

sult from reducing the amount of animal-based foods in one's diet may be very similar to being a flexitarian, the term *reducetarian* refers to action or process of reducing meat eating, rather than already being a semi-vegetarian, or flexitarian. It seems that even some of the vegan discourse is positive about the idea of simply reducing, rather than eliminating animal-based foods. However, to some, it may be counterproductive to focus on small reductions, rather than radical change.<sup>79</sup> Finally, while “reducetarian” or “flexitarian” (or even “vegetarian” or “vegan”) do not directly distinguish between different motives on cutting back on meat eating, other new terms for diets do, such as *climatarian* or *sustainitarian*,<sup>80</sup> which focus on the environmental consequences of food, or more specifically the meat that is eaten.<sup>81</sup> Focusing on co-benefits to human health, animals and the environment (motive alliances, see Belz & Peattie, 2009; de Boer et al., 2013; Hartmann & Siegrist, 2017) may, however, be more beneficial than focusing on single benefits, as discussed further in Chapter 3.

There seems to be some division between optimism and pessimism about change in the meat-eating related discourse within academia. Certain optimism is contained in the writings about flexitarians, for example in the Netherlands (e.g. de Boer et al., 2013) or Germany (e.g. O’Riordan & Stoll-Kleemann, 2015), while there seems to be certain pessimism about the proportion of vegetarians or vegans being low and unchanging, for example in France<sup>82</sup> or the United States.<sup>83</sup> This might be a reflection of (un)willingness to tinker with food cultures (e.g. in Germany vs. in France), or, it could be reflecting higher tolerance and freedom contained in flexitarianism vs. stricter vegetarianism or veganism, or both.<sup>84</sup>

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the majority of the Dutch (77%) to qualify as weak flexitarians. However, when asked, only 13% of the respondents identified with being a flexitarian.

- 79 See e.g. <http://veganstrategist.org/2015/11/06/compromise-isnt-complicity-four-reasons-vegan-activists-should-welcome-reducetarianism-and-one-big-reason-reducetarians-should-go-vegan/>
- 80 See <https://www.lessmeatlesheat.org> and <https://grist.org/food/climatarian-vegavore-reducetarian-why-we-have-so-many-words-for-cutting-back-on-meat/>.
- 81 In this book, the term *flexitarian* is used as a general, most common and rather neutral term for someone eating less (smaller amounts or more infrequently) meat than the average person in the Global North.
- 82 Around 10% of the French see themselves as vegetarians in the future, yet only 2-3% report being currently vegetarian (Opinionway survey, <http://www.20minutes.fr/societe/1808807-20160318-journee-viande-pourquoi-deviennent-tous-vegetariens>). Ouedraogo (personal communication, 21 February 2017) argues this to be a sign of food “malaise” in the French society. Arouna Ouedraogo works for the French National Institute for Agricultural Research (INRA).
- 83 See <https://www.psychologytoday.com/us/blog/animals-and-us/201109/why-are-there-so-few-vegetarians>. The author Harold Herzog is a Professor of Psychology in the US.
- 84 Additionally, researchers’ personal optimism or pessimism may colour their arguments.

At the same time as all these narratives exist, the vast majority of people, and seemingly a large proportion of policymakers, have still been either unaware of the critical issues to do with the broken meat system (see the meta-study by Hartmann & Siegrist, 2017), or even if aware, reluctant to change their own practices (see also e.g. Wellesley et al., 2015) or push for policies encouraging others to do so.<sup>85</sup> Similarly, even many NGOs have not pushed the issue, for example in their campaigning (Laestadius et al., 2014), and even those that do, tend to advocate for small reductions in the consumption of meat, rather than for radical reductions or an overhaul of the meat system together with larger adoption of plant-based diets (Linnea Laestadius, personal communication, 19 October 2017).

There are recent attempts within international organisations, such as the European Heart Network (2017), the International Panel of Experts on Sustainable Food Systems (IPES FOOD, 2017) and the World Bank (2017), to recommend reductions in meat consumption, combining benefits for human and planet health. A report from the International Food Policy Research Institute from 2011 was an early voice in this, suggesting around 20% reduction to the global baseline growth scenario for 2030, in effect bringing consumption of meat back by 2030 to the level it was in 2000 (Msangi & Rosegrant, 2011). At the same time, a 2018 opinion piece from the EU Observer (an independent online newspaper writing about EU matters) suspects that in terms of denial, meat is “the new climate change”.<sup>86</sup>

Looking back, the meat crisis reached awareness even in the wider scientific community mostly only after the publication of the 2006 Livestock’s long shadow report by the FAO (Steinfeld et al., 2006). Newspapers did eventually report on the issue.<sup>87</sup> During the period after the 2006 report, there were high-profile calls for change. In 2008, the then head of the IPCC, Dr. Rajendra Pachauri, called for people to significantly reduce their meat eating.<sup>88</sup> In 2009, the Meat-free Monday campaign was launched.<sup>89</sup> In the same year, Lord Nicholas Stern took a significant political step as a high-profile climate change expert when he said that “meat is a wasteful use of water and creates a lot of greenhouse gases. It puts enormous pressure on the world’s resources. A vegetarian diet is better” in an interview by the Times newspaper.<sup>90</sup> His comments created a lot of, often negative, media at-

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85 See e.g. <https://euobserver.com/environment/127407> from 2015. Among other things, this EU Observer article discusses a European Commission report on sustainable food that the Commission planned to publish by 2013, but then subsequently “buried”.

86 See <https://euobserver.com/opinion/141344>.

87 See e.g. <https://www.theguardian.com/environment/2009/may/16/ghent-belgium-vegetarian-town-environment>.

88 See e.g. <https://www.theguardian.com/environment/2008/sep/07/food.foodanddrink>.

89 See <https://www.meatfreemondays.com/about/>.

90 See <https://www.thetimes.co.uk/article/climate-chief-lord-stern-give-up-meat-to-save-the-planet-2j9kv8btjsr> from 27 October 2009.

tention,<sup>91</sup> and since then, he has apparently not returned to publicly say that, for climate change mitigation, a vegetarian diet would be better than a diet with meat.<sup>92</sup> In an interview by an Indian newspaper the Indian Express in 2017, when questioned, he referred to his comments in 2009 and said that he “did not advocate vegetarianism”, and that “diet is an individual choice”.<sup>93</sup> Further, in his recent book on climate change mitigation, Stern (2015) does not discuss meat’s contribution to climate change at all, although the book does include one very short mention of cultivated meat (on p. 78) as an example of potentially helpful private-sector innovations.<sup>94</sup> In the decade since the FAO report and the high-profile calls for meat reduction, not much seems to have changed, other than that the new alternatives to meat are becoming a reality, and at least partly due to them, the spread of discourses has widened. Meat consumption as such has only increased at a global level and has not significantly decreased for any individual country.

There are multiple explanations for the low awareness — or denial — and the related lack of action until now. They include the discursive hegemony of carnism (discussed in this chapter and Chapter 3), strategic ignorance as a coping mechanism for the internal conflict rising from the meat paradox (see Chapter 3), the disconnection between the production and consumption of meat (this chapter), the seeming lack of certainty in terms of the proportional contribution of the global meat complex to climate change (see Box 2.1)<sup>95</sup> or to many of the other related problems, and the overall complexity of the issues related to the global meat complex (this chapter). Another psychological factor may be the underestimation of impacts from behaviour within which changes are perceived as (personally) difficult (de Boer et al., 2016; Tabi et al., 2013).<sup>96</sup>

Notably, there is relatively little research focusing on the pressure from the conventional animal-based meat industry to maintain the status quo, although this pressure is possibly a major contributor to the lack of action, similar to the impact of some other industry lobbies, e.g. in the fossil fuel industries. Fuchs et al. (2016) offer an analysis of the often hidden power, including discursive power, the

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91 See <https://www.theguardian.com/commentisfree/cif-green/2009/oct/27/vegan-vegetarian-sterm-climate-change> in the online Guardian on 27 October 2009.

92 An indication of this is that e.g. Google search results regarding Lord Stern talking about vegetarianism being good for the climate generally only refer to the interview in the Times in 2009, in other words, there are very few newer internet search results on this.

93 See <https://indianexpress.com/article/explained/costs-ignored-climate-change-a-function-of-market-failure-says-lord-nicholas-stern-world-bank-4593123/> from 31 March 2017.

94 He also says that discussing such innovations would be “beyond the scope of this book” (p. 78).

95 However, in current discourses, a certainty is usually asserted by using a number (usually 14.5% or 18%) without reference to any uncertainty of the science behind it.

96 However, this can also be seen as a coping mechanism, linked to strategic ignorance.

meat industry has. Joy (2010) blames the media for having framed the meat-related discourses in a way that has often supported the existing state of affairs, by for example framing cases of clear animal cruelty in intensive agriculture as exceptions, omitting the discourse, or even sometimes prohibiting it. Stibbe (2018) demonstrates how the global meat complex tries to manage the images of meat and of the industry itself, reinforce the positive stories around meat that benefit the industry, and create uncertainty about the science on the negative impacts from the meat system. Nestle (2018) points out how the meat industry produces its own biased research in order to keep meat's image positive, or at least neutral.<sup>97</sup> Austgulen (2014) suggests that lack of consensus on the issues around meat, and in particular around negative and positive aspects of meat production and consumption present in the public discourse, confuses the public debate, and may act against change. It may be argued that this not only benefits the global meat complex but could even be encouraged by them (see also Stibbe, 2018).<sup>98</sup> Complexity gives an advantage to those opposing reductions in meat eating (e.g. the industry), as it is easy to create uncertainty from complexity (Wellesley et al., 2015). Such tactics would then compare to the tactics used earlier, for example, by the tobacco industry “to fatally undermine public understanding and encourage ignorance in even the most clear-cut of public health issues” (Christensen, 2008:266).

The data I have analysed and will discuss in Chapter 5 reflects some of the narratives and discourses described above. In the rest of the current chapter, however, I will explore some issues related to the transformation of the meat system.

### 2.3 The sustainable future of protein?

Reducing or eliminating meat from our diets is considered “outstandingly” efficient as a way for people to have a positive impact on climate (e.g. de Boer et al., 2016). Further, for example Davis et al. (2016) agree in their study with many other researchers that societies simply cannot move into sustainable global food production and reduce our water, nitrogen, carbon and land footprints enough to account for the growing world population, unless the intake of animal-based proteins is radically reduced. The next sections will look at the possible pathways to changing the course. The options proposed as replacements for (at least some) conventionally

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97 Nestle (2018) points to a new tactic by the industry in positioning meat as a health food.

98 An unexplored issue is whether the food industry has attempted to shape discourses by e.g. purposefully participating in online discussion, similarly to what has happened in (other) political online discussions (see e.g. <https://www.theguardian.com/us-news/2017/oct/14/russia-us-politics-social-media-facebook>).

produced industrial meat, such as plant-based or cultivated meat, and insects will be examined, and simply eating less meat will be discussed as well.

### 2.3.1 Peak meat

Similar to keeping much of the oil in the ground to move to a sustainable, fossil-free future (the *peak oil* discourse), there could be a peak meat moment.<sup>99</sup> In other words, industrial meat production and consumption could have reached its peak, at least in the Global North, and be eventually on its way down — unintentionally, or intentionally.

Scenario research indicates that reducing meat production and consumption can have a significant effect on GHG emissions. For example, Westhoek et al. (2014) calculate that a 50% reduction in all meat, dairy and egg (production and) consumption in the European Union could reduce agricultural GHG emissions in the EU up to 42%, in addition to leading to what is currently considered a healthy level of saturated fat and red meat consumption. Further, Rööös et al. (2016) build scenarios based on agroecological principles whereby meat (production and) consumption would be cut by 60-80%; such diets could be produced using globally fair land attribution, and the climate impacts would be within the 2-degree pathway.

There are basically two main approaches discussed in literature for intentional reduction in meat (production and) consumption, reviewed e.g. in Verain et al. (2015). The first can be called *weak* sustainable meat consumption, as it includes relatively minor adjustments to consumption patterns, choosing products that are less burdening to the environment, either by being more sustainably produced meat products or by having a lower meat content. More sustainably produced meat could consist of a switch between beef and chicken, or it could originate from overall more efficient production. The latter option would most likely result in further global expansion of intensive animal agriculture which could, however, produce lower GHG emissions per unit of production, although the extent of this benefit may have been overestimated (see Hayek, 2019). Advocating for minor reductions in meat eating would belong to this approach. While such “green” meat production or consumption might be preferable by most stakeholders, it has been argued that it would not result in large enough, and fast enough absolute reductions in the negative impacts from the meat system, especially concerning the dual crises

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99 The term “peak meat” has been used e.g. by Spiller and Nitzko (2015), and also in the media, e.g. in a 2013 Guardian article <https://www.theguardian.com/sustainable-business/sustainable-meat-vegan-vegetarian-celebrities>. In these contexts, it refers to a reduction that is not collectively and purposively designed.

of climate and biodiversity.<sup>100</sup> Indeed, if it entailed a further expansion of intensive animal agriculture, it could even lead to an increase in negative impacts (see e.g. Henning, 2016, on FAO's recommendation to accelerate the intensification of animal agriculture in the Global South). Likewise, any rebound effects, such as increased meat exports as a response to falling domestic consumption would be likely to cancel any positive impacts at a global level. Weak sustainability as such could be an entirely separate trajectory, not leading to strong sustainability, as argued by Voegt-Kleschin et al. (2015).

The second approach can be called *strong* sustainable meat consumption, and it involves radical changes to the system, substantial reductions in, or the elimination of, intensive meat production, and radical behavioural dietary change, at a global level wherever this is achievable. The far (and as of today, very unlikely) end of this path is a world where everyone is vegan. This approach relates to the *sufficiency* concept in sustainable consumption policy and research (see also Verain et al., 2015).<sup>101</sup> An option less explored in theory, this approach would likely lead to faster and more relevant changes, bringing about large absolute reductions in meat production and consumption and the related negative impacts. Subsequently, this pathway would result in large positive impacts, e.g. in terms of human health, significantly reduced GHGs and air and water pollution, and in terms of rewilding of landscapes.

The scale of transformation in the strong sustainability approach is daunting. However, meat consumption can be argued to differ somewhat from certain other areas of consumption. Firstly, the challenges are felt at two levels, very personal — most people are strongly attached to eating animals, even with the conflicts involved — and systemic (changing the protein production systems). To compare, transformation in transport may have some common features — e.g. with people arguing for a right to own private cars — but an energy transformation tends to be more about changing the system, and to some extent less about equally personal or identity related issues. Secondly, there can be considered to be an aspect of “people power” in meat eating. In other words, in principle, and to some extent at least in practice as well, many people *can* have some say in what they buy, cook and eat, and therefore they can be, to some extent, steering the change. Especially

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100 See e.g. Garnett (2011); Davis et al. (2016); Johns Hopkins Center for a Livable Future (2018); GRAIN-IATP (2018); Springmann et al. (2018); and Benton et al. (2021).

101 In this book, sustainable consumption generally refers to “sustainable resource consumption, taking into account the complete product life cycle”, and involving the “consumption patterns of industries, governments, households, and individuals” (Lorek & Fuchs, 2011:36). More specifically, the Oslo Roundtable (1994) has defined sustainable consumption as “the use of goods and services that respond to basic needs and bring a better quality of life, while minimising the use of natural resources, toxic materials and emissions of waste and pollutants over the life cycle, so as not to jeopardise the needs of future generations”.

due to the disruption the new meats bring, this can be so *despite* the power structures in societies.<sup>102</sup> Again, to compare, bringing change from the bottom up in transport or energy is likely to be even more challenging for individuals. Chapter 3 will further discuss such potential agency, while the next section of this chapter will look at existing attempts by societal actors at changing things around meat. Subsequently, Sections 2.3.3 and 2.3.4 will still review the main current or future options for replacing meat.

