

The Importance of Consumers' Sense of Responsibility for meeting Climate Targets

Polycentric Climate Action in the European Green Deal

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1. Introduction

The latest Intergovernmental Panel on Climate Change (IPCC) report (2018) paints a grim picture of what the world might look like if we conduct business as usual. To prevent much of the devastating effects of anthropogenic climate change, we need to significantly reduce our greenhouse gas (GHG) emissions until 2030 and reach net zero by 2050.

Yet here we are, 30 years after the founding of the IPCC, and global greenhouse gas (GHG) emissions are more than 40% higher than in 1990 (Ritchie & Roser, n.d.). Meanwhile, EU-27, the EU's 27 member states (henceforth EU), have managed to cut down their emissions by 24% from 1990 to 2019 (European Commission, 2020c). However, as of 2016, EU per capita GHG emissions were still about 80% above the world average (at 8.9 tons), and still far above the emissions budget necessary to reach net-zero emissions in 2050 (Eurostat, 2021; Ritchie & Roser, n.d.). Furthermore, the current net target for 2030 of 55% emissions cut (European Commission, 2020b) is insufficient as it includes land use, land-use change, and forestry, which translates to approximately 52.8% gross emission reductions. To stay below 1.5° Celsius temperature increase requires at least a 60% gross emissions reduction, alongside support for developing countries (Climate Action Tracker, 2020). This paper will focus on the EU because despite having one of the most ambitious climate targets at this scale, they are nonetheless insufficient. This is because the EU fails to involve all stakeholders, thus limiting its chances of reaching and exceeding its climate goals.

While the IPCC has been investigating the effects of climate change since 1988, it may sound surprising that the GHG effect was discovered more than 150 years earlier by Joseph Fourier (IPCC, 2007). Part of this delay between discovery and acknowledgment of its danger stems from ignorance. For example, Svante Arrhenius, who in 1896 predicted that more carbon dioxide in the atmosphere would cause a temperature increase, wrote in his 1905 book *Worlds in the making: The evolution of the universe*:

“By the influence of the increasing percentage of carbonic acid in the atmosphere, we may hope to enjoy ages with more equable and better climates, especially as regards the colder regions of the earth, ages when the earth will bring forth much more abundant crops than at present, for the benefit of rapidly propagating mankind” (p.63).

While the suggestion that human activity would be able to change something as powerful as the climate was controversial at the time, the only thing that remains controversial today is what to do about it. Despite having developed widespread awareness of the consequences for humanity, there is no clear answer as to who should take responsibility.

But like most human achievements or mistakes, it is not a single entity but rather a network of stakeholders including governments, cities, businesses, and individuals that has created the situation we find ourselves in. This does not mean that all agents carry equal responsibility, but that the level of responsibility for contributing to and alleviating anthropogenic climate change differs between agents. In other words, responsibility in terms of blame and need for action lies polycentral (Ostrom, 2009). As no one agent can address the climate crisis alone, there is need for polycentric climate action. This takes the form of effort from, and collaboration of, different

stakeholder groups to realize climate action at different scales (Ostrom, 2009). Thus, while international cooperation on climate issues is crucial, it needs to be accompanied by action from all stakeholders of society in order to stay within a 1.5° Celsius world.

This paper will merge concepts from economics, such as polycentric climate action (Ostrom 2009), with those from philosophy, including the Reason View's (Wolf, 1990) conception of responsibility, to account for the role of consumer responsibility in a transition to a net-zero future. It will use findings on consumers' sense of responsibility and offer philosophical reflections to determine why and how the EU needs to be engaged in fostering this sense of responsibility. Thus, it contributes to the increasingly necessary discussion on the role of consumer behavior, given that efficiency improvements will be insufficient to accomplish climate targets (Cox, 2020). By doing so, it will offer a critique on the European Green Deal (EGD), a climate strategy framework that should be developed into enforceable policies under scrutiny to maximize its impact given the urgency of the climate crisis.

The paper will be structured into three parts with multiple sub-sections. The first part of the paper will demonstrate the necessity of polycentric climate action and why this requires consumers' sense of responsibility. The next part will examine what is necessary for consumers to feel responsible and determine the role of the EU in creating this feeling. This will be followed by a part on how food environment reform can assist the EGD in incorporating consumers' sense of responsibility in its strategy.

More specifically, the first part of this paper will explore how polycentric climate action can help the EU and its Member States achieve its climate goals through consumers' sense of responsibility. It will introduce the sustainability label, which has been proposed under the Farm-to-Fork strategy (F2F), the EGD's framework targeted at food supply and demand, as the main mechanism to engage consumers in polycentric climate action. Whether sustainability labels can be successful in fostering polycentric climate action depends on whether they can make consumers feel responsible (Ostrom, 2009). This is because a sense of responsibility would raise consumers' awareness of their possibilities to contribute to climate action, offering invaluable support for achieving climate targets while increasing public support necessary for environmental policy such as carbon taxes.

The second part of the paper will argue that while a sustainability label can foster responsibility, it cannot foster a sense of responsibility, that which is relevant for polycentric climate action. It will examine moral responsibility under the freedom and epistemic condition and apply this to an environmental and consumer context. I will demonstrate that sustainability labels alone cannot satisfy the epistemic condition, as this requires an understanding of the moral implications of one's behavior. This interpretation of the epistemic condition leads to the responsibility paradox, which curiously claims that consumers who are aware of their environmental impact and live more sustainably carry more responsibility than ignorant or self-deceptive consumers who have a greater environmental footprint. The paradox will be solved by disputing the necessity of consumers' sense of responsibility for responsibility itself, contrary to other conceptions of responsibility such as the Reason View (Wolf, 1990). However, the Reason View will demonstrate why it is necessary to involve governments in the creation of polycentric climate action, as they have a significant role in food environments that shape people's psychological programming towards ignorance and self-deception.

The last part of the paper will demonstrate that feelings of responsibility depend on our food environments, namely the various social and environmental factors which influence our dietary choices and nutritional status. By providing environmental education on top of information, governments can create a sense of responsibility as consumers will value and act according to environmental considerations. To foster polycentric climate action through consumers' sense of responsibility, all agents of society need to be engaged, from schools to households to municipal councils. No one consumer, business, or government can drive the transition towards a net-zero future, but everyone will have to do their part.

