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ARTICLES

The Paradox of E-Numbers: Ethical, Aesthetic, and Cultural Concerns in the Dutch Discourse on Food Additives

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Abstract Persistent public distrust of food additives is often explained in terms of safety and health issues. The broad variety of ethical, aesthetic, and cultural concerns tends to be structurally ignored by food engineers and occasionally even by consumers themselves. The public controversy of food additives—commonly known as "E-numbers"—in the Netherlands is a case in point. Two discursive mechanisms prevent these concerns from becoming legitimate public issues: irrationalization and privatization. But these consumer concerns may not be as unreasonable as they seem, and they may even turn out to be not that private. As long as ethical, aesthetic and cultural concerns are not recognized by food engineers as legitimate issues, the controversy of food additives is not likely to find closure. Moreover, this lack of recognition blocks the opportunity for meaningful dialogue and trust building between food technology developers, policy makers, citizens and consumers.

Keywords Trust · Public controversy · Food additives · Consumer concerns · Privatization

Introduction

As public controversies on the genetic modification (GM) of organisms have shown, public trust is a crucial ingredient for technological innovations in food to succeed and to become socially embedded. National policy reports on the public acceptance of GM and biotechnology all recognize the need to establish more trust. This need is most often presented as a reason to call for more transparency in decision-making processes and to provide objective, independent, consistent and unambiguous

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information (e.g., Nuffield Council on Bioethics 1999; Académie des Sciences 2002; Terlouw et al. 2002; Sheldon et al. 2009). The regulation and implementation of food product labeling is frequently considered as an opportunity to enlarge public trust or consumer acceptance. Also it would give individual consumers the choice to decide for themselves whether or not they should, for whatever reason, purchase a particular food product.

Thus far, food manufacturers are hesitant about food labeling and seem to be well aware of the flipside of the coin: a prominent claim about either the presence or absence of GM ingredients could easily be interpreted by consumers as a warning, and provoke suspicion rather than trust. With regard to possible future labeling of nanotechnology in food products, Unilever's R&D director Gaudefroy stated: "We support labeling provisions where they provide meaningful specific information to consumers. We do not support logos that could be seen as risk warnings" (Food Standards Agency 2010). In anticipation of technological food innovations, both manufacturers and policy makers hope to learn from what turned out to be a delicate issue for European citizens.

However, for an elaborate understanding of public acceptance of food technology, one does not have to draw on high-tech innovations such as GM. In fact, the slumbering but persistent distrust of food additives is perhaps a more interesting case in point. The use of food additives is an age-old technique; it has pervaded into almost any kitchen in Europe; and it is well-regulated by European and national authorities. Though easily identified through a labeling system of "E-numbers," as they are called by popular expression, even the technology of food additives cannot count on plain public trust. The stubborn manifestations of distrust, as well as the pervasiveness of the technology itself, indicate that transparency and labeling do not necessarily result in habituation in the long run.

The regulation of labeling and numbering of additives (such as colorings, flavor enhancers, and preservatives) was introduced by the EEC in 1988 to help promote a free and fair market of safe food products within the European Community. It was conceived as a way to inform consumers about what exactly they buy and eat. What seems paradoxical of E-number labeling is that while the occurrence of an E-number *by definition* means the additive has been scientifically tested and proved to be safe, some consumers associate E-numbers with chemicals that do not belong in our food. Criticism and controversy about E-numbers have been circulating in the Dutch public sphere over the last 30 years. If "E" is for European safety approval, then why do some of the E-numbers still arouse so much suspicion?

In this article, I will analyze controversies of E-numbers in the Netherlands. By interpreting critical voices and responses as concerns that go *beyond* food safety issues, and focusing on the way in which certain arguments are marginalized as supposedly being irrational and irrelevant, I will make an attempt to disentangle the paradox of E-numbers. My claim is that without taking into account the wider range of ethical, aesthetic and cultural concerns, the persistence of controversy and distrust cannot be adequately understood nor addressed by people who would benefit from such understanding: food policy advisors, engineers, manufacturers and consumers.