### 2.3.2 Potential and real action for change in the present

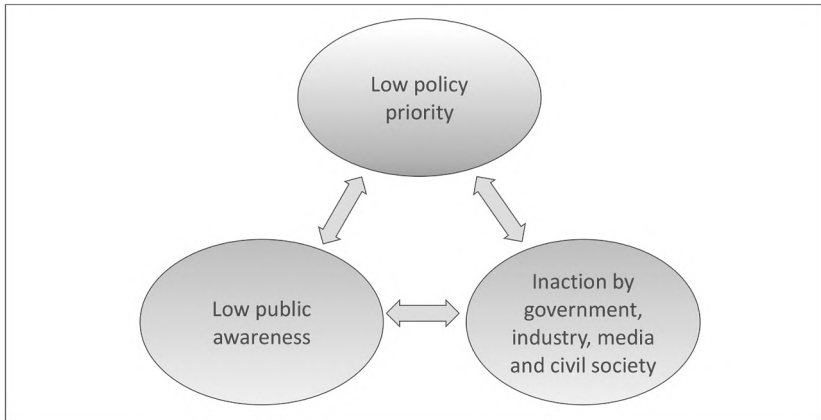
At the level of the discourse, there are changes taking place (see Section 2.2.2), spurred by increased scientific knowledge of the various crises related to the meat system, and with the media playing a large role in the new discourses, and with some NGOs raising awareness. As mentioned earlier, at the level of actual meat consumption, data up to date shows no real change from business as usual, although there does *appear* to be an increasing number of people in the Global North experimenting with a vegetarian or vegan diet in the last few years. While the global meat complex is generally likely to prefer, or even try to maintain ignorance (see e.g. Stibbe, 2018), a small but increasing number of industry-related actors have responded with new technologies, products and investments (such as cultivated or plant-based meat).<sup>103</sup> The internet is inevitably assisting the spread of doubt about the relevance of the issue, but campaigns for change can likewise spread through the internet.<sup>104</sup> Finally, and perhaps most importantly, governments have been largely inactive in terms of policy measures until now (see e.g. Spiller & Nitzko, 2015; Wellesley et al., 2015). Wellesley and colleagues refer to a *cycle of inertia* to describe the negative feedback loop between low awareness, policy priorities and overall inaction (see Figure 2.10).

Breaking this cycle must be a policy priority, according to Wellesley et al. (2015). They argue that the governmental inaction regarding meat comes from fear of public backlash (seeing meat as taboo), fear of industry resistance, lack of (evidence-based) research, lack of issue visibility in discourses (until very recently), and possibly lack of awareness among policymakers until recently. Governments have perceived the issue as too controversial and too challenging. However, Wellesley and

102 See Fuchs et al. (2016) for a critical discussion of the power structures that tend to inhibit change towards sustainability.

103 Some major investment funds have also encouraged food companies to shift more to plant-based foods, see <https://www.reuters.com/article/us-investors-food/investors-urge-food-companies-to-shift-from-meat-to-plants-idUSKCN11WoKH> from Reuters on 26 September 2016.

104 See e.g. <https://www.lessmeatlessheat.org> which "aims to devote all of its effort to addressing the most powerful driver of climate change (livestock agriculture) through the cheapest and fastest way possible (behavioural change)".

Figure 2.10: *The cycle of inertia*

Source: Modified from Wellesley et al. (2015).

Note: The essential difference to the original figure is that its unidirectional arrows (clockwise) have been replaced by bidirectional arrows.

colleagues maintain that “public outrage and tacit acceptance should not be considered mutually exclusive” (idem:16), and their own research indicates that initial public resistance to changes can be overcome. This matches with the understanding that value dispositions can change during the process, rather than them having to change first (as I will discuss in Chapter 3).

Further, Wellesley et al. (2015) assume that governmental intervention at national and international levels would be necessary for larger-scale action among populations themselves to reduce meat eating, and similarly, businesses lack incentives to reduce production on their own and therefore need governmental support. Indeed, the focus group research done by Wellesley and colleagues suggests that populations (in otherwise diverse societies)<sup>105</sup> feel that governments must take the lead, and when they do not, this is a signal of the unimportance of the issue.

In general, governments tend to assume individual behaviour change as the solution to many areas within sustainability (e.g. energy use), but seemingly not so within meat.<sup>106</sup> I see this as a kind of (governmental meat) paradox, as opposed to the other meat paradox, mentioned earlier and discussed further in Chapter 3, as

105 The focus group research was done in the US, the UK, China and Brazil, and similar results in this issue were found in all four countries.

106 And meat is treated differently to other foods, where governments do encourage people to eat differently. Arguably in an obesogenic environment, eating fewer fattening foods as such



effective individual change is in principle *more* feasible within meat consumption than within many other areas of consumption, and yet, it has not been supported by governments. This is so in particular at the present moment with an increasing amount of seemingly good alternatives available. Individual action, especially in something where it is more feasible, can be a prerequisite for political change. As discussed in Chapter 3, political change can also change individual attitudes and values. These two combined could enable a *positive* feedback loop, a cycle of action for change.

Lastly, Wellesley et al. (2015) discuss industry power. Food businesses hold enormous sway over influencing the publics in terms of advertising,<sup>107</sup> and therefore, “in the absence of industry buy-in or regulation of private-sector marketing, government-led nudges would be unlikely to trump those of food retailers” (idem: 13).<sup>108</sup> Although they do not go into details regarding what the industry buy-in could entail, it is considered essential by Wellesley and colleagues and should cover a variety of industries with a stake in meat production, such as feed, livestock, meatpacking, pharmaceutical and food retail industries.<sup>109</sup>

As regards further recommendations on how to make real change, Box 2.3 highlights two in-depth discussions on how to transform meat-eating related practices towards radically lower meat consumption. The first is from the book by Marta Zaraska (Zaraska, 2016a) on the long-term human species’ dependency on meat, and the second is from the Chatham House Report (Wellesley et al., 2015) looking at different pathways to lower meat consumption. The recommendations as regards these two documents are similar, with Wellesley and colleagues being more detailed, however. Both sources focus more on shrinking the consumption side, albeit comprehensibly, and on changing production mainly by indirect financial means. While they do not include more radical methods of transformation, they do both include discourses, changing meanings, the new meats and the idea of co-responsibility (at least between governments and civil society, including individual citizens), topics for Chapter 3. The results of adopting the suggestions could in principle fundamentally change the system, and radically reduce consumption, which already implies following the principle of strong sustainability.<sup>110</sup>

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can be difficult. Of course, some of those foods, such as hamburgers, have had conventional animal-based meat as an essential element.

- 107 Six of the ten largest global advertisers in terms of spending in 2013 were food and beverage companies (Wellesley et al., 2015).
- 108 On the other hand, Wellesley et al. (2015) argue that governments could well use tactics similar to industry advertising and marketing in their anti-meat messaging.
- 109 Fuchs et al. (2014) offer another important contribution on meat industry power.
- 110 One more comprehensive list of measures, similar to the ones in Box 2.3, but in fact closely following the elements of social practices in Shove et al. (2012) are included in Jallinoja et al. (2016, see especially their Table 5 on p. 11). Further, Rothgerber (2013) includes several sug-

### Box 2.3. Ideas for a transformation towards sustainable meat production and consumption

Zaraska (2016a) discusses the main elements of a purposive stage five nutrition transition, mentioned earlier in this chapter as a more “natural” phenomenon of societies moving towards eating less meat after a certain level of income is reached. Zaraska’s main points about this transition include:

- Raising awareness about the “factors that drive our food choices, instead of blindly following our routines, our culture, and [industry] advertising” (p. 201) should be the first step in the change. Zaraska believes that cultivated and plant-based meat and insects will change our attitudes towards meat, and result in us radically cutting the consumption of animal-based meat: “once the idea catches on, it may quickly gain traction” (p. 198).
- Incorporating new meats (such as plant-based or cultivated meat) into diets gives people the taste of meat, while pulses satisfy the “protein hunger”.
- New governmental policies can divert subsidies, establish a meat tax, and change certain laws, such as the United States ag-gag law favouring the meat industry.<sup>111</sup>
- A certain amount of “propaganda” for vegetarian diets is necessary. Using imagery similar to what the meat industry uses, such diets should be presented as convenient, economical, positive, and as something that can make a person strong and beautiful. Some of this, Zaraska argues, can be done by people themselves, for example, creating positive associations of vegetarian meals by pairing them with a delicious dessert, or by grilling vegetables in the summer barbecue, instead of sausages.
- It would be important to be flexible with dietary purity, in the form of seeing part-time vegetarianism (flexitarianism) as positive, rather than as negative.
- It would be essential to try to work with the meat industry, rather than be against it.<sup>112</sup>
- The actual impact (e.g. in terms of the environment) of changes is crucial, and considering this, Zaraska points out that strong flexitarianism may be better than vegetarianism with a lot of cheese, milk and eggs.

Wellesley et al. (2015) argue that short-term change should focus on reducing meat consumption, i.e. eating in moderation, rather than entirely substituting meat, while

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gestions for changing attitudes and perceptions of norms, raising awareness and redefining the link between masculinity and meat eating.

focusing on larger shifts in the status of plant-based and meat-based diets. Their further recommendations include the following:

- National debates should be initiated on meat consumption by considering different national contexts (political, social, cultural); focusing messaging on co-benefits of reducing meat (health, price, local environmental concerns, food safety, food security), and using simple messaging ("hard-hitting facts and visual linkages between meat, dairy products and climate change", p. ix). Further, governments, academia and civil society groups should be connected to media around the issue, and responsible businesses and celebrities used in messaging about new social norms and reduced consumption.
- Comprehensive approaches should be pursued by making meat alternatives (plant-based or low-meat) better available to consumers in shops, cafeterias etc.; using public procurement to promote alternatives (e.g. in schools and hospitals, or agreeing targets with firms); focusing on pricing (meat more expensive, vegetables and meat alternatives less expensive) and taxes (carbon tax); removing subsidies for meat and subsidizing existing plant-based alternatives; being prepared to review and revise policies, as more knowledge is built up regarding what works; supporting innovation regarding the development of new plant-based (or low-meat) alternatives, along with cultivated meat; increasing education about what a well-balanced diet consists of (against the current *protein transition* to more meat and increasing use of industrial foods), as well as education regarding preserving food traditions and knowledge about food preparation.
- The case for governmental intervention should be built by figuring out economic costs of inaction, and gains from action (reduced consumption); aligning with sustainable development goals and Paris climate agreement; focusing on new sustainable food guidelines with recommendations to reducing meat; generating more research on encouraging individual behaviour change (comparing to other nutrition interventions, e.g. with sugar); developing *consumption-based* national GHG emission targets (current ones are production-based and not as effective); and making consistent policy, i.e. taking the issue into account across various governmental ministries.
- Finally, *change agents* should include, firstly, celebrities who can reach socio-economic groups that can otherwise be difficult to reach, and secondly, women who can be first movers in a transition to eating less meat (an indication from many of the surveyed countries in the Chatham House Report), due to their generally lower will to eat meat, and their often central role in food provision.

Box 2.3 focuses on medium- to high-level meat consuming populations everywhere. Regarding the low-meat consuming populations in the Global South, Garnett (2012) notes that there needs to be much more research on what a healthy and sustainable diet could look like in many, especially low-income developing country contexts. Also the InterAcademy Partnership's report (IAP, 2018) suggests further research in this area.

Some small signs of actual change are emerging in treating interventions in meat eating as less of a societal taboo. For example, there have been sessions within the UNFCCC (COP) meetings on meat consumption in both 2015 and in 2017, although only on a very limited and unofficial scale.<sup>113</sup> Further, the SR1.5 report (IPCC, 2018) includes reduced meat eating as an option for limiting global warming to 1.5 degrees centigrade, and the land-use report (IPCC, 2019) discusses the relevance of reduced meat production. There has been some research at the EU level into a "what if" scenario, i.e. investigating the impacts from a more substantial reduction in meat eating in high-income countries (see Santini et al., 2015), although this scenario considers only an 11% reduction between 2014 and 2024, involving a doubling of the number of both vegetarians and flexitarians in this time.<sup>114</sup>

Until recently, options for governmental interventions explored in practice include some attempts at obligatory vegetarian days (perhaps most famously in Ghent, Belgium, already since 2009), fat tax (in Denmark, however, abolished soon after its enactment), and new nutrition guidelines, based on both the most up-to-date science on human health and environmental sustainability aspects. This last option is perhaps the safest for governments, being a rather low profile, and a passive form of policy action, yet at the same time, such guidelines can send a powerful message to society. They are also the basis for nutritional education in schools. In the following, I will give a brief review of the current state of affairs as regards dietary guidelines.

The official dietary guidelines in European countries and elsewhere, generally adopted after World War II, have been going through several periods of adjustment, and the national dietary guidelines have been quite diverse. Some of the newest guidelines aim to bring more consistency with the current science and between different (European) countries, while taking local food cultures into account

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111 The ag-gag laws make it illegal in the United States to record animal rights abuses (with video or photos) within industrial animal agriculture facilities.

112 Zaraska mentions the Dutch brand Vegetarian Butcher as an example of one type of working with the industry.

113 See <https://euobserver.com/environment/139869>, an article in EU Observer on 14 November 2017. Further, COP24 in Katowice, Poland, and the COP25 in Madrid, Spain, included some more discussion on meat.

114 The number of vegetarians was estimated at 3%, and the number of flexitarians at 15% (eating 50% of the average per capita meat consumption) in 2014.

(see EUFIC, 2009). The Mediterranean diet (already part of the national guidelines in Greece) which encourages the consumption of red meat only occasionally, is supposedly taken into consideration. However, until lately, recommending a limit to meat for health purposes has been rare, and considering sustainability rarer still. The guidelines are generally a compromise between the priorities of different interest groups, such as the food industry and scientific experts, and are often published by governmental departments or agencies dealing with the food industry as well (Korthals, 2016). Such is the case in the United States where the USDA is responsible for both nutrition guidelines and the promotion of the food industry. Consequently, the USDA has had an informal policy to avoid saying that the US population should be eating less meat, or any other food for that matter (Foer, 2009).<sup>115</sup>

Gonzalez Fischer and Garnett (2016) and Springmann et al. (2020) have reviewed official dietary guidelines from recent years. Currently, there are guidelines for over 100 countries.<sup>116</sup> Of these, only a handful of countries (such as Germany, Brazil, Canada, Sweden, Denmark, UK, and China) have published official dietary guidelines that include some (implicit or explicit) aspects of sustainability of foods and eating.<sup>117</sup> Some countries (such as the US and Australia) have attempted to include these, but (at least in some cases mainly due to industry pressure) the final guidelines have excluded sustainability aspects. Several other countries do include some sustainability in unofficial guidelines. Generally, however, even when environmental sustainability is included, the messages are not radical, as the limits on meat are often not very far from the average intake (Gonzalez Fischer & Garnett, 2016), and demand for meat-like alternatives to meat is not stimulated by these guidelines (Korthals, 2016). However, it is still significant that pulses are promoted as a healthy protein alternative, in at least some of these new guidelines.

The 2021 Danish guidelines remarkably take food related CO<sub>2</sub> emissions into account, and consequently recommend limiting the amount of meat, especially

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115 The USDA dietary guidelines for 2015-2020 were the first US guidelines to include a message about some people (teenage boys and adult men) potentially eating too much meat. They implied that limiting red meat might be a good idea. However, 111 g of meat (red meat, chicken, eggs) a day was recommended for a 2000 kcal diet, and this is still a rather substantial amount nonetheless. The 2020-2025 US guidelines maintain the recommendation, and no longer imply that there could be population groups eating too much meat.

116 At the time of the publication of the report in 2016, there were 83. Since then the number has grown significantly, which is something to note in itself. See <http://www.fao.org/nutrition/education/food-dietary-guidelines/en/> for up-to-date details.

