

Social Stomach: Performative Food Prototypes

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Abstract. “Social Stomach” is a series of social, textual and “performative” or diogenetic prototypes [1] that rethink the relation between food and technology and experiment with future metabolic exchanges that are biological, technological and political at the same time. Eating in this project represents the ultimate form of “cosmopolitics” [2], an ideal ground for design experiments with temporary assemblages of heterogeneous actors and forces that define society immersed in emerging technologies and changing scientific paradigms. From global supply chains to bodily metabolic exchanges eating involves political, technological, biological but also social acts that cut across various scales and form complex systems of relations and interdependencies. American fast food soliloquies, communal and family organized meals, the street-food culture of Singaporean “hawker” stalls, European restaurant enclaves for small elites and community pubs represent the complex relation between technological, political and economic systems involved in eating. These eating practices and systems are changing nowadays with the rise of social media, new scientific knowledge related to food and health but also global issues surrounding food security and justice. By studying niche communities organized around novel food and eating practices but also hacked, DIY tools for cooking, we can understand and rethink further what is at stake in today’s food politics and how to define our social stomach. .

Keywords. Food, ANT, DIY, DNA, genomics, cosmopolitics, design fiction

*Now, while I am not out now to be taken up as
unintentionally recommending **the Silkebjorg tyrondynamon machine for
the more economical helixtrolysis of these amboadipates** until
I can find space to look into it myself a little more closely first
I shall go on with my decisions after having shown to you in
good time how both **products of our social stomach** (the excellent
Dr Burroman, I noticed by the way from his emended food
theory, has been carefully digesting the very wholesome criticism
I helped him to in my princeps edition which is all so munch
to the cud) are mutuearly polarised the incompatabilily of any
delusional acting as ambivalent to the fixation of his pivotis.
James Joyce, Finnegans Wake, Book 1, Episode 6, p. 163 [3]*

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Introduction

When Joyce refers to the fable of Burrus (butter, butyrum in Latin) and Caseous (cheese, caseus in Latin) he speaks not only of milk and cheese but also of philosophical essentialism and political ideologies related to the idea of whiteness leading to racism, fascism and fanaticism. Joyce poetically linked food chains and food machines (“tyrondynamon” from the Greek word for cheese - tyron) with mythical and cosmological processes and even historical events to discuss unity and multiplicity of potential future collectives. Butter and cheese in this story are “partially independent forms of dependence-inducing mother's milk” (p.18) [4] representing our paradoxical relation to nature, planet and other essentialist notions of origin. While Burrus is the “unbeaten as a risicide” (killer of king and laughter) the smelly Caseous is “not and ideal choose by any meals”(p.122) [5], making their union possible only by the artificial “tyrondynamon” (p.124) [6], a mixer that transforms the unity with nature and the mother. Tyrondynamon divides and unites these two male “pooles” with the help of artificial agency of Margareen or Nuvoletta (margarine) using the mythical and technological metaphors in the process. Cosmological, technological and mythical stories of unity and multiplicity are described as cooking lessons in which we can trace even “Boiled protestants” (potatoes) and “Huguenot ligooms” (referring to French beans) and many more culinary and political movements (p.243) [7]. Myth and technology, past and future, history and science create variety of scenarios which are both familiar and prophetic and which stretch our imagination and memory to its limits.

The design scenarios which we plan to present share some of the poetics of Joyce's tyrondynamon, rethinking the newly emerging parts and units as a story that is both old and new, technological and mythological. We envision design fiction as prototypes with a narrative that mix myth and science, pop culture and machines in a manner similar to this famous literary experiment and machine, *Finnegans Wake*, published in 1939. Discourses, rituals and technologies related to food will help us rethink the future in terms of novel forms of dining together and preparing food. The proposed design fiction embodies Freudian “dream-work”, creates evocative objects that explore the chemical, discursive and social associations between words, things and customs involved in eating. We hope to offer tools that provoke powerful associations, both individual and collective, fears and hopes, and confidently balance apocalyptic and prophetic visions with irony. The “low fidelity” of these experiments, both discursive and social, redefines the various social, biological and political relations and investments between humans and non-humans in some future Latoureaan “Parliament of Things” [8] conceived as a table on which we have to decide who eats who, how and when.