2. Polycentric climate action for a net-zero future

While the EU has made significant progress to reduce its emissions, research shows that to achieve its 2050 net-zero target, it will have to complement efficiency improvements with lower demand (Cox, 2020; Bryngelsson, Wirsenius, Hedenus & Sonesson, 2016). This raises the importance of polycentric climate action, which engages all stakeholders of anthropogenic climate change (Ostrom, 2009), namely everyone who contributes to and can therefore help alleviate the climate crisis such as governments, businesses, and individuals. Polycentric climate action acknowledges the complex interplay between agents while allowing different stakeholders to carry different levels of responsibility.

2.1 Why is polycentric climate action necessary?

Dividing aggregate emissions between 447 million people (Eurostat, 2020a) suggests that the individual consumer has little direct impact on the environment. However, this does not imply that consumer choice with regard to diet is irrelevant. On the individual level, diet offers significant potential for emission reductions; it accounts for approximately 15% of EU per capita emissions (European Commission, 2020; Sandström et al., 2018), 83% of which can be traced to meat, eggs, and dairy (Sandström et al., 2018). While this may not sound like much, staying in a 1.5° Celsius world requires global emissions to fall by 7.6% annually (UNFCCC, 2019). In the EU, where this reduction needs to be larger given high historical emissions, any contribution to climate action helps. Furthermore, raising consumers' awareness on the environmental impact from food would get them to pay attention to other aspects of daily life, leading to a greater reduction in per capita emissions. Meanwhile, there would be a potential ripple effect from environmentally conscious individuals to their social circles.

Furthermore, strengthening the center of consumers' contribution to polycentric climate action can positively impact the center making up governmental actors and businesses. Given the personal, social, and cultural dimensions of diets, there needs to exist substantial public support for effective climate legislation. Ostrom (2009) suggests that environmental policy can only be effective if consumers feel that they are part of a collective problem and henceforth the solution. Since the majority of consumers do not see themselves as responsible (BEUC, 2020b), banning unsustainable products would backfire in a free market economy like the EU, as it would likely lead to elected governments being replaced by less environmentally minded ones. Similarly, a carbon tax would fail to promote consumers' sense of responsibility – and thus public support – by incorporating and thus hiding emissions in prices. By ensuring public support through

personal environmental responsibility, consumers are encouraged to respond and go beyond environmental policy such as carbon taxes and engage in polycentric climate action.

Yet despite the necessity of polycentric climate action going forward, it may also explain why there has been no radical change despite awareness of the extreme conditions we may imminently face. Protecting the environment is considered a public good, meaning that there is an incentive to free ride. Its benefits are non-excludable and non-rival; no one can be excluded from breathing clean air and one's consumption of oxygen has a negligible effect on the availability for others. Therefore, agents will benefit from environmental protection regardless of whether or not they make sacrifices. This standard economic prediction of the "tragedy of the commons" – which predicts the overexploitation of shared resources – is questioned by Ostrom (2009) under certain conditions. She argues that for people to engage in climate action, they need to be aware of how their behavior affects the issue, consequently acknowledging the need for behavioral change (Ostrom, 2009). Thus, it is ultimately the sense of responsibility, and not responsibility itself, that is relevant for polycentric climate action.

Certainly, the individual consumer will not have a tremendous impact on climate goals by changing their behavior. But under the scenario that everyone believes that consumer choices affect the environment, the possibility of reducing GHG emissions is significant. This is relevant as green technologies alone will not suffice for achieving climate targets (Cox, 2020). If we are to stay within a 1.5° Celsius world, we will need to change how we eat, consume and live (United Nations Environment Programme, 2019).

2.2 Polycentric climate action in the EU

Despite a change in consumer diet being crucial for reaching climate neutrality by 2050 (Bryngelsson et al., 2016), there has been little effort by the EU to engage consumers in climate action. EU climate policy, such as the Emissions Trading Scheme (ETS), primarily targets businesses through market mechanisms. With the EGD, and the F2F strategy in particular, the EU wants to change that by also appealing to consumer responsibility for diets. Dietary behavior provides consumers with a significant opportunity to contribute to polycentric climate action, as 10.3% of the EU's emissions are from agriculture, 70% of which stem from animal agriculture (European Commission, 2020a).

However, unsustainable consumption, such as that of meat, continues to be the default in schools, at the workplace and in homes. Europeans currently consume approximately 1.5 kg of meat weekly, a number which needs to drop by 71% by 2030 and 81% by 2050 to meet current climate targets (Greenpeace, 2020). This appears a long way away, seeing as our perception of meat as a luxury has shifted towards one of necessity.

Although emissions are one aspect of food's environmental impact, there are other factors too. Food is responsible for about 20 to 30% of environmental impact, with meat and dairy making up the majority across most impact categories such as marine eutrophication, particulate matter, and land use (Castellani, Fusi & Sala, 2017). For reasons of simplicity, this paper will focus on GHG emissions from diets, but it is important to keep in mind that environmental impact addresses a wider host of issues such as land use, water pollution, and biodiversity loss amongst others.

While estimates of GHG emissions vary depending on the measurement (for example per kg, per kcal, etc.), the majority of the most unsustainable food products have an animal origin. As red meat is, by most measurements, the most polluting, it will henceforth be used as an example. Yet it is not the only thing that needs to change in our diet; dairy products for example have been a part of European's diet for thousands of years, offering survival advantages similar to meat such as continuous supply. Nowadays, the EU has one of the lowest rates of lactose intolerance. Unsurprisingly, it also has the world's biggest per capita cheese consumption at about 18.4kg a year, or 350 grams a week (Statista, 2020), amounting to 248.4kg of CO₂e per person annually (Lewis, 2015).

Making climate action polycentric by including consumers is relevant for environmental as well as health reasons. Since 2014, more than half of the adult population in the EU is overweight (Eurostat, 2020b). People are consuming too much or too much of the wrong things, harming either their health, the environment, or both.