To give a twist to Gaudefroy's words: a meaningful discussion encompasses more than risk warnings. But the desirability of a broader discussion about food production

is nothing new. Brom (2000) has convincingly argued that in the broad variety of food concerns, each kind of issue requires a different response. He warns that food labeling is not always the best way to take consumer concerns seriously—especially where it is used as a means to avoid moral debate and political action. Wynne (2001) and Marris et al. (2001) have pointed out that a narrow focus on risk could be detrimental for the quality of public debate (see also Levidow and Carr 1997). Thompson (2007) has discussed an extensive range of ethical perspectives on food biotechnology, in order to offer "a fair and open hearing for all ethically motivated points of view." With the concept of "Ethical Room for Maneuver," Korthals (2008) offers a promising model for ethical deliberation in the food chain that hosts a diversity of dilemmatic and dynamic food concerns. More generally, Lassen and Jamison (2006) claim that "cultural discourses" deserve more attention in the policy making process; while Verbeek (2006) and Van de Poel and Van Gorp (2006) highlight specific issues in engineering and design that require explicit ethical reflection.

Some of these proposals have already been circulating for more than a decade. But the success of opening up the public debate requires a more in-depth understanding of what keeps engineers, policy makers, manufacturers and consumers from doing so. In support of the aforementioned proposals, I will identify two mechanisms inherent to the current public discourse on food additives that pose serious obstacles to a more meaningful discussion of food technology.

E-Numbers in the Netherlands

One of the first signs of explicit consumer distrust of food additives in the Netherlands goes back to 1983, in the magazine *Ouders van Nu*, where parents are warned against the potential adverse effects of artificial colors and preservatives on their children's behavior. Pediatric allergist Benjamin Feingold discovered that certain food additives would induce hyperactivity or aggression in children (Feingold 1975). Although his findings were qualified as somewhat controversial among scientific experts, the magazine suggested that the so-called Feingold diet—a diet free from artificial colors and flavors—was at least worth a try. Feingold argued that the risks of synthetic colors and flavors outweigh their benefit, for "they are used merely for cosmetic or aesthetic effects" (1975: 799). In 1987, a similar story featured in *Libelle*, a popular magazine for Dutch housewives, and 1 year later a Dutch hyperactive children support group was established. These voices challenged the assumption that additives are a necessary and unavoidable part of our consumption pattern.

The growing need of public awareness of E-numbers was responded to by several consumer guides that assist consumers in finding their way through the supermarket shelves. Some of these guides, such as Kamsteeg's *E = eetbaar?* (2001), its seventh edition in press now, are rather technical and written in a neutral tone. Also, the Netherlands Nutrition Centre issued such a guide. The more recent Dutch translation of Gouget's *Additifs alimentaires* (2008), however, is highly critical and suspicious of E-numbers, considering only 22 % of the listed additives to be completely innocent. Over 100.000 copies of the latter guide have been sold in the Netherlands. Some of these guides now feature as smart phone applications.

To be sure, food manufacturers recognize the controversial nature of E-numbers. In 2007 Unilever launched a marketing campaign, *Eerlijk is heerlijk* ("Fair is delicious"), and proudly claimed its pre-packed sausage to be free from unnecessary E-numbers. A year later, Unilever was brought to the Dutch Advertising Code Committee and charged by a former employee with the complaint that the campaign had wrongfully suggested that food additives are unfair or unsafe. The campaign was alleged to provoke unnecessary fear of E-numbers in the average consumer (Reclame Code Commissie 2008). Eventually, the Committee found the complaint unjustified—as the complainant allegedly did not represent the average consumer—but the explicit product claim about unnecessary E-numbers disappeared nevertheless. This case shows the food industry's ambivalence about E-numbers: should it "give in" to consumer fears or "step up" and explain that these fears are ill-founded? A prominent Dutch food scientist stated this critical position quite aptly: "The fear of E-numbers is completely unjustified. (…) You shouldn't feed the consumer's fear, you should be proud of what industry can do for that consumer. (…) To fight a bad image is a matter of endurance. Constantly explaining how you work and why." (Van Boekel 2008).

Expressions of distrust of E-numbered additives are still widespread. Consumer platforms such as the national TV show *Radar* and the Dutch Consumers Union critically discussed E-numbers. On several online discussion forums Gouget's guide was subject to controversy. An opinion piece in a Dutch national newspaper on ready meals and food additives reheated the controversy (Hertzberger 2010). The Consumers Platform conducted a survey and found that more than half of the respondents stated that if a food product has the label "natural" on it, that is a good reason to purchase the product. And 80 % agreed with the statement that natural products do not contain preservatives or added flavors (LNV Consumentenplatform 2004). A more recent survey by the Dutch Consumers Union concludes that half of the consumers are "occasionally or frequently worried about E-numbers" (2010).

