China – and it is dominated by a small number of corporate groups that follow the vertical integration model, which began taking ground in the 1960s (A. Delgado & Tudela, 2022; Pedreño Cánovas et al., 2021). This model works as follows: the corporate group, also known as integrator, provides the animal farmers with the following: livestock, fodder, transport services, animal drugs, and veterinary services. The farmers, who do not own the animals, just provide the facilities, the licencing, and the workforce. They breed the animals, and are also responsible for the wastewater management, one of the most environmentally problematic elements of the meat industry. The corporate groups thus conveniently externalise this responsibility to the farmers. Once bred, the animals are given back to the integrator, who also owns the slaughterhouses and cutting plants.

Defining the incumbents that belong to the meat sector is therefore complex, since it is built on a rather complex configuration of companies and institutions that extends across industries and spatial scales. There are also slight variations depending on the animal that is being used as a food source but, in broad terms, the meat supply chain encompasses the following: agricultural fodder producers and processors, animal farmers, veterinarians, slaughterhouses and cutting plants, meat processors, and retailers (e.g., butcher’s, supermarkets). This main supply chain also relies in several auxiliary industries, like pharmaceuticals and farm- and food-machinery manufacturers. As previously explained with the vertical integration model, several

of these processes can be integrated within the same meat processing company. Beyond supply chains, other relevant actors are some academia departments (mainly from veterinary- and agronomy-related fields).

Although meat consumption is widespread and deeply entrenched in Spanish society, intensive livestock farming has seen some noticeable contestation from civil society due to the contamination and nuisance it generates in rural areas. This opposition towards intensive animal farming installations, commonly called ‘macrogranjas’ (macrofarms), is mainly channelled through the grassroots platform Stop Ganadería Industrial (Stop Industrial Livestock Farming), born in 2018. It is conformed, among others, by the main environmental associations of the country, as well as by local civil society groups from the rural towns where macrofarms are built or planned to be built, scattered across the country. Although they oppose intensive animal farming, they explicitly support the promotion of extensive livestock as an alternative for the sustainable development of Spanish rural areas ([Coordinadora Estatal Stop Ganadería Industrial, 2021](#)). They thus argue for reducing meat consumption, but not cutting it out completely, and replacing it by ‘better meat’.

In relation to this, and although the model of intensive livestock is the predominant nowadays in Spain, there is still a small extensive livestock sector as well, mainly represented through associations like Plataforma por la Ganadería Extensiva y el Pastoralismo (Platform for Extensive Livestock Farming and Pastoralism), Ganaderas en Red (Women Livestock Farmers’ Network) and Federación Española de la Dehesa (Spanish Federation of the Dehesa<sup>1</sup>). A relevant organisation closely aligned with the extensive model is European Coordination Via Campesina (ECVC), although this one is broader and includes non-livestock farmers as well.

The first discursive confrontations of the Spanish meat sector with alt-proteins start around 2020. As is explained in [Section 4.2](#), previous years saw a surge in the number of alt-protein companies and products in the supermarkets and other food retailers. In 2020, then, and under the ad hoc association of Somos Ganadería (We Are Livestock), the meat sector released a campaign called Realidad Ganadera (Livestock Farming’s Reality) in which alt-proteins were criticised. It was based directly on another campaign done at the EU level in 2019 by the also ad hoc alliance European Livestock Voice, called Meat the Facts. The campaign is backed by 42 Spanish associations comprising most of meat industry’s supply chain, including fodder producers and veterinaries. It was released shortly after the European Parliament rejected the proposed ban on meat analogues being named as their traditional meat counterparts ([ABC, 2020](#)). One of the most relevant associations behind this campaign was ANICE (National Association of the Meat Industries of Spain), the biggest association of meat companies in Spain. In the following years, the meat sector has engaged in other more low-profile campaigns, particularly aimed at questioning the legitimacy of this decision. Examples of this are ‘Búscales un nombre’ (Find them a name), a campaign inviting the public to come up with creative names that alt-proteins could use instead of co-opting those from traditional meat products ([Vicente, 2021b](#)); or ‘Cada

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<sup>1</sup>The term ‘dehesa’ refers to an agroforestry landscape from the southwest of the Iberian Peninsula ([Guzmán Álvarez, 2016](#)). It is commonly associated with the Iberian pig, and thus with the production of traditional and high value pork foods in Spain.



cosa por su nombre' (Call things like they are), a campaign to push the Spanish government to change the regulations in this regard (Eurocarne, 2024).

## 4.2 The Spanish alt-protein sector

The proliferation of Spanish alt-protein companies started and happened mostly during 2017 and 2018. Previously, companies providing plant-based meat replacements limited their offer to traditional vegetarian alternatives (e.g., tofu, tempeh, seitan) and to first-generation meat analogues like textured vegetable protein (Abbaspour et al., 2023). While for decades there have been companies selling plant-based analogues to meat products like burgers, sausages and steaks, they only aimed at partially mimicking the shape and texture of their meat counterparts. These were sold in dedicated shops and in some supermarket aisles, mainly aimed at vegetarian and health-conscious consumers. They did not market their protein content or their meat-like characteristics. It is in the second half of the 2010s, especially during the years 2017 and 2018, when VC-backed start-ups producing second generation meat alternatives seeking to provide a complete *protein through meat experience* (i.e., alt-proteins) start to appear in Spain, arguably following the success of other international companies like Beyond Meat or Impossible Foods. This shows how the global niche (Fuenfschilling & Binz, 2018) of alt-proteins, born in Silicon Valley earlier in the early 2010s (Sexton, 2020), quickly started to diffuse into the main Spanish regional innovation centres, namely in Catalonia and Madrid. Explaining the mechanisms that enabled this diffusion falls however beyond the scope of this thesis.

Defining the supply chain of the alt-protein sector is difficult, because it is a novel, opaque and changing one. It is opaque because the technological innovations of the sector are mainly driven by private actors who make heavy use of patents and trade secret protections in order to draw capital investments (Cooke, 2023; Guthman & Biltekoff, 2021). And it is a changing supply chain due to the continuous technological innovations happening on it. The supply chain also varies depending on which of the alt-protein technologies are being used. However, for plant-based meat, the most established of these technologies at the moment, the supply chain encompasses the following: the growing of agricultural protein crops, the processing of these raw material into protein products, the manufacturing of alt-proteins out of these ingredients, and food retailing (Tziva et al., 2020). The auxiliary industries are mainly food-machinery manufacturers, as well as manufacturers of other ingredients and additives that are used during the manufacturing process. Some of these ingredients are obtained through other alt-protein technologies, like precision fermentation. This integration of different alt-protein technologies in the development of meat, fish, dairy and egg analogues is becoming increasingly common. The distinction between these alt-protein technologies then is likely to become blurrier in the near future, as these and other upcoming technologies continue being further developed, abandoned, upscaled and reconfigured (FAIRR, 2022). Some of these alt-protein technologies like biomass fermentation and cultivated meat can potentially do without protein crops, and thus require of radically different supply chains that rely less on agricultural supplies and more on biotech material supplies.

To this day, the only Spanish alt-protein industry association is Vegetales, founded in 2022, that focuses on promoting plant-based technologies and companies. Of its current 9 member companies, 6 are almost exclusively focused on dairy alternatives (i.e., plant-based milks), which reflects the fact that plant-based alternatives to milk (like those made from almond, oat, rice or soy) are notably more established in the Spanish market than plant-based meats (Vegetales, 2023). The association members range from companies owned by MNCs like Nestlé and Danone, to local independent companies and start-ups.

On the public sector side, neither the national government nor the regional ones have shown much interest in the promotion of alt-proteins. One of the few exceptions is shown in Catalonia, where the Department of Climate Action and the Institute of Agrofood Research and Technology (IRTA) announced in the late 2023 the creation of the Centre for innovation in Alternative Proteins (CiPA). Its deployment is projected to last until 2027, and their facilities will be spread across pre-existing IRTA centres throughout Catalonia. According to the public institute, it aims to become a leading centre in the search for alt-proteins in the south of Europe (IRTA, 2023).

The first interactions of the alt-protein niche with the meat sector started around 2019. From that year onwards, some of the biggest Spanish meat integrators (mostly pork and poultry meat processors) started entering the alt-protein sector through different strategies. Most of them did so by releasing their own plant-based products, either under their same traditional meat brand or under a new ‘vegetarian-products-only’ brand. An interesting outlier in this regard is the meat integrator Grupo Vall Companys, which founded a new alt-protein R&D company called Zyrcular Foods. This company, beyond producing its own brand, has the exclusive licence to distribute in Spain international brands like Beyond Meat and Quorn. Its stated aim is to kick-start the first alt-protein cluster in Southern Europe, akin to the Food Valley region in the Netherlands (Zyrcular Foods, 2020).