The EGD addresses the interrelation of health and the environment in its F2F strategy, which focuses on transforming the food industry, throughout the supply chain and up to the consumer. F2F, as part of the EGD, has only been announced towards the end of 2019 and will be developed into tangible, enforceable policy over the next years. On the supply side, F2F aims to promote the innovation of sustainable farming practices, thus lowering prices of healthier and more environmentally friendly options. On the consumer side, F2F lays out a plan of action that includes proposing a sustainability food labeling framework by 2024, though there is currently no consensus on what this could look like. This approach appears to have significant public support, with one survey finding 57% of consumers in favor of it (BEUC, 2020b). Some companies have already implemented this, including Oatly, a plant-based milk company, which prints a carbon footprint on each product. Even bigger players such as Unilever have committed themselves to carbon labeling on all its products in the next decade (Rathi, 2020). Furthermore, the European Commission wants to reform the EU school scheme to provide more healthy and sustainable meals to enable early exposure (European Commission, 2020).

Nevertheless, according to the European Parliament's rapporteur on the F2F strategy Herbert Dorfman, the strategy pays too little attention to the demand side. In other words, F2F focuses on the "farm", while neglecting the "fork" (Fortuna, 2020). The example he gives is organic farming, which is promoted in terms of farm area, but not market share.

Furthermore, though interrelated, the majority of the F2F strategy targeted at consumers' behavior focuses on health rather than sustainability (Director-General for Health and Food Safety, 2020; 2:20). Despite the environmental and health impact of animal agriculture, 24% of the EU's agricultural promotion budget is designated for meat products. Plans to stop the promotion of meat consumption were dropped from initial drafts of the F2F strategy (BEUC, 2020a). However, under the EU's Beating Cancer Plan, the new promotional budget will include a shift away from red and processed meats (European Commission, 2021). Nonetheless, other animal products with a large environmental footprint such as dairy and fish have not been addressed in the reassessment of the promotional budget. This is despite the fact that the environment affects public health, for example through air quality.

While F2F aims to involve consumers in the transition by empowering them through information, this is insufficient to foster a widespread sense of consumer responsibility.

Although most people are aware of the threats of climate change, information about these is generally associated with unpleasant feelings, leading to psychological repression (Moser, 2007). This makes fear or guilt mechanisms less effective in targeting consumers, which a sustainability labeling framework would possibly induce. These mechanisms can only be effective under perceived self-efficacy, known expected response cost, and social support (Moser, 2007), something a sustainability label alone cannot establish. Therefore, changing consumer behavior requires a sense of hope, for example by framing environmental protection as an achievement rather than a task.

As with other EU regulation such as of data privacy, the policies implemented under F2F may affect consumers outside the EU as well. This makes it especially relevant for the EGD and the sustainability label in particular to be developed under scrutiny, as it might encourage consumer behavior to change beyond the borders of the EU. For example, European food producers may choose to stick to a sustainability label for the internal as well as the external market to save costs, which may confront some consumers abroad with their ignorance of the environmental impact of their food choices.

2.3 Implications of Polycentric Climate Action for Consumer Choice

At a point where the freedom to eat what and how much one likes imposes non-consensual harm onto others, it may be fair to ask whether we should consider limiting this freedom. But assuming that most people dislike the idea of an eco-authoritarian surveillance state controlling one's every purchase or making purchasing decisions for us, it may be wise to engage consumers in polycentric climate action by fostering their sense of responsibility.

With a global population nearing 8 billion, it is not so much a problem that we are eating animal products, but rather how much. This is especially relevant for the richest 500 million people on the planet, whose emissions make up half of the world's total (Klein, 2014, p.114). The emissions intensity of many animal products means that we cannot keep our eating habits the way they are if we are to achieve our climate goals (Bryngelsson et al, 2016). This does not mean that everyone needs to cut out all meat indefinitely, but that we need to be conscious of how our behaviors, dietary or otherwise, affect the environment. This also applies to many non-animal favorites such as coffee, avocados, and asparagus, as well as our consumption of services such as flights.

It should be noted that for some, changing one's transportation habits allows for greater emission reductions (Ivanova et al., 2020). In particular, individuals with the top 1% of carbon footprints are responsible for a whopping average of 55 tons of CO₂ per year, with 41% of their emissions from flights (Ivanova & Wood, 2020a). This is unsurprising given that a return flight from London to San Francisco generates 5.5 tons of CO₂e per passenger, more than half of what the average EU citizen emits in a year (Timperley, 2020).

But if the EU wants to foster broad consumer engagement, it should address behavior that affects everyone. Once consumers become engaged with the environmental footprint of their diet, they might consider their purchasing behavior more generally. While a price-based discouragement of flying is necessary, governments should aim to minimize emission inequalities to prevent high-earning individuals from buying themselves out of responsibility. Ideally, consumers' sense of environmental responsibility would discourage them from flying or at least

reduce non-essential air travel. This is especially relevant as the most frequent flyers would likely be largely unaffected by increased prices due to high incomes.

Though efficiency improvements will help reduce the carbon footprint of many unsustainable products (Bryngelsson et al., 2016), we should ask ourselves whether we are willing to rely on scalable technology improvements with this much at stake. For example, one team of researchers found that including seaweed in cow feed can reduce their methane emissions by 82%, but point to problems of scalability (Milman, 2021). Furthermore, these emissions reductions occur at a stage of the cow's life in which methane production is already lower, making the real emission reductions over the cow's lifetime closer to 8.8% (Splitter, 2021).

Given that current modes of food consumption cannot be sustained, the EU needs to make use of polycentric climate action to work towards a net-zero future. In other words, the EU needs to engage consumers with the environmental impact of their decisions, since efficiency improvements, though necessary and welcome, will not nearly be sufficient (Cox, 2020). Of course, most individuals in the EU will have little personal gain from taking active steps towards environmental protection. However, there are significant benefits of successful climate protection to the individual and the public more generally, for example through better health outcomes. As individual consumers have to be a part of successful polycentric climate action, those reluctant to change their behavior should ask themselves whether consuming unsustainable products is more important to them than the benefits of climate mitigation which will exceed current generations.