The Mechanism of Irrationalization

How do food technologists understand this controversy? An exemplary document is Emerton and Choi's *Essential Guide to Food Additives* (2008), a standard reference book for the food industry. The very first line of the first chapter reads: "The role of food additives in food manufacture has been much maligned and misunderstood in recent years. Additives fell victim to bad press to the extent that, at the height of the anti-"E" numbers campaign in the 1980s, the word "additive" became almost synonymous with "adulteration."" I will discuss this reference book as a typical example: at the risk of grossly generalizing, I do think a closer look at this book helps to identify how food technologists explain the bad reputation of E-numbers and what they see as a solution.

In explaining the bad reputation of E-numbers, Emerton and Choi frame consumers who are critical about food additives as uninformed and easily susceptible to wrong ideas about modern food technology and chemistry. The authors emphasize that the use of chemical preservatives "is but a continuation of the age-old practices of using

salt, sulphite and spices to preserve perishable foods in the days before refrigeration and modern processing techniques" (2008:6). Thus, they implicitly respond to a consumer's preference for traditional foods from the old days: if consumers were reasonable, they would know it makes no sense to reject modern technological food and to long for traditional methods of preparation at the same time. In other words, consumers are inconsistent.

Second, the authors point out that there is nothing special or strange about food additives. They illustrate this with the innocence of a lemon—an often invoked example in discussions of E-numbers of how natural E-numbers can be: "How many people think of additives when they buy a lemon or a bottle of vinegar? Yet these too are authorised additives (as citric and acetic acid, respectively) and widely used in food manufacture for their preservation properties, as well as their acidic taste, precisely as they are used in everyday cooking." (2008:2) Such examples aim to refute possible objections against food chemistry and its products: consumers should realize that some of these E-numbers are not that strange and unfamiliar, and that some of them are perfectly natural, so to say. The explanatory model drawn upon here, again, is that either consumers do not know this, or that they are completely inconsistent—if not hypocritical—in their concerns.

But the authors take their analysis a little further. The problem is not just the bad reputation of E-numbers, but also the persistent character of the controversy. They give two explanations for it: food scares and lenient marketing departments. The emotional aspect of consumer concerns—fear—feeds to, and is fueled by, mass media. As soon as a particular food additive has "perceived adverse effects" and becomes suspect for consumers, the "marketing men" respond to the media scare and take it off the shelf. That is quite unhelpful, the authors explain: every time this happens, a company reduces the range of possible ingredients to use, and "the controversy left unresolved." (2008:16) Thus, Emerton and Choi take the ongoing controversy of E-numbers as a result of consumer demands that are inconsistent, based on false perceptions of food chemistry, and invoked by emotional responses. The controversy will persist as long as the food industry yields to such demands.

How should the food industry operate within this field of unreason, food scares and false perceptions? According to Emerton and Choi, the solution lies in sound science, objective information on food additives, and consumer choice. This solution is grounded in the idea that despite the fears and false perceptions, there *is* one legitimate concern about food additives: their safety. Any food additive on the European market has been evaluated by the European Food Safety Authority (EFSA) according to strict safety regulations. It is claimed that if an additive is suspicious, it can easily be tested by sound science—and the controversy will be resolved. It is the authority of science that helps out here and can make the crucial distinction between safe and not safe.

Emerton and Choi's chapter contains virtually all the ingredients of the typical dominant approach of the controversy of E-numbers. The tone of this approach is undoubtedly one of complaint: consumers are emotional, inconsistent, and uninformed, and their concerns are based on false perceptions of modern food technology. Recurring as the default response to consumer concerns, it functions as a discursive mechanism of *irrationalization* of citizen-consumers. It subscribes to a deficit model according to

which the public understanding of science is central to the interaction between science and public, and citizens are ignorant in that respect (cf. Wynne 1991 and Jasanoff 2005).

But some of these consumer concerns are more reasonable than presupposed by food engineers. In order to clarify and disentangle the paradox of E-numbers, it is worthwhile to take a closer look and re-interpret such concerns, assuming that their arguments might not be that unreasonable after all. I suggest a more *charitable* interpretation of consumer concerns that leaves open the possibility that they express valid, comprehensible arguments.