Another example of this engagement of the meat sector with alt-proteins is the case of the Catalan Cluster of the Meat (INNOVACC). Being the main meat association from Catalonia, it gathers regional actors from the whole meat sector, related industries (e.g., feed, genetics, machinery, logistics, additives, waste and by-product management) and institutions (e.g., universities, trade chambers, R&D centres, professional associations). In 2021 it changed its name to the Catalan Cluster of the Meat and the Alternative Protein, and started integrating alt-protein companies. In a related event on 2022, the 5th edition of the Forum of the Meat celebrated in Catalonia also was renamed Forum of the Meat and the Alternative Protein. The 6th edition of 2024 is also planned to be held under this new name.

# 5. Discourse analysis

In this chapter the discourse analysis is presented, structured by following the main storylines that each sector's discourses promote. The quoted parts presented in this chapter are manual translations from Spanish to English made by myself and, although there might be some nuance lost in the translation, I have made my best to portray the original meanings of the Spanish texts as best as possible.

## 5.1 Storylines from the meat sector

### 5.1.1 Alt-proteins are an opportunity for the meat industry

A storyline that is often mentioned in the meat industry is the idea that alt-proteins are not so much a challenge as they are an opportunity for the sector. This implies a pragmatic acceptance that, in a context where alt-protein technological innovations are becoming increasingly popular due to the raising demand of meat alternatives (whether this is due to environmental, ethical or health concerns is considered secondary), it is in the best interest of meat companies to engage with these innovations. Actors pushing for this storyline see alt-proteins as a diversification opportunity for meat companies, which should include them in their product portfolios in order to reach new and potentially expanding vegan, vegetarian and flexitarian markets.

New methods of obtaining protein will appear, which could affect the market of the meat protein: plant-based protein, algae- and insect-based protein, lab meat, etc. Some are growing, like plant-based protein, but others are in development phase or in certain products. The meat industry needs to start searching for alternatives in order to adapt to the upcoming trends. (INNOVACC, 2020, p. 183)

The diversification of products is one of the factors that will need to be enhanced in order to increase the market share and achieve the sector's growth. These new products are planned to satisfy each of the consumer profiles that are present in society, which vary significantly depending on its country and culture. In the same way the commercialisation of new products that substitute meat, the tendency towards products with higher added value, etc., will be the necessary axes to be able to successfully overcome the future challenges that the sector will face. The meat companies, and also

[ourselves as an association] will need to increase the activity related to these new products, that often will not be derived from pork. (INNOVACC, 2020, p. 268)

Overall, this storyline paints alt-proteins in a rather neutral way, as yet another innovation challenge that the meat sector has to overcome and engage with in order to avoid being left behind by the industry's continuous innovation processes. It is, however, not considered as a radical change in the sector, but instead is placed along other trending changes in consumer demands regarding meat products. In line with these ideas, it is also suggested that focusing on continuing to commercialise animal-sourced meat is also acceptable, as long as its 'differential value' in relation to alt-proteins is emphasised.

If economic history shows us something, it is that when you are working in a certain business sector, and when a disruptive advancement that threatens to change everything arrives, it is better not to mock, disregard or attack it. The correct strategy has always been to watch it closely and to either jump on its bandwagon or understand that everything is going to change. That is the way that enables taking the appropriate decisions that allow one or both of the following options: to reinforce the business by incorporating this new technology [and] to prove the market that what you are doing, the way in which you are doing it, and the price at which you are doing it continues to add a differential value for the consumer. Something that, when achieved, has always worked regardless of how many disruptions show up along the way. (Vicente, 2017)

This storyline is however also rather cautious, warning that what seems like a booming market might not be as lucrative as initially expected. Since alt-proteins are still seen as a recent trend or fashion in food, there are doubts about its future, and about whether its demand will keep growing or remain stuck as a niche product.

Plant-based proteins that are analogous to meat are trendy. They are in the supermarkets, influencers advertise them and big food companies – including the meat ones – have jumped to produce them. At first it seems like a safe and future-proof market, backed by a young environmentally conscious consumer, that will continue to grow in the future, but... paradoxically this year, against all odds, some black clouds have appeared in the sector's horizon. (Barreiro, 2022, p. 32)

It seems that the near future will feature a traditional meat sector that will have to coexist with the entry of new players in the market – although the industry itself is working to be a part of it by opening its business lines both in plant-based proteins as well as in in-vitro meat – and consumers will soon find in the market a huge offer of products that aspire to resemble meat as close as possible. Only time will tell if they finally achieve it. (Barreiro, 2022, p. 44)

An interesting aspect of this storyline is that it is mostly mentioned in documents that are aimed not so much to the general public, but rather to actors that are part of the meat sector. It is

also relevant that this storyline is made almost exclusively from associations of meat processors. While this storyline is not explicitly legitimising alt-proteins, and definitely is not advocating for those technologies, I argue that it is implicitly accepting alt-proteins as a valid niche that can be integrated in the meat sector and coexist with animal-sourced meats.

### **5.1.2 Alt-proteins are co-opting meaty terms**

This storyline argues that the use of culinary names traditionally ascribed to animal-sourced meat products is being unfairly co-opted by alt-protein companies. It became particularly intense in 2020, when the European Parliament rejected the proposed ban on meaty names for alt-proteins. This use of terms like ‘hamburger’, ‘sausage’ or ‘steak’ to name alt-protein products is criticised on two grounds. First, it is argued that consumers can become confused and tricked into buying these alternative products when in fact they are looking to buy those that contain meat in them. Second, and closely related to the first point, the storyline argues that this use of meaty terms by alt-proteins entails an attempt to co-opt the culture associated to the traditional meat products. Companies selling alternatives to meat are thus not only generating confusion among consumers when they shop in the supermarket, but they are also messing with the gastronomic heritage of Spain by making words used to describe traditional meat foods ‘void’ and meaningless.

The products that mimic animal-sourced products can appropriate not only of their sale denominations, but also of the nutritional and gastronomic qualities of meat products, as it is already happening with the ‘jamón’, the ‘chorizo’ or the hamburger, so rooted in our cultural heritage and in the livestock-meat sector. [...] If we protect our regional and local heritage through PGIs and PDOs [regulated geographical origin certificates to protect and promote traditional EU foods], we should be coherent and protect the denominations of our gastronomic heritage, which is also the fruit of our common heritage, and that is now at risk with the rise in the commercialisation of similar products. ([ANICE, 2024c](#))

It is urgent to denounce this phenomenon that is sneaking into our European dishes... specially because instead of being discussed democratically, it has taken the road of public EU funding and the promotion of a culture that calls ‘meat, fish, milk, cheese, pâté’ to foods that do not contain anything animal-sourced and that threatens livestock farming, necessary for our food sovereignty. ([Coordinadora Europea Vía Campesina, 2022, p. 1](#))

Although cultivated meat is still not commercialised in the EU, this storyline also targets it and argues that it should not be called meat on the basis that it lacks some elements of animal-sourced meat. This is relevant because the fundamental difference between cultivated meat and other alt-proteins is that the former can be argued to be identical to animal-sourced meat at the molecular level. This requires opponent incumbents to nuance their storyline for this particular technology, alluding to more technical terms.

These products cannot be named ‘meat’ because there is a lack of several types of important cells (such as nerve cells, adipocytes, etc.) in this intervention, which is nothing more than a cell culture. (Somos Ganadería, 2022).

Although this storyline is still prominent in some parts of the meat sector, particularly in advocacy campaigns, it has proven to be divisive within it. Arguably, the incumbents of the meat sector that have more openly engaged with alt-proteins are more reticent to support this storyline, and less keen to resist the legal limitation of meaty terms to those foods of animal origin. In fact – along with food MNCs like Nestlé and Unilever – some companies within the Spanish meat sector lobbied against the proposed EU ban on meaty terms, on the side of the alt-protein sector (Vicente, 2020). This showcases that there are meat incumbents that do not perceive using traditional meat names for alt-proteins as damaging for the commercialisation of animal-sourced meats, while other incumbents still perceive it as a serious threat.

Meat companies must enter into all the businesses they deem convenient. Even more, from this blog I have stated several times that there needs to be a change in mentality, that they are not meat companies, but protein companies instead. And the plant-based protein is a great opportunity. What I don’t fully grasp is the interest in applying the names that the consumer already knows to new and different products. Products that, furthermore, those alien to the meat sector use to attack meat. (Vicente, 2020)

Noticeably, the incumbents that advance this delegitimising storyline against alt-proteins tend to belong to the livestock part of the value chain within the meat industry.