117 Sustainability is mostly focused on environmental sustainability in these guidelines (except for Brazil), not social or economic sustainability.

red meat. They also recommend high intake of pulses, as much as 100g a day.<sup>118</sup> Similarly, the new Canadian guidelines from 2019 seemingly encourage people to eat more plant-based proteins, e.g. pulses, than meat. They are also very comprehensive in offering food, nutrition, and eating-related advice.<sup>119</sup> One of the other somewhat stronger messages in terms of cutting down on meat eating comes from the newest 2016 UK guidelines where meat is far down the list of proteins to choose from: “Eat some beans, pulses, fish, eggs, meat and other proteins”.<sup>120</sup> Moreover, the new guidelines in France (a traditionally meat-heavy food culture) from 2017 include some limits to meat, while giving pulses a greater role.<sup>121</sup> Finally, the official Chinese dietary guidelines from 2016 include a recommendation to limit meat consumption to about 50% of current consumption among the Chinese. Tian et al. (2016) consider that the most important reasons for the policy shift would be, firstly, that the increased meat eating is negatively affecting the health of the Chinese population, and secondly, that meat production is consuming too much grain that could be eaten by people instead. The Chinese Nutrition Society launched a Less Meat Less Heat -campaign in China in 2016 seemingly aiming for cuts in meat eating to also reduce GHGs.<sup>122</sup> Different from the national guidelines dependent on national politics, a Planetary Health Diet was developed in 2019 (Willett et al., 2019). These universal diet guidelines take into account both planetary boundaries and human health, and could become a significant reference source.<sup>123</sup>

Further, how an intentional increase in meat prices, for example, through a meat tax, or through eliminating governmental subsidies for animal agriculture, would affect meat eating, is not only largely unexplored (but see Springmann et al., 2016), but still a controversial matter (see e.g. Dagevos & Voordouw, 2013; Laestadius et al., 2014). Likewise, Hunter and Rööfs (2016:151) argue that “government policy [regarding food] rarely leverages such tools [as direct price intervention, taxation or limiting access] because they are deeply unpopular with consumers and not

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118 See <https://altomkost.dk/raad-og-anbefalinger/de-officielle-kostraad-godt-for-sundhed-og-klima/spis-mindre-koed-vaelg-baelgfrugter-og-fisk/> (in Danish).

119 See <https://food-guide.canada.ca/en/>.

120 From <http://www.fao.org/nutrition/education/food-dietary-guidelines/regions/countries/united-kingdom/en/>.

121 See e.g. <https://www.foodnavigator.com/Article/2017/01/30/French-agency-ANSES-slashes-recommended-meat-intake-in-new-guidelines>.

122 See <http://www.fcrn.org.uk/fcrn-blogs/lucy-luo/new-chinese-dietary-guidelines-%E2%80%93-what-do-they-really-say-meat-consumption-and-for-the-interpretation-of-the-chinese-guidelines-from-2016>, and for the (originally Australian) Less Meat Less Heat campaign which aims to have a global impact.

123 According to the Planetary Health Diet, a healthy daily meat intake (healthy for the planet and for humans, considering a 2500 kcal diet) of meat and eggs is 56 g and the same for pulses is 100 g.

without political risk". Although research has indicated that meat pricing might not be very effective in directing people's consumption, especially in the Global North (e.g. PBL, 2008), other recent empirical evidence offers some support for the idea of a meat tax (Bailey & Harper, 2015; Wellesley et al., 2015). When asking focus groups in China, Brazil, the United States and the United Kingdom, Wellesley et al. (2015) found that meat tax was considered unpopular and unfair (towards the poor), but still possibly efficient.<sup>124</sup> Comparing to sustainable mobility, pricing measures are seen equally unfair, but restrictions and banning (car use in certain locations) can actually be considered both fair and effective by people, even if it restricts their freedom of choice (Gärling & Friman, 2015).

An issue less often considered when discussing reductions in meat production and consumption, is the rebound effect. In this context, it can take two forms. Firstly, at an individual level, reduced eating of intensively produced meat may be replaced by eating correspondingly more other unsustainable animal protein, such as fish, cheese or eggs (Hartmann & Siegrist, 2017), or organically produced meat which shares many problems with intensively produced meat (Foodwatch, 2009; Steinfeld et al., 2006).<sup>125</sup> Secondly, there can be a rebound effect at the global level whereby a decrease in meat eating in the Global North leads to increased consumption in the Global South, via production or exports moving more towards the South, and/or by lower world market prices for meat (resulting from lower demand in the North) enabling the creation of new, or higher level meat consumers in the South (Spiller & Nitzko, 2015). The more inclusive in terms of conventional animal-based products and more global the transformation, therefore, the better such negative impacts (for sustainability) can be avoided.<sup>126</sup>

In addition to such negative spillover effects, there can be positive spillover effects (de Boer et al., 2016) whereby a change in meat eating at a personal level can lead to positive changes in other areas of personal life, such as energy use, due to interconnected goals or shared underpinning values being engaged by such action (Sanderson, 2014). Even eating organic meat — although not better, and sometimes slightly worse, than intensively produced meat in terms of climate change or deforestation — can have such positive spillover effects (while potentially having negative spillover effects, as mentioned above). More generally, studies done by

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124 See Springmann et al. (2016) for an evaluation of such a tax.

125 Also, people may engage in moral licensing whereby they compensate one moral behaviour with another immoral behaviour (see e.g. Nash et al., 2017).

126 Thirdly, if the production side is the primary focus, and not consumption, increased efficiencies in livestock production (e.g. through increased crop yields or livestock feeding efficiencies) can result in a rebound effect and actually increase consumption or provide incentives for increased production, e.g. farming more land (Smith et al., 2014).

Lacasse (2016) indicate that labelling someone (after them having behaved pro-environmentally) as an environmentalist can lead to stronger positive spillover effects than not labelling them.

Even when policymakers have difficulties engaging in the issue, there would be ample space for environmental and other civil society organisations to campaign for meat reduction more efficiently and on a broader scale than they have until now (see Laestadius et al., 2014), using methods such as those in Box 2.3.

As I will argue in Chapter 3, both the new meatways and the related new discourses can have their own agentive power. In the next section, I will, therefore, review the new meatways, as real current and near-future food choices.

### 2.3.3 Some comparisons of the new meatways

#### 2.3.3.1 Radical vs. incremental change

Shove (2010:1278) argues that radical innovations “redefine the rules of the game; [...] render previously important forms of competence redundant; and [...] reconfigure interpretations of value and significance”. I suggest that the new meats — such as cultivated meat, insects (“new” in the Global North), or the new plant-based meats — can be considered radical innovations. I would consider even *strong flexitarianism*, whereby flexitarians eat conventional, animal-based meat occasionally (and various alternatives, including pulses, as their more typical diet), a radical innovation for the present, even if it is, at the same time, a very old way of eating, and globally, most people actually are flexitarians to some degree at least, even if they do not call themselves that (Hicks et al., 2018).<sup>127</sup>

If adopted widely as new practices of eating meat, these new meatways (eating new meats and flexitarianism) could have huge impacts on existing multi-billion industries, while creating new ones. They could redefine what meat, or meat eating, signifies for most people. They could also partly reconfigure the values people attach to different ways of eating. For example, the strictness inherent in vegetarianism and veganism loses ground to the flexibility in flexitarianism. Eating meat occasionally is considered normal in strong flexitarianism, whereas it is usually seen in a negative light in vegetarianism or veganism, by both vegetarians/vegans

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127 Using the Shove (2010) definition for radical innovation, strong flexitarianism redefines the rules of the game with the idea of sufficiency, i.e. accepting much lower levels of production and consumption than would be “possible”. Further, strong flexitarianism can render previous forms of competence redundant, if it leads to a large scale, or global, transformation of massive intensive production to smaller scale extensive production of meat. Moreover, strong flexitarianism reconfigures interpretations of value and significance by, for example, redefining what eating meat signifies in a system and society where it is eaten only occasionally, as a special treat. Finally, incorporating the new meats into flexitarian diets would redefine the meaning of “meat” as such.



themselves and those around them. A potential breach of identity as a vegetarian or vegan may lead people to give up their vegetarianism or veganism and join the ranks of *former* vegetarians or vegans who, in fact, often end up being flexitarians, even if they would not identify as such (Asher et al., 2014).

*Weak flexitarianism*,<sup>128</sup> whereby change is only small-scale and incremental, is unlikely to lead to radical impacts on its own. It is, however, easily argued to be a possible stepping stone for more radical change. The potential downsides to this approach range from the case where such a process from incremental to radical takes too long to have a timely and large enough impact, to the case where the development from weak to strong flexitarianism truly never takes place, and the incremental “first” step remains the only step (for this, see a review by Nash et al., 2017). Similarly to weak and strong sustainability (see Voget-Kleschin et al., 2015), weak flexitarianism may well be an entirely separate trajectory from strong flexitarianism, where the first does not lead to the second. Taking only a small step into flexitarianism could also create a rebound effect or engagement in moral licensing (whereby people engage more in other unsustainable actions) negating any positive impacts from the incremental change. The behaviour-impact gap is a crucial, but frequently overlooked concept (see Csutora, 2012; Geiger et al., 2018; Gjerris et al., 2016).

In their discussion on various pathways towards sustainable meat eating, Verrain et al. (2015) distinguish between radical and incremental change. However, they look at the definition from the point of view of the eater, so that in radical change, fundamental changes are made in meat consumption patterns. I would argue that, although fundamental changes may be required in terms of consumption (or production), the principal difference between radical and incremental change might be better defined in terms of impacts, rather than in terms of how difficult such change may be to consumers or other parts of society. Defining the radical/incremental contrast in terms of impacts helps us focus on what really matters — a way out of the crises — rather than how difficult the change may, or may not be. Radical change is very often difficult as such, and although focusing on the difficulties may be important for achieving change, the radical reduction in impacts is the ultimate goal.<sup>129</sup>

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128 Terms “heavy flexitarianism” and “light flexitarianism” exist as well (see e.g. Dagevos and Voordouw, 2013). However, there are two reasons why “strong” and “weak” may be better terms. Firstly, they align with strong sustainability and weak sustainability, and the radical vs. incremental nature of change in these. Secondly, “heavy” can be seen as negative (e.g. referring to weight of a person), whereas “strong” is normally seen as positive, and vice versa, “light” is more likely to be seen as positive, and “weak” as negative. The signals are therefore pointing to the wrong direction with “heavy” and “light”.

129 Radical change in terms of impacts might mean, for example, that less land is needed for agriculture in the future than currently, even with the expected global population increases,

### 2.3.3.2 The new meats

The new meats — cultivated meat, the new plant-based meats<sup>130</sup> and insects — have created high *expectations*, even hype. Donaldson (2016b) refers to “redefining the game” with the new meats.<sup>131</sup> Cultivated meat is promoted by its advocates as a wonder solution to the meat crisis,<sup>132</sup> similar to those promoting the new plant-based meats.<sup>133</sup> Apart from the obvious difference in origin and production methods, one of the main differences between these two new meats is that cultivated meat is only gradually becoming a real available product,<sup>134</sup> whereas the new plant-based meats have already been that for some time. However, even the high-tech plant-based meat is still rather new, and only available in somewhat limited locations, which on its own may increase the hype. Further, even insects have created some degree of hype, although considerably less so.<sup>135</sup> Insects are of course an ex-

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or that the species extinction rate decreases rather than increases. Or, it might mean that GHGs produced by agriculture are made as low as possible, not in the current system, but in a transformed agricultural system. Or, that waterways recover and become less polluted by agriculture, even with population increases.

- 130 Plant-based meat substitutes as such are of course not a new phenomenon, with tofu being the oldest and going back two thousand years in Asia. Tofu and other somewhat older meat analogues, developed in the last few decades, are not covered in this book, as they have mostly been considered and marketed for vegetarians or vegans until now, rather than for meat eaters. While tofu never even intended to resemble meat, also the older meat analogues have actually not resembled meat very much, except perhaps in appearance. In comparison, the new plant-based meat is intended to be much more meat-like, and the more they develop, the more meat-like they are expected to become, in texture, appearance, mouthfeel, smell and taste, up to the point of being identical to meat in these respects. In this book, I usually refer to new (or new generation/high-tech) plant-based meats when referring to these meat substitutes. For an overview of both cultivated and plant-based meat, see Dance (2017).
- 131 Some of the related popular book titles from the last couple of years include: “The future of meat without animals” and “Clean meat: How growing meat without animals will revolutionize dinner and the world”.
- 132 This was clear, for example, in a panel discussion at Stanford University <https://ethicsinsociety.stanford.edu/events/meat-without-animals-considering-cellular-agriculture>, from 12 January 2017. See also <https://gizmodo.com/behind-the-hype-of-lab-grown-meat-1797383294>.
- 133 See e.g. <https://www.theguardian.com/commentisfree/2017/apr/18/veggie-burger-clean-meat-revolution-plant-foods-animals> from 18 April 2017.
- 134 A significant step was taken in late 2020 when food authorities in Singapore approved cultivated chicken for sale. See <https://www.theguardian.com/environment/2020/dec/02/no-kill-lab-grown-meat-to-go-on-sale-for-first-time>. It is currently possible to taste (but not buy) cultivated chicken at a restaurant in Israel. See <https://www.theguardian.com/food/2020/dec/04/no-kill-lab-grown-chicken-burger-restaurant-israel>.
- 135 See e.g. <https://www.theguardian.com/lifeandstyle/2013/aug/05/can-eating-insects-feed-world> from 5 August 2013, or [https://www.ted.com/talks/marcel\\_dicke\\_why\\_not\\_eat\\_insects](https://www.ted.com/talks/marcel_dicke_why_not_eat_insects), a TED talk from 2010.

isting food, but not on the scale (and not with the price) that would be required, if they were to replace a significant part of currently produced animal-based meat.

It is only relatively recently that meat analogues have been marketed and regarded as food for those eating conventional animal-based meat, i.e. non-vegetarians,<sup>136</sup> and the new plant-based meat, such as the products from Impossible Foods or Beyond Meat have non-vegetarians as their main target market. This is a significant change and can have an impact on redefining meat. Chapter 3 will discuss further the question of what meat is.

As such, new technologies tend to create hype, which is argued to be a necessary part of their development (see e.g. Magnuson Chiles, 2013). A central idea in the *sociology of expectations* is that “speculation upon what might happen tomorrow makes things happen in the present day”, i.e. expectations are performative (idem:514). Usually, there is a contrast between positive and negative expectations, and the media plays a central role in creating and maintaining these expectations, and therefore, it also plays an important role in creating the future.

To help avoid a significant behaviour-impact gap (Csutora & Zsóka, 2016), the real-world impacts of the various alternatives need to be thoroughly estimated. However, there is still little precise information on the impacts of especially large-scale replacement of conventional animal-based meat by any of the new meats, such as cultivated meat, new plant-based meats or insects. Figure 2.11 shows some comparisons of impacts as life cycle analyses, including pulses, and comparing the alternatives to the production of beef and other conventional animal-based meats and other protein sources. These graphs indicate that, although the range of estimates is rather large and quite high for energy use, especially for cultivated meat, the included new meats do come out well for GHGs and land use.<sup>137</sup>

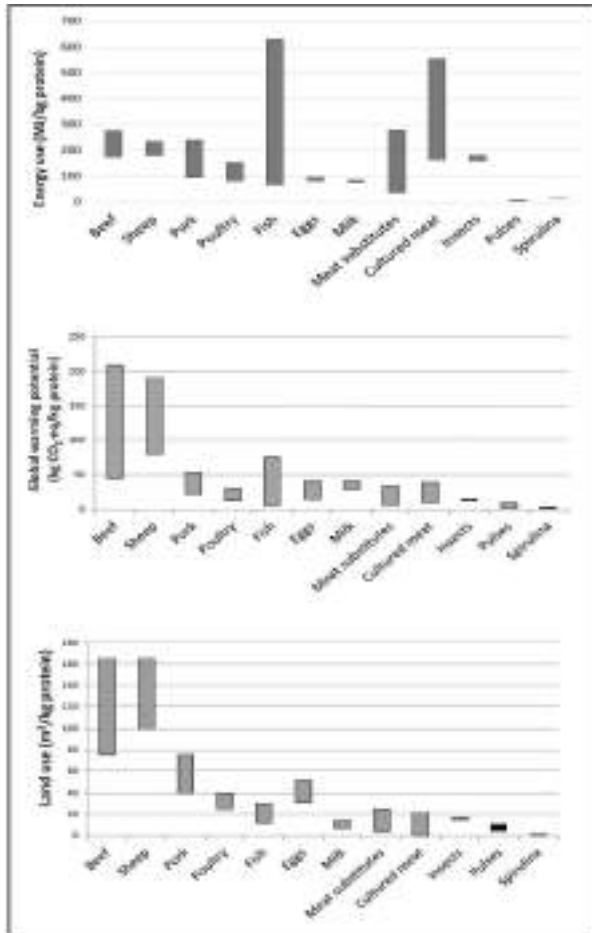
Further, in some situations, different studies can produce rather different results. With cultivated meat, the estimates are based on a handful of life-cycle analyses (mainly Mattick et al., 2015; Tuomisto et al., 2014; Tuomisto et al., 2017; Tuomisto & Teixeira de Mattos, 2011), and these results vary a great deal. Importantly of course, as cultivated meat is only in the process of becoming a real product, it is reasonable that estimates of impacts have a large degree of uncertainty, as different production methods related, for example, to bioreactor design and growth medium, are considered in different studies (see Tuomisto et al., 2017), and the future technology to produce cultivated meat most efficiently

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136 An indication of this can be seen already in this 2012 news article <https://vegnews.com/2012/3/market-for-fake-meat-booming>.