Naturalness and the Need for Experts

Though health concerns are predominant in consumer discussions of food additives, they rarely come alone. Let me give an example how such discussions usually proceed. In 2010, several iPhone users responded to an online review of two iPhone applications that assist consumers in identifying E-numbers (iPhoneclub 2010). Interestingly, each of the posted comments on health effects of E-numbers is surrounded by remarks on the trustworthiness of the science behind E-numbers. In accordance with the dominant approach, citizens are confident that sound scientific research can give an answer to their first concern—are E-numbers harmful?—but they are skeptical about the independence of current research and official information—as they are supposedly informed by the economic interests of the food industry. One discussant remarks: "There are many goats among the sheep. If you really want reliable advice you better see if the Health Council has said something about it. They base their claims upon uncontroversial sound science." She tries to make up her mind in a highly scientific question of what to eat. At the same time, she is anything but confused. She does recognize the importance of scientific testing and consequently the importance of health safety, but she is concerned with what sources to trust.

It is the health effects of additives that draw most attention of the discussants. While "E" stands for "Safe as approved by scientific research," citizens also learn from consumer guides, dissenting scientific reports and alarming weblogs that at least some studies do not consider certain additives to be safe, or warn against allergic reactions. As the dominant approach has it, citizens are indeed concerned about this: are food additives really safe? Yet, it is the diversity of sources of information that gives rise to most concerns. Attached to this concern is the question: who is to tell what safe food is?

A typical response to the consumer's difficulty in identifying reliable sources on health effects is to stay away from food additives all together and to opt for what is perceived as familiar food. For example, one discussant suggests:

> Only gives more stress, these applications. Just leave the diet products and margarine and take real products instead of those chemical fake substances. E.g. an egg and a slice of bread with good butter is healthier than you might think!
> (Yla)

The advice to go for "the real"—that is, an egg, a slice of bread, butter—is presented here as a strategy for the consumer who recognizes the responsibility to

know what to eat, who acknowledges the importance of health effects, but who simply does not want to get into the technical details surrounding strange and artificial foods. Another discussant agrees on this strategy, but goes beyond mere health concerns:

> Easy solution: buy natural unprocessed products. It takes you some effort to prepare your meal, but a good amount of sugar, fat, salt and chemical substances will no longer enter your body. If that makes your body healthier, that's a good thing. If not, at least your food tastes much better anyway. (Niels)

The preference for natural, unprocessed food here too is based on the idea that "chemical substances" entering the body *may* affect one's health. But Niels is not sure about it. His solution is a strategic one as well: whether or not health is at stake, at least there is much to gain in terms of taste. From this discussion it appears that although health concerns are indeed leading in the discussants' comments, they are far from isolated from other concerns about E-numbers, such as the reliability of information on health effects, the strangeness of food additives, and the taste of products containing food additives.

In the examples presented above, negative health effects are indeed a predominant topic of discussion. However, these concerns give rise to a wider range of issues related to E-numbers, such as the reliability of scientific studies and publicly available information, the particular interests in and reasons for the presence of E-numbers in food, avoiding the science and technicalities surrounding the intake of processed food, and the supposed tastelessness of processed food of which E-numbers are a typical marker. Interestingly, the preference for natural food—whatever foods the discussants actually consider as such—is articulated here as a consumer strategy to deal with the individual's responsibility to choose safe foods, and with the problem of how to identify them. Consumers do not present "natural" as *inherently good* but as the easy way out. As such, the call for naturalness is not necessarily a rejection of modern technology, or a flight to the past, but a pragmatic retreat to the familiar and recognizable.

Such concerns are *procedural* in the sense that consumers are concerned about how health effects of food additives are tested, reported and communicated to the public. They are concerns of a type that Wynne (2001) has identified in his discussion of public concerns surrounding GMOs: "The central object of public concern is not GMOs per se but institutional behavior in relation to them." With regard to food additives, citizens might not express such strong criticism and protest to engineers and policymakers as was the case with GM. Rather, their response is tied up with their roles as consumers who feel responsible themselves for what they eat. Yet, it is the background of uncertainty and strangeness surrounding E-numbers that gives full meaning to their concerns—and not just the health effects in themselves. There is nothing unreasonable about that: where food has become highly technological and the quest for good food is scientized (cf. Te Molder and Gutteling 2003), consumers may have good reasons to question the reliability of professionals, their dependence on expert information, or even to decide to turn

away from experts all together. The dominant approach of E-numbers lacks the very recognition of such procedural concerns.

