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Abstract

Behaviourally informed interventions such as nudges are increasingly used to encourage sustainable and often meat-free diets. These interventions are motivated by concerns about people's health, animal welfare, and the environmental degradation linked to meat consumption. However, dietary choices are very personal and often of cultural importance, and behavioural interventions have been criticized, for example, for being paternalistic, manipulative, and not respecting people's autonomy. Applying the FORGOOD ethics framework, this paper organises diverse ethical arguments in favour and against using behavioural interventions to reduce meat consumption. We present a systematic high-level discussion on the ethics of influencing people's diets and suggest that choice architects should reflect on ethical implications when designing, and before implementing, behavioural interventions to reduce meat consumption.

Keywords: Meat Consumption; Sustainable Diets; Nudge; Libertarian Paternalism; Ethics; FORGOOD

JEL Classification: F18, H23, P48, Q00, Q56

1. Introduction

Food production has been identified as a major contributor to environmental harm and it is becoming increasingly clear that changes to our dietary choices are required to achieve environmental targets set by the international community (Funke et al., 2022; Godfray et al., 2018; Machovina, Feeley, & Ripple, 2015; Willett et al., 2019). In particular, red meat consumption has harmful effects on the environment (Clark et al., 2022; Poore & Nemecek, 2018). Driven by environmental concerns, as well as concerns about animal welfare and people's health, policymakers have started considering a multitude of policy instruments to reduce ruminant meat consumption, such as information campaigns, educational policies, labels, mandatory vegetarian days, and meat taxes (Bonnet, Bouamra-Mechemache, Réquillart, & Treich, 2020; Funke et al., 2022; Kwasny, Dobernig, & Riefler, 2022; Reisch et al., 2021). Many of these policy instruments focus on the demand side and aim to change consumer behaviour (Creutzig et al., 2021).

Demand-side policies to reduce red meat consumption increasingly rely on insights from the behavioural sciences (mainly psychology and behavioural economics). These insights suggest that food choices are not always the result of rational deliberation. Instead, habits (Rees et al., 2018; Verplanken & Whitmarsh, 2021), intention behaviour gaps (Loy, Wieber, Gollwitzer, & Oettingen, 2016), temptations and self-control failures (Bauer, Nielsen, Hofmann, & Reisch, 2022), social norms (Sparkman & Walton, 2017), the contexts in which food is consumed (Kurz, 2018), and many other psychological factors (Loughnan, Bastian, & Haslam, 2014) influence how and what we eat. Policy interventions that make use of these behavioural insights are increasingly designed and implemented to encourage sustainable diets (Abrahamse, 2020; Byerly et al., 2018; Ensaff, 2021; Reisch et al., 2021; Vandenbroele, Vermeir, Geuens, Slabbinck, & Kerckhove, 2020).

Nudges are the most popular type of policy intervention suggested by behavioural scientists. Examples of nudges in the dietary area are setting defaults to plant-based options (e.g., Meier, Andor, Doebbe, Haddaway, & Reisch, 2022), positioning meat-free food items at more salient places (e.g., Garnett, Marteau, Sandbrook, Pilling, & Balmford, 2020), sustainability labels (e.g., Koch, Bolderdijk, & van Ittersum, 2022), and dynamic social norm messages indicating that more and more people are reducing their meat consumption (e.g., Sparkman & Walton, 2017). These policies have in common that they change an aspect of the 'choice architecture' which describes the background to which choices are made (Thaler & Sunstein, 2021). Other behavioural public policy instruments that can also be used to encourage meat-free diets include 'boosts' (Grüne-Yanoff & Hertwig, 2016), 'nudge plus' (Banerjee & John, 2021), and 'budges' (Oliver, 2013).