137 Water use was not estimated in this study. Moreover, the meat substitutes do not include the new generation plant-based meat, but tofu, tempeh etc. (original data for these is from Blonk et al., 2008).

Figure 2.11: Energy use, greenhouse gas potential and land use of different protein sources



Source: Tuomisto et al. (2014) and Tuomisto et al. (2017).

Notes: The height of the pillars indicates the range of different results; cultured meat refers to cultivated meat; water use was not estimated in this study; moreover, the meat substitutes do not include the new generation plant-based meat, but tofu, tempeh etc. (original data for these is from Blonk et al., 2008).

may not even be known yet.<sup>138</sup> The eventual scale of production can make a large

138 One near future option for both cultivated meat (for the growth medium) and plant-based meats (directly) could be to use fermented protein produced directly from CO<sub>2</sub>, water and

difference as well. In particular, the large energy footprint of cultivated meat could come considerably down in the future (e.g. Smetana et al., 2015).

Moreover, Figure 2.12 shows a detailed comparison of different impacts from chicken, the most environmentally friendly from conventional animal-based meats, and various other protein sources, such as cultivated meat and insects, along with substitutes based on soy, mycoprotein (Quorn) and gluten. However, the newest meat analogues are not included.<sup>139</sup> In conclusion, cultivated meat does badly in this comparison, mainly due to the amount of energy currently required to produce it. Soy-based meats seem to have low impacts, and chicken and insects do not perform badly either in these estimates. On the other hand, Figure 2.11 indicates clearly that pulses<sup>140</sup> have the lowest environmental impacts of all the discussed alternatives, with a very narrow range of estimates.

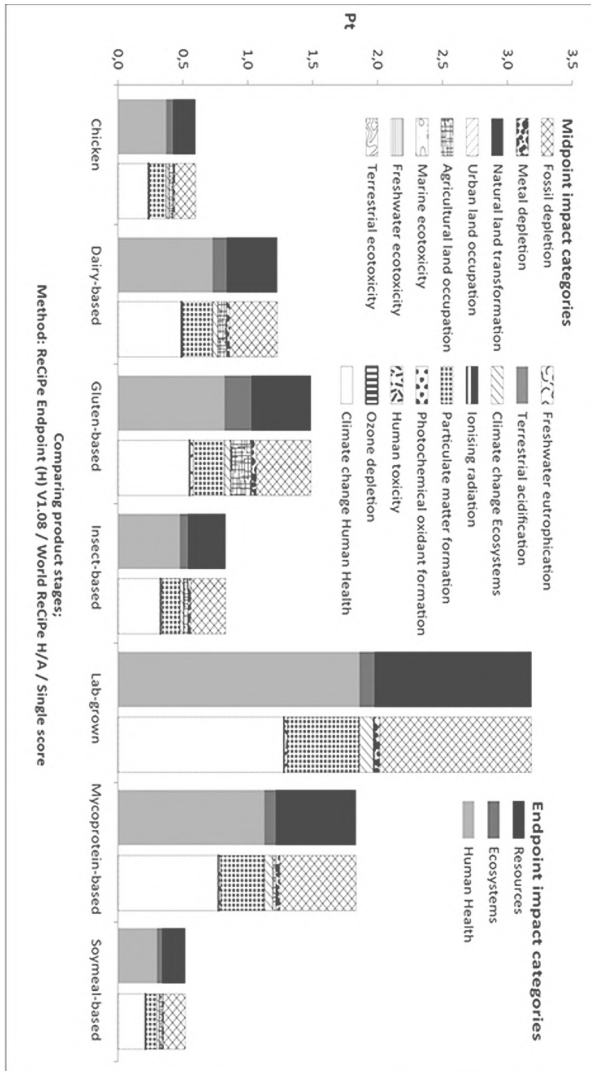
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electricity. Pioneering start-up company Solar Foods has called their protein product Solein. Such “farm-free” food innovations could affect the footprints and prices of the new meats significantly. See e.g. <https://www.theguardian.com/commentisfree/2020/jan/08/lab-grown-food-destroy-farming-save-planet>.

139 Such as the products made by Impossible Foods, or Beyond Meat, i.e. products that are a focus in this book.

140 Together with spirulina, an algae.

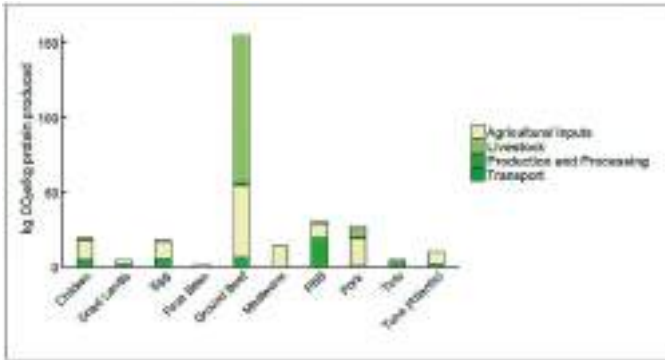
Figure 2.12: Life-cycle analyses — Comparing chicken with alternative protein sources



Source: Smetana et al. (2015).

Notes: Data unit is 0.3 kg of digestible protein; dairy-based alternatives refer mainly to milk and cheese; LCA methodology does not measure all impacts, such as animal welfare impacts; further, land-use change impacts are not included in the methodology of Smetana et al. (2015), although they argue that these are not substantial for soy meant for direct human consumption; Pt refers to points given for the scale of impacts.

Figure 2.13: Greenhouse gases embodied in different foods, including the Impossible Burger



Source: Goldstein et al. (2017).

Note: GHG emissions are measured in kg CO<sub>2</sub>e/kg protein produced. PBB stands for a plant-based burger, and the Impossible Burger, made by Impossible Foods, has been used for the calculations.

As regards the newest plant-based meats, such as the products made by Impossible Foods or Beyond Meat, there are, as of yet, few comparable life-cycle analyses done. The companies have done some of their own estimates, at least partly in cooperation with outside researchers, and in these, plant-based meat performs well, at least when compared to beef. One such study has been done by Goldstein et al. (2017) and contains a life-cycle analysis of the Impossible Burger. Figure 2.13 shows a comparison between the Impossible Burger (PBB) and other protein sources in terms of GHGs embodied in these foods.<sup>141</sup>

141 For water and land use, the company itself estimates that “one Impossible Burger uses about one quarter of the water [and] 5% of the land” as compared to a burger made from typical US-produced cows. (IF Sustainability Report 2017, available at <https://impossiblefoods.app.box.com/s/edwcfyvojzsvzn5d633dxt4c4ehyzq3>. The energy requirements for Impossible Burger, on the other hand, are currently comparable to the low end of beef production (Rebekah Moses, Sustainability and Agriculture Manager of Impossible Foods, personal communication, 27 August 2018).

Table 2.1 gives a brief overview of the three new meats, cultivated meat, insects and plant-based meat, in terms of some of the main actors, issues and developments.<sup>142</sup> The most important aims with all such alternatives are, on one hand, to make something radically better from an environmental point of view as compared to conventional animal-based meat production, and on the other hand, to achieve wide acceptance of these foods as meat, as long as “meat” is considered a necessary element of food cultures.

Strong flexitarianism, which could be defined — in light of the new meats — as including any kind of meat, also plant-based or animal-based meat, or insects, only occasionally, and relying more on pulses for protein, seems overwhelmingly the best option for environmental impacts, while being a healthy option, and arguably healthier than processed foods in general, while fairly likely being ethically more just. Although the question remains, how to mainstream strong flexitarianism (occasionally eating meat), as opposed to weak flexitarianism (occasionally avoiding meat),<sup>143</sup> flexitarianism as a phenomenon is seen as a significant step towards sustainable meat future (see e.g. Verain et al., 2015).

However, it could be that the mere availability of the new meats can function as a way to open up, not only what meat is, but the daily practices of meat eating as well, and change the values attached to eating meat.<sup>144</sup> Because of the new meats, it could be possible for people to experiment with, not only the new meats themselves, but also with flexitarianism. The oppositional positioning between meat eaters and meat avoiders (vegetarians/vegans), which have until now determined each other (Arouna Ouedraogo, personal communication, 15 February 2017), might be eroding with the new meats and with the newly discovered option of flexitarianism which is less dogmatic and, therefore, creates less resentment (de Boer et al., 2014). Chapter 3 will discuss these issues further. But first, the next section will still have a look at pulses, as they are inevitably an important part of a sustainable future of protein.

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142 The developments and the expansion of the number of actors within especially cultivated meat are rapid, and therefore, Table 2.1 only captures some of the main ones. The Good Food Institute is a good source for up-to-date information ([www.gfi.org](http://www.gfi.org)).

143 The term “flexitarian” originally referred to flexible (occasionally meat-eating) vegetarians, or semi-vegetarians, but now includes meat eaters who do not eat meat every day (de Boer et al., 2014). Strong flexitarianism can be seen to refer to the original meaning and weak flexitarianism to the newer meaning. In fact, many vegetarians are strong flexitarians, as they do occasionally eat meat, even if they identify as vegetarians.

144 Similar to what de Bakker and Dagevos (2012) argue could happen with extra focus on promoting organic meat.



Table 2.1: Some of the main actors, developments and issues related to new meats

References (for technical details etc.)	Cultivated meat (Bhat et al., 2014; Danco, 2017; Feroz, 2016; Prid, 2013; Stephens et al., 2018; Verbeke et al., 2015)	Insects (Defoliens, 2009; IFSA, 2015; Lundy & Famella, 2015; Tan et al., 2011; van Weir et al., 2013; Feo, 2016)	Plant-based meat, the new generation (Danco, 2017; Feio, 2016)
Examples of production and sale	Start-ups: Muta Meats (NL), Memphis Meats (US), Modern Meadow (US), SuperMeat (IL) etc.; no consumer sales yet	Wild harvesting, semi-domestication, and some farming in the South, for domestic use and exports, e.g. Thailand, small, often online start-ups in the North, e.g. Sprack Meats (DC), Terry Hugs (MI), Thrive Crispen (PA), Ivy Farms (US), some North start-up to medium-scale farming, and restaurants with insect dishes	Start-ups: Impossible Foods (US), Beyond Meat (US) etc.; possibly included in this generation: Vegetarian Outreach (NL); retailers and supermarkets, especially in the US selling the new generation products, but according to other parts of the report
Other orgs supporting with research & PR, other investors	New Harvest (US), Good Food Institute (US); Sysmilar (JP), conventional meat companies, e.g. Tyson, Cargill investing (81 Gates, Mohr & Lawrence, Indusida (US, start-up accelerator), China (trade agreement with Israel)	FAO produced a landmark report in 2013 (van Huis et al., 2013); relatively large amount of academic interest in research, some EU funded projects, e.g. HYP0635CT; policy interest in China (in case, 3 <sup>rd</sup> global conference insects to Feed the World was held in China in 2018)	New Harvest (US), Good Food Institute (US), Indusida (US, start-up accelerator), Dominate (Canada), 81 (US), venture capital firms
History and state of this, what makes it special	Over ten-year scientific development until now; many participants made; leading to commonly people in food (with SuperMeat) and Suggoos will allow commercial sale in 2021 (choice from US company EAT Inc); animal-based without killing animals (in principle); several production techniques exist, a lot of media attention; part of a new discourse on clean meat (products) and cellular agriculture (field of science); promises to open up meat production (currently, does behind closed doors)	Edible food for thousands of years, and still forming a relevant part of diets in many countries in the South; there are around 1000 edible species known, existing food in the North is animal based, e.g. for pigs, chickens, and fish; in terms of human food in the North, there has been low interest over decades, but increasing media attention in the last 25 years or so	Existing product ("bleeding hamburgers" etc.), a new, more high-tech generation following from older plant-based meat substitutes (e.g. Quorn, Tempeh), more meat-like; a lot of media attention, especially in the US; part of a new discourse on meat alternatives, can be seen in plant-based cellular agriculture; see Danco (2017) for a review of the new meats produced without animals
Main issues for the future	Feeding responsive animal free growth regulator scaling the production up, bringing the price down; making it safe (e.g. from pathogens) and efficient enough especially in terms of energy use; large building, overcoming digest; legislative issues; critical issue: what would be the environmental impacts of large scale production of cultivated meat; fit, were to replace conventional animal based meat?	Legislative issues partially solved in the North; lots of data on harvesting, consumption is made in the South; overcoming digest, large building just only food for the poor, while also supporting food security; scaling production up in the North; moving into farming or sustainable harvesting in the South; making turning safe and more efficient without environmental damage; research on feed for the insects; risk from, ethical issues; critical topics: Is this alternative supporting the global meat complex (as feed for meat animals), or is it a real alternative as food for people? Is mass production of insects better than mass production of chickens?	Legislative issues in terms of producers being able to call their products some form of "meat" (e.g. France banned the use of words referring to meat, e.g. "steak" in 2008 for plant-based products; other courts have considered similar bans); making the product enough meat-like to attract large numbers of meat eaters; large building; market building; environmental impacts of large scale production, if intended to replace meat?

### 2.3.4 Pulses – The future new meat?

Since beans, lentils and other pulses are an important option for global future protein, they are included here, although pulses cannot yet perhaps be considered a new meat as such.<sup>145</sup> While being an important part of the diet in many countries, especially in the Global South, and traditionally in some European countries, especially in Spain,<sup>146</sup> pulses have not until now generated much interest as part of the solution narrative to the meat crisis, as mentioned earlier in Section 2.2.2. This is despite them being excellent from a nutritional point of view (see e.g. Asif et al., 2013; Mudryj et al., 2014), and from an agricultural point of view, especially in terms of soil health (see e.g. FAO-FNS Forum, 2016). There are some recent research developments, such as efforts to breed short-cooking beans (see e.g. Meadows, 2016) or to collect better data for assessing the production possibilities (Cernay et al., 2016), and the United Nations International Year of Pulses in 2016 has inspired new research in the area, especially within the new ten-year research strategy on pulses (Broom, 2016) coinciding with the UN Decade of Action on Nutrition 2016-2025. Further, a Global Pulse Brand<sup>147</sup> has been launched to help the food industry promote pulses, e.g. by incorporating them in other foods. There is therefore also some image improvement going on. However, for wider discourses, media visibility of the Year of Pulses was fairly non-existent, at least in the Global North.<sup>148</sup> Moreover, at least in some contexts where the International Year of Pulses was seen as successful (e.g. in Australia), its success was claimed to originate from pulses being promoted as an additional food to meat, not as a replacement for meat.<sup>149</sup> This obviously goes against seeing increased pulse consumption as a way to help solve the meat crisis.