### **5.1.3 Alt-proteins’ alleged benefits are questionable**

This storyline argues that the claims made by the proponents of alt-proteins and by the companies that sell them are often far-fetched and unsubstantiated by scientific evidence. This refers to both claims about the health properties of the consumption of alt-proteins instead of meat, as well as to claims about the reduced environmental impact that their production entails. Generic criticisms about these claims often allude to their hype being based more on ideological motivations (e.g., animal-rights activism) than on a robust corpus of scientific studies.

Does artificial meat improve people’s health? We still don’t even know what will be the real effects that it will have on consumers. Will artificial meat make Cantabria, Salamanca or Galicia [regions and provinces within Spain], livestock farming territories, become truly more sustainable? How? These are words loaded with animal-rights ideology that we accept without questioning too much, as a result of the continuous cultural intoxication that the animal-rights industry imposes from all spheres. (Martín, 2022)

Incumbents, however, sometimes make a distinction depending on whether they are criticising plant-based or cultivated meats. The first ones are criticised for being ultra-processed foods, arguably due to the physicochemical processes that the plant ingredients go through and to the food additives that are added to achieve meaty textures, flavours and smells in the finished product. This criticism is particularly relevant in the context of Spain, where some years ago a very successful health-food movement emphasised the dangers of ultra-processed foods ([Mediavilla, 2022b](#)), making this word loaded with negative connotations for Spanish health-conscious consumers – a section of consumers that overlap notoriously with those interested in alt-proteins.

Vegan products, increasingly more present in the supermarket shelves, are often promoted as healthier and more ethical alternatives to animal-sourced products. However, a detailed analysis of their ingredients reveals a different reality. Manufactured from vegetable proteins and, in some cases, additives or ingredients that would make them considered ultra-processed, these foods are designed to mimic and displace their animal-sourced counterparts. ([ANICE, 2024b](#))

The second ones, namely cultivated meats, are criticised on grounds of its production being based on novel biotechnological processes that produce food in laboratories, thus making reference to the ‘unnaturalness’ of its origin and its manufacturing processes. Probably because studies indicate that cultivated meat generates more doubts and aversion than other alt-protein technologies in consumers ([de Oliveira Padilha et al., 2022](#)), more emphasis is put on criticising this alternative and its potential dangers while implicitly extending this critique to the rest of alt-proteins.

The fact that ‘cultivated meat’ requires a process that consumes energy and the use of compounds and molecules that would normally be banned in livestock fodder (hormones, antibiotics, etc.) is an aspect that is commonly ignored. ([Somos Ganadería, 2022](#))

During the experts’ consultancy, all the potential hazards of the four production stages of cell-based foods were discussed: acquisition of cells, cellular growth and production, cell recollection and food processing. Results show that there are 53 potential sources of danger that can lead to problems and negative health consequences. These include heavy metal pollution, microplastics and nanoplastics, allergens such as additives to improve the flavour and texture of these products, chemical pollutants, toxic compounds, antibiotics and prions. ([ANICE, 2023](#))

Here it is interesting to see that some farmers’ associations, while being critical of alt-proteins, are also critical of intensive livestock farming, discursively joining them as two sides of the same issue. These tend to be associations of extensive livestock farmers and agroecology advocates. More about this division is showed in the next storyline.

[Instead of on alt-proteins] we prefer to focus on an agroecological transition, because what is proposed here is the replacement of one evil (the flow of bad quality meat in the markets) with another (an uncertain product). In fact, no study or analysis explains how the metabolism will be affected in the long term. [...] The standardisation of food production makes it very vulnerable to any kind of disturbance (which recalls the current propagation of several epidemics in the intensive industrial livestock). (Coordinadora Europea Vía Campesina, 2022, p. 4)

The campaign from Somos Ganadería (2022) uses a series of juxtaposed illustrations in its website to summarise the critique of the association towards alt-proteins. One of these illustrations suggests that an end of livestock farming caused by alt-proteins would result in society being forced to consume dull and unexciting foods that furthermore lack essential nutrients, in line with this storyline (see Figure 5.1). This illustration also emphasises other commonly used animal-sourced products that are enabled by livestock farming, such as wool, leather and pet food.



**Figure 5.1:** Juxtaposed depictions of a man in a living room, with animal-sourced products and without them (source: [Somos Ganadería, 2022](#))



#### 5.1.4 Alt-proteins are damaging for rural regions

This storyline shifts the focus from criticising alt-proteins for their purported negative qualities to criticising them for the potential negative impacts that an upscaling of these emerging technologies can have on the rural areas of Spain (and by extension on those of the EU). In this storyline, livestock farming is closely linked to the rural, as an inherent and essential part of it. During this discourse analysis, discourses around the topic of rurality were found to be by far the most frequent delegitimising storylines coming from the meat sector. This storyline argues

that livestock has three broad and fundamental roles to play in rural areas. First, that it is a key actor in the prevention of environmental disasters like wildfires and biodiversity loss. This argument thus appeals to environmentalist concerns, posing livestock as an ally rather than a liability and playing down the environmental and animal welfare issues that are blamed on the livestock industry. They argue that these have been exaggerated by a minority who wants to completely get rid of livestock farming.

From the perspective of climate change, a world without livestock probably wouldn't be as some imagine it would be. Without ruminants, it would be extremely difficult to keep pastures, countrysides and meadows. The forests would gain ground and become more susceptible of catching fire during extreme temperatures. [...] Livestock also regulates ecological cycles, closes the nutrient cycle and improves the soil's fertility and carbon sequestration by recycling and reusing manure as a bioresource and by employing those pastures unavailable for sowing. In mixed-used zones of crops and livestock, pasture rotations also work to interrupt the plague cycles in crops, therefore enabling farmers to use less pesticides. In a world without livestock, the higher demand of a production based on vegetable crops would lead to an intensification in the use of croplands, an increase in the use of croplands needed for food production, a loss of biodiversity, and the abandonment of lands that are unusable neither for crops nor for the production of proteins, such as the mountainous regions for example. (Somos Ganadería, 2022)

Second, the storyline argues that livestock is also an essential part of rural communities' economy and culture, and that as such it vertebrates Spain and the rest of EU countries' economies and cultures too. Livestock farming is also portrayed as a crucial element to fix population in the countryside and avoid a further rural exodus, which historically has been a particularly acute problem in Spain that remains to this day (Gil, 2021; Martí, 2024). Third, it is argued that livestock is what guarantees food security for Spain and the EU, reducing its dependency on imports that might become affected by global geopolitical turmoils.

Nowadays livestock is an essential component of rural Europe. Livestock is present in almost all rural zones of Europe, providing a wide diversity of production systems according to the local economic, geographic and sociological contexts. The livestock sector contributes a great deal to European economy [...] Without livestock, the rural exodus will increase, putting more pressure on our cities and a further disconnection with nature and with our cultural heritage. [...] The European livestock farming model, which is based on diversified, local and family-sized structures and farms, is the foundation of the European rural areas. It supports a great variety of jobs and industries, and contributes to a circular economy inside the EU's bioeconomy, while at the same time guarantees a continuous and affordable supply of nutritious foods required in a balanced diet. [...] We know that the elimination of the livestock farming activity from Europe would have dire consequences. [...] A first key impact of the

reduction of animal farms would be the impoverishment of the rural structure, of the maintenance of our rural areas, and of their attractiveness. For each farm, seven jobs are kept in rural areas. Another important consequence of reducing livestock production are the effects it would have on the earth and on biodiversity. Livestock farming activities are deeply rooted into the rural European traditions. (Somos Ganadería, 2022)

And what effects would the introduction of artificial meat have on our livestock fabric that vertebrates the rural Spain? The disaster, the vanishing of thousands of livestock farms that are the territorial support of many places in Spain. [...] If our political leaders aren't the ones that put the brakes on what is happening, if they aren't the ones that defend the rural world from the attack that is coming from the animal-rights industry, we will have to be the ones that, as responsible citizens, take action with our individual decisions. (Martín, 2022)

This same storyline is pushed by livestock associations at the EU level. This points to a strong coordination between livestock farmer associations across Europe, highlighting the multiscalar dimension of storylines.

