From plate to policy: understanding meat consumption and dietary transition through mixed methods

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Can public policy tools based on quantitative efficacy truly compete with deeply ingrained private behaviours? One could reasonably argue that simply adding a new subway line will inevitably encourage public transport use, yet this reasoning ignores crucial social and psychological factors. Indeed, for many commuters, the automobile represents a private "bubble", a welcome pause between a demanding workday and family responsibilities. This socio-psychological reality, which research has shown allows positive evaluations of car use to override perceived high costs [1], proves that effective environmental policy must actively engage with qualitative and subjective barriers. This same logic applies to another environmentally critical behaviour, namely meat consumption. Understanding why people continue to eat meat, despite awareness of its immense environmental and health impacts, requires policymakers to move beyond aggregate consumption data and economic models.

The reduction of meat consumption in high-income nations is one of the most cost-effective and urgent policy for climate change mitigation, given its significant contribution to greenhouse gas emissions, land use change, and biodiversity loss [2]. While quantitative research models the economic impact of interventions like carbon pricing, it often fails to explain consumer behavior. The core failure of policy resides not in generating data, but in translating conviction into practice. I believe that mixed methods research is crucial for building usable policy insights regarding meat consumption reduction because it integrates the objective measure of dietary impact (quantitative) with the context-dependent drivers of consumer choice (qualitative). After demonstrating the added value of mixed methods in policy making, I will discuss some ways to build mixed methods in the case of meat consumption. Finally, I will expose how they can inform policies.

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I. Why mixed methods are relevant in the case of meat consumption

The greatest hurdle for environmental policy lies not in calculating the cost of emissions, but in the sociology of quantification. As Espeland and Stevens explain, the power of numbers tends to overshadow qualitative factors that are difficult to measure in policy making, such as identity or culture [3]. The figure shapes the debate: what is measured becomes what is discussed, often to the detriment of what is not.

Pricing mechanisms, rooted in the basic laws of supply and demand, often overestimate their potential impact due to the strong inelasticity of meat consumption. A study by

Vellinga et al. (2022) found that even a significant 30% price increase on meat products in a virtual supermarket environment resulted in a reduction of purchases that was not statistically significant [4]. This outcome demonstrates that for a highly cultural product like meat, the simple economic calculus is inadequate. In fact, the consumer's deep-seated habits and social values buffer the effect of price. Interviews, for instance, could provide a deeper and more relevant analysis.

This weakness is acutely felt when facing the "intention-action gap", which refers to the discrepancy between our intentions and our actual actions. Large-scale quantitative surveys show that a majority of people express environmental concern and a willingness to eat less meat, yet actual consumption remains quite high [5]. The survey (N = 1,367) revealed that 77% of beef consumers reported an intention to reduce or stop their consumption. But only a small minority actually did so. The authors conclude that even if environmental awareness is frequent, it has limited impact on behaviour. Thus, the necessity for effective policy is to understand the social barriers that mediate behavior. This leads directly to the choice of the exploratory or explanatory sequential design.

II. How to implement mixed methods

Creswell and Plano Clark (2017) outline six main mixed methods designs [6]: convergent, where quantitative and qualitative data are collected simultaneously and compared; explanatory sequential, where quantitative findings are followed by qualitative exploration to explain them; exploratory sequential, where qualitative insights inform a later quantitative phase; embedded, where one method supports another within a single study; transformative, guided by a social or ethical framework; and multiphase, combining several studies over time.

According to me, an exploratory sequential is particularly suitable for policies which aim at reducing meat consumption. Since food choices are strongly shaped by social context, it is essential to begin with qualitative research to understand the meanings people associate with meat. First, discussions and interviews can help identify influences such as habits and social expectations. Second, the quantitative phase allows researchers to identify the factors which most strongly predict meat consumption. This approach helps policymakers to design interventions grounded in social dynamics. Note that the explanatory sequential design could be quite relevant too, depending on the situation [7].

Wolstenholme's PhD thesis used an exploratory sequential mixed methods design to understand why people struggle to reduce meat consumption [8]. In the first phase, she conducted 22 semi-structured interviews (20 minutes to two hours) to explore consumers' motivations and barriers. From these qualitative insights, key psychological themes were

identified, such as social norms and emotional attachment to meat. These themes directly informed the quantitative phase, where tailored experimental messages were tested on a larger sample to measure their effects on intentions to reduce meat consumption.

Wolstenholme's findings show that messages inducing guilt are largely ineffective. On the contrary, positive messages promoting meat reduction as responsible, modern, or healthy increase intentions to reduce meat consumption. She emphasizes that effective interventions must consider identity, rather than relying only on information or moral appeals. As a result, it could be useful to normalize meatless diets, for example by using role models. Celebrities who have publicly adopted plant-based diets like Lewis Hamilton and Williams sisters offer a potent political tool. I would like to delve deeper into the topic by mentioning the link between virility and meat. Actually, meat consumption is strongly tied to traditional masculine norms such as strength and physical performance [9]. As a consequence, men who follow vegetarian or vegan diets are often socially marginalized. This is why reinventing the meaning of manhood may contribute to reduce meat consumption. Therefore, combining qualitative insights with quantitative testing allows policymakers to design interventions that are socially grounded and thus more likely to change meat consumption behaviors.

III. How mixed methods could inform policies regarding meat consumption

The value of mixed methods is illustrated by the failure of purely quantitative justification in policy adoption. In an experimental project that I conducted with four classmates, we tried to evaluate the normative acceptance of climate policies within a French population through a "two-by-two" approach [10]. Our team found that justifying a policy (such as a tax targeting red meat consumption) based on purely quantitative economic principles, like the Pareto criterion (showing the policy creates more winners than losers), was significantly less effective than other informational frames. For example, I created a graph showing greenhouse gas emissions (in CO_2-equivalent) per kilogram as well as the amount of proteins per kilogram provided for different foods, such as red meat, poultry, tofu, and egg. This graph was presented to half of the people ($N = 622$). And it appears that it significantly increases the support for non-tradable meat quota rather than a carbon tax on meat.

This finding is crucial. The public was resistant to justifications centered solely on efficiency and aggregated benefits. Instead, our findings suggested that a justification appealing to the legitimacy was far more effective in achieving support. This is because people seek coherence and fairness in public action, not just maximizing utility in the Pareto sense. More generally speaking, behavioural science research has demonstrated that

interventions are most successful when they address the social and political underpinnings of resistance. For meat reduction, the policy intervention must move beyond the cost-effectiveness of the carbon tax. A policy should also be specific to be successful. A global experiment in 63 countries (N = 59,440) tested several behavioral interventions on climate beliefs, policy support, and real actions [11]. The survey shows that the impact of climate interventions varies across audiences. So, policies should be specific and adapt to context.

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Reducing meat consumption highlights the limits of policies based only on quantitative tools which ignore habits and social norms, like carbon pricing. An exploratory sequential mixed methods design addresses this gap. First, qualitative research could uncover emotional and cultural drivers (such as social performance anxiety and gendered identity). Second, these drivers could be tested quantitatively. Consequently, by combining emotional insight with statistical evidence, mixed methods could make policies more legitimate and effective.

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