Taste, Convenience, and Food Culture

Wynne (2001) has made clear that public responses to technological innovation are too often misinterpreted as irrational and subjective concerns; and that most of these concerns are to be understood as a political interrogation of knowledge practices. His analysis, however, is restricted to the legitimacy of procedural concerns: these concerns should be taken seriously *because* in the end they are about how science and society handles substantive issues such as health, safety and environmental effects. But this leaves open the question what happens (and should happen) to other substantive concerns. As Tsjalling Swierstra has pointed out, concerns about meanings, world views, identities, and conceptions of the good life are too often ignored by policymakers and technologists (Swierstra 2002; Swierstra et al. 2009). Especially concerns about impacts that are not easily quantified and are not perceived as cases of direct harm, tend to be marginalized from the public debate (Swierstra and Te Molder 2012).

A recent Dutch debate on food additives and ready meals offers some examples of such concerns. In December 2010, the molecular biologist Rosanne Hertzberger published an opinion piece in a Dutch national newspaper, in which she criticizes TV chefs who conspicuously reject processed foods and who suggest that such inferior foods are for lazy people (Herztberger 2010). As a response, she praises ready meals and food additives for giving her the opportunity to spend her time on things in life that are more important than cooking: processed food is convenient, not unhealthy and a fair alternative to fast food. The appeal to natural and whole foods is hypocritical, she argues, as in our daily lives we delegate so many other tasks to technology.

Her article gave rise to a discussion on *Foodlog.nl*, a prominent Dutch weblog on food. Janneke Vreugdenhil, a culinary journalist, replies that we should ask ourselves a fundamental question: how do we relate to our food anyway? Is food to us what gasoline is to our cars? “Food goes back to culture, to family ties, to traditions, to memories, to so many things that define us as human beings. Who regards the meal as a sum of useful nutrients, neglects the embeddedness of it in our civilization.” (Vreugdenhil 2010). Here, Vreugdenhil pushes the discussion beyond the boundaries of what food chemistry can investigate, viz. beyond the physiological questions of nutritional benefit and potential health effects. She questions firstly, the reduction of food to its biological and chemical components and functions, and secondly, the explanation of the relationship between humans and food in terms of the most efficient way of transferring nutrients only. As the logic of these reductive approaches is inscribed in ready meals—of which food additives are a necessary component—we should be wary of ready meals, so the argument goes, if we appreciate other values that are expressed in our relation to food.

There is, for example, the social meal concern: ready meals would encourage people to eat in solitude, and as quickly as possible, while dining together is an important setting for families to tell, share, care, and give attention. As one

discussant explains: "At the dinner table one learns to take turns in talking, one learns to share, and parents encourage one child to speak up a little and ask the other to keep his voice down. And as a parent you show how much you love your child: Look, I made this for you, I take care of you" (Nadia). The food additive—a symbol for the ready meal and its logic—would thus affect the daily practice of the shared family meal by enabling fast and isolated dinners.

The argument is also expressed in the appeal to cooking as meaningful practice. One discussant, for example, points out that one can have many reasons for preferring home made to ready meals: cooking can be an interesting and engaging activity, something to be enjoyed, and can also result in better-tasting food. These are the things she would miss if convenience foods took over the kitchen. Many discussants agree with her. To some, convenience may be one of the best things that ready meals can offer, but to others this appears to be a disputable value. If the effort of cooking is a worthwhile activity, convenience would equal laziness and indifference.

But there are also concerns about the decay of taste and food culture. Children who are raised in a family that values the enjoyment of cooking and dining would learn to how to appreciate and distinguish different flavors, and learn about various cooking methods. But children who are raised with the taste of cans and packages will not appreciate anything other than processed food. For a whole generation, the argument goes, the march of ready meals would result in a decay of taste. The concern here is that what we may call taste literacy and memory are likely to erode—and a sophisticated food culture with it. Many of the discussants are rather pessimistic about their food culture, and fear a decline of Dutch food culture because of the omnipresence of ready meals.

The point is that food safety and health effects are rarely discussed. Most of the comments here evolve around food as a bearer of culture, a source of taste and enjoyment and as an ingredient of the good life. Concerns regarding the impact of food technology in these spheres can thus be characterized as cultural, aesthetic, and ethical. To recognize them as such, means to accept that scientifically established information can be informative, but not exhaustive in addressing those concerns. They require responses that take into account the normative dimension of what it means to produce good food.

