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The Challenges of Changing Dietary Behavior Toward More Sustainable Consumption

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Shifting socially accustomed and personally habitual behavior is a tough task, and achieving dietary change away from livestock-based foods in developed, emerging, and developing economies offers particular challenges. This article seeks to investigate the more personal behavioral factors that inhibit dietary change, bearing in mind the reinforcing and
interacting systemic impediments introduced in the first article in this series, “The Sustainability Challenges of Our Meat and Dairy Diets.” This article examines the patterns of thinking that discourage the search for relevant information and inhibit exposure to innermost ethical norms, including “existing habituation” supported by processes of dissonance avoidance, and “lazy” belief reinforcement.

This article also seeks to explore the external collective aspects of behavior change, especially the degree of preparedness to engage with credibly offered but challenging knowledge. This offers ways to embark on fresh social learning through new networks of collective engagement, and a willingness to embrace new ethical frameworks. Such an approach requires innovative approaches to knowledge brokering by governments and by business and community organizations, as well as to more open discussion of ethical dilemmas.

Finally, this article examines the role of sustainability science in activating these two forces for enabling consensual dietary change. This form of science combines established forms of scientific evidence gathering and analysis, with coordination and engagement from business, government, civil society, and community organizations, to form new perspectives and transformational energy across all involved. Sustainability science is still fledgling and shadowy. It is by no means either understood or embraced by academia or its other sector bedfellows. Seeking to alter dietary behavior could be one of the early test cases for the successful introduction of sustainability science onto the world stage.

On Diet, Lazy Thinking, and Habit

Aspects of personal behavior change are examined first to illustrate that shifting individual behavior through voluntary encouragement does not work. This is followed by a survey of the more convoluted combinations of collective behavior shifts in the context of policy, economics, social awareness, learning tactics, and global food systems.

Fast Thinking in a Personal Context

The distinguished Nobel Economics Laureate Daniel Kahneman is well known for his distinction between spontaneously automatic “system 1” or “fast thinking” and more carefully deliberative “system 2” or “slow thinking” (see Boxes 1 and 2). The two styles are very connected and can readily morph into each other. Nevertheless, there are distinctions between the two ways of reasoning that are relevant for our study.

Box 1: Fast Thinking and Habitual Behavior

The fast thinker generates impressions, feelings, and inclinations that shape the more rational variants of beliefs, attitudes, and intentions. Fast thinking enables problems to be interpreted narrowly, often with immediacy, and segmentally. Fast thinking also responds more strongly to losses than to gains, favors low probabilities especially of risks, neglects ambiguity and suppresses doubts, seeks to confirm through readily accessible beliefs, responds to available evidence so tends to ignore absent evidence, and generates patterns of ideas from a historical “bank” of experiences and past judgments that seem intuitively “right.” Kahneman points out that fast thinking “links a sense of cognitive ease to illusions of truth, pleasant feelings, and reduced vigilance.”

One barrier at the individual level to progressive diet switching is the influence of habitual behavior. Here we discover the essence of fast thinking. Habits tend to be repetitive, routine, reliable, reinforcing, and rewarding. Habits are often triggered by cues or stimuli (hunger or social routine in the dietary case) and are characterized by intrinsic, intuitive actions that are comfortable because they are familiar and patterned. Habits are also efficient as they do not require attention to detail or to new information (which often can safely be ignored). Indeed it is precisely because habitual behaviors “fit” into personality, to experience, to custom, to social networks, and to culture, that they are so unexamined. As a consequence, habitual behavior does not require constant refreshment of the weighing of gains and losses, nor does it make any demands on uncomfortable, dissonance-exposing self-searching of possible losses against established gains.
appraisal of possible shifts in personal dietary behavior.

Fast thinking helps the portrayal of meat and dairy products for a majority in developed countries as “healthy,” affordable, unconnected to negative distant (in time, space, and emotion) outcomes, and enjoyable. Food businesses encourage such thinking in the ways in which they market, place products on shelves, advertise, and seductively manage prices.

Most people eat meat yet care about animals. Research has begun to examine the psychological processes that allow people to negotiate this “meat paradox.” Many engage in a diet that requires animals to be killed and to suffer. This highlights the moral dilemma involved in eating animals, a dilemma that all people eventually have to resolve if dietary change is to take place. Garnett et al. find that meat eating is flattening out except in East Asia. The drivers for reducing meat consumption are rising cost, health concerns, and animal welfare considerations. Environmental aspects receive less attention because they are afforded less exposure.