Agriculture, and more precisely the livestock value chain is about more than just farming, they are the connecting fibres for our entire lives. Whether Europe's citizens are city-dwellers, rural tenants or coastal denizens, they all rely on the livestock value chain every day of the year. Whether it's for food, clothing, fertiliser, medicines, beauty products, maintaining the landscape, or even travel we all depend on farmed animals. Even crop farming relies on livestock. You can't have one without the other. [...] European Livestock Voice partner associations call for dedicated measures to address the growing divide between urban and rural, with a strategic focus on education. [...] Rather than diverting resources solely to alternatives like plant-based diets, prioritising education can reshape perceptions and contribute to a more sustainable and informed society. (European Livestock Voice, 2024)

Furthermore, the remaining illustrations from Somos Ganadería (2022) focus on visually hammering this storyline, reinforcing my observation that this is a central argument in their critique of alt-proteins. Figure 5.2 portrays an idealised view of a livestock farm, where animals either eat in a small family-sized barn or enjoy the surrounding pastures, and where another building suggests the engagement of the farm in circular economy. In its juxtaposed image, this farm has been replaced by a manufacturing plant of cultivated meat which is surrounded by a car park, and where the transmission towers in the background emphasise the reportedly high energy consumption of this alt-protein technology. Figure 5.3 portrays a similar landscape, where a biodiverse and circular farm that combines livestock and crop farming gets replaced by a supermarket and its car park in its juxtaposed image; there also a protest sign demands the return of the biodiversity that the livestock farm provided. Although the point that the author is trying

to make with this purported conflict between livestock farming and supermarkets is unclear, I suggest that it implies that the livestock farm allowed for a direct and small-scale connection between urban consumers and rural producers. The supermarket, on the other hand, suggests that these local food networks would be destroyed in a landscape dominated by alt-protein manufacturing plants. Finally, [Figure 5.4](#) portrays a town square with a food market on it where animal-sourced foods are being sold. The surrounding buildings are filled with local shops and restaurants, thus projecting the image of a lively town. This is juxtaposed with an empty town square, where furthermore the local shops have shut down arguably by a green supermarket that sells alt-proteins and has shrunk the economy of the town.

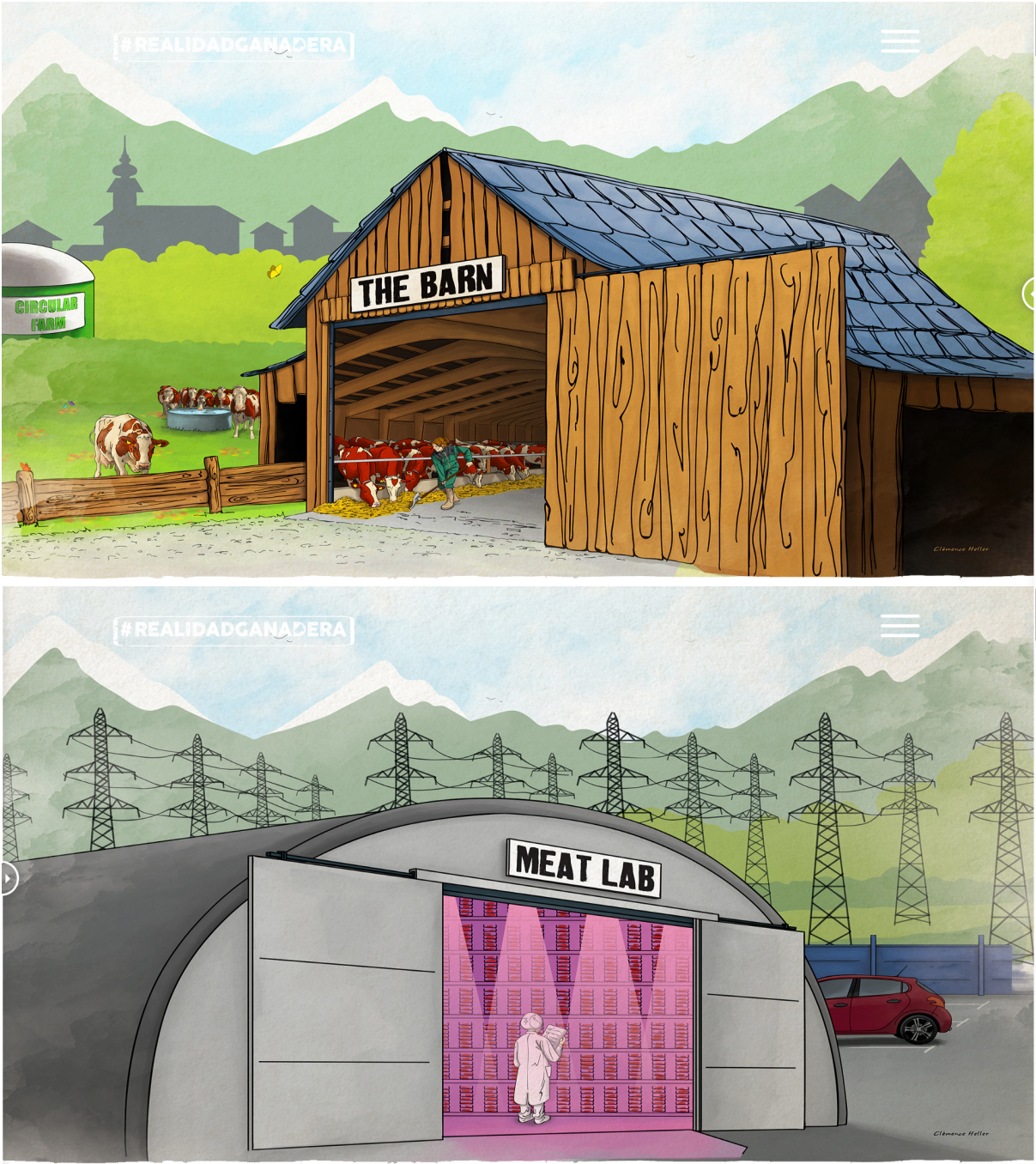
Before jumping to the next storyline, it is worth noting that a similar storyline is also used in reverse to critique the intensive livestock farming industry. This is done both by rural inhabitants opposed to macrofarms as well as by extensive livestock associations within the meat sector. These associations explicitly seek to distance themselves from the animal farming industry. In a campaign called ‘No es lo mismo’ (It’s not the same) aimed at this, they argue that the negative externalities associated with intensive farming are turned into positive ones with the extensive model. They thus state that the intensive livestock industry discursively co-opts their farming model. To fight this, one of their specific demands points to the development of a national labelling scheme that helps consumers differentiate between the extensively produced meat and the intensively produced one.

[Industrial livestock] destroys more than it builds, endangering the economy of the town where it is built and of the surrounding ones, impacting not only the tourist sector, but also the agriculture and traditional extensive livestock of the area. And the promised jobs are few and precarious. ([Coordinadora Estatal Stop Ganadería Industrial, 2021](#))

We have been used to improve the public image of intensive production facilities [...] in a *totum revolutum* in which consumers have no way of knowing what they are eating. ([Plataforma por la Ganadería Extensiva y el Pastoralismo, 2022](#))

Although this discursive struggle within the meat sector does not revolve directly around alt-proteins, it is worth bringing it up to emphasise the fact that actors within a discourse coalition do not necessarily act in a coordinate or planned way ([Hajer, 1995](#)). In fact, they can have different or even conflicting interests in other matters, as shown in this case.

**Figure 5.2:** Juxtaposed depictions of rural buildings, being used for livestock farming and for growing cultivated meat (source: [Somos Ganadería, 2022](#))



**Figure 5.3:** Juxtaposed depictions of rural landscapes, hosting farmed animals and a supermarket's car park (source: [Somos Ganadería, 2022](#))



**Figure 5.4:** Juxtaposed depictions of a town square, with an animal-sourced food market and without it (source: Somos Ganadería, 2022)



**5.1.5 Alt-proteins are promoted by vested interests**

This storyline questions the good intentions and ulterior motives behind the actors that promote the protein transition and alt-proteins. Although the actors that are allegedly behind the curtain are often blurry, and sometimes this storyline veers close to conspiracy theories, there are two main group of actors mentioned: green lobbies and MNCs, which are often personified in a series of well-known individuals that have publicly invested in alt-proteins.

Environmentalism is the new tsunami that threatens to destroy any dissidence. On

the other side, there are the interests of multimillionaires behind the lab meat that is being pushed into us by animal rights militants. Namely: Bill Gates, Warren Buffett, Michael Bloomberg, Twitter founders are shareholders of Memphis Meats, Impossible Foods, Beyond Meat, Tyson Foods. (Landaluce, 2019)

Bill Gates [...] has a special interest in developed countries, like Spain, to stop consuming animal meat. For that, he alludes to environmental reasons and employs as background the fight against climate change. A message he promotes using his all-powerful foundation as a pressure device, along with loudspeakers like UN events, meetings with countries' presidents and prestigious forums. At the same time, stealthily, he has become the main landowner in the USA and has invested millions of dollars in several companies of artificial meat, whose consumption he intends to impose, even suggesting that regulations should be changed in his benefit. (Ollero, 2022)

This storyline gets voiced with particular intensity after some politician makes a public comment or proposal regarding excessive meat consumption or the negative impacts of livestock farming. For instance, after the Spanish government announced a plan that reportedly included mentions to the reduction of meat consumption due to its environmental impact, it generated furious reactions from livestock associations (Vicente, 2021a).