The Promise of Food Chemistry

Perhaps the complaint that consumers display irrational responses when it comes to food additives would best be countered by pointing out that citizens are playing a different game from the techno-scientific justification of the use of E-numbers in food products. In that game, ethical, cultural, and aesthetic standards are appealed to—a domain in which food technologists may no longer claim expertise, and are even reluctant to accept responsibility. Normative considerations of food technology's impact on practices of food enjoyment and food culture, then, are not part of the food engineer's concerns. But looking at the statements that food engineers make with regard to the justification of the use of food additives, we see that this is

not the case. Food additives do subscribe to certain values and standards within the domains of the ethical, cultural and aesthetic: it is part of their nature. In fact, food engineers are far from reluctant to articulate the ethical, cultural, or aesthetic significance of E-numbers.

Preservatives, for example, are said to keep food from deteriorating over time and to increase the shelf-life of the product. According to Emerton and Choi such additives "meet the demands of modern lifestyles, including infrequent bulk shopping expeditions." (2008:6). De Jong, in his Dutch textbook on food processing, argues that "modern man no longer wants to spend a lot of time in the kitchen and increasingly tends to leave food preparation to the food industry. The production of high tech foodstuffs is only possible by the use of additives." (2008:110). And in the textbook *Food additives* Branen and Haggerty proudly present convenience as one of the major benefits of preservatives: "Convenience has been built into TV dinners and breakfast cereals as well as several microwave products." (2002:5). Such accounts not only express that additives contribute to, or enable the exercise of a particular conception of the good life, but also that these additives are intentionally designed to do so. Furthermore, they suggest that the convenient and fast life is simply not negotiable.

With respect to colorings, food engineers are willing to defend the aesthetic norms inscribed in food additives. In fact, they say, it is the consumer himself who demands those colorings. "Colour is important in consumer perception of food," Emerton and Choi explain, "and often denotes a specific flavour." (2008:8). The consumer's expectation that strawberries are red and butter is yellow is precisely what colorings are supposed to meet when they appear in strawberry flavored yoghurt or in margarine. The consumer may express his desire by demanding or protesting, but in the end it is his behavior (to buy or not to buy) that counts. And consumers do not always practice what they preach. Whether or not this makes sense from a strictly logical point of view is irrelevant: in this case, consumer expectation is considered a legitimate reason for adding color.

We can, of course, provide more arguments in favor of food additives. But I highlight these two reasons—ethical and aesthetic reasons—since they explicitly claim to address consumer desires and expectations. In their account of the benefits of additives, food engineers too make use of an ethical and aesthetic repertoire. E-numbers are here to enable a particular conception of the good life, and they fulfill a specific aesthetic ideal. If consumer concerns are to be judged as irrational or irrelevant simply because they appeal to non-technical considerations, then the promises of food chemistry are no less so.

The Mechanism of Privatization

Thus far, I have described how consumer concerns that do not relate directly to safety and health issues are usually dismissed as irrational and inconsistent responses to E-numbers. These concerns cannot be sufficiently addressed by sound scientific testing and providing clear information, since some of them question the institutional organization of such testing, and others object to the functions that

additives are supposed to fulfill or at least the actual effects they have on how we relate to food. In the latter case, they challenge the values of convenience, efficiency and uniformity inscribed in certain food additives. However, even if such substantive concerns are recognized as ethical, cultural or aesthetic questions in their own right, the Dutch discourse on E-numbers shows another mechanism that systematically obstructs a meaningful dialogue: privatization. In this context, I take privatization as the exclusion of a particular concern from the discursive agenda for the reason that it should not deserve public attention. Grounds for that reason may be, for example, that the concern in case is considered to be informed by purely subjective and individual experience, and hence is not expected to find any common ground for meaningful (dis)agreements; or that the matter at issue is not of anyone else's business and needs protection from collective judgment and state regulation.

This demarcation of public and private matters is developed by the tradition of (neo-)liberalism and goes back to J.S. Mill, Constant and Humboldt. In the context of food technology, the supposed implication of this demarcation is that matters of taste, enjoyment of cooking, and the value of social meals, are unacceptable as public concerns and remain both protected and imprisoned in the private sphere. Eventually, the exclusion of ethical, aesthetic and cultural concerns from the public agenda finds its capstone in the logic of the free market: the principle of non-coercive, voluntary exchange of goods implies that no one is actually forced to buy or eat anything, especially if consumers have a large range of options to choose from.

