

‘Spinning facts’

Of spin, post-truth and the instrumentalisation of science. A case study from Denmark

Paula Karoline Ottenberg

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Abstract:

Connecting science to political agenda-setting is essential for a sustainable transition and acceptable politics. This task is complicated by phenomena like post-truth, for which facts are a non-issue. However, post-truth is not the only issue. The practice of political spin, in which the significance of facts is reconstructed according to specific interests poses another threat to scientific credibility and rational politics. Through spin, science runs the risk of being instrumentalised. It can render credibility to developments that are branded as sustainable while being the opposite.

In this study, I have conducted a qualitative case study, examining the discourse on the environmental sustainability performance of Denmark's agricultural sector, deployed by Denmark's current government and Danish agriculture's biggest interest organisation Landbrug & Fødevarer. Denmark's agricultural sector is riddled with sustainability problems, even though the current government and L&F claim the opposite. I analysed a total of 26 texts through the lens of a Faircloughian critical discourse analysis (CDA), with the aim of identifying the role of facts and science in this discourse. Further, I conducted a fact-check on claims made, to assess whether the discourse is spun or post-truth.

I found that Denmark's current government and L&F both view science and factual knowledge as cornerstone of sustainable development. At the same time, their use of facts is highly characterised by spin; or from a Faircloughian perspective, constructed around ideological convictions. These stakeholders indeed instrumentalise science, thus lending their unsustainable policies scientific credibility.

I argue, that science can be instrumentalised in both its production and communication processes. The former issue can be scaled up to a broader discussion on academic freedom under pressure. To counter the issue of political spin, I recommend the implementation of a 'scientific watchdog', through which misuse and excessive spin of science and facts can be traced and countered.

Keywords: Spin, post-truth, instrumentalisation of science, academic freedom, Denmark, agriculture

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List of Abbreviations

AU	University of Aarhus
C	The political party ‘Det Konservative Folkeparti’ [The Conservative People’s Party]
CP	Climate Plan
DCA	Danish Centre for Food and Agriculture, University of Aarhus
DN	Danmarks Naturfredningsforening [The Danish Society for Nature Conservation]
FAO	Food and Agriculture Organisation of the United Nations
FAP	Food and Agriculture Package
GHG	Greenhouse Gas
IFRO	Institute for Resource Economics, University of Copenhagen
KU	University of Copenhagen
LA	The political party ‘Liberal Alliance’
L&F	Landbrug & Fødevarer
RQ	Research question
V	The political party ‘Venstre’

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1. Introduction

We are currently in a time of human history in which we are facing huge challenges. The threat of climate change calls for unprecedented changes in all sectors of society (IPCC, 2018) and rapidly decreasing biodiversity threatens the functioning and stability of ecosystems on which we humans depend (Isbell, 2010). At the same time, we are finding ourselves in a time of post-truth; a time in which facts are ignored and new ones are created at will (Devine, 2018), “in which people are more likely to accept an argument based on their emotions and beliefs, rather than one based on facts” (CambridgeDictionary, n.d.).

Post-truth challenges science in arenas where facts are a non-issue; a challenge, for which science is not yet equipped. Outspoken climate change deniers, such as Donald Trump in the US or the right-wing party ‘Alternative für Deutschland’ in Germany, harvest millions of votes. But post-truth does not only manifest itself in extreme discourses, such as in the examples just mentioned. It finds its way into many discourses, taking different forms. Sometimes scientific results are explicitly denied, other times their significance is reconstructed, depicting distorted pictures of reality. Nesta Devine¹ (2018) calls this restructuring of significance ‘spin’. The line between spin and post-truth is a thin one, easily overstepped with a wrong framing. This raises the question whether one can actually spin science and facts without stepping into post-truth? Or asked differently: to what degree can facts be spun without creating new, post-truth ones in the process? This is the overall question I attempt to answer in this thesis. To do so, I have picked a case study from one of the worlds most celebrated frontrunners of the green transition: Denmark.

1.1 Why Denmark?

Denmark is renowned and admired as one of the frontrunners of the sustainable transition both nationally and internationally (Gds-Index, 2018; SolAbility, 2017). Its reputation has been built up over the past three to four decades, earned through large investments into renewable energy (wind turbines) and through visionary Danish companies such as Vestas, Grundfos and Danfoss (Nordqvist, 2018). Furthermore, Copenhagen is home to several sustainability projects, such as the development of the Northern Harbour area, which is envisioned to become the city’s most sustainable district (Nordhavnen.dk, n.d.); and Copenhagen’s bike infrastructure is setting an international example. However, Denmark is more than bike-lanes and wind turbines.

¹ Professor of Philosophy of Education, Auckland University

For instance, Denmark is also the second most intensively farmed country in the world and has the world's highest annual meat production per capita (330 kg/capita/year) (DN, 2018). As a result of this vast agricultural sector, nitrogen levels² in Denmark's aquatic environments are at such alarming levels that the EU Commission issued a warning to the Danish authorities, which might result in a court case (Borelli, 2019a). Furthermore, Denmark's biodiversity is decreasing continuously (Bosselman, Jensen, Lillethorup, & Gylling, 2016); a hardly surprising scenario in a country in which 62% of its surface is being cultivated, while 8% is left for nature and conservation areas (DN, 2015, 2018). On a global scale, Denmark's high imports of uncertified soy for the swine industry from primarily Argentina and Brazil (Bosselman et al., 2016) drive deforestation of the Amazon and climate change. These facts show that the Danish agricultural sector is riddled with sustainability problems along its entire supply and production chain.

Despite the above, Denmark's current government, along with other stakeholders such as the country's biggest agricultural interest organisation Landbrug & Fødevarer [Agriculture & Food] (hereinafter L&F), brands the country's agricultural sector as being one of the most sustainable agricultural sectors in the world (L&F, 2018a, 2018b), and its recent policies³ dictate "sustainable development" along the lines of 'business as usual' (BAU) instead of change along sustainable trajectories; such as for instance decreasing Denmark's livestock sector. This discourse stands in stark contrast to the actual sustainability performance of the agricultural sector in Denmark.

1.2 Aim and scope

In this thesis, I use the debates and policies on Denmark's agricultural sector as an illustrative case to explore the wider social phenomena of spin and post-truth.

My assumption is that current developments along unsustainable trajectories are a result of power struggles, in which voices advocating BAU development hitherto have been able to defend their ruling position. Drawing on notions of the British professor of linguistics Norman Fairclough (1992, 2009, 2010), I argue that part of this power struggle is carried out on a discursive level; and hence, that power is partially upheld by means of language. Further, I claim that powerful discourses either spin facts or are post-truth, based on the discrepancy between their claims and actual sustainability performances,

² I will elaborate on nitrogen's degrading impacts on aquatic environments in section 2.1.2

³ Since its inauguration in June 2015, the government has adopted two highly controversial policies on the agricultural sector. I will elaborate on these later, but for now it suffices to say that they largely dictate business as usual (BAU) development, even though the government brands them as beneficial to the environment and the climate (Bonnesen, 2016; Energi- Forsynings- og Klimaministeriet, 2018).

exemplified by the case of Denmark's agricultural sector. I argue, that the difference between spin and post-truth is significant, as it influences on which epistemic grounds proponents of a far-reaching sustainable transition can challenge their opponents; essentially, it concerns the role of factual scientific knowledge in society. To spinners, facts and science matter and hence they can possibly be challenged and convinced on factual grounds; this is not the case with post-truthers, who happily ignore facts or create new ones fitting their interests (Devine, 2018).

In light of the above, my overall aim in this thesis is to explore the line between spin and post-truth and to assess to which degree the former is even possible by means of my Danish case. The findings of my research are a valuable contribution to the discussion on the actual role of science and facts for sustainable transitions and can possibly help to identify ways forward.

To do this, I will examine the discourse on the environmental sustainability of Danish agriculture, deployed by Denmark's current government and L&F, and hence assess its 'level of truth'. I do so by drawing on Norman Fairclough's (1992) combined theory-methodology framework 'Critical Discourse Analysis' (CDA) and on theoretical entry-points to post-truth and spin (Devine, 2018; Rider, 2018). To guide my research, I have formulated the below research questions.

RQ1: What is the current discourse⁴ on the environmental sustainability of Danish agriculture?

RQ2: What is the role of science and facts in this discourse?

RQ3: Is this discourse spun or post-truth?

RQ4: What are possible ways forward?

Despite economic and social sustainability issues of major importance, I have decided to focus my analysis on the discourse on environmental sustainability due to the limited scope of this thesis. The time frame within which I have gathered my material is limited to the ruling period of Denmark's current government, which was inaugurated in June 2015⁵.

⁴ Of Denmark's current government and L&F

⁵ It should be noted here, that the government in its current form (consisting of the parties Venstre, Liberal Alliance and Det Konservative Folkeparti) was not constituted until November 2016 (Regeringen, n.d.-b). From the election in June 2015 to November 2016, Lars Løkke Rasmussen's (Denmark's current Prime Minister) party, Venstre, constituted the government alone (Regeringen, n.d.-a). The change was undertaken to increase the government's strength through more mandates. However, this formal change is of no significance to this thesis, as the discourse significant for this thesis is exercised by all of these parties regardless of their formal standing in the Danish government.

1.3 Positioning myself in sustainability science

In 2001, in the very early years of the still young academic field of Sustainability Science (SS), Kates et al. wrote that connecting science to the political agenda for sustainable development was one of the three major tasks of the SS field for the coming years (Kates et al., 2001). At the core of SS lies the idea, that the ‘wicked’ sustainability problems of our time only can be solved through an inter- and transdisciplinary approach, in which natural and social sciences are combined within academia, and in which academic stakeholders work with stakeholders from other spheres of society (Jerneck et al., 2011; Kates et al., 2001).

The reader might think that looking towards Denmark’s agricultural sector is an odd case, lacking relevance for sustainability scientists. However, I use Denmark as an illustrative case along which I will explore wider societal phenomena such as post-truth and spin. I argue that science and scientists run the risk of being instrumentalised in the attempt of connecting scientific inquiry to political decision making. Through spin, depending on its degree, science can be misused to lend credibility to developments that are in fact unsustainable. This is a dimension of non-academic stakeholder cooperation that sustainability scientists must be aware of.

1.4 Thesis outline

To present the results of my research in the most coherent way possible, I have divided this thesis into 7 chapters, of which the first is this introduction.

In chapter 2, you will find background information on the agricultural sector in Denmark; on its environmental impacts; its impacts on human health; its special status in Danish politics; and a detailed description of the previously mentioned current government’s recent policies.