1. Diet-tribes, DIY kitchen appliances and Food 2.0 chains

“Social stomach” design fiction is based on an observation that recent niche communities formed around issues of diet often hack and deploy their own tools for preparing, sharing and managing food. We are starting to witness various “diet-tribes” and even “food-cults” formed around web apps and hardware tools ranging from the DIY sous-vide appliances used by Paleo Dieters [9] to geo-locative foraging services like Fallen Fruit for “freegans” [10] to crowd-sourced biodata visualizations for nutrigenomics enthusiasts [11]. These practices and movements serve as an inspiration

for our design fiction that speculates on the future neo-tribal society in which emergent technologies and tools lead to often extreme relationships with nature expressed through the changing dining rituals. These diet-tribes are viewed as “cosmopolitical” parties whose positions merely exaggerate current food politics [12] and “market segments” defined by “lifestyles of health and sustainability” [13]. They extrapolate the recent trends in commons-based peer production, Internet of Things and “networked” 2.0 body monitoring movements such as “Quantified selves” [14] in which identity formation and social organization are intimately linked with data tracing, monitoring and exchanges. The data driven exchanges between individuals and things as a base for cosmopolitical experiments are represented for example by so called “product-ontologies” [15] or commodities that literally confront us with their conditions of production (logistical chain, carbon foot-print, etc). These data driven practices when applied to food redefine eating as a unity formation, constant negotiation on the state of the common body, the social stomach which is simultaneously a political and a biological process and act.

This “object-oriented” movement which is paradoxically related to the constant and real time availability of data about everything and everyone is making its mark not only in design but also in recent philosophy [16] and political theory [17]. In refers to Latour’s early normative proposal for a “Parliament of Things” [18], a quasi-judicial assembly of humans and non-humans, which is becoming possible by the ubiquitous and body 2.0 computing giving “voice” to various non-humans. We believe that eating and dining provide the best means by which to understand the potential of such human and non-human assemblies based on intensive data monitoring and sharing and that food prototypes will help us understand better the dynamics between the newly defined parts and emerging new biological and political units.

We are trying to position the debate on the future of food along ideological and technological lines described as political struggles at stake both within and outside of the cosmopolitical “Parliament of Things”. As this parliament is essentially a liberal organization certain more radical agonistic views on politics are excluded. Following, for instance, the autonomist school of political theory [19], our speculative approach would allow us to explore the juridical solutions offered by these theories, usually framed only in reactionary terms, as “anti-globalization”, “anti-GMO”, etc. Using the myth and history as a model, what follows is a projection of object-oriented (food) politics into a speculative future. Inspired by Atwood’s “The Year of The Flood” [20] and the recent SF novel by Paolo Bacigalupi “The Windup Girl” [21] we envision alternative food and deep-ecological ideologies in terms of quasi-religious and post-human movements, concerned with some form of “salvation” and with extreme ideas of nature and community.

2. Interacting and Eating across Scales and Data

In this paper we will describe our first two prototypes based on two important recent technologies offering such intensive sharing and monitoring of data that redefine the human body in terms of DNA data and the non-human things in terms of RFID tags and production data. While the DNA data objectify the human body into scientific facts but also community of molecules and bacteria, the RFID data “humanize” things by making possible unique narratives about everyday objects and their cycles. The “object-oriented” politics is then based on these exchanges between animate and