Most people view eating animals as a cultural norm, rather than a choice. In meat-eating cultures around the world, people typically don’t think about why they find eating dogs disgusting and eating cows appetizing or vice versa, or why they eat any animals at all. A set of social and psychological defense mechanisms hides the contradictions between values and behaviors, allowing exponents to make exceptions to what would normally be considered unethical. This view is encapsulated by Loughnan et al.

Eating animals can also be viewed as an extended case study on human morality. By examining a single moral behavior, we can illuminate how emotions (pleasure, disgust, guilt), cognitions (categorization, attribution, justification), and personality characteristics (values, beliefs, identities) combine when people face everyday moral problems. In doing so, researchers have shown how emotion regulation, mind perception, and moral judgment are intimately connected.

Fast thinking buttresses the systemic forces that encourage the meat eater not to delve deeply into more inner beliefs and into other social cues over personal and collective morality. Such patterns are strengthened by habit. Both are reflections of the policy circumstances in which livestock products are translated, interpreted, and unexamined.

The significance of this combination of perspective lies in the activation of norms and the scope for examining personal ethics. Cognitive dissonance processes may subdue the scope for deeply addressing ethical positioning, even if such perspectives come from external valued sources (such as science or theology or role models). But such models have their limitations. Shove stresses that the embedding context also has to shift; it is almost impossible to alter personal behavior if the external contradictory cues do not change, and indeed may be reinforced:

Relevant societal innovation is that in which contemporary rules of the game are eroded; in which

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**Box 2: Slow Thinking in a Learning Social Context**

In the Kahneman perspective, slow thinking rests on conscious awareness, acuity, criticality, and, above all, active learning engagement. It requires effort, attention, analysis, and considered judgement. Kahneman summarizes the attributes of the slow thinkers: “They are more alert, more intellectually active, less willing to be satisfied with superficially attractive answers, more sceptical about their intentions.” Overall, the slow thinkers are more likely to be both analytically reflective and rationally engaged. They search memory, they deliberately compute seemingly contradictory argument, they compare evidence along chosen lines of assessment, and they plan their behavior to suit their intentions and ethical norms.

A start to analyzing relevant cognitive patterns for any diet changing assessment is some appropriate mix of fast and slow thinking. The intuitive elements of fast thinking shape the search processes of the slower and more purposeful evidence seeker and assessor characteristics. Changing habitual behavior requires shifts in ingrained outlooks, a willingness to stand apart from self-judged peer group acceptance, and being supported by coordinated incentives and relevant information.
the status quo is called into question and in which more sustainable regimes of technologies, routines, forms of know-how, conventions, markets and expectations take hold across all domains of daily life.

By activating a mix of personal and socially encouraged norms, it is possible to begin to make a link between the actual and acquired knowledge basis of any framing of action (awareness). This in turn depends on the manner in which critically alerting knowledge is offered, repeated, clearly organized, credible in both content and sourcing, and devoid of confusion and contradiction. Equally important are the personal cognitive processes of organizing all of this information into a coherent package.

**Adopting Non-Livestock Diets: The German Example**

In our companion article we summarized the underlying motivations for shifting to vegetarianism and veganism. The most important driver is concern over animal welfare, followed by personal health. Environmental, religious, and social reasons are becoming more important but do not match other influences such as cost, health, and animal welfare. Social justice aspects are beginning to carry more weight and may well rise in influence as food availability and food price leaps afflict the hungry and impoverished.

Around a billion people worldwide are vegetarians or vegans. Germany currently has among the highest proportions of vegetarians (10%, 7.8 million) and vegans (1.1%, 900,000) in the Western world. A recent survey (“Forsa”) estimates that 42 million Germans are part-time vegetarians (flexitarians). This means that the majority of Germans (52%) consciously avoid eating meat on three or more days per week.

There is a steadily expanding range of vegetarian and vegan products in the supermarkets and in the menus of restaurants, organizational cafeterias, and college cafeterias. The American Dietetic Association actively recommends a permanent vegetarian or vegan diet.

> “It is healthful, nutritionally adequate, and may provide health benefits in the prevention and treatment of certain diseases. Well-planned vegetarian diets are appropriate for individuals during all stages of the life cycle, including pregnancy, lactation, infancy, childhood, and adolescence, and for athletes.”