Chapter 3 and 4 are on my theory and my methodology; in the latter, I contextualise the information provided in the background section with my theoretical entry points. The information provided here is important to follow my analysis.

In chapter 5 and 6 you will find my analysis and my discussion. The analysis is divided into two parts. In the first part I describe characteristics of the current government’s and L&F’s discourse on the environmental sustainability performance of Denmark’s agricultural sector and identify which role science and facts play in this discourse. In the second part, I conduct a fact-check of claims made by these stakeholders to assess the level of truth in their discourse. In my discussion, I both discuss the implications of my results and attempt to identify possible ways forward. In chapter 7, I wrap up my findings and suggest a few points for further research.

2. Background

2.1 Agriculture in Denmark – basic facts and impacts

As written in the introduction, Denmark has the world's highest meat per capita production (DN, 2018). The by far largest component of the Denmark's livestock sector is the swine sector. In 2017, the total annual production of pigs amounted to no less than 31.8 million animals (L&F, 2018c). Next to pig farming, other big sectors are dairy, cattle for meat, poultry and mink farms for fur (DST, 2018). Due to this intensive animal husbandry, around 80% of Denmark's agricultural area is used to grow feed for animals, while only around 11% is used to grow food for humans (DN, 2018). Additionally, vast amounts of soy are imported from primarily Argentina and Brazil to sustain Denmark's livestock sector (Bosselman et al., 2016). According to the Danish Society for Nature Conservation (hereinafter DN), an area equivalent to additional 18,9% of Denmark's total area is needed for the cultivation of soybeans which Denmark imports (DN, 2018). For the swine industry, no agreement has been made only to import certified soy, and so there is no guarantee that the imported soy does not stem from recently deforested areas (Bosselman et al., 2016).

2.1.1 Emissions

According to the Danish Agricultural Agency, emissions from agriculture accounted for 21% of Denmark's total greenhouse gas (GHG) emissions in 2014 (Lbst, n.d.). The biggest GHG contributor is the livestock sector, accounting for 40% of agriculture's total emissions, primarily through methane and nitrous oxide emissions (Lbst, n.d.). However, the Danish chapter of Friends of the Earth, NOAH, states that the number of 21% is an understatement, since land use, land use change and forestry (LULUCF) are not accounted for by the agency (Hessellund-Andersen & Sørensen, n.d.). According to NOAH, agriculture in Denmark accounts for no less than one third of Denmark's total GHG emissions when LULUCF is accounted for (Hessellund-Andersen & Sørensen, n.d.).

2.1.2 Impact on the ecological environment

Agriculture's impacts on both terrestrial and aquatic ecosystems are many. In Denmark, some of the most significant impacts are biodiversity loss and nutrient pollution.

Measuring biodiversity levels on a country level is difficult. Measurements need to be made annually over a long period of time, and often these measurements are only made in certain regions and not across a whole country (Bosselman et al., 2016). In general, however, counting the number of birds on open land is viewed as being a good indicator of biodiversity levels, as these birds have proven to be very receptive to ecosystem changes (Bosselman et al., 2016). Despite pledges to prevent further

biodiversity loss, biodiversity levels, measured at hand of the species abundance of birds on open land, in Denmark keep on falling. In this regard, Denmark is performing worse than the average of other EU countries (Bosselman et al., 2016).

Nutrient pollution is a widespread environmental problem, caused by excess phosphorus and nitrogen in the air and in aquatic environments (EPA, n.d.-b). Nitrogen and phosphorous are a natural part of terrestrial and aquatic ecosystems, and essential for their functioning. Without these nutrients, plants and algae, on which several species depend, would not grow (EPA, n.d.-b). However, excessive nutrient levels cause environmental degradation (L&F, n.d.). Among the main sources of excess nitrogen and phosphorous in the air and in aquatic environments is the current overuse of manure and fertiliser in agriculture; more nutrients are applied than crops can absorb, and excess nutrients enter surrounding natural environments (EPA, n.d.-a). In aquatic environments, they support an abundance of algae growth, so called 'algae blooms', which cannot be absorbed by the ecosystems (EPA, n.d.-b). Algae blooms decrease water quality and cause oxygen loss, which in turn leads to the dying of fish and other aquatic species. Excess nutrients in the atmosphere cause air pollution and pose a serious threat to human health (Pozzer, Tsimpidi, Karydis, de Meij, & Lelieveld, 2017). Furthermore, nutrient pollution of groundwater poses a great threat to human health and is suspected to cause cancer even at very low levels (EPA, n.d.-b).

Despite efforts to decrease nutrient pollution from agriculture over the past 30 years, it is still a major issue in Denmark (A. L. Hansen, Refsgaard, Olesen, & Børgesen, 2017; Parchomenko & Borsky, 2018). In 2017, the total nitrogen load⁶ was 60.000 ton (Mst, 2019). According to Stiig Markager – professor at Aarhus University (AU) in Denmark, and a very present figure in the debate on nitrogen pollution in Denmark – this number is 18,000 ton higher than the calculated maximum allowable input for a healthy environment (DR2, 2019; S. Markager, personal communication, 09-05-2019). The bad state of Danish water environments has now led to the previously mentioned warning from the EU Commission (Borelli, 2019a; EC, 2019).

2.1.3 Other impacts on human health – malnutrition and resistant bacteria

Despite it being described as the most efficient way to produce enough food for the world's (growing) population, industrialised agriculture fails to provide a healthy diet for the people of this world (ETCGroup, 2017). Currently, agricultural production produces enough proteins to feed 1.5 world populations (FAO, 2015). Still, around 815 million people were estimated to suffer from chronic

⁶ The total nitrogen load is "the amount of total nitrogen (nitrate, nitrite, ammonia and ammonium) transported out of a catchment" (A. L. Hansen et al., 2017, p. 326)

undernourishment in 2016 (WHES, 2018). At the same time, 1.9 billion adults (18 years and older) were estimated to be overweight (WHO, 2018b). In the industrial food chain, only 24% of the produced calories are fed to humans; a far larger share is fed to animals (Cassidy, West, Gerber, & Foley, 2013; ETCGroup, 2017). Feeding proteins to livestock that are edible by humans is an inefficient use of resources, and a far too resource intensive process to feed the world's population sustainably (Cassidy et al., 2013). With its intensive animal husbandry, Denmark is a major player in this inherently inefficient system.

Another health issue related to intensive animal husbandry is antimicrobial resistance (AMR). In Denmark, the intensification of the swine industry over the past decades entailed a significant increase in the use of antibiotics to prevent diseases from emerging and spreading (FAO & FVST, 2019). An increased use of antimicrobials increases the danger of resistant bacteria developing. Some of these resistant bacteria, swine-MRSA⁷, can even be transferred from animals to humans (SST, 2018). According to the WHO, AMR "resistance is one of the major threats towards human health, food security and development today" (WHO, 2018a).

2.1.4 Possible trajectories for the future

How to combat these negative impacts from industrial agriculture? According to scientists a major shift is needed. Some of the main messages are: less livestock, more plant-based protein (Cassidy et al., 2013); a diversification of crops (KC et al., 2018); a shift towards perennial crops instead of annual crops (Crews, Carton, & Olsson, 2018; Jordan et al., 2007); diversification instead of specialisation (Abson, Fraser, & Benton, 2013; Altieri, 1998; Kremen, Iles, & Bacon, 2012); in general, a transition away from the animal intense, specialised, monoculture industrial agriculture. These changes would positively impact both the ecological environment, the climate and human health.

2.2 Politics on agriculture in Denmark

2.2.1 A brief historical introduction

Before diving into Danish politics and recent policies on the agricultural sector, a brief introduction to the special status of agriculture in Danish politics is needed.

Throughout the first half of the 20th century, the Danish countryside was home to almost 200,000 farms (Nissen, 2014). About one third of the population lived in rural areas and the agricultural sector employed around a fourth of Denmark's population (Nissen, 2014). And up until the 1950s, the export

⁷ Methicillin-resistant Staphylococcus Aureus

of agricultural products, mainly butter and pork, amounted to no less than 75% of Denmark's total exports (Nissen, 2014). The agricultural sector was a major employer and a major source of Denmark's national income. Through these circumstances, it gained massive political influence.

The sector started gathering its political interests in 1919, when the umbrella organisation 'Landbrugsrådet' [The Agricultural Council] was established (Nissen, 2014). The council's main office was in 'Axelborg', located close to the central station in Copenhagen. Through its strategic work and political influence through close ties to employees in the Ministry of Agriculture, the council earned itself the name "Mesterlobbyen fra Axelborg" [The Master-Lobby of Axelborg] (K. Hansen, 2014; Nissen, 2014). In 2009, Landbrugsrådet, along with other agricultural organisations, merged into Danish agriculture's biggest interest organisation Landbrug & Fødevarer, which still today is seated in Axelborg and continues to have significant (even though decreased since the 1970's) influence on Danish politics (Nissen, 2014).

Today, Denmark's agricultural sector looks very different than it did the mid-20th century. In 2017, only 27,000 farms were left, and the size of an average farm had increased by 56% since the year 2000 (L&F, 2018a). In addition to having become fewer and bigger, the farms have become increasingly specialised. While around 75% of Danish farms were holding both pork and cattle 50 years ago, this number had decreased to 2% in 2017 (L&F, 2018a).

Looking at the percentage of exports from agriculture, jobs created in agriculture and other numbers today, the sector has lost much of its former significance for the Danish economy and job market (Kernn-Jespersen & Rasmussen, 2018; Kjeldsen-Kragh, 2014; Nossell, Pedersen, & Schmidt, 2016). However, its significant role throughout most of the 20th century, its large impact on Denmark's cultural and natural landscapes, and a continuously effective Master-Lobby behind the walls of Axelborg, have granted the sector a special status in Danish politics that lasts until today (Nissen, 2014; Thomsen, 2012).

2.2.2 Danish politics on agriculture today

Overall, Danish politics are divided into two blocks. These are referred to as red block (socialist) and blue block (liberal and conservative). In relation to environmental issues, parties in the red block generally have a reputation of prioritising environmental issues higher than blue block parties. In relation to agriculture, this is very much so.

I have illustrated the blocks in Figure 1. The parties are ranked according to their size/ their number of mandates in the Danish Parliament Christiansborg after the last election in June 2015. The dotted line

around Venstre, Liberal Alliance and Det Konservative Folkeparti indicates that these three parties constitute the Danish government⁸, commonly referred to as the VLAK government.