Barato [president of a farmers' association] believes that Sánchez [Spain's prime minister], is throwing himself into the arms of the big universal capitalists, such as Bill Gates ('the largest landowner in the world') or the theories promoted by the Davos Agenda. 'Sánchez again turns his back on the agrarian sector in favour of the interests of the environmentalists and the artificial meat industry', criticises the president of the business association. (Vigario, 2021)

Similar reactions happened when Spain's then minister of Consumer Affairs criticised the country's macrofarms in an interview for an international newspaper, stating that they export 'poor quality meat from ill-treated animals' (Jones, 2021). This stirred up a heated reaction from the Spanish livestock sector, and although the minister made no mention whatsoever to the protein transition or to alt-proteins, critiques from the livestock sector often linked him to the interests of the alt-protein industry.

He is an ignorant that doesn't know the [livestock] productive system nor their producers, a puppet at the service of ecoterrorist movements, who puts us on the same level of big property speculators [...] I don't know if the minister is an ignorant, if he obeys to the spurious interests of those who want to end traditional livestock farming to saturate the market with artificial meat, or if he just seeks environmentalist votes from the urban world that are totally ignorant about the day-to-day work in the rural world. It's not the first time, they want to annihilate us [...] livestock farmers



are not well looked upon, and furthermore a global movement that persecutes us is being weaponised, with the excuse of the Agenda 2030 to attack the sector, because we are the great competitor that are facing those that want to conquer the food market with new models like artificial meat. (President of a farmers' association, as cited in [Vigario, 2022](#))

This storyline often gets entangled with the previous one of alt-proteins as damaging for the rural world. The aim of these vested interests is therefore not only motivated by the prospect of economic profits or the interests of environmentalists and animal rights activists, but also by a willingness to eradicate the current uses of rural land. This storyline thus links the emergence alt-proteins with environmental EU laws that, although mostly unrelated to the promotion of alt-proteins, farmers still perceive as detrimental to their activities because they limit the uses they can give to their lands.

That's why the mantra 'Europe says, Europe asks, Europe commands' is starting to give headaches in issues related with agriculture, livestock farming, the way of working the land or the way of understanding the exploitation of the soils. Let's remember that our country has nearly a 40% of its total surface declared as part of the Natura 2000 network, which hugely limits the exploitation of its resources and nearly any activity that can be done in that enclosed territory. As if that wasn't enough, the new EU Nature Restoration Law, pushed by a 'green lobby' with opaque vested interests and in which even Spanish politicians are involved, will mean for our country and for almost all of Europe that a 'green noose' is put around the neck of crop farmers, fishermen and livestock farmers. [...] With the pretext of protecting nature, there is a demonising of activities like hunting or sowing, harvesting, extensive livestock farming, the use of insecticides, traditional fishing methods or the controlled burns and the pruning. Instead, there is a boosting of artificial meals, lab meats or the import of food from non-EU countries [...]. And 40% of the continent's land is left to its own devices, which won't be allowed to be used for farming purposes, what in turn will lead to the extinction of thousands of farms and to an absolute and deliberate food dependency. It is possible that all of this might sound like a conspirationist idea or an exaggeration, but very soon all our acts will be ruled by the alleged carbon footprint they say we emit, which will limit our ability to do certain activities or having the right to certain 'privileges' like travelling, eating real meat or owning a car. ([Barona, 2023](#))

As can be perceived throughout most of the cited texts, this storyline often draws not only from EU farmers' dissatisfaction towards the EU's Common Agricultural Policy (CAP) and environmental laws, but also intermingles with conspiracy theory narratives that have fuelled an uprising of rural – and urban – right-wing populism in Europe during the last lustrum ([Niranjana, 2024](#); [van der Ploeg, 2020](#)). These related storylines tend to adscribe much more nefarious vested interests to the actors that promote alt-proteins, which allegedly also seek to destroy the

cultural values and traditions of ‘the West’ by attacking its rural livelihoods, which are portrayed as their core, in line with the previous storyline.

‘We can’t be Europe’s gardeners’, they complain bitterly in the countryside, tired of being blamed as the culprits of climate change by Brussels and Madrid’s bureaucrats. ‘They aim to control what we eat to control our lives’, says Camino Limia [president of a farmers’ association], who blames it on ‘power-hungry elites, non-democratic organisations such as the World Economic Forum who, among others, form huge environmentalist lobbies and try to delineate our way of living, our freedoms’. According to this narrative, very extended, these agents try ‘to take hold of the rural world, which is the one that keeps the traditions, the identity, the customs and the coexistence, because they have already turned cities into ghettos, where citizens are told what, where and when to eat’. This livestock farmer gives as an example the traditionally produced meat that contains natural proteins, and that is attacked from several spheres: ‘This food is mostly consumed in Spain or in China, precisely two of the countries with the longest life expectancy, just the opposite of what they tell us’ because ‘they are interested in us consuming artificial meat to benefit certain companies’. And she asks: ‘Where are mental diseases more common? Clearly in the city centres, in the big cities, much more than in the towns and in the rural families’.

(Vigario, 2024)

This is an attempt of philosophical imposition that clashes with the foundations of our Greco-Latin-based Western civilisation in which the man is the centre and measure of all things. A culture that after undergoing the influence of Christianity has made us who we are, a culture we are proud of. [...] The animal-rights industry, fundamentally of Anglo-Saxon origin, tries to wash away with this way of understanding civilisation, to pull out our most fundamental roots and impose on us new ways of seeing the world. [...] This way, the animal-rights industry, through dozens of associations and lobbies that handle hundreds of millions of euros in their yearly budgets, for years has been massaging the West’s consciences about our ethical wickedness for using animals, preparing the ground so that they themselves can bring us the solution to the problem, namely the ethical foods. This way, we see how artificial foods that come to replace our meats, cheeses, leathers or any other animal-sourced products are slowly paving the way. [...] And finally, there is an extremely serious underlying problem, which is that behind sustainability and ethical claims what exists is the certain fact that we are being pushed to think and eat in the same way across the world, a standardised and extremely fragile society that is dependant on a few individuals.

(Martín, 2022)

As it happens with the previous storyline, this one is also used by extensive livestock associations that seek to distance themselves from intensive livestock. However, as they tend to be more aligned with environmentalist discourses, these associations focus their critiques on MNCs, leaving environmentalist actors out of them.

It's the giants of the international meat market the ones that say they have good intentions. The lab proteins are still not on our plates, but they are already being presented as the silver bullet for many of society's problems by the wealthy and powerful pressure groups. These are the traditional industrial meat actors: Cargill, JBS, Tyson Foods, as well as the newcomers: Aleph Farms, Mosa Meat, Beyond Meat, WH Group. While the intensive industrial meat production is becoming increasingly questioned, and with good reason, these giants protect their financial and economic interests by investing in this new market. If we think about the situation of this market in 2030, as these actors propose, we will see an extreme concentration of food production in the hands of the multi-national industries. ([Coordinadora Europea Vía Campesina, 2022](#))

## **5.2 Storylines from the alt-protein sector**

### **5.2.1 Alt-proteins are not meant to replace meat**

Currently, the dominant storyline in the alt-protein sector appears to be an acceptance of animal-sourced meats as equally valid food products that can coexist with their non-animal counterparts. This is aligned with the practices most of these companies are taking, engaging with the meat sector nationally and internationally. For instance, following the reported commotion in the meat sector caused by the inauguration in 2023 of the CiPA, a member of the IRTA (its parent research institute) was interviewed for a meat-sector news website. When asked whether alt-proteins are a threat for the meat industry, she replied:

Alternative proteins, although experimenting a significant growth in the market, don't necessarily represent a threat to the meat sector in general nor to the meat industry in particular. The field of alternative protein sources can be addressed as an opportunity to diversify the offer of food products and satisfy consumers' demands, which are increasingly incorporating more criteria like the sustainability and the socioeconomic impact of the production and transformation of the foods they buy and consume. Alternative proteins are also an opportunity for the primary sector to explore new or alternative ingredients for the formulation of animal fodder, with a lesser environmental impact and reliance on third countries. (As cited in [Pérez, 2024b](#))

The same news website held an interview with a Spanish alt-protein start-up that focuses on printing 3D steaks. When asked the same question as before, the CEO replied that, besides working with alt-proteins, they also 'reprint' animal-sourced meat cuts that are less valuable, to make them more valuable for the end consumer. He states:

We are an ally. We work with meat and non-meat products. On one side we are providing new alternatives to the consumer, but on the other side we are providing

new opportunities for the [meat processors]. At the end of the day we are not product manufacturers, we are technology developers, and in that sense we will end up working with meat companies that want to develop these kind of products to have them under their brands. [...] Regarding the meat industry, on one side, our mission is to increase the value of a percentage of their production and increase profitability. And, on the other side, to foster consumer loyalty in people that we see are starting to reduce their meat intake for health reasons, although we don't think this is true. With this kind of product, we consider that the meat industry will be able to maintain and attract consumers that, unfortunately, are lowering their high meat consumption. [...] We work with both plant-based and non-plant-based products, we are not a bunch of vegan militants. (As cited in [Pérez, 2024a](#))

This conciliatory storyline towards the meat industry is also mentioned by alt-protein companies in generic newspapers (i.e., in non-sectorial ones), which suggests that the storyline is not only aimed at easing the concerns of worried incumbents in the meat sector, but also to the general public.