The use of behavioural insights to change human behaviour has been criticized for being unethical. Critics argue, for example, that behavioural interventions are paternalistic, manipulative, and do not respect people's preferences, freedom to choose, autonomy, and dignity (Blumenthal-Barby & Burroughs, 2012; Bubb & Pildes, 2014; Grüne-Yanoff, 2012; Hausman & Welch, 2010; Rebonato, 2012; Schmidt & Engelen, 2020). It is likely that such

ethical concerns, as well as the fear of negative public perceptions, have led some policymakers and other choice architects to abstain from intentionally implementing behavioural interventions. While policy instruments, such as taxes, subsidies, bans, and mandates, are subject to much legal and public scrutiny, behavioural interventions can be conducted also on lower hierarchical levels of an organization or institution with fewer administrative steps and checks involved in the implementation (Alemanno & Sibony, 2015). It is important on all hierarchical levels to take ethical considerations into account before designing and implementing behavioural interventions.

Considering the ethics of behavioural interventions is particularly important when the behaviour to be changed is very personal, linked to one's identity, and has strong cultural importance, as in the case of dietary choices. Meat consumption is a controversial topic with strong opinions on whether it should be encouraged or discouraged (Bonnet et al., 2020; Gregson, Piazza, & Boyd, 2022; Parlasca & Qaim, 2022). For example, environmentalists might argue that any policy instrument is ethically legitimate if the negative environmental externalities related to meat consumption are reduced. Others with more libertarian worldviews, or those doubting the extent of the negative environmental externalities of meat consumption, might have strong reservations against any interference with personal decisions such as dietary choices. Moreover, in many countries the agricultural sector has a strong lobby and policymakers are wary of negative reactions from these actors. But for many choice architects who are in the position of designing food menus, positioning food items, adding labels to food packaging, etc., the question of whether nudging sustainable diets is ethical is not all black or white. These individuals and groups can benefit from a nuanced reflection on whether a given behavioural intervention is ethically legitimate.

Recent advances in behavioural public policy suggest that the ethical legitimacy of behavioural interventions needs to be evaluated on a case-by-case basis (Lades & Delaney, 2022; Schmidt & Engelen, 2020; Sunstein & Reisch, 2019). It is of limited value to evaluate the effectiveness and ethics of behavioural interventions to encourage sustainable diets *in general* without considering that these interventions can differ in many aspects. To ease case-by-case ethical evaluations, the FORGOOD framework has been developed by Lades and Delaney (2022). The framework summarises the literature on the ethics of behavioural influence in an actionable and memorable mnemonic. According to the framework, behavioural science practitioners and scholars should consider seven ethical dimensions before implementing interventions: Fairness, Openness, Respect, Goals, Opinions, Options, and Delegation. The framework is increasingly used by practitioners, and it has informed the behavioural ethics guides of leading international organizations (OECD, 2022; UN, 2021; UNICEF, 2021).

This paper applies the FORGOOD framework to help policymakers, scholars, retailers, restaurants, universities, campaigners, and other individuals and organizations who are tasked with the design of food choice architecture to organize their thoughts on the ethics of behavioural interventions that aim to encourage sustainable diets by reducing meat

consumption. When we speak of policymakers in the reminder of the manuscript, we refer to all these groups. The paper provides guidelines to better understand potential ethical implications of using behaviourally informed interventions to reduce meat consumption. This facilitates reflections on the normative stands the choice architects are taking with regards to the different ethical dimensions. We do not make statements about the ethical legitimacy of specific interventions ourselves, because each intervention requires its independent evaluation. Instead, our aim is to help scholars, policymakers, and others to avoid unintentional unethical applications of behavioural insights by encouraging systematic reflections on how sustainable eating nudges might be ethically problematic. At the same time, the paper illustrates that the FORGOOD ethics framework can be used to structure a detailed and systematic discussion of ethical arguments in favour of, and against, using behavioural insights to reduce people's meat consumption.

We deal with the ethics of behavioural influence on people's dietary choices. We do not (or only indirectly) deal with questions about whether meat consumption and production themselves are unethical. Moreover, this essay does not deal with the ethics of conducting research. Others have written about this with a focus on pre-registration, p-hacking, and dissemination of results in the media (Josephson & Michler, 2018). These are important and complementary considerations, but they are not specific to behavioural interventions and hence we do not deal with them here. We also do not claim that we have provided a complete discussion of all ethical issues related to the use of behavioural insights to influence people's diets. However, we suggest that the FORGOOD framework offers a systematic way to start reflecting on the ethics of such behavioural interventions which is considerably better than having to start from scratch.