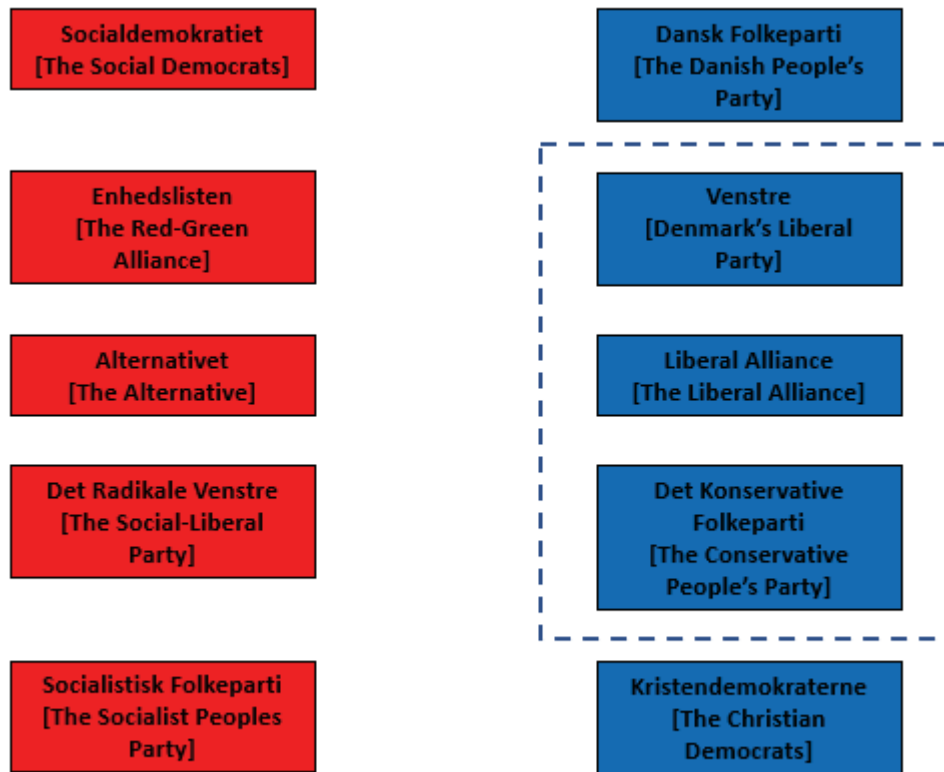


Figure 1. The political blocks in Danish politics.

Figure shows the political parties in each (red and blue) block in Danish politics. The parties are ranked according to their amount of mandates after the last national election in June 2015. The dotted line around Venstre, Liberal Alliance and Det Konservative Folkeparti indicates that these parties currently constitute the Danish government. Source: (Ft, 2015). (Own illustration)

Except Socialdemokratiet, all red block parties vouch for a transition from conventional to more (Enhedslisten, n.d.; RB, n.d.; SF, n.d.) or a 100% (Alternativet, n.d.) organic farming in Denmark. Furthermore, 'Alternativet' and 'Enhedslisten' explicitly write on their homepages, that Denmark's livestock sector must be reduced (Alternativet, n.d.; Enhedslisten, n.d.). Socialdemokratiet is the only red block party, according to which agricultural politics should largely continue as BAU (Socialdemokratiet, n.d.).

Of the parties currently constituting Denmark's government, Det Konservative Folkeparti (hereinafter C) is prioritising the environment the highest in its visions for agriculture in Denmark (C, n.d.).

⁸ This means that Denmark's Ministers come from these three parties

According to C, 15% of Denmark's agricultural area should be transitioned to organic farming (C, n.d.). Venstre (hereinafter V) and Liberal Alliance (hereinafter LA) on the other hand, have no set targets or ambitions for organic farming (LA, n.d.; Venstre, n.d.). However, judging from their homepages and their recent policies, all VLAK parties prioritise high exports and economic growth higher than environmental issues in their politics on agriculture. In the following two sections, I will elaborate on two controversial policies concerning the agricultural sector, which have been adopted since the government's inauguration in June 2015.

2.2.2.1 Fødevarer og landbrugspakken [The Food and Agriculture Package]

On February 26th, 2016, the 'Food and Agriculture Package' (hereinafter FAP) was passed in Parliament, adopted by the VLAK parties and Dansk Folkeparti. The overall aim of the package was to "equip the food- and agricultural sector [with a political framework allowing for increasing its] production and exports, and to facilitate growth and employment throughout Denmark – in synergy with nature and environment" (Mfvm, 2016).

Summarised, the FAP allowed Danish farmers to increase their use of manure and fertiliser to maximise yields (Redder, 2019). To compensate for rising levels of nitrogen emissions resulting from this, a system was set up, through which farmers could apply for subsidies to implement nitrogen reducing measures such as wetlands (Goddiksen, 2017). These compensating measures, referred to as "collective instruments", were all voluntary. By means of these collective instruments, nitrogen should have been reduced by 1451 ton by 2019 and 2450 ton by 2021 (Borelli, 2019b; Redder, 2019). Earlier this year, a report revealed that nitrogen had only been reduced by 12 ton.

The FAP was heavily criticised by DN, NOAH, and the parties from the red block (Jerking, 2016; Ogstrup, 2016). It soon became known as "Gylle Gate" [The Manure Gate] in Danish media and in the Danish public. Major points of critique were that all actions benefitting the environment were voluntary; and many voices questioned the solidity of the FAP's underlying calculations. The agricultural lobby and Eva Kjer, the agricultural Minister in office at the time, were accused of having manipulated with numbers calculated at AU (Forskerforum, 2016; Jerking, 2016). Furthermore, the government had prohibited AU to publish calculations on the FAP before the adoption of the package (Andersen, 2017; Larsen & Buhl, 2016). Eva Kjer was forced to leave her post before the deal was passed due to a vote of no confidence (Goddiksen, 2017). The discussion came back to life in early 2019, when it became evident that the FAP had indeed failed in reaching the targeted nitrogen reductions.

2.2.2.2 The Climate and Air Initiative: "Together towards a greener future"

Proudly, the Danish government presented their new plan "Sammen om en grønnere fremtid. Klima- og luftudspil" [Together towards a greener future. Climate and air initiative] in October 2018, commonly known as the "climate plan" (henceforth CP). The plan consists of 38 initiatives, aiming at a climate neutral Denmark in 2050, manifesting Denmark's leading position in the green transition, and at inspiring other countries to act (Energi- Forsynings- og Klimaministeriet, 2018).

The plan received a lot of critique. According to the chairman of Denmark's green think tank Concito, Christian Ibsen, short-sighted economic growth was prioritised over long-sighted environmental sustainability (Ibsen, 2018). And while the governments ambitions for the transport sector were deemed admirable, ambitions for other sectors were, at best, considered mediocre (Ibsen, 2018). The lack of ambition to regulate the agricultural sector and reduce its emissions was amongst the most criticised points (Minter, 2018; Søgaard, 2018; Tang, 2018). Indeed, agriculture went largely unaddressed by this agreement. While seven initiatives concern the agricultural sector, none of these point towards any changes to the current system (Energi- Forsynings- og Klimaministeriet, 2018).

3. Theoretical entry points

In the following sub-sections I introduce Fairclough's conception of discourse and his three-dimensional CDA framework. In extension hereof follows a section on ideology, hegemony and struggle; and further, in section 2.3, I introduce different conceptions on post-truth and spin (Devine, 2018; Rider, 2018). Section 2.4 contains a summary of my theoretical approach and my argument on how the discourse, ideology, hegemony and struggle relate to post-truth and spin.

3.1 Critical discourse analysis (CDA)

Discourses are communication in speech and writing. They are powerful, as our use of language is an important part of creating our values, and the world we live in. On the other hand, discourses are shaped by our surroundings. In other words: discourses are in a dialectical relationship with reality; they are shaped by it and shape it (Fairclough, 1992, 2009).

According to Norman Fairclough (1992), discourses are far more than just text. And a CDA is "not an analysis of discourse [spoken and written language] 'in itself' as one might take it to be, but analysis of dialectical *relations between* discourse and other objects (...)" (Fairclough, 2010, p. 4). Fairclough's conception of discourse is three-dimensional (see Figure 2 for illustration); discourses are simultaneously text, discursive practice and social practice (Fairclough, 1992). In this thesis, in accordance with Fairclough's (1992) notions, I take 'text' to be both spoken and written language.

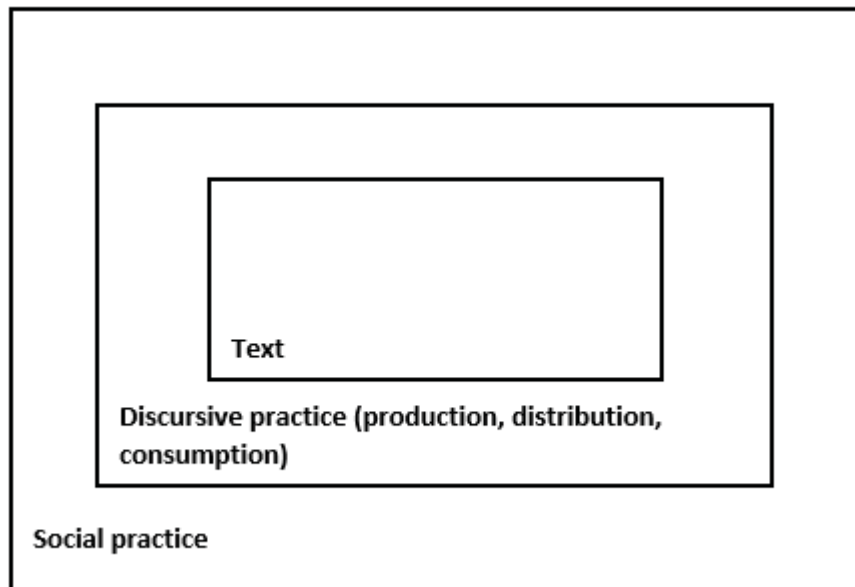


Figure 2. Fairclough's framework for Critical Discourse Analysis.

Fairclough's conception of discourse is three-dimensional – a discourse is simultaneously text, discursive practice and social practice. Source: (Fairclough, 1992, p. 73). (own illustration)

The three-dimensional framework helps tracing the relationships that create discourses; for instance, between text production and distribution, or between the ideological standpoint of the producer and the discourse (s)he deploys in social practice.