inanimate things, bodies and products that are forming new food chain and ecologies. The supply chain logistics traceability has been widely required by regulation, for instances in the global food industry due to issues concerning food safety [22]. These regulations, combined with perceived consumer demand and pressure by consumers groups, have brought about a widespread trend towards corporate social responsibility which has in turn encouraged manufacturers to analyze and redesign product life cycles [23]. Until recently, these innovations had taken place on the supply side, signified to consumers via a variety of labeling schemes, but proliferation of LOHAS schemes and branding strategies are increasingly employing tags and similar technologies to form a type of discourse that has been referred to as “supermarket pastoral”. [24]. In a similar manner, the DNA data about our bodies help us understand the politics of interaction between the inside and the outside of our body, between our ancestral “past” and the present influences, with increasing demands for a more healthy and harmonious symbiosis with our bacterial microbiome [25] and the whole environment. The global life cycles of products and the complex ecologies in our bodies involved in these food flows, exchanges and interactions that are biological, social and political in a complex manner.

When compared with the dramatic changes in consumption patterns in digital media, the market in durable goods and food has remained relatively unaffected by the disruptive forces of media in transition. Recent dot-com startups, however, have developed applications that dis-intermediate what today we might think of as one of the last true broadcast media, the department store. Connecting products to the Internet of Things, via product barcodes, systems such as “Sourcemap” [26] allow for direct connections between producers and consumers in order to trace and map a product’s supply chain and carbon footprint, while others such as “GoodGuides” [27] attempts to perform calculations on every single ingredient by consults tens of millions of evaluations with data categorized in terms of health, environment and society composing what is referred to as a “product ontology”. The increasingly finer granularity of data on location from satellites, to cell phone towers, to WiFi triangulation to barcodes and RFID, all the while decentralizing and creating more alternatives. The space opened up by these latest barcode-based applications, potentially allow users to personalize their experience of consumption in relation to a single object, much in the way that locative media practices had sought to do with urban space via GPS. While these technologies monitor the food flows and ecologies outside of our bodies, the consumer genomics services offer a possibility to understand further what is happening inside our bodies when we consume food. These DNA profiles [28] open a different space for personalizing the eating experience and transforming it into a complex decision making process.

3. Social Stomach as Cosmopolitics of Food

When we eat, we simply form community inside our body but also outside in the society. People believing in scientific intervention in food (which we will call functional foodies) would like to open our evolution to experiments and technological intervention, slow food movements are trying to preserve a certain form of nature and certain evolutionary stage which proved resilient and useful indefinitely. Extreme food practices coupled with various technologies simply form different communities and views of nature and evolution that offer a very different vision of the “social stomach”

– the food chains, communities and ecologies we are supposed to be part of. In order to understand these visions we will use narrative that works with four food micro-cults defined by their respective and opposing views in relation to nature/technology and history/evolution. Additionally, we developed two prototypes that will allow us to follow the dynamics of the future food cults used in the story. The future “Parliament of Things” formed around food involves various flows of data, things and humans whose interactions create new niche communities. Each school of thought (diet-tribe) is defined by one thinker or celebrity who is recognized for their stance on current matters-of-concern around food. The story pits these concerns against each other in the context of a revolutionary struggle for the future of food in which a curious mix of innovation and conservation comes to dominate world food production. Like so many revolutions it is a perceived ethical problem which motivates the action. In this case it a “Moral Crusade Against Foodies” [29]:

1. The eco-pragmatists: Associated with the figure of Stewart Brand [30], co-founder the Global Business Network and Long Now Foundation, this political ideology integrates genetic science with environmental practice. Brand’s unquestioned belief that humanity is headed for environmental catastrophe motivates a openness to compromise between progressive political principles and a belief in innovation. The most conservative figure in this narrative, he nevertheless shares a common enemy with the other figures, namely: the food zombies and the foodies.
2. The food zombies: The food zombies represent the “lumpen proletariat”, they do not have a leader, their minds extinguished, whose undead bodies riddled with the diseases of affluence, habitually return to worship at the false idols of fast food mascots. Although unaware, their actions support a vast industrialized “pain production complex” (industrial food production).
3. The foodies: Led by the former chef and gourmand Anthony Bourdain [31] they represent the decadent element of society. Like the food zombies they contribute to “pain production complex” through their diets, yet this is considered far more insidious as they “should know better”. Their existence serves to unite the seemingly opposed ideologies of the other elites against them as a kind of metaphysical “enemy within”. In opposition to their decadence which takes into consideration only egoistic interest in taste, the ecopragmatists are united with the locavores.
4. The locavores: Led by local food guru Michael Pollan [32] they are the romantic idealists who oppose both the “pain production complex” as well as the degradation of life through bio-tech. As opposed to the ecopragmatists they draw a firm line between natural and artificial life. In the story they are instrumental in the early years of the revolution, but ultimately ill-suited to post-revolutionary politics. Their popularity amongst the young intelligentsia marshals widespread support for their “guerrilla gardening” [33] scheme transforming whole cities into romantic idylls. As the movement grows, however, the locavores cannot adapt to consider problems at a global scale, particularly given their rejection of technology. Ultimately they prove only to be a transitional movement, most of whose supporters eventually defect to the other parties, leaving only a few holdouts referred to as the “loony locavores” .
5. The Symbiotic Utilitarians: Led by Peter Singer [34], the spiritual father of the animal rights movement, their actions are informed by the principle of minimizing suffering, which they believe can be quantified scientifically. Their fundamentalist stance makes them active in the early years of the revolution waging an asymmetric war of terror against the “pain production complex”. After the seizure of power by the revolutionary movement, they eliminate the “pain production complexes”, as the

locavores build the “guerilla gardens”. In comparison to the locavores, with whom they share many of the same interests, they are however paradoxically willing to work with science to design new forms of life, such as in-vitro, that can not feel pain. Their quantifiable approach towards ethical problems meshes well with the technocratic approach of the eco-pragmatists, and they completely abandon their former radicalism.

6. The Mycological Anarchists: In the post-revolutionary society these last remaining radicals, led by the guru of the wild fermentation movement Sandor Katz [35], have formed a network of communes growing and sharing wild yeast cultures that exist entirely outside of the state and are practically invisible. While they share the locavore’s decentralized attitude to government, by contrast they fully embrace technology.

4. Food In The Age Of Nutrigenomics

The first application of the aforementioned narrative comes in the form of a prototype designed to rethinking the practices of dining, and what we call “messaging”, in the age of personal genomics. The interest in personal genomics on the side of the public and the increasing importance of epigenomics for the scientific community already formed a new generation of social networking services that use DNA profiling and biodata to connect people that share certain traits but also to crowdsource these data with various institutions [36].

This present trend is taken a step further by the eco-pragmatists and mycological anarchists in our 2020 design fiction. To upload information on your daily habits via various sensors becomes a citizen duty imposed by the government involved in various insurance schemes but also in scientific research for which it is important to monitor not only what people eat but also their excrement. To improve the individual microbiome is a civic duty, a matter of personal hygiene similar to washing your hands or brushing your teeth, vigorously monitored by the insurance companies, and also part of a certain social identity.

Different groups grow different microbiomes that support different DNA interaction between the bacteria, food and the human gut. People are walking communities of organisms that have a say in the politics. While the eco-pragmatists follow the ideal standard of microbiome to which food zombies adapt, the mycological anarchists experiment with various new bacteria in the guts. They travel to exotic locations to find new food and new bacteria that will form certain unique interaction. Some mycological anarchists eventually turn into decadent foodies and some become extreme locavores which creates tension with the ruling eco-pragmatist government that would like to impose standards on what you can grow in your body.

Being healthy is not just individual good but a responsibility to your community and it is a political and biological act of keeping your DNA and bacteria in some equilibrium. On this point the locavores agree with the eco-pragmatists, and after years of struggles they decide to share their DNA and food data in order to build a case for preserving certain locations, crops and lifestyles intact by any experiments. Eating without uploading data in real-time on how your body reacts is considered a crime offence and the only group that rebels are the decadent foodies that would like to preserve the right to eat things which create misbalance in the microbiome because of pleasure but also the mycological anarchists that are searching for exotic bacterial species. The symbiotic utilitarians create special interfaces that make these inner

microbiome communities part of your social networking profile which mentions in real-time the state and happiness of your microbiome.