This line of reasoning is strongly anchored as an intuition in the Dutch public discourse on food additives. Remarkably, at this point the "dominant approach" is not only taken by food engineers but also endorsed by consumers and citizens themselves. I will discuss an example to illustrate how issues of taste and the good life are privatized in a public discussion on food additives. In response to Hertzberger's opinion piece, a second discussion has taken place on the online discussion forum of the national newspaper *NRC Handelsblad* (De Jong 2010). It is quite similar to the Foodlog-debate: here, several versions of the argument against the reductive and alienating logic of food technology are put forward as well.

But one specific thread in the discussion is interesting in particular, because it concerns the sense of the debate itself, and in particular the terms in which it should proceed. Is the issue of ready meals, in the end, an ethical affair, and should we not decide for ourselves? Is it a matter of taste, about which one cannot and should not argue? Many object to the idea that taste and preference can be the subject of a meaningful debate. One discussant, Sander, comments: "Mrs Hertzberger doesn't like cooking. Who cares, apart from Mr. Hertzberger, perhaps." Also, the alleged moralistic tendency of people who take a critical stance against processed food is strongly criticized by their opponents. While some explicitly dare to frame the discussion as a question of the good life, many dismiss such framing as moralistic, elitist, and paternalistic—stressing the importance that each should be free to cook and eat as he likes.

Remarkably, one discussant takes the analytical effort to clarify the problem with moralism. He argues that there is a significant difference between expressing one's

personal taste and giving reasons for it on the one hand, and proposing that taste as a general rule, on the other:

> As far as I know, there's no moral obligation to eat tastier or healthier food per se, apart from the fact that it makes human existence pleasurable/more convenient/more valuable. But to whom are we obliged to make our existence more pleasurable? To God? To the Good Life? To ourselves?
> (P.)

This particular thread, woven into discussions about taste, food culture, pleasure and alienation, reflects the obstacle that ethical, cultural and aesthetic concerns need to take in order to gain a legitimate standing in the discussion—an obstacle to be challenged even before such concerns can become serious positions in an argument.

Again, the cultural, aesthetic and ethical concerns raised in this discussion are contested, not necessarily on the grounds that they would be false, wrong or inconsistent, but on the basis of the repertoire that they are part of. The repertoire of taste, enjoyment, and the good life is hardly considered appropriate for public discussions, since it seems to express a realm of private experiences and personal preferences which do not seem to have any public significance. The privatization of such concerns is often expressed in the reproach of moralism and paternalism: in the end, food is something to be consumed, and in matters of consumption there should be individual freedom of choice.

Re-imagining Private Impacts as Public Matters

Are some of these concerns surrounding E-numbers private matters indeed? In his essay *Public Goods, Private Goods,* Geuss discusses three historical cases in each of which the meaning of the public/private distinction is established. Although overlapping, these meanings differ from context to context: it may refer to a conception of intimacy and appropriate behavior, to republican ideas of interests and responsibilities, or to what counts as cognitive access to beliefs and desires. His conclusion is that no single clear and substantial distinction between the public and the private can be drawn that would be generally meaningful. He argues that we should not start from a basic understanding of what is private/public and only later consider what it implies for collective action. "Rather, *first* we must ask what this purported distinction is *for*, that is, *why* we want to make it at all" (Geuss 2001:107). This does not mean that the line between public and private concerns does not exist, but that rethinking or redrawing that line should be part of any debate over concrete and contextualized matters. I suggest that we understand, perhaps not all, but at least some of the consumer concerns about food additives as an attempt to re-imagine what impacts of food technology count as public matters.

In this respect, there are good reasons to recognize concerns about the way we relate to our food as legitimate and public issues. These reasons have been offered in the field of political philosophy by critics of political liberalism, who advocate ethical deliberation on the good life in the public and political sphere. More interesting, however, are the arguments made in the field of philosophy of

technology, since they pertain to the social and ethical impacts of technology in particular.

Albert Borgmann, for example, has argued that in modern society, the overall availability of technological devices reflects a pattern in how we perceive and interact with the world. The pattern is one of disengagement: many activities with intrinsic meaning and value have become redundant with technological devices to which their technical functions are now delegated. Borgmann presents the table dinner as an exemplary case of such an activity: "Once food has become freely available, it is only consistent that the gathering of the meal is shattered and disintegrates into snacks, TV dinners, bites that are grabbed to be eaten; and eating itself is scattered around television shows, late and early meetings, activities, overtime work, and other business." (1984: 204). Borgmann's point is not that we are somehow forced to do so by food technology. But it would be naïve to claim that our food habits remain unaffected by it. Invisible and self-evident, pervasive and consistent, the pattern of technological delegation has become the default position or background against which we make choices. "Living in an advanced industrial country, one is always and already *implicated* in technology and so profoundly and extensively that one's involvement normally remains implicit." (1984:104–5—italics are mine).