I don't think that it will be possible to substitute the 100% of animal-sourced meat, because people like it and furthermore there are very good producers, but we have to consume it in another way, reducing the quantity that we eat, which is clearly excessive, and taking advantage of alternatives. (CEO of an alt-protein company, as cited in [Mediavilla, 2022a](#))

Overall, this storyline gets closely aligned with the one of alt-proteins as food innovations coming from the meat sector.

### **5.2.2 Alt-proteins are hindered by unclear regulations**

This storyline is particularly emphasised by the association Vegetales, which makes it one of the central points of its first released document.

First of all, we want to contribute to improve the health of the plant-based sector in Spain: not only by the promotion of the consumption of our products, but also by advocating for a better regulation. A better regulation that, in our case, means just a regulation, because currently there is no specific norm that defines, classifies, determines or concretises what are plant-based foods and drinks. ([Vegetales, 2023, p. 5](#))

This storyline signals some concessions to the meat sector's storyline that alt-proteins are co-opting meaty terms, because the former does not reclaim the right to use these meaty terms in their products. Instead, they implicitly acknowledge the meat sector's argument that meaty terms applied to alt-proteins can confuse consumers.

The growth and consolidation of plant-based products in Spain will depend on the development of the legal recognition of this category. It is necessary to work on this direction to generate a trust environment throughout the value chain, from the producer to the consumer. (Vegetales, 2023, p. 9)

This call for clear regulations for the alt-protein sector can be understood then, in discursive terms, as an interest in ‘settling the debate’ over which words their industry is allowed to use in their products, rather than on continuing to prolong this discursive struggle. This storyline therefore, in combination with the previous one, signals that the alt-protein sector is seeking to institutionalise its existence through a regulatory framework that establishes alt-proteins as a well-defined product category within the food industry. The sector, however, seems willing to be categorised differently from the already well-established animal-sourced foods.

### **5.2.3 Alt-proteins are a healthy and sustainable alternative to meat**

This storyline is shared by virtually all alt-protein actors, which often emphasise or suggest these qualities on their websites and packagings. There are slight differences depending on the alt-protein technology they refer to, since the source raw materials change significantly. Particularly those that are plant-based often refer to the widespread association of plant foods as healthy, and also emphasise the scientific evidence that points to an increase of vegetable protein consumption (namely legumes) as key in having a healthy diet. The Spanish plant-based food association Vegetales, however, suggests that alt-proteins are not necessarily healthier than meat, but just equally healthy. This can be understood as related to the previous storylines, in the sense that it tries to emphasise that alt-proteins and meat can coexist.

There’s noise in many places, but when it comes to our industry, it is focused on associating or dissociating us from other products, usually those animal-sourced protein analogues. With this publication, we want to demystify what we aren’t to assert what we are: products that are healthy, committed with sustainability, that have their own identity, without wanting to replace or demonise any other, regardless of how rival it is. (Vegetales, 2023, p. 5)

Actors from the cultivated meat sector, instead, emphasise the possibilities of making this meat healthier by modifying its composition through biotechnological processes: ‘our meat has no fat, which makes it healthier, and vegetable oils such as olive oil can be added to it, which are healthier’ (as cited in Medina, 2023).

# 6. Discussion

## 6.1 Discourse coalitions and the reconfiguration of the meat sector

After having extracted and analysed these storylines from the meat and alt-protein sectors, two broad discourse coalitions seem to be forming, based on whether the actors engage in legitimising or delegitimising discourses regarding alt-proteins (see [Table 6.1](#)).

### 6.1.1 The legitimising coalition

The coalition that legitimises alt-proteins is composed of the alt-protein niche actors, as well as of some actors in the meat regime – specifically those associations where meat processors have a prominent relevance. The legitimising storyline of alt-proteins not being meant to be replaced by meat (L2) closely aligns with the storyline about alt-proteins being an opportunity for the meat industry (L1), because they both showcase that animal-sourced meat is not being questioned at any point. To calm the fears of the meat sector, L2 presents alt-proteins not as a disruptive technology that will topple the environmentally damaging meat regime, but as a promising set of technologies that will enable meat companies to release new non-animal products that cater to a wider selection of consumers, while at the same time also enables the companies to continue selling animal-sourced products – that in some cases can benefit from alt-protein technologies too. This storyline also helps this niche sector to draw in and gain the support of incumbents that have the financial and productive resources to upscale this technology. The legitimising storyline of alt-proteins being hindered by unclear regulations (L3) also shows that the niche sector is currently seeking to better establish itself into the food industry as a clearly and legally defined food category that can clearly differentiate itself from the animal-sourced food categories. It shows that the sector is trying to institutionalise itself through regulations that can help build trust in their foods. This is probably a reaction to the delegitimising storyline of alt-proteins being co-opting meaty terms (D1). The legal battles around the labelling names allowed to alt-proteins are still ongoing, as previously explained, and the niche is noticing that this uncertainty surrounding their sector only hinders their upscaling opportunities, which is further aggravated by the inconsistent or nonexistent regulations towards this sector in different countries. Furthermore, this storyline also reinforces the will of the alt-protein sector to align with established meat processors, some of whom may also seek to have clearer regulat-

ive frameworks before committing to further engage with this niche. Finally, the storyline of alt-proteins as being healthy and sustainable alternatives to meat (L4) is perhaps the one that more directly confronts with the meat sector, by posing itself as a superior food than animal-sourced alternatives. However, even when this niche reclaims and advocates for its benefits, it stops short of demonising or explicitly delegitimising animal-sourced meat, which also signals how these sectors are aligning with each other, and presenting themselves as two coexisting branches within the food industry.

In summary, these storylines indicate a growing confluence in the discourses and practices of the meat processing companies and those of the alt-protein companies, therefore forming a discourse coalition that legitimises alt-proteins without delegitimising animal-sourced meat. Although there are differences between actors depending on their specific alt-protein technology, they all ultimately agree in the importance of providing a *meat experience* through other means to cater for emerging ‘sustainable’ and ‘ethical’ consumers, without this meaning that animal-sourced meat production will be reduced or abandoned. This discourse coalition indicates that the alt-protein sector has adopted a fit-and-conform strategy rather than a stretch-and-transform one, where discursively it seeks to present itself as an ally of the existing meat sector through a marginal narrative that aligns closely with it (Simoens et al., 2022). This is coherent with what has been found to happen in previous studies of the protein transition in other countries (Hoogstraaten et al., 2023; Mylan et al., 2019; Tziva et al., 2020). This means that the meat system is reconfiguring by integrating these niche technologies and non-animal ingredients into their production and manufacturing processes and into their brands, without the need to make radical changes in its system or moving away from livestock supply chains. It then begs the question of up to which point this strategy of alt-protein companies has the capacity to enact deep changes in the meat system that amount to a real sustainability transition.

### **6.1.2 The delegitimising coalition**

When looking into the incumbents that are vocal against alt-proteins (i.e., those that form a discourse coalition that seeks to delegitimise them), it jumps out that these are not so much meat processing companies, but rather associations of livestock farmers – and other actors closely related to the livestock sector. The four delegitimising storylines (D1-D4) in fact make a strong emphasis in reasserting the necessity of livestock farming as a protection and guarantee against the many potential problems that alt-protein technologies might entail if they continue their upscaling process. The storyline of alt-proteins as co-opting meaty terms (D1) emphasises how traditional names of meat products are inextricably linked to the cultural and material origins of these – that is to say, to livestock. Accepting that foods that do not come from animals can be named as such therefore entails that these names no longer refer to a livestock-related gastronomic heritage, and thus that the cultural value of traditional Spanish food is lost. The storyline of alt-proteins’ alleged benefits being questionable (D2) also emphasises that the livestock sector stands as a historical and reliable source of tasty and nutritious food (see Figure 5.1) that also knows how to take care of the territory, something that cannot be guaranteed by the niche

technologies. The storyline of alt-proteins being damaging for rural regions (D3) emphasises the connection between livestock farming and the Spanish rural world, establishing that if alt-proteins hurt this sector then it will cascade into a series of negative effects not only for rural populations and landscapes (see [Figure 5.2](#) and [Figure 5.3](#)), but also indirectly for urban dwellers due to a decrease in food security and sovereignty (see [Figure 5.4](#)). Finally, the storyline of alt-proteins as being promoted by vested interests (D4) portrays these niche technologies as the product of external, untrustworthy and potentially nefarious actors that are alien to the Spanish rural world, in contrast to the livestock sector as being composed by native, ‘salt of the earth’ and trustworthy Spanish farmers.