Already in 2002, Schneider called for a strategy for lifting the image of pulses in the Global North, calling for communication campaigns, development of more modern, convenient and varied pulse products, more research and the coordination of integrated chains from domestic producers to industry to consumers. Further, she noted that in Australia, there was a remarkably rapid and steep rise in domestic pulse consumption in the 1980s (reaching above the levels in Spain), and argued

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145 But see e.g. Jallinoja et al. (2016) where pulses are treated as an outstanding meat alternative for meat eaters.

146 However, many traditional meals in Spain include both pulses and meat, although considering from a nutritional point of view only one of these would be desirable.

147 See <http://pulses.org/pulse-brand>.

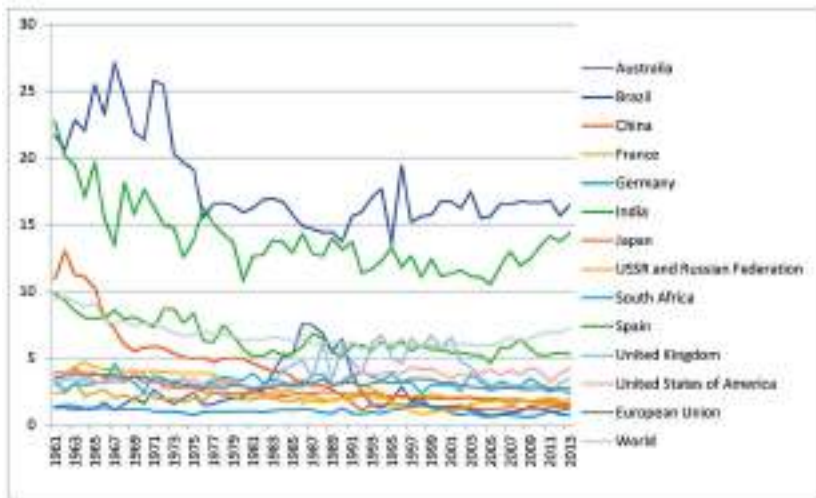
148 For example, there were no news articles in the UK Guardian in 2016 regarding the International Year of Pulses, although alternatives to meat as such are a common topic in the Guardian.

149 See <http://www.farmweekly.com.au/news/agriculture/agribusiness/general-news/campaign-promotes-pulses-globally/2753776.aspx>.

that this was due to the image of pulses being changed in Australia. However, the FAOSTAT data shows that the rapid increase was followed by a rapid decline about a decade later, which may have been due to increased exports, especially to India where markets were opened to other countries from the mid-1980s (Siddique & Sykes, 1997). It, therefore, remains an open question why the domestic Australian pulse consumption rose so rapidly. If this was due mostly to industry strategy and marketing, it was very efficient indeed.

Figure 2.14 shows the trends in pulse consumption over the last half a century for 12 countries. Although world consumption has risen slightly in recent years, the longer trend has been towards lesser use of pulses. Of the top ten pulse consuming countries, seven are in Sub-Saharan Africa, with Rwanda and Niger currently at the top<sup>150</sup> and with both countries' per capita consumption, surprisingly, more than twice as much as India's.

Figure 2.14: Per capita pulse supply in various locations from 1961



Source: FAOSTAT.

Notes: Data in kg/person/year; data for USSR until 1991, for the Russian Federation from 1992; the 12 countries are the same as those in Fig. 2.5 for meat; the data is supply, not consumption; there is no exact information on how much various losses account for with pulses; all food and agriculture-related data from FAOSTAT is available from 1961.

Pulses can hardly compete with the excitement related to the high-tech start-ups working on cultivated meat and new plant-based meats. As they are, how-

<sup>150</sup> These countries are not shown in Figure 2.14.

ever, the original and arguably the best meat alternative, for human, animal and environmental health, it may be unfortunate that pulses even have to compete. Although pulses as basic products without much further processing do not create big profits for the food industry, people can, however, already incorporate them into their diets. Pulses do not necessarily need further development, although the research investigating breed varieties of beans that cook faster, or are more weather resistant can certainly make acceptance easier in the Global North, and contribute to food security in the Global South. In terms of the giving pulses a “makeover” to make them more appealing, Jallinoja et al. (2016:12) argue that new associations are necessary to see pulses as “festive, fulfilling, energizing and pleasurable food”, similar to how meat has been seen until now.<sup>151</sup> Associations can change through practices, and a new food can be accepted through frequent exposure. So, could pulses also change from being associated with only vegetarians or vegans to being a relevant meat alternative — a new meat — for everyone? For a new “bean-eating practice” to develop in Europe, elements of “positive meanings, appropriate materials, and skills and competences” (idem:6) need to be in place. Jallinoja and colleagues call for the promotion of flexitarianism and seeing meat eating and vegetarianism (or veganism) not as opposites, but as points on the same continuum. This could make moving along that continuum easier, and replacing (some) meat with plant-proteins a more relaxed affair, and therefore more easily a routinized and embodied practice.

Although, for example, Verain et al. (2015) note that flexitarianism can just be a food style among many others, rather than a step towards eventual vegetarianism, it could still be that the different clusters of eaters — such as those identified by Verain and colleagues — are on the same continuum or journey from avid meat lovers to vegetarians and vegans, but just at different points on that journey. While some might never move much forward, others walk all the way.

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151 Schyver and Smith (2005) also call for work on changing the image of soy.

## 2.4 Conclusion and discussion

Considering the new meats on a practical level, even if cultivated meat would be a significantly more environment and climate-friendly option than animal-based meat, and even if it could compete in price and quality with animal-based meat soon, I suspect that the production of it could not replace the massive production system for animal-based meat in a short enough time, nor would it seem sensible to perform such full-scale replacement, at least from the environmental impact point of view. Further, even if farming insects would be more climate or environment-friendly than farming conventional animals (per kg of protein), farming insects at a scale even remotely similar to current animal farming in the near future, and without causing damage at the same scale, would seem rather challenging. As an illustration, the meat from one single modern meat cow would correspond close to 2 million mealworms.<sup>152</sup> The new plant-based meat replacing processed animal-based meat would likely be a feasible option. Combining different alternatives in individual strong flexitarian diets — such as some plant-based meat, some cultivated meat,<sup>153</sup> some insects, with a small amount of extensively raised more conventional meat animals (at least in the Global South) — might work. However, this would still amount to a radical change in how “meat” is produced, and in what people eat when they eat “meat”, and how much “meat” they eat.

Increasingly the necessity of changing practices related to producing and eating meat is being recognized, although still often in minor ways.<sup>154</sup> Survey results indicate that many people might be willing to cut down on their meat eating or even change to the new meats.<sup>155</sup> It could be argued, however, that these surveys reflect the ideal self more than any realised action at the level of daily practices (Lalwani, 2009).

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152 This estimate is based on the following: one average meat cow from conventional production has approximately 200 kg of meat and one (currently) average size mealworm weighs just over 0.1 grams.

153 Or cultivated fish — another product under development — to counter the depleting fish stocks.

154 For example, the new scientific IPCC SR1.5 report (IPCC, 2018) recognizes a need to look into meat consumption, but this has not yet been recognized officially at the policy (COP) meetings.

155 For example, survey results in Lee and Simpson (2016) suggest that 29% of the UK population had cut their meat eating in 2013-2014. Other survey results claim that the Generation Z (those born from around the turn of the millennium, although definitions vary) is leading the change from meat to plant-based meat (<http://uk.businessinsider.com/generation-z-is-eating-fake-meat-2017-10?r=US&IR=T>). Similarly, a 2017 YouGov poll in the UK found that 56% of the respondents agreed that meat is not necessary in order to have a good meal. See <http://yougov.co.uk/news/2017/04/06/over-half-happy-have-meat-free-meals/>.

At the same time, in other surveys, awareness of the particular issues related to the broken meat system, especially regarding its connection to climate change, still seems to be low (e.g. Wellesley et al., 2015). In line with this, the meat consumption data still does not show any significant declines for most countries, the global per capita consumption is still going up, and the FAO still predicts enormous future rises in the “demand” for meat.

I would suggest that the willingness of survey respondents to cut down *in the future*, but not today, may be linked to a phenomenon called *ethical mirage* (Tenbrunsel et al., 2010), whereby we expect to behave in line with our ideal self (or our should-self) in the future. Further, it may be that the low awareness (when asked in a survey question) is, in fact, partly strategic ignorance, a coping mechanism for the difficulty in accommodating both the ideal self, and the values related to it, and the daily practices of eating animals. Even those who claim to have already reduced their meat eating in the past may be influenced by ethical mirage, whereby we use our ideal self to explain our past behaviour, and thereby give more inaccurate assessments. Chapter 3 will explore these issues further.

In conclusion, the world needs to question the meat demand paradigm (Garnett et al., 2018), and the broken meat system needs to be fixed, if not entirely unmade, redone or replaced. Currently, however, there is no societal action plan for any of that. Rather, there is still large-scale denial and doubt among much of the public, and even policymakers, about the problem in the first place. The new meatways, however, offer an alternative (Zaraska, 2016a), even if this is not yet given much emphasis. Purposive change may often start from the level of discourse — in terms of some agreement about a problem, and a search for solutions — and I suggest that perhaps the most important role of the new meatways in the very near future is and will be at the level of discourses. Fortunately, discourses as regards both the necessity of change and the new meatways already exist. These discourses are by no means universal and are still limited to certain media, of which the UK Guardian newspaper is an example.

In Chapter 5, I explore, through the data from the Guardian, answers to my research question related to how the new meatways and discourses around them could enable radical changes in meat-eating related practices, importantly bringing the related values closer to the ideal self, and thereby hopefully reducing the need for coping mechanisms regarding meat.

First, however, Chapter 3 will focus on explaining the above concepts in more detail. It will combine and expand on different concepts within social practice theories. It will also argue for the relevance of discourses as regards changing practices purposively. Bridging social practices and discourses has still not been explored much in detail in literature, and as mentioned in Chapter 1, I hope to offer some insights into the connections in the next chapter.

### 3. Conceptual structure

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The purpose of this chapter is, firstly, to engage in the research task from Chapter 1, namely, exploring social practice theories and the connections between discourses and social practices, in order to create a framework that could help enable purposive change in unsustainable social practices both at individual and at societal levels. Secondly, this chapter provides the conceptual structure for the empirical analysis in Chapter 5 which aims to answer the more specific research question from Chapter 1.

In this chapter, I will attempt to adapt social practice theories in the context of purposive change towards sustainability. I will build a framework that is based on combining aspects of different versions of social practice theories with concepts from social psychology, philosophy, cognitive linguistics and critical discourse analysis. I aim to build a structure that connects practices and discourses closely and emphasizes the connections to values and emotions, often given less attention in social practice theories. Further, I will explore the role of *discursive consciousness* that can help combat two large obstacles standing in the way of purposive change towards sustainability, namely *strategic ignorance* (of knowledge, and of value and emotion conflicts) and often invisible, but dominant ideologies, paradigms, and frames.<sup>1</sup>

First, however, it is necessary for this chapter to briefly present some background to social practice theories, especially in connection with sustainability, and so, in Section 3.1, I will discuss social practice theories in comparison to other theories of change, from the point of view of sustainability transformations, and explain the notion of *meat-eating related practices* I use in this book. Following this,

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1 I attempt to build a structure that makes sense, so to speak, and seeks to explain to a satisfactory level. In interdisciplinary work, some fences may be necessarily crossed (e.g. here, using social psychology in connection with social practice theories), and this may not always seem appropriate at first sight. However, I hope to be able to justify adequately the arguments I make. Many of the mechanisms and related phenomena to do with social practices, and human behaviour in general, are still far from being fully explained. This book is one attempt to suggest some combinations of links that may not have yet been explored fully.

in Section 3.2, I will first present the, by now fairly dominant, take on social practices by Shove et al. (2012), before moving on to some potential modifications to their model later in Section 3.2 and in Section 3.3. These modifications include adding *the body* as the fourth element of practices, replacing the element of *meanings* with *general understandings*, a broader concept, and incorporating *values* and *emotions* more tightly as vital connections to the main practice elements. Last but not least, as regards the modifications, in Section 3.4 and Section 3.5, I will link practices to discourses, through the counterparts of general understandings (on the side of practices) and cognitive frames (on the side of discourses). Discursive consciousness and the concept of *discursively open practices* will be discussed in these sections, as well as ideologies and critical discourse analysis, with the latter being not only related to the conceptual structure, but also the methodological approach I will take to my data in Chapter 5.<sup>2</sup> Finally, before the conclusion to this chapter, in Section 3.6, I will briefly align my thoughts on the issue of agency for change, being that change is the critical overarching issue I want to tackle in this book.

### 3.1 Social practice theories as the basis

This section will first give a brief overview of why social practice theories might work better than more individual-based theories or even theories that tend to only focus on the system level. Further, I will illustrate how there is still no agreement on what social practice theory, in the singular form, should look like. As a consequence, interdisciplinarity may fit with the current social practice theories more easily than with some other more established theories.

#### 3.1.1 Transformations to sustainability – Between approaches

##### 3.1.1.1 Onwards from individual-based behaviour change models

Behaviour change policy methods by governments or other organisations have relied on, and still often rely, on models of human behaviour whereby individuals are driven to behave in a certain way by factors residing inside (e.g. attitudes, preferences) and/or outside (e.g. social norms, environmental cues, financial circumstances) of those individuals, while still being relatively free to choose which way to behave or do things. In Chapter 2, I referred to the factor model, but other names for a similar way of centralizing the individual include the rational choice

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<sup>2</sup> Chapter 4 will explain in more detail how I conducted the data analysis in practice.



model,<sup>3</sup> criticized, for example, as the *portfolio model*,<sup>4</sup> or the *ABC model*.<sup>5</sup> Such a model seems to be a functional way of explaining the world in which humans move about, doing things while being affected by various factors. In some circumstances, the individual-based behaviour change methods may be beneficial, and the economic theory, sociology and social psychology behind many of them offer relevant insights. However, as Welch and Warde (2015) argue (see also Southerton et al., 2004), this way of looking at behaviour:

...structurally overestimates the role of deliberation in routine purposive tasks, and fundamentally underestimates the extent to which individuals' autonomous action is constrained by infrastructures and socio-technical systems [...by norms and...] resource constraints: social, cultural and economic.

(Welch & Warde, 2015:88)

Especially when the question is about complex issues — with more long-term and global, rather than short-term and local benefits — and about necessary large-scale changes — whether large-scale to the individual or large-scale to society — relying on individual-based models or methods without changing the bigger picture is both inefficient and not transformative enough. Moreover, whatever the issue, small or large, when values or emotions are in conflict, a human response (including at the level of governments) is to attempt to deal with the situation by ignoring the conflict and thereby attempting to ignore the whole issue.

### 3.1.1.2 System-wide approaches

In contrast, system-wide theories seeking large-scale and systemic social change have often minimized the role of the individual. Hölscher et al. (2018) usefully analyse the differences between a focus on *transition* and *transformation*. The former, mainly in the form of theory on sustainable transitions or transitions management (see e.g. Markard et al., 2012 for an overview), focuses more on changing subsystems, such as energy or mobility, and examines the related social, technological and institutional interactions.

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- 3 What is meant by the rational choice model here includes many recent theories about behaviour. One overview of them can be found at <https://www.apsc.gov.au/changing-behaviour-r-public-policy-perspective>.
  - 4 In the portfolio model (originally from Hindess, 1988), people choose their behaviour based on a portfolio consisting of more or less stable values, attitudes, norms, interests and desires (Welch, 2017).
  - 5 The "ABC" (in the way Elizabeth Shove uses it) comes from attitude, behaviour, and choice. Shove (2010) argues that governments hide behind this framework instead of acknowledging their role in sustaining unsustainable institutions and ways of life, and their ability to change structures.

On the other hand, global change research referring to transformations tends to focus more on “large-scale changes in whole societies, which can be global, national or local, and involve interacting human and biophysical system components” (Hölscher et al., 2018:2). In transformational systems thinking, interventions at the paradigm level — such as at the level of societal values and ideologies — is considered most efficient (Meadows, 2008). O’Brien (2018:157) contends that the dimensions of transformation are indeed best tackled collectively “to engage individuals and groups [...] such that they shift from being seen as ‘objects to be changed’ and reduced to their carbon footprints, to viewing themselves as subjects or agents of change who are capable of contributing to systemic transformations”.