Discourse as text can be analysed under four headings: vocabulary, grammar, cohesion and text structure (Fairclough, 1992, p. 75). The way texts are pieced together determines how the meaning of the text is signified; certain vocabularies construct certain realities and potentially reveal political or ideological standpoints. For instance, there is a great difference between using the term 'land acquisition' as opposed to 'land grabbing'.

Discursive practice has a micro- and a macrolevel. The microlevel is concerned with how texts are produced and distributed, while the macrolevel analysis dives into the nature of the resources a certain institution has, making broader distributions possible (Fairclough, 1992). This macro-level is closely linked to social practice: "it is the nature of the social practice that determines the macro-processes of discursive practice, and it is the micro-processes that shape the text" (Fairclough, 1992, p. 86). The concept of intertextuality is important at both the micro- and the macro-level. Intertextuality is about the historicity of texts; all texts are in some way historical, incorporating and responding to previous texts: "there can be no statement that in one way or another does not re-actualise others" (Fairclough, 1992, p. 101). Exactly what previous statements are incorporated and responded to depends on the

political and ideological standpoint of the producer. Intertextuality is an essential factor in the structuring and re-structuring of discourse, and thus an essential factor for change (Fairclough, 1992).

In social practice, discourses are situated in relation to ideology and power. According Gramsci (Beilharz, 2005; Gramsci, 2000), power struggles are essentially hegemonic struggles.

3.2 Ideology, hegemony and struggle

Ideology is a contested concept with many definitions. In this thesis, I shall adopt Fairclough's definition of ideology, according to which "ideologies are significations/constructions of reality" (Fairclough, 1992, p. 87). In other words, ideologies are belief-based constructions rather than factual knowledge (Fairclough, 1985). They are built into discourses, and contrasts between discourses are often ideological. Ideologies are strongest when their constructions of reality are perceived as common sense (Lakoff, 2010; Lears, 1985).

The essential premise of Gramsci's concept 'hegemony' is, that "classes rule by securing consent as well as by coercively imposing their will" (Callinicos, 2007, p. 213). Hegemony is a continuous process, a permanent struggle between opposing classes. According to Gramsci, this struggle is carried out just as much in civil society as in the political sphere (Gramsci, 2000). Hegemony in civil society is what Gramsci termed cultural hegemony, and maintaining cultural hegemony is an essential task for the ruling class. A disrupted civil society renders the economic system instability, while a settled and peaceful cultural sphere renders the economic system stability (Lears, 1985).

Hegemony is partly exercised through discourse (Lears, 1985). To secure consent, the ruling class attempts to naturalise its world order. Information and views supporting the world order of the ruling class are made available and elaborated, while other views are dismissed or ignored (Lears, 1985). Through this process, it turns its constructions of reality into common sense. This points back towards ideology, and thus I argue that a hegemonic discourse is a discourse ideologically superior to counter-discourses. At the same time, the hegemonic discourse incorporates and colonises counter-discourses (Beilharz, 2005). Through this, counter-discourses are discouraged, and their points are often twisted.

2.3 Post-truth and spin

As written in the introduction, post-truth is defined as "a situation in which people are more likely to accept an argument based on their emotions and beliefs, rather than one based on facts" (CambridgeDictionary, n.d. accessed on 03-04-2019).

Sharon Rider (2018) extends the above definition, arguing that one person's truth is often nested in interests rather than personal values. The level of truth is not assessed based on facts, but on one's circumstances. This is best exemplified through thinking about jobs; the day a person is employed at a company, this company's truth becomes the truth of that person (Rider, 2018). Further, Rider (2018) argues that the implications of this 'mobile truth' are not "merely" dishonesty in people's discourses, but that 'mobile truth' entails a fundamental change in people's perceptions of facts. Facts are being thrown around as universal truths by several stakeholders, even though these facts are often only valid under very specific circumstances. This leads to a general distrust towards factual accounts, and lures people to rather trust their own beliefs (Rider, 2018). This in turn renders actual facts and scientific inquiries an undeserved loss of credibility.

According to Nesta Devine (2018), people's proneness to trust their emotions rather than scientific facts has historical roots. Much of humans' current understanding of Truth comes from a "medieval certainty, from a time when truth was singular" (Devine, 2018, p. 162). At that time, Truth was to be found in the bible and the word of God, and this truth was absolute. Later, she argues, Truth was to be found through scientific investigations and this turned out problematic. From science we "expect 'progress' in relation to truth (...) the nature of truth in a scientific world must be always changing" (Devine, 2018, p. 162). Thus, in a scientific world there is no absolute Truth. Instead we are facing a world in which many Truths are constantly developing and at times competing. However, we are still clinging to the idea of an absolute truth, which makes a scientific world both confusing and frustrating, and thus many people deselect scientific truth and live in a post-truth world instead.

However, Devine (2018) warns against a uncritical use of the post-truth concept. She argues, that there is a thin line between post-truth and spin. Post-truthers ignore facts and create their own while spinners 'merely' reconstruct their significance (Devine, 2018). Political spin, often done by spin doctors, is defined as "the sophisticated selling of a specific message that is heavily biased in favour of one's own position" (Braun, 2008). The essential purpose of spin is to twist facts in a way that fits the preferred message of the communicator (Braun, 2008). Through effective spin, the 'multiple truth' nature of science is escalated, entailing an even further drop of the perceived credibility of scientific inquiries (McHenry, 2010).

In this thesis, I take post-truth to be a situation in which facts are ignored and new ones are created in accordance with interests, while I define spin as twisting existing facts to fit specific interests.

2.4 Summary of my theoretical approach

The essence of this section is that a discourse analysis is not merely a linguistic exercise. Discourses are simultaneously texts, discursive practice and social practice; they shape reality and are shaped by it.

Power is partially exercised discursively. Through incorporating counter-discourses, ruling classes work towards creating a consensus throughout society and to dull counter movements. This is a constant struggle, which happens largely happens on ideological terrain; on the terrain of naturalised worldviews. The concepts of post-truth and spin relate to the concepts of ideology and hegemony in different ways. First, as written in section 2.2, ideologies are constructions of reality, which may but don't have to be based on facts. Thus, the general concept of ideology resonates well with the general world view of post-truthers and spinners. Further, hegemony is partially upheld by providing the "right" information. Put in other words, one could say that the ruling class partially maintains its hegemonic position through either ignoring certain facts or restructuring the significance of others, which essentially is what post-truthers and spinners are doing.

4. Methodology

4.1 Case study

The phenomena of post-truth and spin, and the challenges they pose to (un)sustainable policymaking are difficult to grasp at an international level. Societal contexts, historical and cultural leverages of different sectors, political systems and many other factors influence how 'truth' is created, communicated and debated. To make the debate on post-truth and spin more tangible, I decided to conduct a qualitative case study, as these allow researchers to explore complex phenomena within a specific context (Baxter & Jack, 2008).

4.2 Data collection

4.2.1 Academic literature search

In the initial phase of my research, I conducted several literature searches on LUB Search, Scopus, Web of Science and Google Scholar. The aim of these searches was twofold. (1) To gather information on the negative impacts of industrial agriculture – both internationally and in Denmark. I mostly collected articles on this through Scopus and Web of Science, by searching for keywords such as "industrial* agricultur*", "conventional farming", "Denmark", "Danish", "biodiversity loss", "water pollution", "sustainability", "environmental impacts". (2) To gather literature for my theoretical basis. This I mostly did through LUB Search and Google Scholar, searching for keywords such as "post-truth",

“spin”, “communication” and “discourse analysis”. Additional literature was found through the snowball method while reading articles.

Later in my research, after having examined the role of facts and science in the discourse of Denmark’s current government and L&F, I searched for academic literature validating or falsifying their statements. While I used LUB Search for this purpose, I mostly searched for reports and articles on the sustainability performance of Danish agriculture in the databases of the Institute for Resource Economics (IFRO), University of Copenhagen (KU), and the Danish Centre for Food and Agriculture (DCA), AU, as these centres have large amounts of literature on this.

4.2.2 Non-academic material

As the discourse of the current government and L&F is largely deployed in non-academic contexts, a large amount of data was gathered through Google searches and through visiting homepages of different stakeholders relevant to Danish agriculture. This data was mostly gathered using the snowball method. Initially, I searched for “The Climate Plan and agriculture”, “Problems with Danish agriculture”, “The economy of Danish agriculture”, “The manure gate”, “The food and agriculture package”, “Agriculture’s special status”, “The government and agriculture”, “Landbrug & Fødevarer power” (in Danish). Through these searches, I found a vast body of material; newspaper articles, press releases, reports, opinion pieces and TV debates. I found the announcement of a conference, “Food in a changed climate”, in Copenhagen, arranged by the iClimate Centre at AU, which I attended in March. When I found points that needed further explanation – in a report or a newspaper article – I contacted the authors for clarifications. This resulted in one-hour long interview with a researcher at IFRO, two phone interviews and email correspondences with four other stakeholders (see Appendix 1 for more information on interviewees). This approach was a continuous process, always guided by my research questions. Everything served to understand and examine the current government’s and L&F’s discourse on agriculture in Denmark, the role of science in this discourse, and the political system surrounding it, including counter discourses.

4.3 Data analysis

4.3.1 CDA

My CDA serves to answer my RQ’s one and two. I have illustrated how I have applied Fairclough’s CDA framework in Figure 3.