The remainder of the essay is structured as follows: Section 2 reviews some common behavioural interventions to encourage sustainable food consumption. Section 3 uses the FORGOOD framework to identify potential ethical issues with such behavioural interventions. Section 4 concludes.

2. Behavioural Interventions to Encourage Sustainable Diets

Amongst all behaviourally informed policy instruments, nudges have become the most popular one. Nudges are "aspects of the choice architecture that alter behaviour in a predictable way without forbidding any options or changing economic incentives" (Thaler & Sunstein, 2021). They were introduced as a "libertarian paternalistic" policy instrument that aims to improve the well-being of the nudged individuals (the "paternalistic" element) while at the same time allowing people to choose as they wish (the "libertarian" element) (Thaler & Sunstein, 2003). However, nudges have also been applied non-paternalistically to reduce negative externalities by, for example, encouraging pro-environmental behaviours (Carlsson, Gravert, Johansson-Stenman, & Kurz, 2021; Schubert, 2017). Many forms of nudges have been suggested to encourage sustainable diets mainly by reducing meat consumption, and several papers have reviewed them (e.g., Abrahamse, 2020; Byerly et al., 2018; Ensaff, 2021;

Reisch et al., 2021; Vandenbroele et al., 2020). Rather than adding another review to this literature, below we present some typical nudges that have been used to reduce meat consumption to illustrate this literature and provide a grounding for the ethical reflections in the following section.

2.1. Setting Defaults to Sustainable Food Options

The literature on nudging has come to the consensus that setting defaults is the most powerful nudge (Jachimowicz, Duncan, Weber, & Johnson, 2019). Defaults are pre-set options that define what happens when individuals do not make an active decision to opt out of the default. Green defaults have been shown to be effective in reducing energy use (Liebe, Gewinner, & Diekmann, 2021) and meat consumption (Meier et al., 2022). They can change dietary behaviour, for example, in restaurants (Gravert & Kurz, 2021; Taufik, Bouwman, Reinders, & Dagevos, 2022), when dining out (Parkin & Attwood, 2022), when ordering food online (Prusaczyk, Earle, & Hodson, 2021), and at conferences and other catered events (Hansen, Schilling, & Malthesen, 2021). Several potential mechanisms can explain why defaults are effective (Kaiser, Bernauer, Sunstein, & Reisch, 2020). In the context of reducing meat consumption, defaults work mainly because people interpret them as endorsements and because people prefer not investing the effort to opt out of the default (Meier et al., 2022).

2.2. Positioning of Vegetarian Options

The decision environments in which food choices are made can have an influence on our dietary behaviour. For example, when plant-based options are placed in prominent positions at eye level or near cash registers, they draw more attention to themselves and this salience leads to them being chosen more frequently (Abrahamse, 2020; Ensaff, 2021; Vandenbroele et al., 2020). Vegetarian options can also be presented first in cafeterias which increases their sales, at least when there is enough physical distance between the vegetarian options and the meat options (Garnett et al., 2020). An alternative to increase the visibility of meat-free options is to put plant-based meals first on food menus (Kurz, 2018) as products listed at the top of the menu benefit from a primacy effect (Abrahamse, 2020).

2.3. Sustainability Labels

Descriptive labels can be used to communicate environmentally relevant food attributes (e.g., location, organic, fair trade, no palm oil, vegetarian, vegan, plant-based) on packaging or on food menus. Such labels can help consumers understand which products are sustainable, they can increase consumer knowledge about the sustainability of the products, and they can deliver emotional gratification for those having bought the products with the sustainable labels (Vandenbroele et al., 2020). For example, labelling meat-free items as "vegetarian" or "vegan" makes them more likely to sell than labelling them as "plant-based" (Krpan & Houtsma, 2020; Rosenfeld, Bartolotto, & Tomiyama, 2022). However, labelling products

as "vegetarian" or "free from meat" by placing them in a vegetarian menu section might reduce the numbers of people choosing these options (Bacon & Krpan, 2018). Carbon footprint labels have been shown to reduce the probability of choosing high-carbon meals in university cafeterias, albeit only by less than 3 percentage points (Lohmann, Gsottbauer, Doherty, & Kontoleon, 2022). Labels can also be evaluative by providing information about how sustainable a product is (e.g., using grades, star ratings, or colour coding). Showing people stickers suggesting that animals are similar to humans regarding aspects related to intelligence, sociality, and pain can also reduce intentions to eat meat (Choueiki, Geuens, & Vermeir, 2021).