2.4 Carbon Taxes and Polycentric Climate Policy

Encouraging polycentric climate action would not alleviate governmental and corporate environmental responsibility, but rather add to it. If consumers become engaged with their environmental impact and its implications, they are likely to demand more stringent environmental standards. Thus, engaging consumers in climate action by fostering a sense of responsibility can take multiple forms; consumers can become engaged with their consumption but may simultaneously become more sensitive to other issues affecting levels of environmental degradation such as fossil fuel subsidies, consequently demanding more firm political action.

One policy suggestion included in F2F that targets consumers is that of carbon taxes for foods, something which would effectively bring about a level of polycentric climate action. It does so by steering consumers towards more sustainable options by “ensur[ing] that the price of different foods reflects their real costs in terms of use of finite resources” (European Commission, 2020). Economic theory suggests the majority of the tax burden would be borne by consumers, regardless of whether consumers or companies are charged the carbon tax. This is because, as a necessity, the elasticity of demand for food is relatively low, meaning that consumers' responsiveness to a change in price is relatively small. However, certain groups of food, including beef, have higher price elasticities than others (Andreyeva, Long & Brownell, 2010). While this means that less of the tax burden would be borne by consumers, the tax consumers pay would have a stronger impact on purchasing behavior.

This makes carbon taxes a promising economic tool, as it would reduce demand for some unsustainable food products while simultaneously generating tax revenue that could be invested in climate mitigation. However, unlike other policy points mentioned in F2F, carbon taxes are

not included in the action plan, which puts in question the effort that is currently going into realizing this project. It is easy to see why; public acceptance is identified as one of the main barriers to implementing carbon taxes, a view which may be encouraged by private sector lobbying (London School of Economics, 2018; Carattini, Carvalho & Fankhauser, 2018). One survey found that 75% of respondents were opposed to carbon taxes on more polluting food products (BEUC, 2020b). This implies that price-based policy instruments would likely be rejected by the consumers and limit polycentric climate action since they do not perceive themselves as responsible, for example, if they cannot afford the price increases (Special Eurobarometer, 2020; BEUC, 2020b).

This aversion to behavioral change is problematic as agricultural efficiency improvements will have to be accompanied by lower demand for unsustainable products. But achieving this through carbon taxes is not without its challenges. There are political barriers, especially due to its distributional consequences, as lower-income households generally consume a larger proportion of their income relative to higher income groups, that is, they have a larger marginal propensity to consume. In this sense, the distributional consequences of carbon taxes present a double bind; tackling environmental issues through carbon pricing would disproportionately fall on low-income households, while not addressing environmental pollution generally affects low-income groups disproportionately.

Alleviating the distributional burden of carbon taxes on low-income households could entail the use of tax revenue for welfare transfers. Alternatively, the EU could consider lowering taxes on healthy and sustainable food options.

2.4.1 The Impact of Consumers' Sense of Responsibility on Carbon Taxes

The 2018 to 2019 Yellow Vest movement in France can be used to demonstrate the importance of consumer responsibility, and perception thereof, for successful polycentric climate policy. While it was triggered by a planned increase in fuel tax, it was a response to general economic dissatisfaction. The French President Macron claimed that the tax, though disputed by protesters, was a step towards France's sustainability goals (Roth & Gerasimchuk, 2018).

Even after its peak, a survey showed that 72% of French citizens supported the Yellow Vest movement (Chrisafis, 2018). Coincidentally, Pew Research Center (2020) found that 71% of French adults believe environmental protection should be prioritized, while 63% claimed the French government was not doing enough. How is this reconcilable? One must point out that the Yellow Vest movement was not against climate policy per se, but more generally concerned with low incomes alongside high costs of living and taxes. In fact, the demands put forward by the movement included environmental policies, such as ending the tax exemption of kerosene and improving transport alternatives (Roth & Gerasimchuk, 2018). Instead, Macron had cut taxes for the wealthy, and lower-income groups were forced to pay up to finance the budget gap, despite many of them being unable to do so.

A lack of available transport alternatives means that the responsibility of fuel consumers in rural France is non-existent, as consumers could not have acted otherwise. Lack of alternatives also implies that the fuel tax would have limited effect on car usage and thus serve primarily as a source of tax revenue, revenue which could have been collected from higher income groups without significantly restricting their financial well-being. Thus, if fuel consumers have little to no capacity to adapt to the tax by changing their behavior, polycentric climate policy cannot be

successful. While the lack of responsibility leads consumers to not feel responsible, it is essentially a lacking *sense* of consumers' responsibility that leads to the rejection of such policies.

Given that most consumers are opposed to a carbon tax suggests that they do not feel responsible for the emissions these taxes are trying to prevent. In both cases, consumers' lacking sense of responsibility prevents polycentric climate action, as it leads to the rejection of climate policy, despite widespread acknowledgment of the need to protect the environment. Thus, environmental regulation would require consumers to have alternatives available and to be informed about the importance of this policy over others. Only when a sense of responsibility exists, are governments able to impose climate policy that will charge consumers a price for their emissions.

3. When do consumers carry environmental responsibility?

Much like the warming of the globe, individual responsibility in collective issues comes in degrees rather than a binary indicator; some contribute more than others. The first part of this paper has demonstrated why polycentric climate action is necessary for the EU to achieve its climate goals, and why this requires consumers' sense of responsibility. This part will examine whether sustainability labels, the part of F2F addressing consumer responsibility, can foster a sense of responsibility. At first glance, F2F appears to accommodate both the freedom condition by supporting the development of affordable, sustainable products and the epistemic condition through a sustainability labeling framework. If consumers know, how much their consumption patterns contribute to emissions and still decide to purchase those products, one may claim that they can and should be held responsible for the environmental damage that follows. To test this hypothesis, I will apply the concept of moral responsibility to the environmental impact of consumer behavior. I will question that consumer responsibility requires the epistemic condition to be satisfied and show that the epistemic condition applies to consumers' sense of responsibility instead of responsibility itself. Consequently, sustainability labels cannot foster a sense of responsibility and thus fail to realize polycentric climate action.