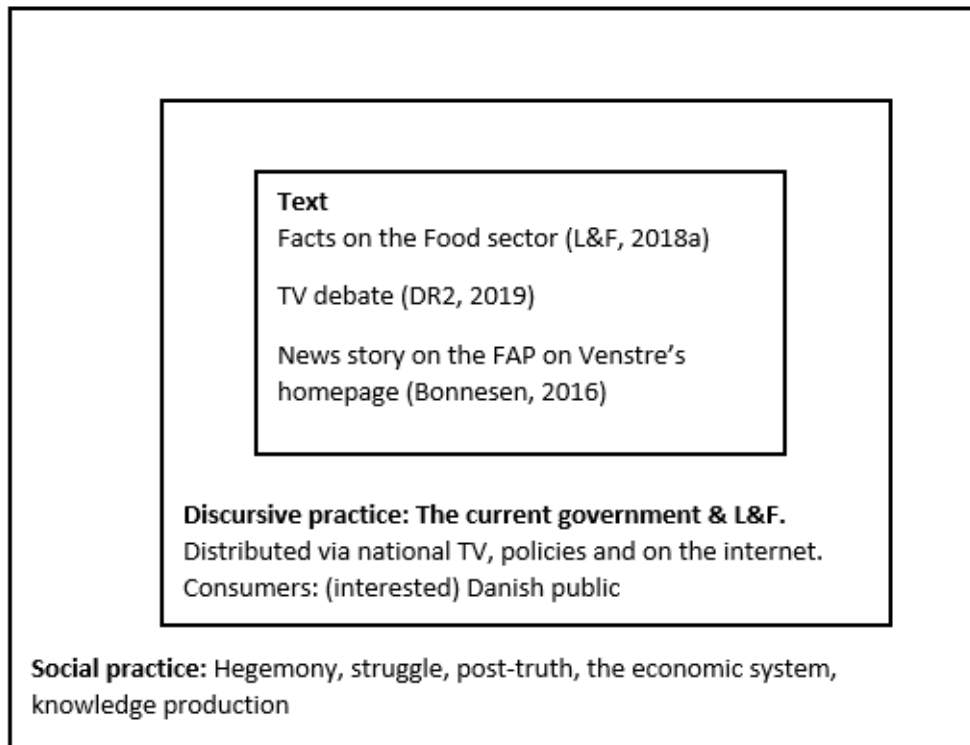


Figure 3. Fairclough’s CDA framework and my research.

The Figure shows how I have combined the context of Danish agriculture with Fairclough’s three-dimensional conception of discourse. The texts listed in the innermost frame are the texts from which I use illustrative quotes in my analysis. Source: (Fairclough, 1992) Inspired by: (Jaques, Islar, & Lord, 2019) (Own figure)

The texts listed in the innermost frame are those, from which I use quotes⁹ throughout the first part of my analysis. The complete list of texts (26) on which I have based my CDA can be seen in Appendix 2.

The report “Facts on the Food Sector” is the most recent edition of an annual publication produced by L&F (2018a), and the news story on V’s homepage, written by V’s MP Erling Bonnesen (2016), was published on the adoption day of the FAP. The TV debate, titled “The Climate – talk or action?”, was streamed on national TV in Denmark on March 7th, 2019. The debate was on political action on climate change in Denmark. Throughout the first forty minutes, selected panellists discussed the failure of the FAP, and the climate impact of Danish agriculture. I have listed the panellists I quote in my analysis in Table 1.

⁹ All my quotes stem from Danish documents and are own translations

Table 1. TV debate “Klima – snak eller handling?”. Selected panellists

Table lists those panellists who participated in the TV debate “Klima – snak eller handling?” on March 7th, 2019 that are quoted in the analysis. The table contains their names and the institution they represent. Source: (DR2, 2019)

NAME	INSTITUTION
Maria Reumert Gjerding	Chairwoman of the Danish Society for Nature Conservation
Uffe Elbæk	Chairman of political party Alternativet
Stiig Markager	Scientist and researcher at AU
Jakob Ellemann Jensen	Minister for Food and Environment (V)
Martin Merrild	Chairman of Landbrug & Fødevarer

As written in sections 3.1 and 3.2, the social practice of discourse situates discourses in the broader sphere of hegemony, struggle and power. The hegemonic discourse and economic system largely determine the frames of and means granted to knowledge production. In the context of Danish agriculture, the hegemonic discourse of the current government and L&F must be viewed in relation to opposing discourses, such as those stemming from red block parties, DN, NOAH and (some) scientists. The current government’s and L&F’s discourse – partially due to effective lobbyism from L&F, and partly due to the power given to national governments – is both securing consent and cultural hegemony and coercively imposing its will through the FAP and the CP. Both stakeholders are, due to economic capital and high visibility able to distribute their discourse across many channels and reach many members – both national TV, in several newspapers, on their homepages and on other platforms. Through this, a large part of the Danish public consumes their discourse.

With this political context in mind, I analysed a total of 27 texts (listed in Appendix 2), paying special attention to the stakeholders use of facts and general ‘positioning’ towards science.

4.3.2 Assessing the level of truth

After my CDA, I turned to assess the level of truth in the current government’s and L&F’s discourse to answer my third RQ. To do this, I selected a series of statements and stories. The statements and stories in this part are mostly from L&F. However, I take these to be representative of both the current government and L&F, as my CDA showed that the current government and L&F largely deploy the same discourse and rely on the same arguments. Identifying and assessing the factual basis of my chosen statements and stories proved to be an at times challenging task, and the method I deployed

was not identical across stories but had to accommodate the differing nature of claims across these. I found the material I used to “fact-check” facts on different platforms; some on the homepages of IFRO and DCA, others in the articles in my background section, some via Google searches and others via LUB Search.

5. Analysis

This analysis is divided into two parts. In the first part, I will describe the characteristics of the current government’s and L&F’s discourse on the environmental sustainability of the Danish agricultural sector. I will further show, how this discourse is defended in scenes of struggle by using quotes from the TV debate described in section 4.3.1. The first part of my analysis is concluded with a short paragraph on the use of facts in the dominant discourse.

In the second part of my analysis I conduct a ‘fact-check’ of the discourse. In this second part I continuously assess whether the government and L&F are building their arguments on facts, spun facts or whether their arguments should be categorised as post-truth. I conclude the second part with an overall assessment of the discourse’s level of truth.

5.1 The dominant discourse

5.1.1 *Characteristics*

Through my analysis I found that the current government’s and L&F’s discourse on the environmental sustainability performance of the Danish agricultural sector has two distinct characteristics.

First, ‘the fact’ that Denmark’s agricultural sector is one of the most sustainable agricultural sectors in the world, and that BAU will be able to solve existing and future problems, is constantly reiterated, both explicitly and implicitly. This resonates very well with the general perception of Denmark being a green country. The basic logic is, that agricultural production should stay in Denmark for the sake of the global climate, since Danish production is environmentally and climate friendly, and resource efficient. The discourse implicitly carries the idea, that Danish farmers are a significant contributor to the world’s food market. This first characteristic is exemplified in the below quotes, taken from “Facts on the Food Sector” (L&F, 2018a) and the TV debate.

“(…) we need to work to ensure that the [agricultural] production stays in Denmark and isn’t outsourced to other countries that are less environmentally friendly, less aware of resource efficiency and less climate friendly.” (L&F, 2018a, p. 10)

“(…) we shouldn’t fool ourselves by thinking, that the pigs won’t be produced elsewhere if we don’t produce them in Denmark. Due to this we have an obligation to produce in

places, in which they are produced most climate friendly.”
(DR2, 2019, 36:19 - 36:31, Jakob Ellemann Jensen)

A more implicit formulation of the sustainable state of Denmark’s agricultural production is exemplified below.

“(…) what should have brought nitrogen levels down, further down than they are today, has not been delivered. But that will happen.”
(DR2, 2019, min. 3:45 - 4:06, Jakob Ellemann Jensen)

Prior to the above statement, Jakob Ellemann Jensen was asked, whether he was disappointed and surprised by the failure of the FAP. While indicating some disappointment, he focused almost his entire answer on bureaucratic parts of the FAP that had been successful. Further, he essentially argued (see quote), that Denmark is already doing very well in terms of nitrogen emissions by saying that the level should go further down than they are today, and through this he modifies the failure of the FAP. The modification of the FAP and the success of BAU is shortly after reiterated by Martin Merrild (L&F), when he is asked how nitrogen emissions should be brought further down in the future.

“Well, we need to continue along the track we are currently on. We have a clear standpoint: It needs to be compatible to run effective agriculture in Denmark along with having a clean water environment for all. We have a clear interest in solving this, and that is what we are currently doing.” (DR2, 2019, 14:01 - 14:19, Martin Merrild)

These quotes show how the government and L&F are ‘unproblematizing’ the problems of Denmark’s agricultural sector through praising both the sector and their own policies.

The second characteristic of the discourse is that environmental issues are subordinated to the economic performance of the sector. This is sometimes expressed explicitly, other times implicitly. An explicit expression can be seen in the below quote. Prior to the quote, Jakob Ellemann Jensen was asked how to bring down the GHG emissions of Denmark’s agricultural sector.

“That is a very good question. That is why we have granted massive means, 90 million DKK, to research to find out how to do this in a smart way. There is no easy solution to this. (...) No easy solution that can maintain our welfare state.” (DR2, 2019, 31:12 - 32:10, Jakob Ellemann Jensen)

The message of the above statement is very clear: without the agricultural sector, Denmark’s wealth and welfare state could not be maintained. The government is interested in bringing down emissions in accordance with scientific guiding, but not at the expense of the Danish way of living.

A more implicit example of subordination can be seen below. The quote is the first paragraph of V's MP Erling Bonnesen's news story "Today is a good day for agriculture – and for the environment" (Bonnesen, 2016).

"With today's adoption of the FAP in Parliament, we ensure better working conditions for Danish farmers. Conditions that will ensure an increase in the production of good, Danish food; ensure jobs in all parts of Denmark; and increase export incomes." (Bonnesen, 2016)

While the article's headline already suggests that environmental issues are not the most important factor of the FAP, the first paragraph manifests this suspicion. Environmental issues are not mentioned once in the introductory sentences of the article. In total, the article consists of five paragraphs, and the environment is not mentioned until the last sentence of paragraph four. Based on Fairclough's (1992) notions on discourse as text and the significance of text structure, I argue that this structuring is a clear indicator of the subordination of environmental issues to economic interests, which are mentioned no less than eight times prior to mentioning the environment. Furthermore, it is interesting to see how agriculture and the environment are described as two different things, as if they are not unifiable.

With the quotes in this section I have exemplified the two overarching characteristics of the current governments and L&F's discourse on the environmental sustainability performance of the Danish agricultural sector. (1) The continuous reiteration of the Danish agricultural sectors sustainability, and (2) that environmental issues are subordinated to the economic performance of the sector.

5.1.2 Discouragement, ignorance and dismissals

The above described discourse is defending its hegemonic position by discouraging, ignoring and dismissing arguments brought by opponents of counter-discourses. In this section, I will exemplify these tactics using of two series of quotes from the TV debate.

The first series of quotes is taken from different scenes throughout the debate, in which the level of ambition of the FAP is discussed, along with the means to reach these ambitions.