2.4. Social Norms

People's behaviour is often influenced by their beliefs about what others do or what others think is appropriate (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Green behavioural interventions can make use of this tendency to act in line with descriptive and injunctive social norms. For example, hotel guests tend to reuse their towels more often when they believe that this is the local norm (Goldstein, Cialdini, & Griskevicius, 2008) and informing people about other's electricity use influences energy consumption (Allcott, 2011). When it is not yet the social norm to eat a plant-based diet, dynamic social norms can be used by informing people that more and more others abstain from eating meat (Sparkman & Walton, 2017). Based on these insights, Banerjee and Picard (2022) show that telling people that more and more people are choosing plant-based dishes can reduce the emissions linked to food choices people make.

2.5. Nudge Plus Encouragements to Reflect

Partly driven by concerns that nudges might be manipulative, nudge+ was recently suggested (Banerjee & John, 2021). This variant of nudging suggests that nudges can be coupled with a form of reflection about their preferences and the nudge itself. For example, before or after defaulting people into meat-free meals, policymakers can provide information about the purpose and the design of the default, or they can ask people to think about signing a pledge to eat sustainably (Banerjee, Galizzi, John, & Mourato, 2022). This combination of an encouragement to reflect and the default leads to higher intentions for greener dietary options compared to the nudge alone.

3. Ethical considerations for behavioural interventions to encourage sustainable diets

The FORGOOD framework was designed to bridge the gap between the abstract philosophical debate on the ethics of nudging and real-world applications of behavioural insights in the field (Lades & Delaney, 2022). Policymakers and others applying behavioural insights already use mnemonic frameworks such as EAST (The Behavioural Insights Team, 2014) and MINDSPACE (Dolan et al., 2012). FORGOOD presents such a framework for ethics. It suggests that seven ethical dimensions should be considered when thinking about the ethics of behavioural

influence. These seven dimensions are somewhat overlapping and might not cover all ethical issues related to behavioural interventions to reduce meat consumption. However, the framework provides a valuable tool to start and organize the discussion about ethical nudges to reduce meat consumption. Below, we consider each of these dimensions and identify their respective relevance for behavioural interventions that aim to encourage sustainable diets.

3.1. Fairness

When considering behavioural interventions to encourage sustainable diets, policymakers should consider whether the interventions have undesirable distributional consequences. For example, meat is a rich source of nutrition (e.g., proteins and micronutrients) and alternatives to meat might be less nutritious or more expensive (Zaharia et al., 2021). Interventions that reduce meat consumption might thus put additional financial burdens on poorer individuals. In high-income countries, interventions to reduce meat consumption might be more defensible than in low-income countries where vegetarian lifestyles are not affordable or even available for large segments of the population (Parlasca & Qaim, 2022).

It is also important to consider systemic impacts of large-scale behaviour change. If meat consumption was substantially reduced by behavioural interventions, livestock farmers would suffer economically. In many countries, livestock farming is an important economic factor, and many poorer households rely on the income from livestock production and have limited opportunities for alternative work. From a fairness perspective, one should consider whether interventions are ethical and/or design policies that reduce economic harms from a change in diets in the spirit of a just transition to a more sustainable economy. To organize the effects of behavioural interventions on different actors, policymakers can follow Camerer, Issacharoff, Loewenstein, O'Donoghue, & Rabin (2003) and calculate the effects of the behavioural policy on boundedly rational consumers, rational consumers, implementation costs, and firms' profits.