3.1 Epistemic Criterion for Moral Responsibility

To examine whether a sustainability label can foster a sense of responsibility, one might first want to understand what consumer responsibility itself is. Let us consider the following two conditions. First, consumers must be able to have acted otherwise, that is, more sustainably (freedom condition). In F2F, this is addressed by making sustainable options more affordable and accessible. Secondly, consumers should have knowledge and understanding of the impact of their decisions (epistemic condition) (Rudy-Hiller, 2018). Whether the sustainability label can achieve this will be analyzed based on the following four requirements: awareness of action, moral significance, consequences, and alternatives.

First, awareness of action requires that consumers are aware of their actions at the time of the event. This should be fulfilled under regular circumstances. When a consumer chooses to buy beef, whose unsustainability is indicated on the label, they should be aware of this action.

However, as we will later see, even with a sustainability label this requirement need not be fulfilled.

The second requirement is awareness of moral significance. Consumers should understand why, despite every purchase having at least some environmental impact, they should choose to minimize this. This requirement is only fulfilled if a sustainability label can signal why a product with a smaller carbon footprint is morally superior to one with a larger footprint. However, sustainability labels alone cannot educate on why it is undesirable for one's carbon footprint to impose harm onto populations of sentient beings across ecosystems. Thus, a sustainability label would have to be accompanied by strategies creating awareness of the moral significance of individual climate action, and, to avoid psychological repression from guilt, foster a sense of empowerment (Moser, 2007; Ostrom, 2009).

Next, awareness of consequences requires consumers to be aware of the (potential) consequences their actions might have, namely understanding how their behavior contributes to morally bad outcomes. While awareness of moral significance involves an understanding of why an outcome is morally bad, awareness of consequence implies that consumers understand how this outcome is a result of one's action. A sustainability label thus would have to succeed at contextualizing a carbon footprint; what will this mean for the world? As conveying the complexities of human environmental impact from consumerism may be difficult if not impossible to convey through front-of-package labels, awareness of consequences is unlikely to be raised exclusively by a sustainability label.

The fourth and final requirement, awareness of alternatives, necessitates consumers' awareness of consuming more sustainably. This requirement is closely linked to consumers' sense of empowerment, which is crucial for polycentric climate action (Ostrom, 2009), as it allows consumers to envision an alternative mode of living. It is important to note that while every purchase will have an environmental impact, some will have a worse impact than others; this is what makes the consumption of plant-based meat alternatives more desirable than meat. While some unsustainable products, such as avocados and chocolate (Ochoa Ayalaya, 2020; World Wildlife Foundation, 2017), may not have close substitutes, there is always an alternative, namely eating less of them.

However, the availability of more affordable and sustainable alternatives does not guarantee awareness about them. Despite the rise in plant-based alternatives, meat is culturally often seen as necessary for a balanced diet, especially for men, who make up the minority of vegetarians and vegans. Explanatory factors may be the role meat plays for the masculine identity, less compassion towards animals than women, and historical reasons, from hunter-gatherer societies to modern marketing strategies (Gorvett, 2020). As a result, proteins from meat become more difficult to replace for reasons other and more complex than nutrition, namely how we come to define our identities. A sustainability label may help compare the carbon footprint of different products but will probably be ineffective when it comes to deconstructing consumers' identities.

As sustainability labels are the first comprehensive policy appealing to consumers' responsibility for diet in the EU, it is unlikely that other factors are currently contributing to the fulfillment of the requirements of the epistemic condition. This is supported by the fact that although 93% of EU citizens see climate change as a serious issue, 64% of consumers do not see themselves as responsible for climate change (Special Eurobarometer 490, 2019). Similarly, 63% do not

consider their diet to harm the environment (BEUC, 2020b), suggesting underestimation given the high average consumption of meat and dairy in the EU. Since the majority of the 15% of per capita emissions from diets are avoidable or reducible under a healthy diet, the freedom condition should be satisfied, especially as sustainable products become cheaper. This suggests that consumers are either ignorant of their impact, or they are deceiving themselves. Given these psychological tendencies, it is unlikely that a sustainability label alone can lead to the fulfillment of all four requirements.

For example, consumers may easily not pay attention to the sustainability label, making them unaware of the action and implying that they are not responsible.

Furthermore, some consumers may be in denial about the moral significance of their behavior, which can explain why most consumers claim not to feel responsible but nonetheless change their behavior. They may adjust their beliefs about the environment or their impact on it, indicating at least some level of cognitive dissonance for most consumers; either they deny their responsibility for the environment and nonetheless change their behavior, indicating some sense of responsibility, or they falsely believe and claim to change their behavior.

Other consumers may not feel responsible if they are completely unaware of the environmental consequences of diets. Yet considering the importance of sustainability in recent years, it is unsurprising that 64.3% of consumers claim to pay at least some attention to the sustainability of their diet. Assuming this is true suggests that most people are aware of the impact of diets, but are most likely underestimating their environmental impact, (BEUC, 2020b). As only 5% of EU households live within climate targets (Ivanova & Wood, 2020b), this underestimation is probable for most people and may be explained by instances of moral accounting. If consumers pay some attention to the environmental impact of their diet, they may excuse themselves from further scrutiny.

Unawareness of the availability of alternatives may too be a result of ignorance and or self-deception. Depending on how deep-rooted the narrative of the necessity of meat is, consumers would probably ignore information about their unsustainable food choices or justify their consumption by drawing attention to the supposedly irreplaceable nutrients found in meat.

Thus, it is unlikely that the 64% of consumers who do not feel personally responsible for contributing to climate change (Special Eurobarometer 490, 2019), would become aware of the moral significance of their actions, the consequences of those actions, and/or possible alternatives solely through a sustainability label. If they do not acknowledge these requirements, they will not consider themselves responsible. Thus, according to the epistemic condition, for consumers to *be* responsible, they need to *feel* responsible. This raises what will be referred to as the ‘responsibility paradox’: an environmentally conscious consumer will be more responsible than one who is ignorant or self-deceptive, even if the former has a smaller impact on the environment. This raises doubts on whether the epistemic condition can realistically describe responsibility itself, or whether it exclusively refers to consumers’ sense of responsibility. In other words, it raises the question whether ignorance and self-deception can be used to extricate consumers of their responsibility.