"We have seen a slight increase in nitrogen since 2012. (...) We must remember that the target is to reduce by 18,000 ton. When we are discussing the difference between 1,400 and 12 ton, we aren't grasping the big picture"
(DR2, 2019,07:17 - 07:52, Maria Reumert Gjerding)

"Our target in 2021 is 2,450 ton. And that is what we should reach in this period and we will." (DR2, 2019, 08:39 - 08:46, Jakob E. Jensen)

“Since 2011, nitrogen has increased with 700 ton per year.”
(DR2, 2019, 27:08 - 27:11, Stiig Markager)

“I don’t recognize the increasing numbers. There has only been a slight increase in 2017, and that was because of special weather.” (DR2, 2019, 27:48 - 28:05, Martin Merrild)

What I seek to illustrate with these quotes is how the government and L&F are dismissing accusations of lacking ambitions by simply not reacting to these or claiming that they don’t recognise what is being said. The Minister does not really respond to the needed reduction of 18,000 ton – he does not even repeat the number. Instead, he reiterates the efficiency of BAU policies and claims, that targets will be reached by means of these. Furthermore, Martin Merrild rejects increasing nitrogen levels, dismissing the statements made by Maria Remuert Gjerding and Stiig Markager. Instead, he claims that nitrogen levels only increased in 2017 due to weather conditions – conditions beyond anyone’s control.

The second series of quotes I have chosen concerns Denmark’s intensive animal husbandry, and who is to be held responsible for this.

“The climate crisis is global. To produce enough food for a growing population is also a global challenge. I am sure that many people in Denmark can live a good life with less meat. But luckily the world’s population is getting richer. And they want more meat. And that should be produced in those places with the least impact!”
(DR2, 2019, 33:58 - 34:52, Martin Merrild)

“The world shouldn’t eat more meat. Right now, more than half of Denmark’s surface is agricultural land, 80% of this is used for feed production. Besides that, we import soy from an area in Latin America equivalent to the size of Zealand.”
(DR2, 2019, 34:52 - 35:13, Uffe Elbæk)

“You need to talk to the consumers about this, and not to me as a farmer.”
(DR2, 2019, 35:17 - 35:21, Martin Merrild)

“No, this should come from the government on behalf of society.”
(DR2, 2019, 35:22 - 29, Uffe Elbæk)

“You need to talk to the world’s consumers.” (DR2, 2019, 35:35 - 35:40, Martin Merrild)

I seek to exemplify two things with these quotes. First, Martin Merrild continues to ‘unproblematise’ Denmark’s intensive animal husbandry. He doesn’t only do so by reiterating its sustainability, but by putting a ‘philanthropic’ touch it by saying that Denmark is providing something good for the newly rich in this world. Second, the series illustrates very well how responsibility is being pushed around. While L&F throughout the debate claimed to take on responsibility for the sustainability of Denmark’s agricultural sector, he now pushes the responsibility onto the world’s consumers. Through this, the actual agency for transforming the agricultural sector is moved from Danish stakeholders to the

consumers of this world. This point of view is also expressed by the Minister at another time in the debate.

With these quotes I have exemplified how the government and L&F, from a Gramscian perspective, defend the current development of the Danish agricultural sector and their hegemonic position through dismissing and ignoring, and thus discouraging and delegitimising counter discourses.

5.1.3 What is the role of science and facts in this discourse?

Science and facts play an important role in this discourse. First and foremost, international climate science is recognised by both the government and L&F, and both stakeholders recognise that there is a need to act. However, neither the government nor L&F appear to accept the premise of unprecedented changes. This is clearly indicated by the Minister when he says, that the Danish way of living and the Danish welfare state must be maintained.

Science is by both stakeholders viewed as a cornerstone of guiding the development of the Danish agricultural sector. As the minister indicated, 90 million DKK have been allocated to conduct research on possible ways to reduce emissions of the sector. Also, as written in section 2.2.2.1, the FAP was developed in cooperation with universities. Further, L&F clearly signal that they base their work on facts; such as those listed in their report “Facts on the Food Sector” (L&F, 2018a).

Both stakeholders use and rely on scientific credibility and factual knowledge when building their arguments. The question then is: where do these facts come from?

5.2 Truth? Post-truth? Spun truth?

In the following sections I assess the level of truth of four statements made by the current government and L&F. The statements I have chosen are related to the climate efficiency of the Danish agricultural sector, its environmental friendliness, the use of antibiotics and management of resistant bacteria, and its crucial role for the Danish economy.

5.2.1 Climate efficiency

As shown in the quotes in section 5.1.1, both the current government and L&F state that the Danish agricultural sector is one of the most climate efficient agricultural sectors in the world. In “Facts on the Food Sector”, L&F (2018a) back up this claim with a ranking. According to this ranking, Denmark’s dairy production is the EU’s most climate efficient per produced unit, while Danish pork production ranks in 7th place (L&F, 2018a). While this ranking at first glance appears to verify their claim, it is hard to assess its validity as the report does not contain any references.

In 2016, researchers from IFRO published a commissioned work report for Danish authorities, in which they assessed whether Danish agriculture is rightfully branded as sustainable or not (Bosselman et al., 2016). In this report, the above-mentioned ranking used by L&F reoccurs. Bosselmann et al. (2016) discuss two frequently cited studies on emissions of European livestock sectors. One of these is a Life Cycle analysis conducted by Lesschen et al. (2011), in which GHG emission profiles of European livestock sectors are created. In this report, Danish dairy production indeed ranks first, while Danish pork production takes the 7th position (Lesschen et al., 2011). The ranking used by L&F's could potentially stem from this study. Assuming that it does, the numbers used by L&F are a product of scientific work. What is not mentioned, however, is that the Lesschen et al. (2011) study has a major flaw; imported feed is not accounted for (Bosselman et al., 2016). Since the Danish agricultural sector so heavily relies on imported soy, Bosselmann et al. (2016) argue that the results of this study overestimate the climate efficiency of the Danish agricultural sector.

The other frequently cited study (Weiss & Leip, 2012) on emissions of European livestock sectors discussed in Bosselmann et al.'s (2016) report does account for imported feed. Weiss & Leip (2012) reach the conclusion that Danish dairy production ranks 17th EU wide, while pork production ends on a 16th place. Bosselmann et al. (2016) point out, that Weiss & Leip's study has flaws as well, and that Denmark performs better than their ranking suggests. However, Denmark does perform significantly worse than Lesschen et al.'s (2011) study concludes, and hence also than L&F claim in "Facts on the Food Sector" (2018a). Framing Denmark's agricultural production as an obligation due to a high climate efficiency is a significant exaggeration due to the high import of feed.

5.2.2 Environmental friendliness

The same point of exaggeration can be made about the environmental friendliness of Denmark's agricultural sector. According to Bosselmann et al. (2016), Denmark is indeed performing very well in some areas, as for instance resource efficiency and in managing ammonia emissions. However, as written in the background section, Denmark is performing significantly worse than many other EU countries when it comes to protecting biodiversity. Even though biodiversity loss is one of the most prominent and pressing problems of industrial agriculture, it is rarely mentioned by the current government and L&F, almost as if it were a non-issue. Furthermore, the severe issue of nutrient pollution in Danish water bodies is not even mentioned in "Facts on the Food Sector", and it is largely 'unproblematised' by the Minister, as exemplified in section 5.1.1.

While L&F and the current government describe the Danish agricultural sector as being one of the most sustainable agricultural sectors in the world, none of them define sustainability at any point. In

“Facts on the Food Sector” (L&F, 2018a), L&F writes that sustainability is hard to define, and that it is not always possible to be the most sustainable on all fronts at the same time (L&F, 2018a, p. 21). This statement almost raises suspicion that the interest organisation does not have an explicit sustainability strategy, and that “sustainability” is merely used as a buzzword which must be used to secure consent and justify their development.

5.2.3 Antibiotics and resistant bacteria

On February 21st, 2019, a new story came up in the newsfeed on L&F’s homepage; the headline: “Antibiotics: The Food and Agriculture Organisation (FAO) of the United Nations highlights Danish pig production as an international example” (L&F, 2019). According to the interest organisation, Danish pork production, more specifically the use of antibiotics and handling of resistant bacteria in pork production, was once again praised internationally – this time in the new FAO report “Tackling Antimicrobial Use and Resistance in Pig Production. Lessons Learned in Denmark”.

The story was structured around three citations from the report, commented on by the L&F Swine Production Chairman Erik Larsen. An example of this is shown in the quotes below.

“Denmark in many ways laid out a plan before there was any known roadmap to follow; every step was based on a continuous analysis (...)”
(L&F, 2019, report citation)

“We are proud of being in the lead, but this position entails, as pointed out in the report, that we often must move into unknown territory to reach our goals.”
(L&F, 2019, Erik Larsen)

This framing strongly suggests that the mentioned report was written by the FAO. However, the list of contributors only reveals Danish names from Danish institutions such as the Technical University of Denmark, The Danish Agriculture and Food Council and the SEGES Danish Pig Research Centre. Even though the FAO and the FVST [Denmark Ministry of Environment and Food – Danish Veterinary and Food Administration] are the report’s authors according to the required citation, the only FAO contribution appears to be the foreword. And when looking at the frontmatter it is explicitly written that the views expressed in the report “do not necessarily reflect the views of the FAO or the FVST” (FAO & FVST, 2019, p. ii). The foreword was written by Juan Lubroth, the Chief Veterinary Officer and Antimicrobial Resistance Focal Point, Animal Health Service of the FAO. Comparing the foreword to the news story on L&F’s homepage, it becomes evident that all citations used are taken from the foreword, and not from the report’s main content. However, what is not mentioned in the news story,

is that the quotes shouldn't be seen as a promotion of the Danish swine industry, but a rather 'sober' explanation of lessons learned. In the second sentence, Juan Lubroth explicitly writes:

“Readers may interpret the conclusion [of this report] as a promotion of the swine industry in Denmark. This is not the case; rather it is an example of one country's experience addressing antimicrobial resistance (AMR) in the swine sector” (FAO & FVST, 2019, p. v)

5.2.4 *Economic significance*

The last statement I examine in this part of my analysis is the claim that the Danish agricultural sector is essential to maintain the Danish welfare state.

The Danish agricultural sector is part of the Danish food sector. The entire food sector employs 189,000 people according to L&F (2018a), and 140,000 people according to V (Bonnesen, 2016). Numbers on the total amount of exports from the food sector differ; according to V these are no less than 25%, according to L&F it amounted to 166.4 billion DKK in 2017 (L&F, 2018a). These numbers on the Danish food sector go far beyond agriculture, including Denmark's fishery industry and revenue created throughout the entire supply chain (Kern-Jespersen & Rasmussen, 2018).