3.2. Openness

Applied behavioural scientists should also consider the extent to which a behavioural intervention is open or hidden. Manipulating people into sustainable diets can be considered ethically problematic even if one agrees with the ethical legitimacy of the goal to reduce ruminant meat consumption (see subsection 3.4) (Sunstein, 2021b; White, 2013). In fact, not many behavioural interventions discussed in the literature are manipulative. For example, disclosing information about the CO_2 emissions of food options is more educative than manipulative. And positioning meat-free food items at different places in shops or on the menu, informing people about what others are eating, and even hard regulations such as bans and mandates (which can be motivated by behavioural factors as well) are very open and not manipulative.

Other behavioural interventions are less open. For example, people might not be aware of meat as a food option when they are defaulted into a meat-free alternative at an event.

Defaults have been described as "effective mandates" (Bubb & Pildes, 2014). Even when nudges such as defaults are openly communicated, busy individuals might not be aware of their options (Blumenthal-Barby & Burroughs, 2012; Bovens, 2009; Hausman & Welch, 2010; Saghai, 2013; Schmidt & Engelen, 2020). In these situations, it is thus important to reflect on how much open communication is warranted. Too much communication is not respectful of people's time and attention and too little communication risks being manipulative. To communicate that a behavioural intervention is in place, policymakers and other choice architects can announce the use of certain interventions on their websites or press briefings to generate some discussions. Or consumers can be directly made aware of the interventions when it takes place (Bovens, 2009 calls this token transparency). For example, elements of reflection can be incorporated in the behavioural intervention which also might bring about a more persistent behavioural change (Banerjee & John, 2021). Openly telling people when a behavioural intervention is in place does not have to reduce the effectiveness of the intervention (Bruns, Kantorowicz-Reznichenko, Klement, Jonsson, & Rahali, 2018; Loewenstein, Bryce, Hagmann, & Rajpal, 2015).

Other forms of behavioural influence can be defined as manipulative. Consider, for example, subliminal advertising (which is not a nudge) or labels that trigger deep emotions, such as fear and disgust (which could be describes as a nudge). Such behavioural interventions can backfire. Koch, Bolderdijk, and van Ittersum (2022) show that graphic warning labels that make people feel disgusted can decrease people's intentions to reduce their meat-consumption if these labels are perceived as being manipulative.

3.3. Respect

Ethically acceptable policies that aim to reduce meat consumption should be respectful. They should respect people's autonomy, preferences, freedom of choice, dignity, and privacy. Regarding autonomy, food choices are personal and often an expression of one's identity (Fischler, 1988). External influences on what to eat can be seen as infringements to one's autonomy. Behavioural science suggests that most of our behaviours are influenced by the contexts in which we make decisions and that it is not possible to make decisions without this influence (Park, 2020; Sustein, 2015). Accordingly, one could argue that it is impossible to avoid any external influence and that it is more relevant to ask whether some kind of influence is more relevant than another. Some external influence might be more autonomy-reducing than other types of interests and choice architects should consider how they can make sure that they do not treat citizens as children whose capacities for making good dietary decisions are not being taken seriously to avoid being perceived as insulting or condescending (Binder & Lades, 2015; Blumenthal-Barby & Burroughs, 2012; Rebonato, 2012; Schmidt & Engelen, 2020).

When people decide to eat meat and thus reveal a preference for meat over other alternatives, policymakers and other choice architects should consider whether (or to what extent) to respect these preferences. Putting arguments about the negative externalities of

eating meat aside for the moment, a good starting point is to fully respect people's preferences. In most societies today, a strong majority prefers eating meat and only a minority wants everybody to stop eating meat. However, behavioural insights suggest that preferences can be biased and people sometimes choose options that do not maximize their welfare (Beshears, Choi, Laibson, & Madrian, 2008; Kahneman, Wakker, & Sarin, 1997). If people's revealed preferences for meat are the result of biased decision-making processes (e.g., present-biased preferences for immediately available meat), choice architects might consider whether the revealed preferences are or are not the normative preferences that maximize welfare (Bernheim, 2016). If people show the same preference for or against meat consumption across many different contexts, respecting these preferences is warranted (Bernheim, 2016).