In transitions research, concepts such as values, emotions, or individual agency have been largely left with little or no role. Although transitions management sees policymaking as building networks in which different actors can participate and interact (Shove et al., 2012), transitions research has been criticized for mainly being concerned with technocratic transitions. Approaches to systems-scale transformation, on the other hand, seek more radical, large-scale and long-term societal changes (Hölscher et al., 2018). Further, in systems thinking, the notion of *transformative agency* emphasizes the role of “intrinsic motivation, cognition, emotions and values as key dimensions of human agency for change” (Hölscher et al., 2018:2, also O’Brien, 2012).

### 3.1.1.3 Social practice theories

A strong recent focus in social practice theories is related to policy-relevant research on changes towards sustainable societies (see for example, a much quoted book by Shove et al., 2012). While some social practice theory approaches to sustainability use transitions theory to a larger extent (see e.g. Spaargaren, Oosterveer, et al., 2012b), others do not. Social practice theories, in general, could be seen as approaching the systems level, while at the same time focusing on everyday practices performed by individuals. Yet, the one idea connecting the range of practice theories is that the unit of analysis is not the individual, but practices as such, and especially the repeated performances of practices.<sup>6</sup> However, even when the individual is seemingly reduced to a *carrier of practices*, as is the case in some approaches, but by no means all, the individual is nonetheless in the picture, and arguably, therefore, has a role.<sup>7</sup>

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6 Nicolini (2017) specifically advises against shifting the focus to large-scale abstract things, such as “institutions” or “the state”, which to him are largely incompatible with a practice-based approach.

7 Others emphasize that even as carriers of practices, individuals are not passive, but that change is constant and natural to practices, and takes place through individual performances of practices (e.g. Shove et al., 2012).

As regards the definition for a social practice, several authors have given their versions over time. The version that seems to work best in the context of this book is the following from Welch and Warde (2015:85): a social practice is “an organised, and recognizable, socially shared bundle of activities that involves the integration of a complex array of components: material, embodied, ideational and affective”. A relevant contribution of more recent practice theoretical literature has been to see practices, or “the organization of human activity as nexuses of generic types of components” (Warde et al., 2017:29) which different authors have then treated with different emphasis.

Although practice theories usually emphasize habits, routines, and *practical consciousness*, rather than discrete actions and reflection, or discursive consciousness,<sup>8</sup> the extent to which different aspects are highlighted, and even more fundamental ideas about what human behaviour consists of, can be large. Scholars preferring the stronger approaches may see the weaker approaches as closer to the individual behaviour change approaches.

Figure 3.1 illustrates both some of the emphases in different social practice theories, as well as the emphases between social practice theories and individual-based behaviour change approaches. While stronger social practice theories are often in opposition to individual-based behaviour change approaches, the somewhat weaker approaches in social practice theories can indeed be placed somewhere in the middle. They, for example, may consider individuals to have more agency or grant discursive consciousness some role to play.

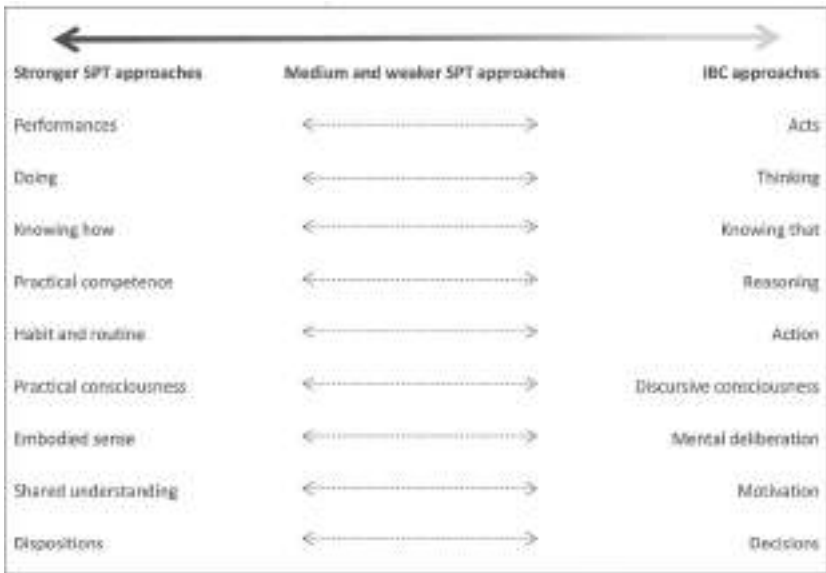
Warde (2014) argues that the stronger versions of practice theories tend to not only emphasize the items on the left of Figure 3.1, but suggest further that some of the items on the left *precede* items on the right, so that, for example, doing comes before, and also directs, thinking, and habit, routine and practical consciousness are not only the “default mode of engagement in the world” (*idem*:292), as medium strong versions might see things, but “all consciousness is effectively practical consciousness” (*idem*:285). Medium-strong versions would see the left-hand items as more important than those on the right (but not argue for their time-wise precedence), while the weaker versions of practice theories would merely note that the left-hand items should get enough attention. Some authors purposefully claim to use weak practice theory, in particular, by not decentring the human actor with agency (see e.g. Goulden et al., 2014). Others seek to maintain a somewhat stronger position and state that agency exists but mainly transpires through practices (e.g. Welch, 2017a).

Social practice theories evolved from the 1970s onwards, partly to solve the long-term issue in social sciences of agency vs. structure, moving beyond it, without pri-

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8 The terms practical and discursive consciousness come from Giddens' structuration theory (1984).

Figure 3.1: The emphases in different practice theories and in behaviour change approaches



Source: Substantially modified from Warde (2014).

Notes: The original comparison by Warde is between practice theories and the “sovereign individual”, and there is no middle position; SPT refers to social practice theories, IBC refers to individual behaviour change.

oritizing either structure or agency, and yet being able to describe and analyse both change and stability (Shove et al., 2012; Welch & Warde, 2015). Practices, practice elements and their relationships both ensure that practices are relatively stable, but at the same time perpetually changing. In a way, practices are always open to potential change within their elements, and at the same time closed due to their apparent stability. However, the stability of practices is only the “outcome of successfully faithful reproductions of a practice” (Shove et al., 2012:13).

Although today social practice theories are seen as cutting across the field of sustainable consumption (Lorek & Vergragt, 2015), applying social practice theories to consumption-related issues mainly came, soon after the turn of the new millennium, as a reaction to social sciences seeing consumption increasingly as something done by an “empowered individual, exercising freedom of choice through voluntary decisions” (Welch & Warde, 2015:86).

The question of agency is, therefore, an essential unifying, yet dividing concept in social practice theories, especially when they are applied to the issue of change. Welch and Warde (2015) argue that the question of agency indeed has

roughly divided those adhering to practice theories into two “programmes” as regards sustainable consumption, change and the potential that individuals have to change things. The first programme, in their view, represented by Elizabeth Shove, and rooted in stronger practice theories, has been sceptical, while the second programme, rooted in ecological modernization, and represented by Gert Spaargaren, has been optimistic. The first programme has focused more on the dynamics of practices, why they form the way they do, and how they change, giving materialities (including infrastructures and technologies) a central role. The second programme has focused more on citizen-consumers as change agents at “consumption-junctions” where production and consumption meet. Lately, however, there has been convergence (Welch & Warde, 2015) whereby the first programme has focused more specifically on transforming practices (e.g. in Shove et al., 2012), and the second programme has acknowledged that social practices define, or “produce” individuals (Spaargaren, 2013), while at the same time, individuals as citizen-consumers retain agency for change.<sup>9</sup>

Related to the question of social practice theories and agency, there are differences in terms of the emphasis given to other human-related qualities or experiences potentially relevant to practices, such as emotions and values. Decentring the human tends to decentre such concepts as well. However, the relevance of both emotions and values to social practices is increasingly emphasized by some authors. Reckwitz (2017) and Welch (2017a) both consider emotions being intrinsic to all practices. Similarly, Weenink and Spaargaren (2016) tie collective agency to practices via emotions. And Welch (2017a) considers values to also be strongly connected to practices. The further development of the concept of *general understandings* by Welch and Warde (2017, concept originally from Schatzki, 2002), as an important component of social practices, helps to see both values and emotions linked to practices via such general understandings, as discussed further in Section 3.3.

The embeddedness of emotions and values in social practices makes insights from social psychology relevant to social practice theories, even if the policy priority is not to change the behaviour of individuals through psychological methods. For example, Nash et al. (2017) argue that social psychology and social practice theories can complement and enrich each other in attempts to create broader change towards sustainability. However, similar to Hargreaves (2011), Nash and colleagues point out that rather than attempt to change behaviour through changing value dispositions of individuals, “attempts to change practices seek broader, societal shifts

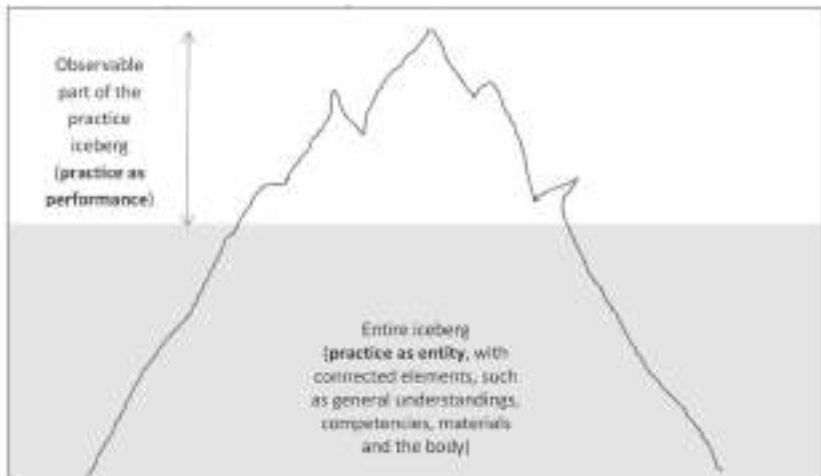
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9 Citizens in this context can be seen as prioritizing more sustainability-facilitating values (see Section 3.3.2), including a sense of responsibility, while consumers would tend to prioritize more sustainability-hindering values (e.g. Gjerris et al., 2016). Citizen-consumers are a combination of the two, supposedly able to balance different value priorities.

in the organization, understandings, and/or performances” of practices, including changes in social norms (Nash et al., 2017:11).

Regardless of the disagreements around agency, Welch (2017a) maintains that a social practice approach innovatively reframes the policy question “How do we change individuals’ behaviour?” into “How do we change practices and their performance?”. The latter question clearly must pay some attention to the system as well, whether “system” refers to the mesh of practices or to societal structures more traditionally. An iceberg is a useful metaphor illustrating the difference between *practices as entities* and *practices as performances* (with the latter understood commonly as “behaviour”), as provided by Spurling et al. (2013), and shown in Figure 3.2. If policymaking only focuses on the visible tip of the iceberg, i.e. the behaviour, it is no wonder that not enough sustained change can be made.

Figure 3.2: Social practice as an iceberg



Source: Modified from Spurling et al. (2013)

Mainly, according to Welch (2017a), practice theories offer new insights for understanding processes of social change and the framing of problems, while offering new opportunities for intervention, and challenging the common assumptions feeding into policymaking.

Although until now, practice-theoretical research has mostly analysed individual performances of practices,<sup>10</sup> instead of focusing on the larger system (Warde,

10 So, the focus has still been on the tip of the iceberg, but taking the whole iceberg into account. Social practice theoretical analysis has traditionally not centred on change.

2014), the possibilities are there. Social practice theoretical research for policy insights on practice-related norms, values, discourses, knowledge, standards and societal structures could, and perhaps should, become the central focus of investigation and intervention.<sup>11</sup> Social practice theories move away from framing problems in term of “false oppositions or alternatives: the individual *or* the social context; behaviour *or* technology” (Welch, 2016:238). Indeed, sufficiently broad interventions that have addressed several components of practices (rather than just one) have been more successful (Southerton et al., 2011).<sup>12</sup> Using social practice theory to the fullest in policymaking would, however, mean that policymakers should be capable of critical self-reflection.

Among the policymakers that do see the benefits of incorporating social practice theories, there is a tendency to use practice theories to formulate the policy issues themselves, but when it comes to motivating behaviour change, policymakers often go back to social psychology to address individual consumers (Welch, 2017a). It appears that using practice theories for actual social change is still a challenge. This may partly be because changing system-wide elements such as worldviews, meanings, or paradigms is not only challenging but often not something policymakers would even wish to do.

Sometimes reformatting policy issues and looking at them anew from a practice point of view can be beneficial. For example, Hargreaves (2011) analyses more traditional behaviour-change campaigns in a workplace through a social practice theory lens and concludes that such campaigns can be seen as interventions in the organisation of multiple connected practices, rather than attempts to change the motives and values of individual people. Although the campaign may stay the same, the focus of assessing its impact shifts more towards practices (both as entities and as performances) and away from individuals, while also better revealing the challenges in behaviour change campaigns.

Welch and Warde (2015) see essentially three outstanding issues calling for further development of practice theories, especially in terms of making them into more useful policy tools. Firstly, the relationship between production and consumption is problematic, as production is mostly neglected in practice theories. However, Welch and Warde argue that the recent attempts for a synthesis with socio-technical transition approaches might help in this respect.<sup>13</sup> Secondly, the

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11 This would be close to the system change approach described above, in terms of most efficient interventions being at the paradigm level (Meadows, 2008).

12 An example of a successful campaign is the Cool Biz initiative in Japan (see Shove et al., 2012).

13 See Geels et al. (2015) for another attempt to synthesize. Geels and colleagues also look for synergies between the capitalism and efficiency-based approaches and full sustainability transformation approaches.

relationship between collective agency and everyday routines has largely been neglected in practice theories. Welch and Warde suggest that one way to get away from this theoretically tricky relationship is to see sustainable consumption as an “organized field of strategic interventions”<sup>14</sup> (original quote from Barnett et al., 2011:13), whereby unsustainable consumption is “taken up as the object of problematizing discourse” (Welch & Warde, 2015:97). Thirdly, the relationship between the micro-level of everyday performances and the macro-level of institutional context is an issue for sociology as a whole, but it is especially so for the stronger practice theoretical programme discussed above. Indeed, usually adhering to *flat ontology*,<sup>15</sup> stronger practice theories tend to see no division between individual practices and the system level, yet they often stay at the level of practice performances for empirical (and even theoretical) research.<sup>16</sup> Welch and Warde conclude by saying that practice theories still lack fully persuasive conceptual answers to how to make change, especially due to the third point above.

Spotswood and Marsh (2016) assume that the future of behaviour change is transdisciplinary. Although incompatibility may not necessarily be an issue in transdisciplinary or interdisciplinary research, I would argue that even when it is, compatibility need not always be a first priority (Colyvan, 2008), if certain concepts around a phenomenon nonetheless represent ideas that may achieve results. This is somewhat in the spirit of *bricolage*. I would add that compatibility between issues may also be found later on. Colyvan (2008:119) argues that ontological consistency is “just one virtue among many”, and in natural sciences in particular, inconsistency is sometimes unavoidable. In any event, my purpose is to contribute to new insights into complex and urgent problems through working in an interdisciplinary manner.

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14 This is in the sense of political consumption whereby everyday consumption is seen “as a surface of mobilization for wider, explicitly political aims and agendas” (Barnett et al., 2011:13).

15 I do not follow flat ontology (rejecting a hierarchy of societal entities) in this work as such, even though I agree with the view of the world consisting of a near infinite number of interlinked social practices. I would rather see that many of those practices form what can be called “the system” (such as in the “meat system”).

16 Regarding applying social practice theories to large-scale phenomena, Nicolini (2017) notes that it is not always clear what is large and what is small: for example, there can be large-scale phenomena that are not “big” as such. He gives the example of greetings as apparently small scale, but at the same time “ubiquitous, pervasive and critical to sustain the fabric of social relationships and its orderliness” (idem:100).