The interfaces that connect data on the genome with food data in terms of macronutrients (e.g., fatty acids and proteins), micronutrients (e.g., vitamins), and naturally occurring bioreactive chemicals (e.g., phytochemicals such as flavonoids, carotenoids, coumarins, and phytosterols; and zoochemicals such as eicosapentaenoic acid and docosahexaenoic acid) are omnipresent. Sensor inside and outside of our bodies constantly follow what influences our DNA and bacteria and there are displays in restaurants and fast foods that give advice on what to eat and how to make our body healthy. Information on micronutrients and bioreactive chemicals in foods are constantly followed as part of a microbial “weather” information system. People are constantly briefed on their metabolic reactions that determine everything from hormonal balances and immune competence to detoxification processes. These information and interactions are shared in a family but also among coworkers to maximize efficiency and create optimal society, so your e-mail client tells you in what physical and emotional state is someone and whether it is appropriate to send him/her e-mail or wait.

While the scientific community strives for more data that will explain the interactions between the genome and the environment and give to the politician the ideal recipe for the microbiome, the general public seems to enjoy the serendipity behind interactions involving DNA profiles as we can already see in the case of match-making [37] and family tracing applications [38] that connect complete strangers. Interacting over DNA profiles involves casual and random connections between familiar and even complete strangers. The sharing of DNA profiles and information on food is not only crowdsourcing some form of scientific research but it also becomes a form of entertainment in which we choose our dining companion based on similarity of what we should or should not eat. Integration of genomic science with nutrition and with lifestyle variables such as cigarette smoking and alcohol consumption leads to the ban of many substances which are not considered safe.

However, not everyone likes the integration and sharing of all these data on food and DNA not only because of privacy concerns but also because it supports functional food movement that is gaining control over the food. Part of the locavore movement turns into “slow food terrorists” that organize secret dinners that do not involve DNA data sharing but support wild eating habits. These secret dinners are often organized by the mycological anarchists and become very popular among the young population because it often involves drug abuse of various mushrooms and similar products. While the functional foodies groups (eco-pragmatists, conservative locavores, food zombies, symbiotic utilitarians) become more social and communitarian in terms of their data crowdsourcing practices, the radical slow food movement (foodies, mycological anarchists, extreme locavores) turns more individualistic and elitist, embracing indigenous food practices and it eventually moves into illegality.

These extreme food groups refuse to preserve the optimal genome values and they want to experiment with nutrition that can modify the body. They work with different genes that are expressed and modulated with different food. Impact of dietary components and nutritional factors on the genome is used for exploring some extreme mutations or even for forms of food suicides. Members of these niche communities often embrace even slow food ideologies but they tend to self-experiment with any type of food (even functional and non natural). Different members of these groups even

specialize in certain biochemicals in foods (for example genistein and resveratrol) which are ligands for transcription factors and thus directly alter gene expression.

The rising possibilities of personal genomics coupled with new models of social networking, data aggregation and visualization, but also with future ad hoc and wireless sensor networks for medical monitoring etc. become testing ground for future forms of symbiosis that are constantly contested by various radical and conservative food groups. Interfaces using DNA, biological and micronutrients data call into question the basic divisions and assumptions of HCI about conscious human beings with intentions that use and communicate over unconscious agents (machines, computers) defined by processes and algorithms. The basic goal of HCI which is to translate between human intentions (mind, subjectivity) and computer algorithms or other objective processes in the outside world does not hold in the case of interfaces using DNA data [39]. This is because these interfaces not only translate and connect the human with the machine but also represent and objectify our subjectivity and question our status. Common profiles created by users themselves still express human intentions; interests, values and needs that machines and computers can meet or even enhance will disappear. Profiles based on biological data such as genomes and nutrients are generated by a vast sensor infrastructure and by science laboratories and it is not completely clear what they express and who or what they represent. They are a product of bioscience protocols which are part of a large system of interests and processes related to different industries rather than to individuals, personal intentions and user needs. DNA sequences and SNPs profiles define the user and his and her needs in terms of seemingly objective data about the molecular makeup which is also a product and effect of industry standards and protocols used in DNA sequencing, microarray analysis and different methodologies.