A complication for the aim to respect preferences arises when preferences are constructed "on the fly" as a response to the contexts in which decisions are made, which can involve behavioural interventions that have changed these contexts (Chater, 2018; Dold, 2018). Some scholars suggest that deep preferences do not exist independent on the contexts in which we make decisions (e.g., Infante, Lecouteux, & Sugden, 2016). We might prefer meat in context A and vegetarian meals in context B and do not have a preference ordering independent of context. If people's revealed preferences for meat are the result of specific context factors (e.g., a meat default), choice architects can ask themselves what this means for respecting people's preferences. A further difficulty arises when acknowledging that preferences change over time and that learning dynamics of food preference have been influenced by marketing and government interventions (Park, 2020; Witt, 2001). This poses the question whether behavioural insights can and should play a role in influencing preference change over time.

It is difficult to distinguish "true" preferences from mistaken and context-dependent preferences. But a growing literature in behavioural welfare economics has made some progress (Bernheim, 2016). Some suggest to give well-informed and unbiased preferences higher moral value than less well-informed and context-dependent preferences (Beshears et al., 2008; Sunstein, 2021a). Others suggest to use structural models to measure true preferences and decision-making biases separately and use the "purified" preferences as the guide to welfare (Beshears et al., 2008). It might also be possible to exclude mistaken preferences from the welfare-relevant domain and view all other preferences, even if they are context-dependent, as normatively relevant (Bernheim, 2016), or to focus on "agentic" preferences that are sufficiently stable, reasonable, autonomous (Fabian & Dold, 2022). To avoid some of these philosophical or practical problems, Hausman (2022) suggests that generalizations about what typically makes people better off (e.g., "overeating is on average harmful to individuals") are sufficient to justify behavioural interventions. However, can policymakers identify such generalizations in the context of meat consumption?

When it is difficult to identify whether preferences are a good measure of what makes people's lives go best, behavioural policy instruments could be preferred over other policy

interventions. This is because interventions such as nudges allow people to choose for themselves and respect freedom of choice. People who have strong food preferences will not be affected by nudges, because nudges work mainly for people who are indifferent about whether a given meal contains meat or not and people cannot be nudged to make choices they do not want (de Ridder, Kroese, & van Gestel, 2022). For example, Leach et al., (2022) show that people with a strong preference for meat consumption disregard nudges that aim to encourage meat-free diets by providing information about food-animal minds. Similarly, the effects of reminding people of the resemblance of food items with animals is attenuated when the food is very familiar (Possidónio, Piazza, Graça, & Prada, 2022).

However, a complication arises when acknowledging that it is not always straightforward to realize one's freedom of choice, for example because people might not be aware of the choice architecture (see section 3.2 on Openness) and just go with the default. When it is difficult to make the decision one wants to do, or to navigate through one's life in the way one prefers to, freedom is reduced (Sunstein, 2019). As such, choice architects should consider whether the freedom of choosing any food item is present in practice. Moreover, freedom of choice entails that nudges respect the individual right to make errors. If people sometimes err and make decisions that are harmful to themselves, some argue that even in the presence of these "internalities" people should be allowed to make any decision when they are not harming others creating externalities (Sugden, 2017).

Respecting dignity in the context of dietary choices means that behavioural interventions should not stigmatize people for what they eat. For example, pointing out ruminant meat consumption as "killing the planet" and thus labelling meat eaters as "murderers" is likely undignified policymaking. Respect for animals is also an important consideration, and we deal with it in the next subsection on goals.

3.4. Goals

It is important for policymakers to reflect on why they want people to eat less meat. Do they justify the interventions with the aim to reduce environmental harm? Are they concerned with animal welfare (Singer, 1975)? Or do they want to help people make healthier dietary choices? The ethical justifications for intervening in people's diets differ across these goals (Bonnet et al., 2020). When policymakers have people's health in mind, interventions to reduce meat consumption are paternalistic as they aim to help people make decisions that are in their long-term interests assuming that being healthy is a goal shared by most. Excessive consumption of red meat has been linked to risks of cardiovascular disease, colon cancer, and type 2 diabetes (Richi et al., 2015). People may sometimes make decisions that are not in their own best self-interest and these decisions can create negative "internalities" to themselves (Allcott & Sunstein, 2015).