### 3.1.2 Meat-eating related practices

Although the focus of this chapter is more general, it still seems necessary to define here what the meat-eating related practices are that I examine in this book before embarking on building the fuller conceptual structure.

The components mentioned in the above definition for social practices (Welch & Warde, 2015) include material, embodied, ideational and affective components. In meat-eating related practices, the material components would include the food that is eaten, cooking equipment, supermarkets, farms, processing facilities, and so on. The embodied components would include, for example, skills and practical knowledge for all the related activities. The ideational components would include meanings, understandings, knowledge and values, and these would be connected to the affective components which would mainly relate to different emotions related to food and eating.

Most if not all practices are more or less closely linked to, and overlapping with other practices (e.g. Weenink & Spaargaren, 2016) to the extent that any particular practice is usually part of a complex, interconnected mesh of practices. So it is with meat: meat-eating related practices are part of a mesh of practices, most closely related to shopping, socializing, family raising, cooking, disposal and digestion related practices, but they are equally part of the larger meat system of breeding, feeding and killing domestic animals; production, processing, distribution, trading, wholesale, retail, marketing and advertising of meat, further connected to the larger agricultural systems, subsidies, governmental policies, and so on. I am therefore greatly simplifying the picture by focusing on meat *eating* as a practice, but by “meat eating” I do not only refer to the bodily consumption of animal flesh (or the new plant-based meats), but also the relatively closely related practices — described above and generally taking place after the *consumption junction*, while being connected to what comes before the consumption junction. Since according to the dominant “demand hypothesis”, meat production in intensive systems is driven by the demand for meat to be eaten, the “eating side” of the consumption junction should certainly be relevant to examine for radical change. The eating side reflects the dominant values and worldviews related to the production side, including ideologies such as *carnism* (discussed in Section 3.5.3).

Eating as a practice is both similar and dissimilar to other practices, especially those seen as consumption practices. It is dissimilar in the sense that (together with other bodily consumption of substances) it is the only form of consumption where the human body literally does the consuming. But much of other consumption is also related to (perceived and often real) bodily needs, such as domestic heating or water consumption related to cleaning our bodies. The bodily consumption of food for sustenance is of course not the only reason people engage in eating practices. Other reasons include many of the same reasons people engage in other

consumption practices: to satisfy emotional needs or to form and maintain social connections. Further, eating involves similar linked practices as other consumption practices such as shopping, and knowledge related to what to purchase. Generally, it is performed as a means to an end, similar to most other consumption practices. Finally, similar negative emotions can be related to eating as compared to some other forms of consumption, feelings of guilt, for example.

Warde (2013) defines eating as a particularly complex social practice, a *compound practice*, i.e. a combination of four component integrative practices: supplying of food (nutrition), cooking, organisation of meal occasions (etiquette) and aesthetic judgements of taste (gastronomy). Warde points out how eating is a generally disorganised and weakly regulated practice (no clear standards exist). As exceptions, he mentions traditional eating in France, the Slow Food movement, and eating out as a treat. When viewed as a product of history, eating is a practice that has changed enormously over time, and even currently differs significantly between cultures and geographical areas. From a long-term historical point of view, eating practices — similar to many other social practices — are in a constant process of change.

As regards the practices of eating meat, the reason I more frequently use the term “meat eating” rather than “meat consumption” is primarily threefold. Firstly, “consumption” in general can be a more ideological term than “eating”, on the positive side seen as supporting the functioning of economies, and on the negative side seen as contributing to the destroying of nature. Secondly, “consumption”, similar to “consumer”,<sup>17</sup> infers materialistic values that are potentially not beneficial as regards sustainability-related communication (Crompton, 2016, see also Section 3.3.2). Thirdly, Wilk (2018) warns against using abstractions — and “consumption” is an abstraction — in connection with attempts for radical societal change towards sustainability.<sup>18</sup> However, I do refer to “consumption” at times, especially when referring to the quantifiable amounts of meat being produced and eaten.<sup>19</sup> Additionally, I refer to “eating animals”. In general in this book, I reserve this last expression to contexts where the (often hidden) animal origin is the main point, for example, in connection with strategic ignorance.

To note, most of the concepts or topics discussed in this chapter will be relevant to meat-eating related practices. Therefore, at certain points, there will either be

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17 In opposition to “consumer”, “citizen” implies more sustainability-facilitating values, such as co-responsibility. See more on values in Section 3.3.2.

18 According to Wilk, abstraction — making abstract concepts into personified reality, e.g. “the market” — can make arguments less convincing to the lay person. Using more concrete and real terms, such as “weather”, are closer to the everyday than more abstract and virtual terms, such as “climate”. Weather is experienced, climate is not.

19 This is especially so in Chapter 2.

an unnumbered subsection entitled *Meat-eating related practices and...* in which the links from the concepts to meat will be explored, or the meat-eating related issues will be discussed directly in the main discussion.<sup>20</sup>

## 3.2 Modifications to the elements of social practices

In this section, I will explain how I have adapted the model of social practices contained in Shove et al. (2012). Detailed explanations will follow, but Figure 3.3 provides first an illustration.

Compared to the simplified model of practices shown in Figure 3.3b, and originating from Shove et al. (2012), Figure 3.3a still maintains the one-to-one connections between elements, as it moves from two dimensions to three dimensions. However, as modifications, it includes a fourth element, *the body*, and additionally, *meanings* has been replaced by *general understandings*, a term representing a component of practices, originally from Schatzki (2002), and developed further by Welch and Warde (2017). Moreover, Figure 3.3c illustrates the coupling between general understandings<sup>21</sup> and *cognitive frames*, importantly connecting practices to discourses. As Figure 3.3c illustrates, values, emotions, and knowledge connect to both general understandings (on the side of practices) and cognitive frames (on the side of discourses), as discussed later.

### 3.2.1 A brief overview of Shove et al. (2012)

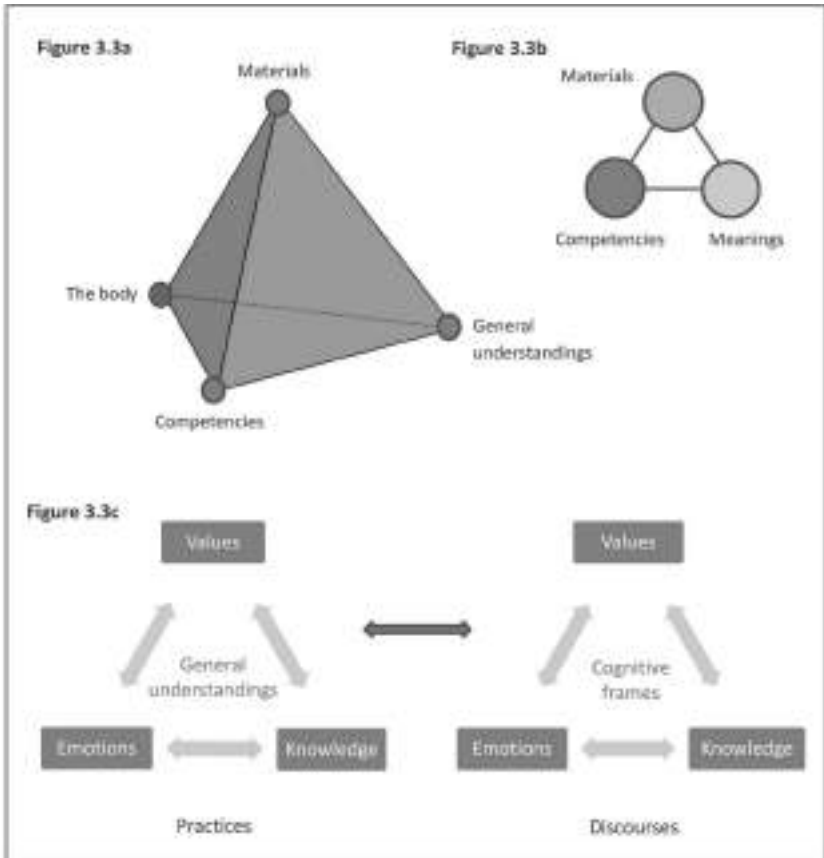
The 2012 book by Elizabeth Shove, Mika Pantzar and Matt Watson has become a classic in social practice theory literature in a short time, even though it has also received some criticism (see e.g. Weenink & Spaargaren, 2016; Welch & Warde, 2015). Apart from its approach in addressing the crucially important policy side, its emphasis on certain old and new aspects of social practice theories themselves have in part helped to solidify some parts of the rather diverse field. The main new theoretical contribution of Shove and colleagues lies in the dynamics of practices and in emphasizing materialities as an element of social practices. The main points that Shove and colleagues highlight include the following:

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20 This is, in particular, the case in Section 3.3.3.2.

21 Schatzki (2002) distinguishes between “practical understandings”, more specific to certain individual practices, and “general understandings”, shared between practices.

Figure 3.3: Social practices and their connections to discourses



Source: Figure 3.3a is inspired by Shove et al. (2012), Figure 3.3b is based on Shove et al. (2012), and Figure 3.3c is by author.

- Practices are composed of elements, which in the simplified model<sup>22</sup> are comprised of meanings, materials and competences
- Materiality is key to social practices
- People are carriers of practices, although not passively so
- The distinction between practice-as-entity and practice-as-performance is central

22 The model contained in Shove et al. (2012) is simplified in order to focus on the dynamics of practices, on stability and change. See Figure 3.3b.

- Practices emerge, persist, change and disappear, and this largely happens through the links between different practice elements being made, remade or broken
- Stability of practices only comes from faithful repetitive performances of practices and is therefore always provisional
- The unit of enquiry for research and/or policymaking are practices, not individuals.<sup>23</sup>

As regards issues I focus on in this conceptual structure, Shove and colleagues do recognize both agency and emotions as residing in social practices. They talk about the relevance to many sustainability-related policy issues such as climate change of profound changes in social practices, *including* dominant worldviews and discourses. Further, they argue that the ABC model is a political position downplaying the role that governments often have in maintaining unsustainability. However, they do not focus specifically on values, more obviously not at an individual level, but also not specifically at a societal level.<sup>24</sup> This is likely to be partially a result of their aim of overturning the dominant behaviour change policy framework for which the *value-action gap*, for example, would be a key question. In recognizing discourses as relevant to changing practices, for example, when “dominant discourses crumble” (Shove et al., 2012:58), they touch upon my concern with connecting practices and discourses more tightly.

To speak more specifically of the process of change: as stated above, the way Shove and colleagues see practices changing is mainly through reconnecting elements. In fact, while practices are in a constant state of change, elements may be more stable. Shove and colleagues make a distinction between a proto-practice and a disintegrated practice, in both of which relevant elements exist without being linked. In the former, they are not yet connected, and in the latter, they are no longer connected. The point is that elements may be replaced, and links remade one by one, and during this process, the practice may not go through any sudden and radical change as such, but still in the end, it may be radically different from what

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23 Many of these points come from earlier practice theory literature, such as Reckwitz (2002), e.g. the carrier concept and seeing practices as consisting of elements. The main unit of enquiry was seen already earlier as practices. And the original idea for the formulation of practice-as-entity and practice-as-performance goes back to Schatzki (1996). However, Shove et al. (2012) have further enforced these positions, and brought them together in a digestible whole.

24 However, in other writing, e.g. in Shove (2003), the meanings of value concepts such as comfort, cleanliness and convenience are a central focus, with the message being that the meanings have been, and can be redefined, and that diversity in meanings would be better for sustainability than sticking to the current resource-intensive Western meanings of these value concepts.

existed before. The example Shove and colleagues use is the change from horse-driven carriages to automobiles, while arguing that the only truly new element *during this change* was the petrol engine itself, and the skills for its maintenance and repair.<sup>25</sup>

In the following sections, and later in this chapter, my focus is necessarily selective. I discuss materialities mainly from the point of view of power and agency, relating to stability and change. Similarly, as regards competencies, I focus on their connection to practical consciousness, as the counterpart to discursive consciousness (relevant to discourses, as well as change). Finally, I discuss the suggested additional fourth element to the simplified model of social practices in Shove et al. (2012), i.e. the body, largely concerning the ways the body connects to emotions and values, which are a key focus for me, together with the element related to meanings (which I expand to “general understandings”).

To recap what Shove and colleagues see as constituting the streamlined elements (as shown in Figure 3.3b): *materials* to them consist of objects, infrastructures, tools, hardware and the human body itself; *competencies* include background knowledge and understanding, know-how, skills, and practical consciousness; and *meanings* consist of meanings of practices as such, but also emotions and motivational knowledge, ideas and aspirations.<sup>26</sup>

Finally, it is noteworthy that I refer to “behaviour” sometimes seemingly in the same way as I refer to “practices”. Shove (2010), however, warns against such usage, as practice theories are specifically *not* behavioural theories. She sees the two concepts theoretically in opposition to each other. However, I see “behaviour” in most cases as the observable performances of practices, the tip of the iceberg in Figure 3.2 (and in Spurling et al., 2013; Welch, 2016), whereas normally when referring to “practices”, I refer to the whole body of the iceberg, the practice as an entity. With this distinction in mind, it seems justifiable to speak of both “behaviour” and “practices” in certain contexts.

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25 Later on, of course many more elements changed in the new practice of car driving.

26 These lists may not be exhaustive.

### 3.2.2 Adding emphasis – Distributed agentive power

Section 3.6 will return to *agentive power*,<sup>27</sup> but in this subsection, I want to clarify how I see agentive power in relation to the elements of social practices as depicted in Figure 3.3a.

Even though Shove et al. (2012), in line with practice theoretical arguments, seek to decentre individual humans and bring out practices as the defining unit of social life, they see agentive power as part of practices in several ways, although the reader needs to search fairly attentively for the instances where the topic is discussed. Further, and notably, change is not specifically attributed to agentive power.

Firstly, Shove and colleagues see agentive power distributed within practices. They acknowledge that human agency exists, and it is:

...loosely but unavoidably contained within a universe of possibilities defined by [...] complexes of practice. It is in this sense that practices make agency possible, a conclusion that is not at all incompatible with the related point that practices do not exist unless recurrently enacted by real life human beings.

Shove et al. (2012:126)

Humans as carriers of practices are therefore not passive, and in fact, practices themselves are “active” in a way, and form “inherently dynamic” integrations of elements. Practices do not exist without human action, and humans could not act effectively without practices.

Secondly, Shove and colleagues emphasize the material element of practices, and go some way towards Actor Network Theory (e.g. Latour, 2000), in assigning things and materials an important role. Therefore, Shove and colleagues are “broadly sympathetic to the view that agencies and competencies are distributed between things and people” (Shove et al., 2012:10). However, instead of giving materiality a larger agentive role in the way Actor Network Theory does, Shove and colleagues integrate materiality tightly as part of social practices.

Discussing social practice theories in connection with sustainability, Sahakian and Wilhite (2014) refer to agentive power distributed across different *pillars of practices*, comprised of the body (including embodied physical and mental knowledge), the material world, and the social world (social context, including social norms and

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27 A useful definition of agentive power for this book: “the capability or power to be the source and originator of acts” (Sahakian and Wilhite, 2014: 28, with reference to Ortnier, 1989). I see *agency* as agentive power of human actors, implying some form of (potential) intention and planning, whereas non-human actors (including “things”) can have agentive power, rather than agency, as they do not intend and plan to use such power (artificial intelligence excluded).

values, institutions and legal frameworks). On the one hand, the deeper a practice (or a habit) is fixed on these pillars, the harder it is to change, and on the other hand, when change (intentional or not) takes place in more than one pillar, it is more likely that a change in practices will be persistent and successful. Importantly, Sahakian and Wilhite do not take issue with practices being in a constant state of change (as Shove and colleagues do), their focus is mostly on *purposive* change. Crucially for them, all the pillars have *distributed agentive power*. This type of agentive power is what makes purposive change in practices possible, as changes in just one pillar are usually not enough.

Shove et al. (2012) perceive practice elements somewhat differently from Sahakian and Wilhite (2014), and the foci of these two approaches to change are different as well. Nonetheless, the idea of distributed agentive power remains relevant in both, and this is the idea I wish to build on, emphasizing, along with Sahakian and Wilhite, the importance of such power for purposive change.