To summarise, these storylines show that the meat incumbents that belong to the livestock sector are the ones most staunchly resisting the reconfiguration process that the previous discourse coalition (i.e., alt-protein entrants and meat processor incumbents) has engaged in. This can be explained by the fact that what alt-protein innovations are offering are technologies that can potentially enable a shift to a post-animal bioeconomy ([Sexton, 2020](#)) – that is to say, an economy that shifts from extracting value from farmed animals to extracting it from other living organisms (such as protein crops, microorganisms and cell cultures). In this scenario, livestock would no longer be needed. In other words, if alt-proteins scale up successfully and gain widespread consumer acceptance as valid replacements of animal-sourced meat, the survival of a noticeable portion of the livestock farming configuration (namely the actors and technologies related to it) can get endangered. For these incumbents within the meat sector, then, arguing for the necessity of meat consumption is becoming less useful and effective, due to the aforementioned changing ontologies of meat ([Jönsson et al., 2019](#)). Although the arguments of ‘real meat’ being superior to ‘fake meat’ are still used by livestock incumbents (see D2), biotechnological advancements might make this argument obsolete at some point in the near future. In this future, both the livestock and alt-protein configurations might be able to provide (each through their own technologies) the meat industry with virtually identical *meat materials* that enable meat processors to continue the provision of *protein through meat experience*. In this scenario, industrial animal farming technologies could have a difficult time competing with the potentially more efficient alt-protein technologies. Therefore, their discourse seems to be shifting to storylines that emphasise the importance and benefits of keeping the livestock industry alive. And in order to do this, they tap into widespread meta-discourses, as will be discussed in [Subsection 6.2.2](#).

**Table 6.1:** Coalitions around the analysed storylines

Legitimising coalition	Delegitimising coalition
Alt-proteins are an opportunity for the meat industry (L1)	Alt-proteins are co-opting meaty terms (D1)
Alt-proteins are not meant to replace meat (L2)	Alt-proteins’ alleged benefits are questionable (D2)
Alt-proteins are hindered by unclear regulations (L3)	Alt-proteins are damaging for rural regions (D3)
Alt-proteins are healthy and sustainable alternatives to meat (L4)	Alt-proteins are promoted by vested interests (D4)



### 6.1.3 Implications

Grouping the analysed storylines into discourse coalitions, based on whether they legitimise or delegitimise alt-proteins, has so far helped to get a better understanding of the reconfiguration processes that are happening in the meat system with the irruption of alt-proteins' technological innovations. It has shown that the niche-regime dichotomy indeed falls short to capture the complexities of this socio-technical transition. While it is useful to conceptualise alt-protein entrants at the niche level and meat incumbents at the regime level – to emphasise the weak structuration of the former and the strong structuration of the latter –, the discourse analysis shows that the frictions and resistances against the niche technologies do not come from the regime level as a whole, but just from some of its configurations. Other configurations close to the regime (namely meat processors) in fact are engaging with the niche technologies, if not with enthusiasm, at least yes with certain optimism regarding the economic possibilities they open up.

This fact also emphasises the issue that the concept of incumbent is too generic and broad to allow capturing the nuances of a socio-technical reconfiguration process. Both meat processors and livestock farmers are incumbents of the meat socio-technical system, but they encompass actors that are linked to fundamentally different technologies and institutions along the supply chain. Meat processors' technologies and knowledge revolve around the processing and packaging of food products, by using the meat that is sent to them from slaughterhouses as their raw material. Livestock farmers' technologies and knowledge, on the other side, revolve around the breeding of living animals from which the raw food will be extracted. The fundamental differences between these incumbents' configurations (both being part of the same meat system), then, can help explain their different response to alt-proteins. The implication of this for sustainability transition studies is that the incumbents of a socio-technical system should be differentiated based on the particular technologies they provide to the system, and on how attached these technologies are to the previously identified regime (i.e., the dominant institutional logic of that system). In [Section 2.2](#), I identified livestock farming as the dominant logic within the meat sector, and as shown in the analysis, the fact that alt-proteins are fundamentally challenging that regime explains why livestock farmers are the main incumbents opposing these innovations. But because alt-proteins do not question the necessity of a socio-technical system that provides *protein through meat experience* as a societal function, other incumbents do not have incentives to oppose them. In fact, they actually have incentives to engage with them, as I will argue in [Subsection 6.2.1](#).

In the next section, I shift the analytical focus from the socio-technical system level to the socio-technical landscape level. I do this by further scrutinising both coalitions' discourses (i.e., the sum of all their respective storylines), with the aim of understanding the meta-discourses they are drawing from to build trust and acceptability in their discourse. These meta-discourses can help to see the directionality of the reconfiguration process, and understand the values and assumptions that drive it ([Simoens et al., 2022](#)).

## 6.2 Meta-discourses affecting the protein transition

### 6.2.1 Ecological modernisation

The storylines of the legitimising coalition emphasise that alt-proteins are healthy and sustainable products that can fit within a meat industry that continues producing animal-sourced foods. This industry, like others, argues that it is constantly seeking to improve itself and to develop more efficient and environmentally conscious industrial processes and products, and that therefore alt-proteins can be a good step in this direction. Furthermore, it allows meat processors to expand their range of products to cater to changing consumer behaviours that reduce or eliminate meat from their diets, therefore capturing a bigger share of the food market.

The arguments of the legitimising coalition's storylines therefore align closely with the meta-discourse of *ecological modernisation*. This idea can be defined as one that 'recognizes the structural character of the environmental problematique but none the less assumes that existing political, economic, and social institutions can internalize the care for the environment' (Hajer, 1995, p. 25). It therefore posits that environmental issues can be remedied just through technological innovations that fix the inefficiencies of previous technologies, without the need to change underlying socio-economic structures like capitalism. This is a widespread meta-discourse that often underpins private companies' discourses, for instance when they announce new 'green' products or innovations that enable them to continue their business as usual while improving their public image through appeals to mainstream environmentalist concerns. Ecological modernisation is therefore grounded in a capitalist rationality, because 'it allows for a new orientation toward more environmentally friendly practices without challenging the overarching capitalist ideas and assumptions' (Simoens et al., 2022, p. 1845).

Bringing in the consideration of the logic of capitalism as part of the ecological modernisation meta-discourse in sustainability transitions, as I suggested in Section 2.3, helps to explain the ongoing confluence of the alt-protein and meat industries. The progressive integration of alt-proteins into the meat regime is not so much a paradoxical co-optation of a 'disruptive' industry, but just the rational next step in the profit-oriented intensification of the (post-)animal bioeconomy. As shown in this thesis, most advocates of the alt-protein industry do not aim at promoting a different socio-economic alternative to capitalism, but just at promoting innovations that can integrate in the social and economic status quo. The implication of this, then, is that these technical innovations enable incumbent meat processors to keep accumulating capital through continuing the provision of protein through meat experience that does not require the commodification, exploitation and killing of animals – or at least, that requires so in a much lesser degree (Jönsson et al., 2019). As explained here and in other accounts, the evolution of the meat industry during the second half of the 20th century in Spain and other countries has been a history of commodification, industrialisation and intensification, aimed at extracting as much profit as possible from animals' bodies. It has been the history of meat companies pushing livestock farmers to invest in incremental innovations that make the process of breeding and killing animals ever more efficient (Neo & Emel, 2017). In this context, biotechnological R&D is

starting to come up with innovations that have the potential of making this process even more efficient, either by breeding meat directly (like in the case of cultivated meat) or by producing increasingly identical analogues through the processing of other raw materials (like in the case of plant-based and fermentation technologies). Seen this way, the eventual abandonment of the livestock regime by the meat sector only looks like the next logical step in the (re-)meatification process (Hansen et al., 2023) – this is, of course, providing that the consumption of these alternatives becomes widely accepted by consumers. In relation to this last caveat, Efstathiou (2021) makes the interesting argument that the ‘technologies of effacement’ implanted by the intensive livestock industry to intensify meat production can potentially facilitate consumers to transition towards alt-proteins: because nowadays meat consumers in high-income countries are already much more familiar with the *meat products* than with the effaced *living animals* where those products originate from, the removal of animals from the manufacturing process of those meat products (i.e., the decoupling of the meat from the animal that is enabled by alt-protein technologies) should be cognitively easy for consumers to accept. In other words, as long as the *meat experience* these new products provide is identical to the originals, the removal of animals from an opaque production system that already hides them should be of little concern for most consumers.