The interconnections with the environment in a sense of our habitat but also in a sense of our political, social and economic milieux become a matter of interfaces coupling our DNA with data about our habitat and food. The technologies help us understand and manage the different limits of our biological, social and political existence rather than to support the narrow technooptimist forms of enhancement and extension. They are basically maturing into means of reflection, persuasion, empathy and even moral improvement rather than only means of immersion, interaction and transformation. In the most obvious cases this involves managing our physical fitness and health or monitoring and warning us against energy consumption or other excesses. To sum up the design for this “post-interactive” era prefers monitoring, visualizing, reminding and persuading as the main functions of the new tools and applications working with large numbers of human and non human users (institutions, stakeholders, and environment).

5. Performative Prototype: 23andMe dinner - Eat What You Are

Typical dinner in the Age of Personal Genomics will couple gastronomy with nutrigenomics in order to make comfortable various diet-tribes. The dinners will be dedicated to various patrons and food styles. For example to Jean Anthelme Brillat-Savarin who is the patron of all locavores but also foodies or to emperor Rudolf II. who is embraced by functional foodies because he served as a model for Arcimboldo's portrait of the Roman God Vertumnus, reducing a human to an assemblage of vegetables in a manner similar to which scientist show how we share parts of our

genome with various flora and fauna. We tested the idea of personalized DNA dinner with people that have 23andme profiles as a design probe into the future of dining. The guests are supposed to enjoy food but also interact over available information on genes and play with a near future scenario on dining in the age of personalized genomics trying to answer questions such as: What happens when DNA decides on your menu? How will restaurants use DNA data? Will it be all health related or we can think of some entertainment value of DNA data? How will people connect and interact over such data? How will this affect their experience of dining?

The menu for such future dining experience based on sharing DNA data will have to take into account the serendipity of DNA interactions and the health benefits. For that reason the starter could be something like “Ancestry Map: DNA tour in time & space” with following explanation: “Your plate is an ancestry map where genes and food meet & create your genealogical portrait. Mom’s cooking acquires special meaning with this starter that uses food to represents your genetic & culinary inheritance and the closest region where your DNA mixes and creates your unique individuality.” In our design probe we created such plate for one of our guests whose genetic ancestry states that “You test 70% Tuscan, 24% Lithuanian, and the rest Mideastern. The spot on the map, which is probably a good guess, is near Trieste. The chromosomes show clear, recent, Mideastern mixing. The parts of the chromosomes showing the Mideast are roughly 50% Mideastern, perhaps Jewish, while the rest are western European”.

The personalized starter for this individual was described: “XY, on your plate Tuscany brochette with pecorino which is 70% of your plate meets Ashkenazim and East European stuffed mushrooms and to add to uncertainty we put 6% of hummus to refer to that Mideastern mess. The hummus is a celebration of your 6 chromosome which is your most Mideastern part and which plays important role in the immune response but also sexual attraction since it is the base for the 100 genes that are part of the Major Histocompatibility Complex closely linked olfactory receptors.”

The main course was made for the whole group of guests and it was called “ADRA2A, MTHFR & TAS2R38 variations” referring to the names of important genes describing how we metabolize important nutrients. Genetic “average” of the whole group was placing them somewhere in France and that is why Beef bourguignon was served in portions of different sizes depending on the individual sugar intake efficiency status (ADRA2A gene). The right balance of green veggies like asparagus, spinach and broccoli was supposed to balance the individual needs for folates (MTHFR gene). We also checked the 8q24 region, SMAD7, LOC120376 and 15q13.3 regions which relate to intestines and an alternative portion of salmon was served in a case of SNPs that don’t support meat consumption.