3.2 Consumer Responsibility under the Reason View

The inability of sustainability labels to foster responsibility is supported by the Reason View from Susan Wolf. In her book *Freedom Within Reason* (1990), she writes that doing wrong when one is psychologically programmed to do the wrong thing is not blameworthy while doing good when one is psychologically programmed to do the right thing is praiseworthy. Thus, consumers are only blameworthy, and can therefore be held responsible, if they are psychologically programmed to do the right thing but choose to do the wrong thing instead, in this context, to consume unsustainably.

This links to the responsibility paradox from the previous section. To examine whether an environmentally conscious consumer is more responsible than one who is ignorant or self-deceptive, one must examine whether the latter would be psychologically programmed to do the right or wrong thing.

Consumers' level of ignorance of the severity of the climate crisis may depend heavily on their food environment, which may be outside their control. A food environment refers to "the collective physical, economic, policy and socio-cultural surroundings, opportunities and conditions that influence people's food choices and nutritional status" (Vandevijvere, Dominick, Devi & Swinburn, 2015, para. 1). Food environments help explain why highly educated consumers, who are generally already concerned for the environment (Clery & Rhead, 2013; Meyer, 2015; Director-General for Health and Food Safety, 2020; 9:25), are likely to be better at integrating a product's sustainability information into their behavior. Less-educated consumers might not consider the sustainability of their diet because their food environments do not encourage it, implying that they are psychologically determined to do the wrong thing.

Despite the widespread denial of personal responsibility for climate change, 64.3% of people claim to pay at least some attention to the environmental impact of their food choices (BEUC, 2020b). Thus, it seems that people would be psychologically determined to do the right thing, as most people at the least want to consider the environment in their purchases. Ignorance or self-deception of this kind is thus associated with being blameworthy or responsible because, even though most people deny their responsibility, they either change their behavior towards the right thing or at least claim to do so, thus acknowledging its benefit. The same holds for consumers who may choose not to educate themselves on issues they know will question their worldview, and thus whose ignorance is a result of self-deception.

However, one may argue that the reason consumers deceive themselves is that they are psychologically programmed towards it. It should be said that most if not all consumers engage in self-deception at times. This might be explained from an evolutionary perspective; self-deception offers social advantages because if we can convince ourselves of something, we are more adept at convincing others (Von Hippel & Trivers, 2011; Hendlin, 2018). However, some consumers are more self-deceptive than others, and this too may be a result of food environments. For example, some households may celebrate masculinity more than others, resulting in a greater risk of self-deception in light of sustainability information due to the encouragement of meat consumption. As a result, people are not responsible for their self-deceptive and potentially ignorant views because they are psychologically programmed towards them. This would make them less responsible than environmentally conscious consumers, regardless of their impact.

Yet this puts in question whether the Reason View can give an appropriate solution to the responsibility paradox. Consumers who are psychologically programmed towards educating themselves on the sustainability of their lifestyle, but occasionally indulge in unsustainable meat consumption, would be more blameworthy than those who are psychologically programmed to uninformedly consume meat daily. The environmentally aware consumer would likely *feel* more responsible than the ignorant consumer, but their knowledge should not make them more responsible than those acting out of ignorance and self-deception, especially if their awareness leads them to contribute less to the problem at hand. In other words, awareness followed by action of any degree should be rewarded with praise and not blame.

The same holds for self-deception. While it might be a result of psychological programming, this should not be a reason to absolve consumers from blame. For example, growing up in an abusive family might explain why someone acts abusively towards other people but does not imply that the person is not responsible or blameworthy. One might feel sympathy towards the person through better understanding, but psychological programming is amendable and can therefore not be a lifelong excuse for acting wrongfully. When psychological programming leads to harming others, we hold people responsible regardless of their motivations. While applying this to people's environmental attitude usually is associated with less direct harm than abusive relationships, the same principles apply, especially considering that abusive people might deny the harm they are causing. Even though we grow up in a society where mass consumerism is marketed as the solution to our insecurities, we should not victimize ourselves to this narrative indefinitely. Instead, we are responsible to question the current food environment, as well as our and others' interest in keeping them that way, not least when this is contributing to the destruction of ecosystems and harming vulnerable populations.

The responsibility paradox is thus addressed by breaking down the relationship between responsibility and a sense of responsibility. It is not necessary for consumers to feel responsible to be responsible, as this implies that environmental awareness is punished by blame, while ignorant and self-deceptive consumers are shielded from responsibility. However, this does not discredit the Reason View, given that consumers may not be blamed for initially being psychologically programmed a certain way. Instead, it raises attention as to why governments need to actively support consumers in changing their psychological default, given that they have a significant influence on food environments.

Thus, examining the conditions for moral responsibility has shown that the epistemic condition need not apply for consumers' environmental responsibility, but that it instead describes when consumers feel responsible. By acquiring a better understanding of what is necessary for consumers' sense of responsibility, the EU can develop policies that will engage consumers instead of alienating them through guilt. This is relevant in the context of sustainability labels, as they might encourage ignorance and self-deception if they discourage certain products without conveying the importance of making sacrifices to reach a net-zero future. While governments can impose sustainability requirements on businesses, some food products cannot be realistically consumed at the same rate without further jeopardizing the stability of ecosystems (Bryngelsson et al., 2016).

4. How can the EU foster a Sense of Consumer Responsibility?

So far, this paper has demonstrated that polycentric climate action is necessary for the EU to achieve its climate targets and that this requires consumers' sense of responsibility. Furthermore, it has shown that the sustainability label proposed under F2F would fail to nurture consumers' sense of responsibility as it cannot account for ignorance nor self-deception that is encouraged by current food environments.