### **Meat-eating related practices and material agency<sup>28</sup>**

In line with the idea of material things having agentive power, there can be little doubt that Mark Post's cultivated meat patty from 2013, or the cultivated meat products from Memphis Meats since then, or the plant-based Impossible Burger,<sup>29</sup> can all be seen as having agentive power: "the mere idea [of cultivated meat] is enough to stimulate thought on our present and future meat consumption" (van der Weele & Driessen, 2013:653) when normally such thoughts tend to be kept hidden through strategic ignorance (see later in Section 3.3.3). Expectations are performative (Magneson Chiles, 2013), and so, expectations of the new meats have agentive power. In addition to affecting our minds already before their physical existence — as mere ideas of materialities — these new meats have now started to reorganise the food industry. Conventional meat companies are now taking alternatives to meat seriously, as competitors, and as something to invest in. Moreover, plant-based meats, such as the Impossible Burger, already existing materialities, are currently being eaten more or less consciously as something actually called "plant-based meat" by thousands of Americans. Due to the marketing and media attention, most customers in the restaurants serving the Impossible Burger would likely be aware of what they are eating. Further, these material things have indeed entered various discourses, not only in the Western public discourses but

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28 As mentioned earlier, these Chapter 3 sections exploring meat-eating related practices are unnumbered.

29 The Impossible Burger is a product from Impossible Foods, see <https://impossiblefoods.com>. For Memphis Meats, see <http://www.memphismeat.com>.



also beyond that, even though on a smaller scale, as mentioned in Chapter 2.<sup>30</sup> Most importantly perhaps, these new meats have already significantly contributed to questioning the future of intensive animal farming (van der Weele, 2017). Although material things lack “intelligibility, intentionality and affectivity”, they can have performative power to influence the ways practices unfold (Weenink & Spaargaren, 2016:66)<sup>31</sup> — in the form of both expectations and actual materialities.

### 3.2.3 Adding a fourth element — The body

Shove et al. (2012) include the human body as part of the material elements of practices, so in fact, the body is included. However, it is given very little weight, possibly on purpose, to keep to the principle of decentring the individual. Similarly, Shove and colleagues seem wary of incorporating Bourdieu’s concept of *habitus*<sup>32</sup> (idem:5). It is hard to see habitus residing in any particular element of practices conceptualised by Shove and colleagues, but rather partly in all of them: in materials (which include the body), in competencies (which include skills and practical consciousness), and meanings (which include other aspects often seen as part of the habitus, such as aspirations and values). In contrast, Sahakian and Wilhite (2014) explicitly bring out the significance of habitus. To them, it resides in the body pillar of practices and plays a crucial role in the habitual and routine performances of practices.

Moving back to Shove et al. (2012), when combining “body” with other “materials”, Shove and colleagues, not only decentre individual humans but appear to nearly exclude them entirely from the world of practices. However, all of the three practice elements in Shove et al. (2012) have bodily connections. I, therefore, argue that, *without* having to involve the concept of habitus as such, the “body” works well as a fourth element of practices together with the conceptualisation of practice elements by Shove and colleagues. Since in a tetrahedron all corner points are connected, in Figure 3.3a, the body is also connected to the other three practice elements, as it is in actual practices. The body connects to competencies via skills, embodied knowledge and practical consciousness, to general understandings via values, emotions, and discursive knowledge (including meanings), and to materials via the close connections between human bodies and materials (technologies, infrastructures, things, including food) that are made for and used by human bodies.<sup>33</sup> The body is involved in some way in the performances of all practices. No

30 See Section 2.2.2.

31 I would equate performative power with agentive power in this context.

32 Habitus is understood here as various dispositions mediating thought and action, and acquired through past experiences (Sahakian and Wilhite, 2014).

33 Importantly, I would include nature or non-human animals in materials only to the (unfortunate) extent that they are objects to be used by humans, such as “meat animals”. This brings the conflict between humans and the natural world in view. On the other hand, perhaps non-

social practices exist without human action and experience. Including our physical and mental capabilities, our bodies enable us and restrict us in our practice performances; the body is an essential part of them. The body cannot, therefore, be sensibly omitted as a relevant component of practices, even if it may draw unhelpful attention to individuals in a practice theoretical scheme that tries to focus away from the individual.

However, reflexivity, discursive consciousness or conscious decisions (bodily processes as well) are not involved in the performances of all practices. In fact, they are not involved in *most* routine performances of practices. I will return to the theme of reflexivity and discursive consciousness in more detail in Section 3.4.1.

### 3.2.4 Replacing an element – General understandings

When streamlining the elements of practices, Shove et al. (2012) give “meanings” a large role. One of the practice elements, meanings relate to the “significance of participation” (idem:23) in practices, and as said, they also connect to motivational knowledge and emotions: “states of emotion have been folded into ‘meaning’” (idem:121). It is clear from the discussion by Shove and colleagues that competencies do not include conscious mental activities, but meanings might do so, on occasion at least. Further, Shove and colleagues do not discuss values, but to the extent that they are properties of practices (see later in this chapter), they would be likely to connect to meanings as well.

Welch and Warde (2017) elaborate on the concept of *general understandings*.<sup>34</sup> To Welch and Warde, general understandings account for “how very general ideas are incorporated into practice”, thereby accounting for meanings. They are “experienced, articulated and negotiated in [...] embodied activity”, thereby connecting to the body. Moreover, they “inform and shape practices, and in turn [...] are themselves conditioned by practices” (idem:195), thereby able to be conceptualised as an actual element of practices. Finally, they include values, and they are connected to emotions: “values — a particular kind of general understanding — combine conceptual, pre-reflexive and affective components” (idem:189).

In most of the above, the role of general understandings is similar to how Shove et al. (2012) conceptualise meanings. However, general understandings are conceived as a broader and therefore arguably more advantageous concept by Welch and Warde (2017). Importantly for the connection between practices and discourses (discussed further in Section 3.4), general understandings also connect different

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human animals could be thought of as engaging in social practices, and in such cases, the “body” would include the bodies of non-human animals.

34 As mentioned earlier, the concept comes originally from Schatzki (2002) who distinguishes between practical and general understandings.

practices to each other as they can “inform multiple practices”, and help us, therefore, understand how both closely and distantly related practices “borrow from and change one another” (idem:195). In fact, Shove et al. (2012) see meanings connecting practices as well.<sup>35</sup> This similar function further supports incorporating general understandings into Figure 3.3a and replacing meanings with them.

### 3.3 Concepts linking to general understandings

In this section, I will first continue on the topic of meanings, as it remains important for social practices and change towards sustainability. Meanings carry particular relevance to the issue of new meats, discussed below. In the two sections thereafter, I will focus on values and emotions, and to some extent on knowledge.<sup>36</sup> These are all concepts that link to general understandings as an element of social practices and are therefore necessarily part of the discussion in this conceptual structure.

#### 3.3.1 Changing meanings and sustainability

Shove et al. (2012) argue that while changing competencies often takes time, meanings as forms of association can emerge, change and travel far and fast. Therefore, while Shove and colleagues emphasize the stability of practice *elements* in general — as opposed to practices themselves which have a natural tendency to change — they see meanings as often delicate, and not necessarily stable. As Lehtonen (2000:117) states, meanings are “always temporary, bound to a certain time, place and context”.

Examples given by Shove and colleagues on natural change — natural, in the sense that it has taken place through other changes in practices or societies, and has not been purposive — but still rather radical change in meanings over time include car driving (from luxurious to the everyday), home baking (from a necessity to a hobby), and writing with ink (from normal to special).

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35 As an example, they discuss how the meaning of being overweight connects practices such as shopping, exercising and eating (Shove et al., 2012:113).

36 Knowledge is connected to general understandings in Figure 3.3c, in the same way as values and emotions. Theories of embodied knowledge also connect knowledge directly to emotions and the body (see Ignatov, 2007). Knowledge will be discussed in this section implicitly or explicitly when relevant. For example, knowledge is connected to meanings, and ignoring knowledge is relevant to strategic ignorance. My focus is on purposive change, and while knowledge is important for practices as such, it is most challenging for change to the extent that its existence might or might not produce seemingly beneficial or necessary change; hence the connection of knowledge to strategic ignorance, for example, is relevant.

A further example on meaning changing naturally, and, in fact, rather rapidly is how the meaning of misplaced plastic has in the last few years shifted from simple, but perhaps ugly “litter” to something “pervasive and sinister” and a “source of contagion”. This is argued to have taken place due to the realisation — first among scientists and then among the publics — of the ubiquitousness of plastic microbeads, initially, in various cosmetic and cleaning products, and subsequently, in nature: “the realisation that microbeads were pouring down millions of shower drains was a key moment in the public turn against plastic”.<sup>37</sup> As a consequence, in less than five years, a global revolt against plastic, in discourses, in action, and at governmental levels, has developed.

However, Shove and colleagues emphasize that meanings can also have their persistent lives. Meanings can even swap practices — such as the meaning of being chauffeured in horse carriages to being chauffeured in automobiles in the early days of the car. Meanings can reappear as well — such as cycling in certain locations, for example in the Netherlands, where it was reborn in around the 1980s, after decades of a minor role, as the normal method of moving around.

Further, meanings can be changed on purpose. On this, Shove and colleagues give two examples: Nordic Walking and Cool Biz, as explained below.

Nordic Walking was popularised in Finland in the 1990s. For it to become popular, “walking with ‘sticks’ had to be disassociated from meanings of frailty and somehow connected to concepts of vitality and wellbeing” (Shove et al., 2012:53). The manufacturers succeeded in this by using two established narratives, one of personal health, and the other of fresh air, nature and outdoor life. Although the transformation of Nordic Walking into an internationally popular form of exercise was a success, Shove and colleagues maintain that such a process tends to be uncertain and local, constrained and enabled by existing contexts. It can also take time, as cultural meanings are often slow to change.

Nordic Walking was originally only partly about public health, and partly about selling new equipment. As an example of policymakers taking action to reduce CO<sub>2</sub> emissions, Shove and colleagues discuss the Japanese Cool Biz and Warm Biz campaigns in the 2000s. Although not purposefully applying practice theories, these campaigns were precisely about changing elements of practices, most importantly, by changing meanings — and, thereby changing behaviour as well. Efforts were made to change the meaning of normal office clothing in order to affect the material technologies (how much air conditioning and heating was needed in offices, and increasing the acceptable range of temperatures) and competencies (how people dressed for the office, and how facilities management handled the temperature

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37 See <https://www.theguardian.com/environment/2018/nov/13/the-plastic-backlash-whats-behind-our-sudden-rage-and-will-it-make-a-difference>, an in-depth article by Stephen Buranyi in the online Guardian, 13 November 2018.

control). In less than five years, for example, “running air-conditioning ‘cold’ and wearing a tie and jacket in the summer turned from being a normal to an exceptional thing to do” for many (Shove et al., 2012:158).<sup>38</sup>

For achieving sustainability, Shove and colleagues argue that the focus of policymakers might usefully shift towards facilitating the breaking down of old unsustainable practices, including redefining meanings of certain “bad” elements of practices, such as the meaning of “comfort”. They contend that this may seem radical, but maintain that policy methods focusing on practice elements such as meanings have long been used in public health policies.

### Meat-eating related practices and changing meanings

There are many ways to understand the meaning of meat, including the more literal, the more symbolic, and the meaning regarding what is normal or not normal.<sup>39</sup>

As regards the literal meaning, etymologically the English word “meat” (from Old English “mete”) is related to the word “meal”, referring generally to food. Other old languages (Old High German, Old Saxon, Old Icelandic and Gothic) have similar histories with the word. At some point, however, a “meal” (by then, ground grain) became perceived as incomplete without animal flesh (Marder, 2016). In some other languages, the corresponding word for meat may have originally referred to “flesh as food”, such as in ancient Greek or Latin. Only from around 1300, however, has the English word “meat” referred to “flesh as food”. In light of history then, the literal meaning of “meat” has changed over time, and is likely to change again, even if not intentionally, as meanings do change.<sup>40</sup>

In fact, and as mentioned in Chapter 2, due to the meat crisis, there are current efforts to change the meaning of “meat”. Promoters of the new meats (companies, organisations, individuals) are keen on expanding “meat” to cover cultivated meat and plant-based meat,<sup>41</sup> whereas the conventional meat industry is keen on restricting “meat” to conventional animal-based meat. There is, therefore, a fight

38 For more details and discussion of Cool Biz and Warm Biz, see Shove et al. (2012).

39 I introduced the 4 Ns — Normal, Natural, Necessary and Nice — often associated with eating meat, already in Chapter 2. I will discuss them again in connection with strategic ignorance later in Section 3.3.3, as the 4 Ns are usually seen as rationalizations for a practice that causes cognitive dissonance (see Piazza et al., 2015). I will discuss them again in Section 3.5.3 in connection with the ideology of carnism.

40 Considering sustainability and purposive change, a future meaning for “meat” could even be something like “protein food resembling animal flesh”.

41 This expansion of course covers the very name “plant-based meat”, used, for example, extensively in the book *The future of meat without animals*, edited by Donaldson and Carter (2016).

going on about what meat is — together with other, up-to-now animal-derived products such as milk — and the fight has extended to the courts in several countries.<sup>42</sup> The fight can be seen as being over profits, but it can also be seen as a fight over power in discourse — for example, who gets to decide what meat, or milk, is and is not? It is, in this sense, also a fight over power in society.<sup>43</sup>

Figure 3.4 illustrates the new meats and the older options on a two-dimensional scale, measuring conventional meat character — various sensual experiences of “meatiness” that has until now defined whether something is considered meat or not — and the amount of animal protein in the food in question. The latter has until now been seen as important for what meat is. Looking at the issue as in Figure 3.4, it becomes easier to appreciate that, firstly, the definitions for the literal meaning of meat are not necessarily clear-cut, and secondly, that variety and change in the meaning is quite possible, perhaps even including the possibility that pulses could eventually be considered enough meat-like to be enjoyed as “meat”. Further, I have included “hybrids” as a potential cross-over between cultivated and plant-based meat, or any other combination, for that matter.<sup>44</sup>

One popular name for cultivated meat has been “clean meat”. This term was created in 2016 by the Good Food Institute, an organisation involved in advancing the development of cultivated and new plant-based meats. “Clean meat” has been seen as a term that is catching on: “clean meat, clean conscience”.<sup>45</sup> Some instances have extended “clean meat” to cover also the new plant-based meats.<sup>46</sup> Adopting “clean meat” as a larger category consisting of cultivated and plant-based meats could further erase the strict definition of meat, and facilitate a transformation away from conventional meat eating. Another recent term for cultivated meat, “cell-based” meat, when compared to “plant-based” and “animal-based” meat, might also have some agentive power to make different meats more equal and to narrow the psychological distance between the production and consumption of any kind of meat.<sup>47</sup> Ferrari (2016) notes that cultivated meat promises to bring the meat pro-

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42 One significant court case has been with plant-based milk product manufacturer Oatly and the EU, see e.g. <https://theconversation.com/vegan-dairy-products-face-eu-ban-from-using-milk-cartons-and-yoghurt-pots-and-uk-could-be-next-153564>

43 See e.g. Wilson (2015) for a discussion on political discourse.

44 Hybrid products with cultivated meat have been discussed. In fact, hybrids already exist as a combination of animal-based meat (conventional meat or insects) and plant-based protein in certain processed products.

45 See <https://www.theguardian.com/lifeandstyle/2017/sep/20/lab-grown-meat-fish-feed-the-world-frankenmeat-startups> in the online Guardian on 20 September 2017.

46 See e.g. <https://a16z.com/2016/11/23/meatless-meats-clean-meats/>, a podcast from 2016, or <https://www.cbinsights.com/research/future-of-meat-industrial-farming/> from 16 January 2019.

47 The term “cultivated meat” is one that the Good Food Institute decided to try to advance in 2019 as the best term so far. See <https://www.gfi.org/cultivatedmeat>.