Experts estimate that by 2020 at least one-fifth of Germans will consume a predominantly vegetarian diet.
Preparing vegetarian healthy food is fun and simple. This position is supported by the German Official Agencies and is more understood and admitted by the whole medical health sector. Experts estimate that by 2020 at least one-fifth of Germans will consume a predominantly vegetarian diet. The decisive influences here are the compelling arguments against meat while vegetarian food is becoming increasingly available, more varied, and less expensive.

Many prominent role models are taking a lead. One is a popular 33-year-old vegan chef and cookbook bestseller and fitness model (German with Turkish roots) Attila Hildmann.11 Actors, singers, presenters, and sportsmen are also making their views publicly known. The German Vegetarian Association (VEBU) has launched a service portal for community gastronomy. The aim is to improve and expand the vegetarian offerings in restaurants, cafeterias, hospitals, and schools, and above all to make it more appreciated as being “sustainable.” In-house cookery training programs are adopting vegetarian recipes adapted for use in large-scale kitchens. Together with the Compass Group, the biggest catering company worldwide, VEBU has a specific policy of advocating meat-free and sustainable food in the workplace.

Establishing a fresh moral framing might enable those switching away from livestock-based diets to feel pride and personal esteem in “doing the sustainably right thing” even when others around are not doing the same.

The particular reasons why there are so many more vegetarians in Germany compared with other developed countries are not well researched. The whole issue is attractively promoted in the media (TV, print press, social media, and movies) as a very modern and responsible lifestyle. In adventurous Berlin it is really “in” to be “veggie,” with a vast food infrastructure responding to this life choice.12 There is also a cultural mood of high social responsibility. A lot of younger Germans have learned in schools and through civil society that they have the power in their own actions to change not only their individual moral norms, but also those of society as a whole.

The food companies and the food service sector already provide nonmeat or lower meat convenience meal alternatives. In response to persistent petitioning by PETA (People for the Ethical Treatment of Animals), IKEA sells vegan meatballs to signal a significant reduction in carbon and methane emissions. A marketing director of IKEA explains that this sends a strong signal to large target groups.13

In Israel, change agents in civil society groups are bringing about a national shift toward veganism. Some 1 million consumers, out of Israel’s population of 8 million, no longer eat meat, and 40% claim that they have friends or relatives who have shifted to nonmeat diets over the past year. Overall, this wave of dietary change has increased in demand for vegan dishes in restaurants by more than one-third. Segal suggests that this pattern has been encouraged by media celebrities, by exposés of animal suffering and by scandals in the food industry.14

A New Moral Framework

Establishing a fresh moral framing might enable those switching away from livestock-based diets to feel pride and personal esteem in “doing the sustainably right thing” even when others around are not doing the same. The strength of this moral framework may lead to individuals encouraging others to adopt the same moral perspective. It is likely that a deep sense of moral commitment may form a key component in shifting and retaining new forms of dietary behavior.

All of this is very much easier to proclaim than to deliver. To be credible, evidence of the links between biodiversity losses and ecosystem disruptions needs to be set in the consequences for future generations: likely price hikes, possible socially unjust and perverse outcomes for the already poor and hungry, and such outcomes for “identifiable” biodiversity (beloved animal and invertebrate species and plant life). Then there is the moral case for intervention. This will
require much thoughtful discussion, including theologians, philosophers, politicians, and ethical investment and trading enterprises. There is also a fascinating conversation to be instigated around “people's social values”: the role of mentors, drawn from familiar communities, acting as ambassadors, referents, and enablers helping to meet the requirements of “keeping at it” and providing encouragement and support.

Culture shifts away from meat eating create a growing sense of “dissonance discomfort” and alert contradictory or incomplete beliefs influenced in turn by personal histories and social contexts. Social marketing strategies can be developed to alleviate cognitive dissonance and reduce the consumption of factory-farmed meat in favor of environmentally friendly livestock foods. Social marketing research places greater emphasis on exploring motivations for behavioral change, in particular the values and attitudes that bring about and/or increase the behavioral and structural ambiguities that arise between sourcing meat consumption and shifting attitudes and values. To be effective, a social marketing strategy also needs to target the key stakeholders in the entire “governance” system, such as regulatory bodies, retailers, producers, service providers, media, and others.

We offer four avenues to achieve this framework.

**Interactive Learning**

An interactive learning process should be conducted in schools, churches, social and mainstream media, and where people gather to converse and to learn. These dialogues should make use of organized information to show that the many outcomes associated with livestock-product-rich diets will lead to more costly and wasted food, to more socially unwanted distress, to a weakened planet for offspring, and to poorer personal health—in essence, to socially unwanted outcomes. This exercise will also require consonant mainstream and social media engagement, which also needs to be examined in preparatory research. Research projects connected to sustainability science offered in this article could provide backing for this set of approaches.