4.1 Why is Reform of Food Environments necessary?

This section will address why it is necessary to reform food environments to foster a sense of consumer responsibility. Though every consumer will be self-deceptive at times, it is not reason enough to absolve them from responsibility, given that consumers are stakeholders in anthropogenic climate change too. However, polycentric climate action is not directly affected by whether consumers are responsible, but rather by how agents feel regarding their environmental impact. Sustainability labels may not be sufficient to create a sense of responsibility by failing to holistically address food environments – the various social and environmental factors influencing our dietary choices. If well designed, the reform of food environments could address psychological programming towards ignorance and self-deception and lead consumers to pay greater attention to the environmental impact of their lifestyles, consequently increasing the effectiveness of sustainability labels. This can take various forms such as environmental education in national school curricula or encouraging community gardens. The goal of food environment reform is not only educating consumers on the climate crisis, but more specifically fostering a sense of empowerment by raising awareness to alternative modes of consumption.

Due to greater access to expertise than the average consumer, governmental institutions such as the European Parliament play an important role in encouraging actors to contribute. Regarding consumers, it must be more ambitious than simply providing sustainability information of a product, which cannot provide context on the urgency and severity of the climate crisis. To convey this, consumers need to have access to other resources which educate them on the importance of environmental protection and how they can contribute. This is especially important as sustainability labels, for example in form of a traffic light system, may induce feelings of guilt, meaning that a sense of empowerment needs to accompany it to prevent psychological repression (Moser, 2007).

Targeting policy towards the reshaping of food environments is especially relevant given that governmental institutions have a significant influence in shaping them, for example through the regulation of food and beverage advertising. As a result, the EU can help shift the default of psychological programming from ignorance and self-deception towards self-critical environmental concern. While providing consumers with information is one necessary component of food environment reform, it is insufficient. As pointed out, not everyone will be able to integrate this information into their consumption behavior equally, thus affecting how responsible consumers feel. The EU should not count on a consumer-driven transformation of food environments to promote sustainable choices, especially if unsustainable products such as milk are widely available and often cheaper than more sustainable ones, such as plant-based milk. Even under a sustainability label, food environmental factors such as these encourage ignorance

and self-deception. This impedes polycentric climate action by limiting consumer contribution while restricting the policy tools available to governments. Again, the individual consumer will not have a significant impact on the environment, but if enough consumers act as if they do more often than not, the potential for emission reductions is significant.

4.2 How can the EGD integrate consumers' sense of responsibility into its strategy?

If the last section established why food environment reform is necessary on top of sustainability labels, this section will examine more concrete examples of what this might look like. It might not be easy for governments to encourage consumers to develop a sense of responsibility, and certainly not with factual information alone. Instead of solely providing environmental information to consumers, the EU should provide environmental education which reprograms consumers away from ignorance and self-deception and towards environmental concern.

4.2.1 In schools

The EU should focus on empowering agents in all parts of society to contribute to transforming the food environment. This starts with the youngest members of society. While the F2F strategy includes reforming the EU school scheme, this is mostly focused on providing healthy diets in schools. To foster the environmental literacy of its citizens, the EU should encourage incorporating social and environmental sustainability in national school curricula. Ideally, this would combine theoretical and practical lessons, such as informational sessions and gardening sessions respectively. This type of education is already popular in Scandinavian Folk Schools, which may also partly explain why Sweden, Denmark, and Finland are the three nations ranking highest on deeming climate change as the single most concerning issue facing the world (Special Eurobarometer 490, 2019).

By involving children in food production processes from an early age, the EU can influence public perception in the long haul. In particular, children should learn that food does not come from the supermarket, but that it requires a network of agents and various resources. In general, it should teach children the importance of a two-sided relationship with the ecosystems we inhabit – it is about giving and getting. There is no reason to believe that this holistic approach would be difficult for children to understand; if you take more from the environment than it can produce, you will degrade it. The transformation will take time, but the earlier people are made aware of the importance of environmental protection, the more effective it will be in preventing ignorance and self-deception in light of sustainability information. This would not only influence the child itself but has the possibility of having ripple effects, especially in later life. Thus, taking polycentric climate action by involving everyone, including children, will be necessary to address climate change effectively.

4.2.2 At home

While children would learn about sustainability at school, this effort must continue at home. Parents themselves may have limited knowledge of what it means to live and eat sustainably. There are different ways the EU could target families and households in general, including informational campaigns, support groups and by encouraging civic engagement. By encouraging citizens' involvement in municipal councils for example, households can become aware of the

sustainability issues facing cities and society in general. As a result, people would recognize their role in the food environment, for example as food wasters. Food waste is a major issue in the EU, where approximately 20% of food is wasted, half of which by private households (European Commission, n.d.b). Allowing citizens to offer suggestions on ways to make households, neighborhoods and cities more sustainable may be helpful to encourage consumers to reflect on their behavior while increasing the pool of potentially innovative ideas. More importantly, civic engagement would create consumers' sense of empowerment, laying the groundwork for successful polycentric climate action while fostering bottom-up democratic participation.

4.2.3 In cities

With a growing urban population, F2F could include the promotion of urban agriculture in the form of vertical, rooftop, or community gardens. By doing so, the EGD would bring the farm closer to the fork, not only in terms of distance but more importantly through understanding. Involving citizens in community gardens for example, would lower emissions by encouraging seasonal consumption and reducing the distance that products travel. Simultaneously, it would increase consumers' environmental literacy by teaching about seasonality, soil health, and the resources going into the food we buy in supermarkets. However, greater urbanization and population density mean that fewer people have access to gardening spaces in which they can learn about the food they eat every day (Botter, 2018). Thus, enabling access to gardens to a greater number of people, especially those from disadvantaged backgrounds, could increase environmental awareness. Additionally, being in close contact with nature exposes the impacts of extreme weather events on food security, therefore confronting consumers first-hand with the problems we will increasingly face. As a result of environmental concern and the associated sense of responsibility, the efficacy of a sustainable label would increase. Yet the benefits of community gardens extend beyond environmental ones, with studies showing various social benefits such as reduced antisocial behavior (The Guardian, 2017). This might be explained by the fact that community gardens enable people to get to know their neighbors, which can increase public trust.