Also, Bruno Latour has criticized the instrumentalist assumption that technological artifacts are neutral instruments that in themselves do not prescribe or effectuate particular actions. Rather, he argues, artifacts are inscribed with a certain program of action: they embody a particular view of how they are supposed to be used, what context is appropriate, and what kind of actions are to be promoted. In this sense, artifacts have the ability to mediate our actions in the sense that what we do is co-shaped by both artifacts and by ourselves. This is conceivable only if we recognize that things, like human beings, can be actors with a certain agenda (Latour 1999; see also Winner 1986 and Akrich 1992).

Bringing together Borgmann's and Latour's conceptions of technology, Verbeek (2005) has argued that although artifacts can and often do have a decisive role in how we lead our lives, their influence is not necessarily coercive or strictly determined. That is, they rather *invite* or *discourage* certain ways of acting—and this includes those practices that we consider to be part of the good life. To be sure, Verbeek revises Borgmann's gloomy claim that artifacts would only draw us away from meaningful practices; they might as well enable us to engage with the world around us in new ways that are different, but just as meaningful (Verbeek 2005: 186–191).

In pointing at the mediating character of technology, and by making explicit the ways in which human action is implicated by artifacts, these authors have made clear that technologies can invite, hinder, enable, transform, guide, seduce, delay, restrict, or assist our actions. To qualify technologies as matters of public or even political concern, as these authors have done, means to question the pervasiveness and desirability of their impacts. From this perspective, the ethical, cultural, and aesthetic concerns surrounding food additives cannot be dismissed for the reason that the consumption of processed food is simply a matter of individual and free choice, because that is exactly the claim that is contested in the first place. Even though such concerns do not draw a direct causal relation between the use of food additives and the way we eat, they point out cases where food additives *mediate* the

practices of preparing, identifying, memorizing, enjoying and sharing food that they value so much.

Conclusion

I have argued that the paradox of E-numbers commonly perceived by food engineers disappears once we notice those consumer concerns that go beyond the question of safety and health impacts. These concerns draw critical attention to the highly scientized and technological character of food (procedural concerns), and to the impact of the use of food additives on current food practices and the development of food culture (substantive concerns). The usual call for sound science and the dispersion of objective information on E-numbers does not address any of these types of concerns. The recurrent appeal to consumer autonomy fails to recognize the mediating character of food additives, or at least paralyzes any meaningful public dialogue about it. The two discursive mechanisms I have identified, irrationalization and privatization, are serious obstacles for addressing these concerns. Rather than merely showing that a much broader set of concerns circulate among citizens and consumers, and that they should be taken seriously *because* they are numerous, my point is that they may not be as unreasonable as they seem, and they may even turn out to be not that private.

As Meijboom et al. (2006) point out, trust cannot be forced, but *trustworthiness*—a precondition for trust—can be enhanced. For the agri-food sector this means acting reliably, but also explicating the norms and values they act upon. After all, trust is a matter of *normative* expectations. Also, trustworthiness means to be responsive to public concerns and engage in a critical discussion about those norms and values (Meijboom et al. 2006, see also Brom 2000).

In the context of food additives this leads to three recommendations. (1) Food engineers explicitly acknowledge that the use of certain food additives have ethical, cultural and aesthetic implications. And (2) that they are at least willing to reflect and publicly discuss their responsibilities with regard to those implications and impacts. (3) Citizen-consumers, on their part, need to develop more effective ways of articulating their concerns and better not avoid moral and even political repertoires in doing so.

Thus far, I have left many questions open. For example, is the consumer's skeptic attitude towards scientific testing and the dependence on experts based on reasonable doubt? Are there good reasons to question the motives of the food industry? Are food additives really that successful in making our lives more convenient? If consumers say they are concerned about food additives, why do they still buy processed food? How pervasive is the march of processed food? How to attribute responsibilities if no clear causal relations can be established? And is it true that there's no arguing about taste? Perhaps this is a nice set of random questions that may feed into a meaningful, public dialogue in which consumers and citizens, technology developers and—why not—marketing departments engage in the open. But if procedural, as well as ethical, cultural and aesthetic concerns are instantly

irrationalized and privatized, we surely miss the opportunity of engaging in such a dialogue.

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