**Progressive and Continuous Campaigns**

Business leaders and influential role models could proclaim the advantages of lower livestock linked diets in the light of these various “collective conversations.” In response to the “negative” points made in the preceding, there should be “positive” messages about dietary flexibility, animal health, environmentally and socially friendly production and marketing, choice of local and cultural foods, personal health guarantees, and freedom of self-identity set in terms of longer life (health benefits), gender (choice benefits), and youth (ecological and generational bequest benefits). To make these positive

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**Box 3: Collective Behavior Change and New Habituation**

We are entering a world of norms and intent. This world is also infused with social relations, and the many interconnections between personal acts and external drives and biases such as economic incentives and regulations, policy domains, and shifting cultural values. Andrew Darnton provides a full survey of the relevant social psychological approaches. He points to the connections between automacity or fast thinking habits: intent or expectation arising from any act, and conformity to emerging social referents. Ultimately, sustainability eating should become just another element of personal convention and household routine: day-to-day conformity in a “new habituation.” To get there will require some form of shakeup of preexisting behavioral stabilities and systemic biases. This may result through emotional reaction to new information or biasing conditions, especially if such information is offered in unusual ways (such as falling into personal ill health, being exposed to scenarios of environmental catastrophes over many generations, and/or impacts that go against norms of social justice). This may also be triggered by the activities of consumer and environmental organizations working to alter cultural norms.

Kurt Lewin sees habit as being both resistant to change and the engine of change. If social norms shift, so do relevant external cues. If it is the “norm” to link meatless foods with regard to personal health, to community-based relations, and to next generation decency, then readjusted habits could form in the wake of the “new conformity.” Lewin showed that loyalty and conformity to social reference groups help to determine beliefs, interpretations and personal norms. If the beliefs of the reference group shifts and their behavior is opened up to refreshing reinterpretation, then “new habituations” can form and progress.

A step in this direction is the work by Fisher et al. around the joins between information, motivation, and behavior. This has been applied to health-related actions such as avoidance of HIV exposure and of liver failure through excessive alcohol consumption. The critical feature here is attentiveness to learning propensity. This means targeting information to the interests and existing knowledges of the participant, triggering the sense of efficacy and self-motivation, and introducing social norms in the context of the learner’s referent group values. In the context of dietary change, the school or the church or the youth center could form a valued basis for such learning dynamics. Information should be offered as loops of innovative discovery.
messages stick, there will need to be supportive arrangements for business backing, for the breakup of the global and national lobbies, and for the championing of new social cultures of lower livestock diets. In addition, there should be research, supported by business and by consumer organizations, to explore how fresh approaches to “nudging” might be pursued. For example, why not offer vegetarian (and vegan) foods in all catering and on planes, in all hospitals, and at conferences, and ask customers to sign in to asking for meat-based alternatives as an expression of “dietary requirements”? And why not put exciting vegetarian foods in school cafeterias and again ask pupils or their parents to argue for a meat-based alternative? If nothing else, the exercise of suggesting such nudging would cause the kinds of learning processes that lie at the heart of the new habituation.

**Promotion of “Healthy Food”**

*Towns and Streets*

Participants and residents can gain pride in their new “conforming” behavior and begin to acquire “sustainable dietary habits.” We address this in our new habituation section (Box 3): There is a lot of supportive literature over community-based engagement and social learning, which we cover in our review of community-based behavior change in Germany and elsewhere.

**The Policy Dilemmas**

There are still many intractable policy measures that need to be redesigned in order to support the direction of travel in lowering animal product consumption. These include measures to alter perverse subsidies toward favoring meat production and supportive subsidies for soybean farmers in the United States such that these soybeans are mainly used for feeding animals but also exported to China, and incorporating relevant and linked social and environmental costs in food production more generally. Garnett et al. stress the patchy understanding of dietary behavior in developing countries, the lack of consistency in the messages and the policy outcomes of focusing on health-related prods and environment-sustainability gains, the failure to move far beyond voluntarism in regulation, and the paucity of case work in experimental approaches to the “knowledge–action gap.” Above all, they bemoan the absence of integrated approaches to research, experimentation, and learning.¹ (pp. 75–85)

An unexamined moral dilemma takes up the invisible baton conducting much of this from this article. This is to apply the same processes of “sustainable diet habituation” to those releasing themselves from poverty and underemployment in emerging economies; those who are beginning to occupy burgeoning cities; those who are less connected to the natural world; and those who