Looking at agriculture alone, around 75,000 people were employed in agriculture in 2016, and of these only 36,500 were employed full time (Statistikbanken, 2016). And only 8% of Denmark's exports are directly related to agricultural production (Goddiksen, 2017). According to Alex Dubgaard, Associate Professor at IFRO, many of the supply chain jobs in the Danish food sector would also be there without agricultural production in Denmark (Kern-Jespersen & Rasmussen, 2018), and thus the sector is not as crucial – neither in terms of jobs nor for the Danish economy – as the current government and L&F like to make it sound (Kjeldsen-Kragh, 2014; Nossell et al., 2016).

5.2.5 *'Beyond truth'? Or literally post truth?*

I defined spin as restructuring the significance of facts, while I defined post-truth as a situation in which facts are ignored and new ones are created in accordance with given interests.

Seeing the above stories in light of this definition, Denmark's current government and L&F are walking on a very thin line between a spin and a post-truth state. When L&F describes Danish milk production as the most sustainable in the EU, one could argue that they restructure the significance of being resource and climate efficient within Denmark's own borders, presenting it as an absolute truth. On the other hand, one could also argue that they quite frankly ignore a fact they very well know about –

namely the huge impact of the imported soy. At least, the claim cannot be labelled as truthful, as it is not stated without any reservations, which in this case are crucial.

The same can be said about unproblematising the inefficiency of the FAP and hence understating the critical state of the Danish water environment, or not even responding to problems of biodiversity loss. In these cases, the government and L&F appear to be closer to ignoring certain facts that do not support their interests. However, they do not create completely new facts from the bottom. This raises the question, whose interests current BAU development serves, and what exactly these interests are? In the above I showed, how the Danish agricultural sector is not a crucial part of the Danish economy anymore. Hence, these interests appear not only to be about profit. I will return to this in my discussion.

The most extreme story of the above is the story on the FAO report. While one could argue that L&F is merely reconstructing the significance of the authorship given in the required citation, this argument is very thin. In the story headline and throughout the article they are continuously stating the exact opposite of what can be read in the report's frontmatter and in the foreword written by Juan Lubroth. This news story is misleading readers to believe something that is not true.

I have shown, that spinning facts is a big part of the current government's and L&F's discourse on the Danish agricultural sector. The reality they are communicating does not fit with the reality of Danish agricultural production. From a Faircloughian perspective, their communicated reality is largely ideological, spun around a main signifier: the economic performance and growth of the Danish agricultural sector. Further, Denmark's greenness has reached 'common sensical heights' in the current government and L&F's discourse. According to Rider (2018), scaling facts that are true only in certain contexts up to being universal realities, is one of the biggest problems of communicating facts in our time as it renders facts and science a loss of credibility. This is exactly what the current government and L&F are doing. However, I would not categorise this discourse as being post-truth. New facts are not created from the bottom. Instead, they are rooted in some factual knowledge and then scaled up through spin. The overstatement of economic significance is in fact 'post truth' in a literal sense – forty years ago, the Danish agricultural sector was a keystone of the Danish economy. It appears, that L&F and the Danish government are still clinging to this past.

I argue that this discourse is rather 'beyond-truth' than post-truth. Despite the fact that some of their framings appear to be post-truth, the arguments made by Denmark's current government and L&F are rooted in factual knowledge, and thus the epistemic foundation of their arguments is not post-truth and cannot be categorised as such. Snippets of truth are taken and scaled up to astonishing levels.

Even though there does not appear to be a great difference between a spun and a post-truth argument, the process along which these arguments are made is different. I have tried to illustrate this in Figure 4 below.

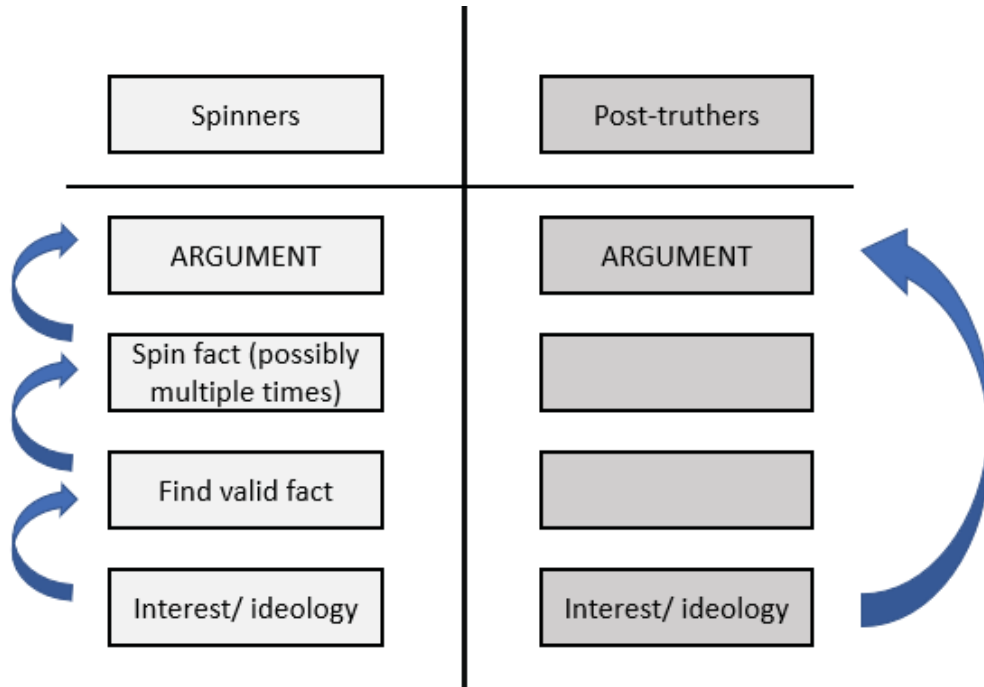


Figure 4. The process of creating an argument. Spinners and post-truthers

The figure illustrates the different processes along which post-truthers and spinners create their arguments. (Own Figure)

This procedural difference is of major importance. Spinners cannot just deny facts, despite them trying to ‘overlook’ them or spin them. This allows for a debate on factual grounds, in which the very premise of factual knowledge is not denied by opponents. And it is after all easier to discuss different angles on scientific results and facts, than to discuss the very relevance of science and facts.

As illustrated in Figure 4, spinners might spin facts multiple times before reaching their final argument. For sustainability scientists, and for scientists in general, it is important to understand how these processes play out. Understanding the process and knowing the institutional setup in which spin happens is the starting point for changing this process and the institutions, and such change could potentially make a great difference for science-informed political agenda-setting in the sustainable transition.

5.3 Summary of my analysis

The discourse on the environmental sustainability performance deployed by the current government and L&F is characterised by subordinating environmental issues to economic performance, and by reiterating the 'greenness' of the Danish agricultural sector. From a Faircloughian perspective, the government and L&F communicate an ideological reality, into which they successfully have incorporated sustainability as a buzzword.

The reality they have constructed is rooted in factual knowledge and due to this, their discourse cannot be categorised as post-truth per se. Still, the used factual knowledge is spun to such a degree, that only small snippets of the actual facts are left in the discourse. There are many similarities between spun and post-truth arguments, however, the epistemic starting point and the process along which arguments are made differs (see Figure 4). Changing the process of spin and the institutions behind it could prove to be an important step on the way of spurring a sustainable transition.

6. Discussion

My discussion is divided into four parts. In the first part I will discuss the results of my analysis; in the second part I discuss the importance of cultural leverage for creating discourses, in the third I answer my fourth RQ and attempt to identify possible ways forward; and in the third part I discuss the limitations and weaknesses of this thesis.

6.1 The instrumentalisation of science

When I positioned myself in Sustainability Science in section 1.3, I wrote that science runs the risk of being instrumentalised by stakeholders outside of academia in the attempt to connect science to the political agenda. Based on my analysis, I argue science and facts are indeed being instrumentalised by the current government and L&F. I furthermore argue, that science – both in Denmark and on an international level – is being instrumentalised both in its production and in the application and use of scientific results. With instrumentalising the use of science, I mean the act of spinning facts. 'In between' lies the act of prohibiting the publication of results, such as was the case with the calculations made for the FAP. In the following sections, I will focus on the instrumentalisation of production.

Danish universities carry out a range of services for the Danish state and other stakeholders. These services are called "forskningsbaseret myndighedsbetjening" [research-based authority service] (UFM, 2018). The idea is that universities deliver input to the state or other authorities to formulate policies and make decisions on an enlightened base (UFM, 2018). While this certainly has some advantages, there is also a downside to it.

The Bosselmann et al. (2016) report, which I used to partially debunk the claimed climate and environmental friendliness advertised by Denmark's current government and L&F, was written as a service for the Danish Ministry for Food and Environment. Bosselmann et al. (2016) concluded that Danish agricultural production partially did deserve its sustainable reputation due to its resource efficiency and good management of ammonia emissions, but that the import of soy and biodiversity loss were problems. Nutrient pollution of Danish water bodies and terrestrial ecosystems was not part of the assessment. I was surprised with this assessment, since intensive animal husbandry is inherently resource inefficient, and there was no critical comment or section on the status quo; everything in the report was 'within the box' of BAU. I further found, that this 'system conform' approach was a common denominator of all reports I looked into in these authority-ordered series. Critical questions concerning fundamental changes of Denmark's highly industrialised agricultural sector, international supply chains or the inherent resource inefficiency of animal husbandry were not asked. The fact that critical sustainability studies of the system are completely absent is a surprising fact, considering that Denmark brands itself as a progressive, green country.

I contacted two researchers carrying out authority-ordered services; Aske Skovmand Bosselmann from IFRO and Jørgen Eivind Olesen from the DCA. Both said that these authority-ordered reports were largely carried out "within the box", and that a critical sustainability angle contesting the status quo was underrepresented in these services (A. S. Bosselmann, personal communication, 07-02-2019; J. E. Olesen, personal communication, 20-03-2019). Furthermore, Jørgen Eivind Olesen added that this was partly due to the fact, that the knowledge of the universities largely lies 'within the box' (J.E. Olesen, personal communication, 20-03-2019).

'Within the box' lies a very specific line of thought. Researchers assess how the status quo of intense animal husbandry can be done in the most resource-efficient way. The essential factor is meat production; "resource use → meat production → food". From a sustainability perspective (and from many other perspectives), the essential factor should be how to most efficiently feed the world's population. It is ironic, that Denmark's current government, L&F and other stakeholders proclaim that they are doing the latter.

Since Danish authorities (partially) base their decisions on these reports, the absence of critical system thinking is highly problematic. Currently, scientific inquiries reinforce the current system. From a Gramscian perspective, BAU voices have infiltrated those institutions which should inform and lead the solutions against them and partly manage to make them work in their favour instead.

