Biomedicalized food culture – A Critical analysis at the intersection of “healthy” food, bodies and health

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Abstract

This article presents my analysis of what I call the contemporary “biomedicalized food culture”. This food culture participates in defining the ways by which “healthy” food is currently understood and practiced, and in creating and orienting particular relationships between bodies and food. In this paper, I present Clarke et al.’s (2010) works on biomedicalization along with the works of researchers in critical food studies (such as Guthman (2014); Landecker (2011); Scrinis (2013)), which have inspired my analysis of the biomedicalized food culture.

Inspired by Clarke et al.’s (2010) ways of presenting the biomedicalization of the social field, I present the contemporary biomedicalized food culture from and through its constitutive processes. Drawing from my fieldwork in Montreal, Canada, I discuss how mediatization, molecularization and commercialization processes participate in the development of the biomedicalized food culture as well as in the creation of knowledge and practices constitutive of “healthy” food, bodies, and the links between them.

I approach this culture from a cultural studies’ perspective, which makes it possible to question the power relationships at stake in its development. I thus criticize how the biomedicalized food culture contributes to the (re)production of exclusions, discriminations, stigmatizations of some knowledge, practices and individuals, as well as to the (re)production of injunctions and normativities linking food, bodies and health, in particular and situated ways at the intersection of its constitutive processes. I finish up by opening up the discussion on how these relationships between food, bodies and health should be thought in their multiplicity and their complexity.

KEYWORDS:

biomedicalized food culture, biomedicalization, critical food studies, cultural studies, “healthy” food, bodies

This article presents what I call the contemporary “biomedicalized food culture.” I argue that this food culture participates in defining the ways by which “healthy” food is currently understood and practiced, and in creating and orienting particular relationships between bodies and food. The analysis presented in this article questions what contributes, culturally, to defining contemporary “healthy” food. Since “[...] biomedicine has become a potent lens through which we culturally interpret, understand, and seek to transform bodies and

lives” (Clarke et al., 2003, p. 163), I argue that it needs to be thought at the intersection of contemporary food knowledge and practices, as food becomes increasingly approached as a tool to transform bodies from the inside. Therefore, I briefly present Clarke et al.’s (2010) works on biomedicalization along with the works of researchers in critical food studies (such as Guthman (2014); Landecker (2011); Scrinis (2013)).

Inspired by Clarke et al.’s (2010) ways of presenting the biomedicalization of the social field, I present the

contemporary biomedicalized food culture from and through its constitutive processes. Drawing from my fieldwork in Montreal, Canada, I discuss how mediatization, molecularization and commercialization processes participate in the development of the biomedicalized food culture as well as in the creation of knowledge and practices constitutive of “healthy” food, bodies, and the links established between them.

Given the cultural studies’ perspective in which this analysis is rooted, the analysis of the contemporary food culture is not limited to the contents, nor to the actors or interests related to authorities legitimated to speak food “truths” (for instance, recommendations from the new Canada’s Food Guide, from dietitians, from Health Canada, etc.). I understand “healthy” food as defined and materialized within the current food culture, allowing certain food knowledge and practices rather than others, thereby limiting what can be said, understood and practiced. The notion of “culture” in the expression “biomedicalized food culture” is inspired from the works of Stuart Hall (1980), himself inspired by Raymond Williams for whom “culture is ordinary” (1981), which means that it is (re)produced through knowledge and practices that compose daily life. Culture hence incorporates and materializes what structures or modulates it, as a result of the power relationships that are negotiated through it. A culture is therefore observable through the deployment of a whole set of knowledge and practices (political, economic, from popular culture, mediatic, medical, etc.).^{1,2}

My analysis makes it possible to question the power relationships at stake in the negotiation of this food culture, as they contribute to the (re)production of exclusions, discriminations, stigmatizations of some

knowledge, practices and individuals. I thus criticize how the biomedicalized food culture contributes to the (re)production of exclusions as well as injunctions and normativities linking food, bodies and health in particular and situated ways at the intersection of its constitutive processes. I conclude by opening up the discussion on how these relationships between food, bodies and health should be thought otherwise, in their multiplicity and their complexity.

From the biomedicalization of society to the emergence of a biomedicalized food culture

The current nutritional paradigm

A few years ago, Scrinis (2013) presented his critique of the nutritionism paradigm, that has dominated the nutritional sciences since the 19th century, and which promotes “[...] a pharmaceutical model in which direct and precise effects on particular bodily functions are attributed to single, isolated nutrients and food components” (Scrinis, 2013, p. 197). Scrinis (2013) describes the current dominant paradigm as functional nutritionism.³ The latter is characterized “not only [by] a more extensive understanding of the relationship between nutrients and biochemical processes but also [by] the attempt by scientists and food technologists to more directly target, control, and manipulate these internal bodily processes, functions, and biomarkers” (p. 165). This paradigm participates in the development of new biospecific⁴ knowledge (at the intersection of biochemistry, microbiology, nutrition and medicine, among other things), through technoscientific advances. For Scrinis (2013), the functional era thus generates an

1 This understanding of culture is inspired by some cultural studies’ works that emerged in America (e.g. Carey (2009) and Grossberg (1996, 2012)), as they « worked to the theorisation of the relation between culture and power, with the premise that power is deployed and acts within culture itself » (Durocher, 2017). I understand culture as being constantly (re)negotiated, unstable, not fixed.