**Mentoring**

Mentoring fits in perfectly with the practices of shifting social and cultural referents and for assisting the socially and economically disadvantaged to address diet changes with a degree of calm and progressive purpose. Successful mentoring is undertaken by those trusted by those who are mentored, with whom they can engage with a high degree of comfort. Here surely is a place for social enterprise to flourish, as mentoring is a creative job market, attracting self-starting social entrepreneurs. Such a creative program of learning and mentoring fits in well with the social and moral aspects of behavior change. And it should be paid for through the many health and environmental benefits that diet change can create. So another key research area is to identify the willing first movers in livestock-based food businesses who are ready to change the rules of the game.

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Nearly four-fifths of pigs reared in China are housed in very intensive units, full of antibiotics and hormones, and creating huge problems of waste effluent.
want to make a statement about their newfound prosperity. Here is a real difficulty. For these consumers, the kinds of processes outlined in this analysis are not as likely to prove effective.

Take the case of the expanding pig production and consumption of prospering China. The average Chinese eats 35 kg of pork per year, five times what their predecessors consumed in 1979. Nearly four-fifths of pigs reared in China are housed in very intensive units, full of antibiotics and hormones, and creating huge problems of waste effluent. For every kilogram of pork, 6 kg of soya or corn feed is required. Even though China produces much home-grown feed, more than half of the global soya production and well over one-third of corn trade is destined for Chinese hogs. China has not signed up for sustainable roundtables of either soya or corn, and is currently pursuing agricultural land purchases in the United States and Africa to assure its porcine trade flows. Garnett and Wilkes point to a possible 50% increase of meat consumption in China over the decade 2010 to 2020 with a 70% take of world soya trade (from 63% in 2010) by the end of the decade. They also note the beginnings of a policy interest in more efficient livestock production systems, a move away from fat-enhancing vegetable oils, greater concern over animal welfare, and, with growing urban affluence, a shift to more quality foods, including a move away from meat. Their analysis also points out that the public health and environmental aspects of Chinese livestock production are by no means a matter of public concern or political attention. The authors are also convinced that these matters are bound to become more critical in the light of the Chinese commitment to greenhouse gas emission reduction, land use degradation, pollution more generally, and public health in particular.

To establish a diet-changing recipe will require prior commitment by the big livestock-consuming countries and polities to face up to the kinds of challenges we offer here. Here surely is where the learning and behavior-shifting processes will require a global campaign of awareness raising, of corporate buy-in, of much-improved redistribution of consumer affordability, and of community-encouraged moral transformation, which are the hallmarks of social transformation for sustainability. We stress that we are not being advocates here—just pointing out the policy dilemmas in prospect.

Implications for Sustainability Science

We conclude by providing a sustainability science perspective of the genuine challenges that face campaigners and motivated people when addressing this theme. One critical blockage here is the need to work with regulators and food corporations, whose ethos does not normally extend to moving diets away from livestock-based products, yet whose cooperation will be required by researchers working in sustainability partnerships if voluntary dietary change is to be attempted. We also note the research evidence summarized by Garnett et al. showing that consumers will not be sufficiently moved to switch their livestock diet preferences in a hurry, nor by any whiff of compulsion or moral hassle. Here is a test case for the emerging success of sustainability science. Like it or not, the world has to confront the necessity of engaging with the wider (moral, societal, equitable,
health, intergenerational) prompts for shifting diets, because of the enormity of the consequences in the coming decade of letting livestock consumption rip, and the unavoidability of ignoring it.

Here possibly is a role for the major science institutions to act in an equivalent manner to the climate scientists under the banner of the Intergovernmental Panel on Climate Change. Because of the many dimensions to diet and people and the planet, not to mention the international aspects and cultural and religious features, such a process needs the interdisciplinary and interactive characteristics of sustainability science. This is especially the case in light of the new habituation and social conformity that low-livestock-input diets should reflect. In any case, it is also essential that sustainability science shows that its very special qualities are precisely required of this dietary and cultural shift (not to mention the reduction of dissonance and of corporate lobbying that such a new habituation must engender). Thus, a key marker is the scope to convene the kinds of global information and knowledge that touch the hearts and minds of people in meaningful ways. This places a new dimension on sustainability science being part clinical and analytical, part advocate, and part ambassadorial, all the while connecting the personal to the social to the contextual. Grappling with dietary behavior change provides the setting for this exciting new science to flourish.

Note
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