The EU could foster environmental awareness in cities, by offering grants to communities who wish to operate a garden. While this already sometimes exists at local levels, as it does for example, in Rotterdam, there is little technical assistance provided. Bringing community gardens to citizens requires not only money but encouragement from municipalities, national governments and the EU to get citizens involved in local projects which foster environmental consciousness, for example through awareness campaigns. This is especially relevant in disadvantaged neighborhoods, where people are less likely to have private gardens.

4.2.4 In government

Besides sustainability labels, the EU could introduce legislation discouraging the consumption of unsustainable products, for example by prohibiting discounts on such products in supermarkets. This could also be applied outside the food industry in the form of luxury taxes, for example for flights, as these represent a significant source of emissions for high-income consumers. Moreover, it could reallocate part of the promotional budget towards more sustainable products such as plant-based proteins to help people rethink the necessity of meat. Yet encouraging

environmental concern in diet must not only be channeled through the food environment. Making public space greener not only improves people's health, but may also increase a connection to nature, which can motivate people to protect the environment (Nisbet, Zelenski & Murphy, 2009).

Yet more radically, if the EU were to actively discourage the consumption of unsustainable products, it may have to re-evaluate how it measures success. Despite its many flaws, gross domestic product (GDP) is currently the standard for measuring how well people are doing in a country. This ignores inequalities, the fact that the marginal utility from income is diminishing, and that some of these products are detrimental to our health and the environment. If people were to consume fewer unsustainable goods and services in general, GDP would be lower without necessarily reducing quality of life. Thus, we need to re-evaluate what guides our policies; we should first ask ourselves what matters to us before deciding how to measure it. This could be anything from poverty to inequality to preventable deaths. While this would leave us with a greater complexity of indicators, it is a small price to pay when one considers the benefits that will emerge from this re-evaluation.

4.3 Challenges

Targeting (future) consumers through different channels can increase their sense of responsibility, as people start reflecting on the food environments that shape them and vice versa. However, appealing to consumer responsibility within the food environment will likely include various challenges. Though consumers' behavior will need to change for the EU to meet its climate targets, it may be difficult to target. There will likely be trial and error, for example when deciding which products to regulate.

For one, the EU needs to assure consumers that other agents in the economy are doing their part and needs to strike the right balance between holding businesses and consumers responsible. It should be wary of lobbying claims, which would likely oppose discouragement of any type of consumption. Furthermore, it should avoid the "responsibilization" of consumers, which refers to corporations blaming consumers for the poor outcomes of their choices (Hendlin, 2018) to evade environmental scrutiny. While consumers need to make environmental considerations a greater part of their behavior, this does not imply that other stakeholders in climate change such as businesses can have their responsibility alleviated.

Regarding the sustainability labeling framework specifically, the EU needs to ensure that it brings meaning to the label. In other words, it needs to put the emissions label into context – after all, who understands what a 1kg of CO₂e does to the environment? While sustainability labels require other food environment reforms, its design will nonetheless have a major impact on its effectiveness.

In terms of making use of economic tools, the EU needs to be cautious of distributive consequences, especially if few alternatives are or appear to be available. While transforming food environments will promote environmental consciousness and thus the environmental responsibility of more consumers, there will be inevitable differences in how successful this is. The EU needs to be aware of differences in consumers' preferences and implement various strategies to engage the most amount of people with their environmental impact.

Another challenge, or rather question we might face is whether we should aim towards decoupling identity from consumption or whether we should reframe our relationship between the two. If we reframe, do we run the risk of creating consumption patterns with new ethical or social problems or will it help us foster greater awareness towards the things we own? Is it even possible for us to decouple identity from consumption, seeing the multitude of social and historical dimensions which shape our consumption patterns? These questions do not have a simple answer but could be of interest to explore in the future.

5. Conclusion

Fostering consumers' sense of environmental responsibility is necessary to ensure polycentric climate action and therefore the EU's ability to meet its climate targets (Ostrom, 2009). A sense of responsibility will not only encourage consumers to reflect on their purchasing behavior, dietary or otherwise, but will also lead to more stringent climate policy. This has been demonstrated by the fact that carbon taxes, a climate policy that directly affects consumers, has been adamantly rejected by consumers due to their lacking sense of responsibility from an inability, or belief thereof, to adapt to the policy. Despite the importance of fostering consumers' sense of responsibility, it is unlikely that the strategy currently laid out under F2F, namely a sustainability label, can foster this on its own.

This is because the extent to which various consumers perceive themselves as responsible is largely determined by ignorance and self-deception, which in turn is programmed through food environments. This paper has questioned that the epistemic condition is necessary for moral responsibility in the consumer and environmental context and demonstrated that it refers to consumers' sense of responsibility. Even though this does not excuse consumers from their responsibility, the Reason View (Wolf, 1990) explains why governments nonetheless need to take an active role in fostering consumers' sense of responsibility.

Ignorant or self-deceptive consumers may still be responsible for the environmental damage they cause, but they are often encouraged not to take sustainability information into account when making decisions, as it might contradict their identities. Thus, the EU should aim to reduce this deficiency in consumers' sense of responsibility by facilitating the reform of food environments to foster behavioral change and ensuring public support for environmental policy. For the EU to address as many consumers as possible, it should steer various components of food environments towards accommodating the environmental crisis of today. It can do this by supplementing environmental information with environmental education of all citizens, from children to the elderly. Teaching children about the importance of protecting the environment while engaging adults in community gardens can help everyone internalize environmental considerations in the purchasing behavior.

While individuals' behavioral change will not prevent ecological disaster, if more people start believing and acting as if their behavior matters, there is a chance at reducing some of its effects. This is especially relevant considering that changing our attitudes towards food would potentially help us re-evaluate our consumption habits in general. As a result of the greater integration of environmental behavior into consumers' behavior, other sectors such as beauty, technology, and clothing would struggle if they fail to address their environmental impact. As individual consumers, we can do this by paying more attention to what and how we consume, keeping in

mind that what goes around comes around. If we want to achieve our climate goals, recognizing that our health is only as good as that of the planet may help us change our relationship with the environment from one of exploitation to one of cooperation.

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