However, although this capitalist logic of ecological modernisation can indeed promote the development and upscaling of alt-proteins, paradoxically it can also potentially limit the transformative potential of the protein transition. In fact, the success and consolidation of alt-proteins as a market could just result in them becoming another food group that coexists with animal-sourced meats in the supermarket shelves, as the industry itself suggests in its discourse. On top of that, because it is being enacted by private companies that invest in technological innovations that are driven ultimately by profit, not by sustainability or public good goals, there is a high risk of them steering the protein transition in a direction that leaves aside the social justice demands of a more deep and comprehensive sustainable food system transition (Béné, 2022; IPES-Food, 2022; Simon, 2023). In other words, alt-proteins risk becoming just another non-disruptive disruption ‘where markets remain resolutely undisrupted, and planetary crises, such as food insecurity, become another frontier of for-profit technofix solutions’ (Sexton, 2020, p. 6). This points to the the need of the public sector to step in this sustainability transition, to steer the technological innovations of alt-proteins in a direction that prioritises environmental, public health and social justice goals before profit-driven ones. Speaking in meta-discourse terms, in order for the protein transition to be successful, an alternative meta-discourse to ecological modernisation is needed. In this regard, there are proposals that have already been made for a truly sustainable protein transition, and which range from the more pragmatical governance approaches (Søndergaard et al., 2023) to the more radical ones (Broad, 2019; Dutkiewicz, 2019).

### 6.2.2 Livestock exceptionalism

The storylines of the delegitimising coalition emphasise that the issues alt-proteins bring to the table are not so much about their questionable qualities as healthy and sustainable foods, but about the negative impacts they can enact on the rural world, and therefore on the core of the socio-cultural fabric of society. They threaten to sink job opportunities in rural regions and to accelerate their depopulation, which not only erases the cultural heritage that surrounds livestock farming and traditional meat products, but also leaves the country in a more vulnerable position regarding food safety, by being more dependant on importing proteins from other places.

The arguments of the delegitimising coalition's storylines therefore draw heavily from the meta-discourse of *livestock exceptionalism*. I propose this term by drawing directly from the concept of *agricultural exceptionalism*, which refers to the widespread idea that the farming industry is fundamentally different from most other economic sectors, and that as such it is to be allowed to operate under a different set of rules than the rest, often being favoured by governments with more permissive regulations and subsidies (Daugbjerg & Swinbank, 2009; Torrella, 2023). This rationale is based on a series of particularities that historically farmers have been subjected to, due to the nature of their economic activity. For instance, their huge dependence on external factors like unpredictable weather conditions made them highly vulnerable to price and market fluctuations. Furthermore, during the late 19th and early 20th centuries, different turbulent historical events led nation-states to consider agriculture as a key strategic sector that contributed to broader national interests and goals, mainly by providing their populations with a safe supply of food in times of uncertainty. Therefore, agricultural exceptionalism became entrenched among policymakers and farmers, which have created strong links and connections over decades thanks to it. After the Green Revolution happened during the second half of the 20th century (Gunderson, 2011), the increase in productivity reduced the previous risks to food security in high-income countries. This made agricultural exceptionalism to focus on emphasising other public goods that agriculture provides, such as taking care of farmed landscapes and being the economic support of shrinking rural communities, therefore also enabling the preservation of the nations' cultural heritages (Daugbjerg & Swinbank, 2009).

Livestock exceptionalism, then, is basically that same meta-discourse, but with the difference that it emphasises the fact that farmed animals are brought to the centre of the discourse as a key element of agriculture. It shows how livestock farmers react discursively to criticisms to their sector by building on an existing meta-discourse, but making subtle changes to address the fact that alt-proteins do not necessarily question the need for agriculture, but they do question the need for livestock. This meta-discourse therefore consists on widespread romanticising notions of the livestock farming activity, which get perpetuated well beyond the historical policymaking rationale through idyllic representations of livestock farming in everyday objects, ranging from children books to advertisements of dairy and meat products in media and packaging – in a very similar fashion to what is shown in Figure 5.2 and Figure 5.3. Even though current intensive livestock farming landscapes, in Spain and in other industrialised countries,

often do not resemble these idealised portrayals, they nonetheless remain ingrained in the common cultural imaginary. Therefore, I argue that livestock farmer incumbents within the meat socio-technical system draw heavily from this meta-discourse in order for their delegitimising storylines to gain acceptability.

On top of this, as shown in the storyline of alt-proteins as promoted by vested interests (D4), livestock farmers also seem to be increasingly building their discourse by drawing from conspiracy theories that are becoming a concern in the EU. This might be fuelled by livestock farmers' resentment to what they perceive as external changes emanating from elitist urban cores, whose innovations they try to impose on their hinterlands (Skjølsvold & Coenen, 2021). This indicates that this is a key concern that public policies that aim to successfully accelerate the protein transition should address from the start by engaging livestock farmers in the process. It should be important, however, to keep in mind that the entitlement that the livestock exceptionalism provides to farmers (that often are owners rather than labourers) might strongly hinder efforts in this regard. It is therefore important to also engage in a critical questioning of this meta-discourse and of its remaining validity in the current world. The realities of livestock farmers however vary widely even within countries like Spain, and these actors cannot be considered as a homogeneous group of incumbents (Deviney et al., 2023; van der Ploeg, 2020). In fact, the employment of the livestock exceptionalism meta-discourse can also work to obfuscate power inequalities in rural areas (e.g., in land ownership) and issues of exploitation and abuse of farm labourers by farm owners, with the former being usually migrants in situations of vulnerability (Fiałkowska et al., 2022) that rarely are considered in recent farmer debates and protests in the EU. Livestock farmers as key incumbents of the meat sector and opponents of alt-proteins are therefore a complex and heterogeneous group of actors that requires more attention in upcoming studies that aim to focus on the protein transition.

### **6.2.3 Implications**

In summary, the consideration of these two meta-discourses shows that the landscape level of structuration should be given more relevance in sustainability transitions research. As has been shown, meta-discourses are paramount structures that, as mechanisms, have the capacity not only to enable or hinder a transition, but also to establish its directionality. This happens because actors are influenced and constrained by them, and because when engaging in discursive struggles they will – consciously or unconsciously – build their storylines based on the widespread values and assumptions that underpin these meta-discourses in order to gain legitimacy in the eyes of society. This in turn ends up reproducing and reinforcing the meta-discourse. Therefore, interventions to accelerate sustainability transitions should investigate the meta-discourses that limit and hinder this process in order to start questioning their deeply rooted values and assumptions. Only by doing this can transformative change be enacted (Simoens et al., 2022).

## 7. Conclusions

The aim of this thesis' discourse analysis was to answer the following research question: How can discursive struggles around alt-proteins reveal (a) the socio-technical reconfigurations that are happening in the meat sector, and (b) the landscape factors that are affecting these reconfigurations?

By answering this question, the thesis has contributed to the ongoing research on the protein transition by providing two new insights: first, that the main incumbents that oppose the upscaling of alt-proteins are livestock farmers, due to the threat that these innovations pose to livestock farming by potentially making it become an obsolete and inefficient way to produce meat. In this situation, livestock exceptionalism serves as a strongly and widely entrenched meta-discourse to which livestock farmers appeal to to garner the sympathy of society and policymakers, thus severely complicating and hindering the implementation of public policies that support the protein transition. And second, that as the protein transition is currently an endeavour almost exclusively guided by private companies, it is underpinned by a logic of ecological modernisation and capitalism that can however facilitate the endogenous reconfiguration of the meat sector towards a post-animal institutional logic in lieu of the livestock regime. But this reconfiguration, also because it is enabled by a capitalist rationale, risks leaving aside the environmental, public health and social justice goals that the protein transition should strive for.

By answering the research question, the thesis has also contributed to sustainability transition research in general by providing two key conclusions: first, that a more nuanced picture of incumbents' heterogeneity in reconfiguration processes is needed, particularly when dealing with socio-technical systems that involve several configurations with a variegated array of actors and technologies. And second, that an increased attention towards the relevance of landscape level meta-discourses is granted, because of the paramount relevance these have in the possibilities of making a transition possible and guided by a truly sustainable and socially just criteria.

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