The green, leafy and healthy veggies also tested the PROP status (TAS2R38 gene) of the individual, which defines the ability to detect various bitter combinations of taste. It is believe that the first gastronomers where people with elevated PROP status and sensitive bitter receptors foraging and testing the surrounding flora. In the dinner guests were tested to see how many preserved this taste curiosity and LCT gene (lactose intolerance) was used in the desert part to decide who gets a portion of cheese or commit. Drinks were served based on the opioid receptor gene (OPRM1) that was used to decide on how much drinks were served. The final cup of green or black tea was based on COMT gene that also reveals some dopamine related behavioral issues and secrets.

Based on the analysis of the genes related to alcoholism, guests would get only a limited numbers of drinks. One of the guests got a following card explaining the numbers of drinks:” Your opioid receptor gene OPRM1 entitles you to only one and a half glass of wine. Having two copies of the A version at the SNP rs1799971 increases your odds of severe alcoholism 2.16 times because you have more than 12 years of education. We can serve you that extra half of a glass because your education, the odds of severe alcoholism are 3.3 times higher for individuals with two A copies of the OPRM1 SNP rs1799971 when combined with less than 12 years of education. Unfortunately however, you have two copies of a variant in the DRD2 gene affecting the neurotransmitter dopamine receptors and increasing the risk of severe alcoholism 1.85 times. To add some words of comfort, this configuration of your OPRM1 gene also decreases sensitivity to social rejection so you do not suffer when people criticize you that you are drinking less and you will not feel being a burden to others. People with two A copies of the OPRM1 on their SNP rs1799971 have significantly lower levels of sensitivity to social rejection and even pain. Your lower brain activity in the anterior cingulate cortex and the anterior insula, brain regions associated with the processing of both physical and emotional pain, make you more resilient to pain than the people with one or two Gs.”

6. Conclusion

We have explored actor-network theory as a performative engagement with material systems across a variety scales from phenotype to speculative futures for a global Parliament of Things. In specific we have applied our analysis of food design, towards broadening the theoretical base of this emerging field as well as intervening in the practice as designers ourselves. We have done so both in terms of narrative speculation as well as creating diegetic prototypes. We seek to develop the ongoing conversation between science fact and science fiction upon which human computer interaction design relies to excite public desire and spur innovation. The performative prototype in a form of a dinner using DNA data from the 23andMe service helped us formulate the design fiction on the future of eating and food in the age of data deluge. Biological data have this ambiguous and unclear status in relation to both objective facts and social constructions and they are often a strange amalgam of computer algorithms, scientific protocols, human intentions and social customs. The users of these data can never be completely certain whether they can trust the scientific, analytic and clinical validity and utility due to the limits of DNA sequencing technologies. The influence of genes and SNPs on human behavior and needs is even less clear so these future utopias of data sharing that would make this more certain still remain a hope rather than reality. The different attempts to integrate such data in our personal and social relations and to create interactions over biological data should be seen more as an experiment testing the borders between constructions and facts, biological and social phenomena, private and public spheres. HCI in the age of DNA is simply is not only about human and computer interaction but more about the interaction between emerging technologies with society and politics. It is becoming a science of different forms of symbiosis between society and emergent technologies that goes beyond the simple interaction between individual users or even groups of users and their machines. We are forced to design and think on a level that is both more discrete and micro and at the same time more global and macro in biological and social sense. The common notion of the user

and the human being is dissolved in terms of DNA, biological and psychological conditions, even neurotransmitters, and the design is not only about a new type of interface than links user needs to some community and machines but a design of new types of community that redefines the relation between business, biotechnology and politics.

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