The above case is very specific to the national context of Denmark. However, the general instrumentalisation of science, and in extension hereof academic freedom, is not. The type of pressure under which academic freedom is, differs across the globe. In totalitarian regimes, it is directly restricted by governments; such as in Hungary, in which the field of ‘gender studies’ was banned from Hungarian universities in October 2018 (Wang, 2018). In other societies, science runs the risk of slowly being instrumentalised through the ‘corporatisation’ of research (Marklein, 2015), in which refers to accepting funds from commercial sponsors with their own agendas (Palfreyman, 2007).

The above – both how science and facts are spun and how science is being instrumentalised through censorship and funding – raises disturbing questions on the state of scientific institutions and the role of science in general. Is scientific work only characterised by its methods, or also by the questions asked? Should there be a fundamental sense of curiosity and openness to scientific work? Or is it also science when questions are merely asked to confirm something that is already known? Following this: is instrumentalised science still science? I will not answer these questions in my thesis. However, discussing them and attempting to answer them is important for both sustainability scientists and science in general. They concern which role science will and should play in the sustainable transition.

6.2 The influence of culture

The main characteristics of the current government’s and L&F’s discourse, identified in section 5.1, resonate very well Denmark’s green reputation and the historical role of agriculture in Denmark. The stories about the ‘greenness’ of the Danish agricultural sector fits the idea many Danes have of their country; created by both politicians and the international press (Gds-Index, 2018; L&F, 2018b; Øyen, 2017; SolAbility, 2017). Further, emphasising the significance of the Danish agricultural sector fits with the cultural and historical leverage of agriculture in Denmark; animal husbandry, and especially holding pigs, has been done in Denmark for centuries and influenced Denmark’s natural and cultural landscapes (J. G. Hansen, 2016; Jensen, 2010). All traditional Danish meals contain either dairy or pork. On the day of Danish elections, “valgflæsk” [“election pork” (fried pork belly)] is served across the entire country and eaten in many homes; and no traditional Danish dinner is served without “rød grød med fløde” [red berry pudding with cream]. I argue, that this leverage plays an important role, and hence that maintaining the Danish agricultural sector is not only about economic interests, but also about culture¹⁰. Parallels can be seen in other societies; just as Denmark has its agriculture, Iceland has its renewable energy sector (Guðmundsdóttir, Carton, Busch, & Ramasar, 2018) and Germany has its

¹⁰ I of course recognize, that economic interests and power on a global scale are a major driver of the system

car sector (Reents, 2018; Ruhkamp & Rossbach, 2013), all enjoying differentiated treatment due to a special cultural heritage. I do not say that cultural heritage justifies unsustainable development. However, I argue that transitions in sectors with high cultural heritage are harder to spur than in newly developed sectors.

6.3 Where to go from here?

What are possible ways forward? Both internationally and in the case of Denmark? As hinted at in my analysis, a possible way towards change along sustainable trajectories could be to change the institutions and processes that allow drastic ‘spinnings’ of facts.

In the concrete case of Denmark, the setup of research-based authority services could be changed. Currently, the execution limits its benefits, but the setup in itself is an excellent opportunity to connect science to the political agenda and inform sustainable development. As it is now, authorities largely dictate questions and frames. While researchers can influence these questions to a certain degree, the overall frame within which different questions are examined are set by the authorities. There are several ways to alter this process. For instance, the influence of authorities could be limited to setting the topic and hence leaving the questions to researchers. Furthermore, research-based authority services on agriculture are currently only carried out by university institutes that largely base their work on quantitative data. An inclusion of qualitative institutes could prove useful for broader, critical assessments. However, there is also the more fundamental problem which became evident in Jørgen Eivind Olesens last comment; namely that the knowledge of (Danish) universities largely lies ‘within the box’. Changing this requires far greater alterations than merely procedural adaptations; and it is closely connected to the question of what science is, and what we can expect from research.

Broadening the scope beyond Denmark’s borders, there is a dire need to fight the instrumentalisation of science and for academic freedom. To counter the instrumentalisation of science production (normatively speaking), more funds must be given independently of economic interest. But how to counter excessive spinning of facts?

To make sure that science and facts are not misused, there is the possibility of setting up a “scientific watchdog” institution, responsible for cross-checking statements with sources. For such an institution to function, it would have to be legitimised by a legal framework ensuring that untrue information can be held back legally. An interesting tendency in this context are the increasing numbers of, and the growing attention towards, climate change litigation cases and the idea of holding stakeholders accountable for misuse of information along legal ways. There are of course challenges connected to

this; who gets to decide what is true and what is not? And in general, the efficiency of legal action is not yet clear. Despite challenges and uncertainties, I argue that a body cross-checking that scientific results are not taken out of their boundaries would benefit scientific credibility.

6.4 Limitations of my approach

Like any research design, mine has limitations. Through combining a CDA with the assessment of truth and a general discussion on the implications of and similarities between spin and post-truth, some parts of my analysis are lacking some depth. Different prioritisations could have provided this. For instance, I could have focused my thesis on the challenge of communicating truth, without going elaborating on the environmental consequences of agriculture in Denmark. However, I wanted to show a broader picture and not a detailed picture of one sole phenomenon. This naturally came at the expense of detail and depth at certain points.

7. Conclusion

In this thesis, I wanted to explore the line between spin and post-truth to assess whether the former is even possible without becoming the latter. I argued, that the difference between post-truth and spin is important, as it influences on which epistemic grounds proponents of a sustainable transition – as, for instance, sustainability scientists – can challenge their opponents. Further, I argued that being aware of processes of science production and communication is essential for scientists in order not to be instrumentalized in the attempt to connect science to the political agenda for sustainable development. My thesis is a contribution to the discussion on the (potential) role of science and facts in political agenda-setting for (un)sustainable development.

To do the above, I used the current governments and L&F's discourse on the environmental sustainability performance of Danish agriculture as a case study. I analysed the discourse to identify its main characteristics (RQ1); the role of science and facts in the discourse (RQ2); and to assess whether this discourse is spun or post-truth (RQ3). Further, I discussed the implications of my results and attempted to identify possible ways forward for a useful connection of science to political agenda-setting for sustainable development (RQ4).

Through my Faircloughian (1992) CDA, I found that the current governments and L&F's discourse is characterised by continuous reiterations of the Danish agricultural sector's sustainability, and by subordinating environmental issues to the economic performance of the sector. From a Gramscian perspective, the current government and L&F dismiss, ignore and discourage counter discourses to maintain their hegemonic position. While this discourse on the environmental sustainability

performance stands in stark contrast to many sustainability problems that riddle the Danish agricultural sector, both the current government and L&F appear to build their claims on facts, and both view science as a cornerstone of sustainable development. However, by digging out the sources on which these stakeholders base their claims, I found that their discourse is highly spun; or from a Faircloughian perspective, ideological. Still, the discourse cannot be categorised as post-truth per se, as it is rooted in facts and therefore has another epistemic starting point than post-truth arguments.

The implications of what I found can be termed the 'instrumentalisation' of science. I argued, that science is both instrumentalized in production (funding, institutional factors) and communication (spin) processes. Through instrumentalising science and using it as a legitimising tool, science in fact becomes a driving and legitimising factor for BAU development. At the heart of this debate lies the issue of (lack of) academic freedom. Academic freedom could be guaranteed through different institutional setups and funding schemes, decreasing scientist's reliance on private, corporate funding. In Denmark, changing the procedure for research-based authority services could also prove beneficial. Countering excessive spin and misuse of scientific results, along with guaranteeing the immediate publication of scientific results and punishing censorship can be done by a 'scientific watchdog'.

My thesis has offered insights into the large problems spin poses for sustainable development. It is a starting point for further discussions on what science and scientific work is and should be. Is instrumentalised science still science? Or is it merely scientists producing documents ordered by different stakeholders? Furthermore, the issue and processes of spin must be investigated further, if science is to play a part in a sustainable transition. Another issue related to processes of political spin, which I haven't discussed in this thesis, but which should be investigated further, is that it is unclear whether politicians are aware of the fact, that their information is spun.

At the end of this thesis, I wish to be explicit about one thing. While I argue that the discourse of Denmark's current government and L&F is deceiving and that there is a dire need to replace these actors to spur a sustainable transition, I do not think that these actors (1) should be held solely accountable for their actions; nor (2) that they do not have good intentions. Denmark's agricultural policies to a large degree follow rules set up by the EU and thus the system is far bigger than what I have investigated in this thesis. Further, the lacking capability to think outside of the box and try to fit everything within our current systems is a pertinent issue of our time. This does not justify the lack of creativity in a country calling itself both green and progressive; however, the responsibility is not only to be placed on the current government and L&F.

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Appendix 1

Interviewee	Form and date of correspondence	Topic
Aske Skovmand Bosselmann <i>Assistant Professor Department of Food and Resource Economics (IFRO), University of Copenhagen</i>	Face to face interview 07-02-2019	IFRO Report 248 Research-based authority services
Kjeld Hansen <i>Debater, writer, lecturer and journalist</i>	Telephone interview 25-02-2019	Questions concerning the political economy of the Danish agricultural system
Jan Nørgaard <i>Chairman, Arla Foods</i>	Telephone interview 02-04-2019	Elaborating questions on some of Jan Nørgaards comments in a debate at the iClimate “Fødevarer i et ændret klima” conference (18-03-2019). Concerning the use of facts and placing responsibility
Jørgen Eivind Olesen <i>Section Manager Professor Department of Agroecology, University of Aarhus</i>	Email correspondence	Elaborating questions on Jørgen Eivind Olesens lecture “Can Agriculture be Climate Friendly?” given at the iClimate “Fødevarer i et ændret klima” conference (18-03-2019) and research-based authority services
Peter Lund <i>Professor, Department for Animal Science, University of Aarhus</i>	Email correspondence 20-03-2019	Elaborating questions on Peter Lunds lecture on climate efficient feeding techniques in animal husbandry given at the iClimate “Fødevarer i et ændret klima” conference (18- 03-2019).
Nikolaj Kleis Nielsen <i>Senior Consultat, SEGES</i>	Email correspondence 11-03-2019	Questions concerning the political economy of the Danish agricultural system
Stiig Markager <i>Professor, Institute for Bioscience, University of Aarhus</i>	Email correspondence 09-05-2019	Questions concerning the FAP, correct terminology and nitrogen loads in Denmark

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