Justifications of interventions to reduce meat consumption are more frequently motivated by the goal to reduce negative externalities for either the environment or animals. The scientific consensus is growing that meat consumption is one of the biggest contributors

to environmental degradation (Godfray et al., 2018) which has negative consequences on current and future generations that are not reflected in the relatively cheap price of meat (Funke et al., 2022). Moral questions related to meat consumption and animal welfare have also been discussed (Dhont & Hodson, 2020; Joy, 2010; Singer, 2009) highlighting, for example, that the conditions under which animals are bred to support the rising demand for meat pose problems for their welfare. Meat produces in intensive confinement systems deny animals a life that would be suited for their species. Therefore, an ethical discussion arises on whether animals should be spared from suffering, regardless of the species that experiences it (Park and Singer, 2012).

A related policy goal can be to help people achieve their own ends, whatever these ends are. Surveys suggest that a subset of the population (nearly 40% of European respondents to a survey, (Smartproteinproject, 2021) report intentions to reduce their meat consumption. Helping people with these intentions to reduce their meat consumption to bridge potential intention-behaviour gaps could also be seen as a justifiable goal for these individuals. However, since only a minority of the population indicates having a goal to reduce their meat consumption, and since not everybody trusts such self-reports about intentions, arguments related to negative externalities and internalities as mentioned above would need to be employed to argue in favour of a policy goal to encourage sustainable diets despite people's preferences to keep on eating meat.

3.5. Opinions

Different people have different opinions about meat consumption, and about whether behavioural interventions to encourage sustainable diets are ethically acceptable or not. It can be hard for policymakers to design interventions that everybody considers acceptable. Moreover, public approval is not a perfect indicator to determine whether a behavioural intervention is ethical (Sunstein & Reisch, 2019). But public disapproval of a given behavioural intervention may indicate an underlying ethical problem that warrants further reflection. To identify interventions that the public deems problematic, public acceptability surveys can be used. Existing data shows that public acceptance of green nudges such as those that aim to encourage sustainable diets is generally high (Hagman, Andersson, Västfjäll, & Tinghög, 2015; Sunstein & Reisch, 2019; Yi, Kanetkar, & Brauer, 2022). These surveys also help identifying the characteristics of behavioural interventions that are seen as problematic by the public (e.g., Banerjee, Savani, & Shreedhar, 2021). For example, paternalistic nudges are evaluated more positively than nudges that aim to reduce negative externalities (Hagman et al., 2015), suggesting that meat reduction nudges might be assessed as more justifiable when they are motivated by health concerns rather than negative externalities of meat consumption.

One problem for the use of public approval ratings to evaluate policies arises when opinions change due to the intervention. For example, acceptance of indoor smoking bans and congestion charges increased after the implementation of the policies (Schuitema, Steg, & Forward, 2010; Thomas, Sautkina, Poortinga, Wolstenholme, & Whitmarsh, 2019). For the

policymaker it creates the question whether to rely on the opinions pre or post implementation of the policy. Besides such ethical issues, negative press can also undermine the trust in the policymaker and should hence be avoided for more instrumental reasons.

3.6. Options

When considering using behavioural insights to reduce people's meat consumption, it is important to consider other policy options that could help achieve the same goal. There are various behavioural and non-behavioural interventions that might be more effective (Osman, Schwartz, & Wodak, 2021) and also more ethical. Recent debates on average effect sizes of nudges suggest that nudges are on average not very effective (DellaVigna & Linos, 2022; Maier et al., 2022; Mertens, Herberz, Hahnel, & Brosch, 2022; Szaszi et al., 2022). Moreover, not much is known about the long-term effects of nudges. However, these debates also illustrate that calculating average effect sizes of a variety of nudges is not helpful. Rather, policymakers should consider the effectiveness and ethical legitimacy of a specific behavioural intervention at a time as it is done, for example, in a meta-analysis that investigates the effects of defaults on meat consumption (Meier et al., 2022). Insights from such meta-analyses can then be compared with predicted effects of other policies.

An additional problem arises when behavioural interventions crowd out attention and motivation to implement harder and more systematic policies (Hagmann, Ho, & Loewenstein, 2019). While there is only limited evidence available for such a crowding out effect, policymakers should reflect on whether they are considering a behavioural intervention instead of (rather than additional to) harder or more systematic policies such as bans, mandates, taxes, or subsidies (Bonnet et al., 2020; Funke et al., 2022) as well as interventions that change people's motivations and attitudes toward eating meat. Behavioural interventions should be viewed as complementing system-level changes such as meat taxes and should not be seen as substitutes to such harder policies (Chater & Loewenstein, 2022). Nudges have strong effects on choices of those who do not have strong preferences. From an ethical point of view, this is an advantage (see the discussion about respecting preferences above), but it can become an ethical problem when ethical reasons call for large and sustained dietary changes of everybody (including those with strong preferences for meat). Nevertheless, if the barriers to the implementation of harder policy instruments are too strong, behavioural interventions might be the only way to regulate meat consumption at least in the short run and for street-level choice architects.

3.7. Delegation

Policymakers, scholars, and others considering the use of behavioural insights should engage in a self-reflection exercise and think about whether and how they should use the time, money, and power that society delegated to them to nudge people to reduce their meat consumption. One question to reflect upon is whether resources should be spent on testing and implementing behavioural interventions that might have small effect sizes (DellaVigna &

Linos, 2022; Maier et al., 2022; Szaszi et al., 2022) and that lead to a limited reduction of meat consumption (see Michler, Masters, & Josephson, 2021 for a discussion on the ethics of topic selection).

Maybe more attention should be devoted to non-behavioural and more effective policies. Relatedly, it is important to reflect on whether one's involvement in designing and implementing behavioural interventions might reduce the chances that more effective policies are implemented. For example, Chater & Loewenstein (2022) suggest that industry (e.g., the agricultural sector) provides financial support for conducting behavioural research with the aim to draw attention toward interventions that change individual behaviour and away from system-level interventions such as taxes, bans, mandates, etc. Choice architects should engage in some reflection as to whether their involvement might serve some hidden agendas. Potential choice architects should also reflect on whether they are competent enough to apply the behavioural insights effectively and ethically. There are many reasons to design and implement nudges. For example, nudges can be cost-effective and some nudges such as defaults can also lead to substantial behavioural change. Choice architect should be aware of these reasons.

4. Conclusion

This paper uses the FORGOOD ethics framework to organise diverse arguments in favour of, and against, the use of behavioural insights to reduce people's meat consumption. While many academic papers demonstrate that behavioural interventions can be an effective tool to reduce meat consumption (e.g., Abrahamse, 2020; Byerly et al., 2018; Ensaff, 2021; Reisch et al., 2021b; Vandenbroele et al., 2020 for reviews), the question whether such interventions are ethical has not received sufficient attention. By relying on an existing framework that was designed to cover the most important ethical concerns related to the use of behavioural insights to change human behaviour, this paper presents a detailed and systematic overview of various ethical arguments about why using behavioural insights to reduce people's meat consumption can be seen as ethically warranted or problematic.

The paper also recommends that choice architects should spend some time to think about potential ethical issues related to the interventions when designing, and before implementing behavioural interventions to reduce meat consumption. Starting such an ethical evaluation from scratch is difficult, and the framework we suggest here helps in this endeavour. It is a pragmatic tool that policymakers, scholars, retailers, restaurants, universities, campaigners, and other individuals and organizations who are in positions to change food choice architectures can use to organize their thoughts on whether a given behavioural intervention aimed to encourage sustainable diets is ethical. The framework suggests considering at least seven questions: (1) Is the intervention Fair? (2) Is the intervention Open and transparent? (3) Is the intervention Respectful? (4) What are the Goals of the intervention? (5) Should alternative Options be considered? (6) What are people's Opinions about the intervention? (7) How should the power that society Delegated to the

policymaker be used? In short, the paper suggests that choice architects should apply behavioural interventions to reduce meat consumption only when these interventions are FORGOOD.

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