2 The methods used to analyze this food culture are inspired by feminist approaches (especially the work of Haraway (1988)) that advocate for the production of knowledge from a situated perspective. I explored and analyzed this food culture by acknowledging that I am fully embedded in it and therefore collecting materials from my daily life. The materials selected and collected participate in defining, implicitly and explicitly, contemporary “healthy” food, in Quebec. I was inspired by the dialogic and embodied ethnographic methods mobilized by Probyn (2016) in the constitution of an heterogeneous corpus for analysis, composed of various materials ranging from media documents, promotional materials, informational documents to observation notes from the field, to name a few.

3 Scrinis (2013) designates three distinct nutritional paradigms that have dominated the last few decades, each of them characteristic of their era. After the quantifying nutritionism paradigm and the good-and-bad nutritionism paradigm, the current dominant paradigm is that of functional nutritionism, which began in the 1990s. For Scrinis, every one of these paradigm changes brings new ways of conceiving food and linking it to bodies and health. Moving from the machinic bodies fed with “appropriate” food of the quantifying nutritionism paradigm and the subsequent at-risk-of-chronic-disease bodies (mostly associated with the overconsumption of “bad” nutrients and/or calories) of the good-and-bad nutritionism paradigm, the current functional era is characterized by a greater focus on the microbiological components and processes linking food and bodies, so as to improve food consumption practices and conceived effects on bodies and health.

4 With the expression “biospecific knowledge,” I refer here to the very specific biological and biochemical knowledge associated with organic matters and molecular processes and interactions. I conceive that this biospecific knowledge is produced in relation to body matters as well as to food matters, and both are conceived to interact with each other, at a molecular level.

understanding of bodies as potentially “nutritionally enhanced, since functional nutrients and foods are understood to target and optimize the functioning and performance of the body” (p. 48) Bodies are understood and linked with food, with particular interest for the internal biochemical processes involved in ingestion and digestion. Bodies are also analyzed through the identification of biomarkers, which become the perceived indicators of the current composition and functioning of the body, and therefore of its current and future health. Through this nutritional era, the diagnosis and the surveillance of health risk factors related to diet are expanded to the micro scale (e.g., cellular, molecular, genetic levels).

Landecker (2011) analyses food practices such as those in nutrigenomics⁵, the production of genetically modified foods and the use of food nanotechnologies, as they contribute to the characterization of food at the molecular level as having therapeutic, even medical virtue: “Food’s biological activity and its connection to human health, its pathogenicity or therapeutic power, becomes understood in terms of how outer molecules articulate with inner molecules in a life of eating” (Landecker, 2011, p. 185). For Landecker (2011), such knowledge and practices are embedded and developed within a cultural context where prevention is intimately linked to the improvement of bodily functions and components, which are associated with the state of health, present or future: “Consumers eat ‘for my wellness, not just my illness,’ in the reach for enhancement and imagined protection of the body from toxins or stress, and they try to consume the biological power perceived to reside in some molecules and not others” (Landecker, 2011, p. 185). Clarke et al.’s work (2010) on the biomedicalization of society provides relevant theoretical tools to reflect on the deployment of such knowledge and practices, as they put bodies and food into relation in particular ways.

Biomedicalization

One of the characteristic manifestations of the contemporary nutritional era is functional food, defined by Kim (2013) and Scrinis (2013) as referring to food or nutrients conceived as producing specific physical or physiological effects and as having the potential to reduce the risks of chronic diseases.⁶ For Kim (2013),

the production of knowledge constitutive of functional food is informed by the biopolitical context (as defined by Rabinow and Rose (2006)), which makes food a new space for population regulation. The expansion of biomedical knowledge and techniques within the social field is the result of the biomedicalization of the social field.

Biomedicalization, as presented by Clarke et al. (2010), refers to the complex and multi-sited transformations of medicalization processes, partly caused by the technoscientific advances that inform the contemporary ways in which bodies and health are apprehended. While medicalization processes have fostered the development of practices and knowledge aiming to control medical phenomena (such as diseases or injuries), biomedicalization “emphasize[s] transformations of such medical phenomena and of bodies, largely through sooner-than-later technoscientific interventions not only for treatment but also increasingly for enhancement” (Clarke et al., 2010, p. 2). The addition of the prefix “bio” to “medicalization” refers to these new possibilities to transform the living (human and non-human) through technoscientific interventions “such as molecular biology, biotechnologies, genomization, transplant medicine, and new medical technologies” (Clarke et al., 2010, p. 162).

For Clarke et al. (2010), the interrelated processes constitutive of biomedicalization reflect changes in the distribution and appropriation of biomedical knowledge. The relationships between bodies, health, and life itself are reconfigured, as are emerging new biotechnical and biomedical potentialities to intervene in them, with the aim of improving and optimizing, bodies and/or their future health. These transformations are characteristic of epistemic changes that divert the “clinical gaze initiated in the eighteenth century (Foucault 1973) to the emergent molecular gaze of today (Rose 2007)” (Clarke et al., 2010, p. 4). This engenders new technoscientific and biospecific ways to evaluate and characterize bodies, which entail which entail the categorization of new “at-risk” bodies, before they even demonstrate any sign or symptom of disease. Scrinis (2013) has furthermore criticized the new ways of creating “at-risk” populations in the context of the current functional nutritionism paradigm as “this expansion of at-risk biomarkers, and of

5 Nutrigenomic refers to « (...) the study of individual differences at the genetic level influencing response to diet. » (Chadwick, 2009, p. 94).

6 For example, the idea of functional food pervades this enunciation: “Everyone knows that whole grains are good for

health. According to the new Canadian Food Guide, eating high-fibre foods can help to decrease the risks of heart diseases, stroke, type 2 diabetes, and colon cancer” (My translation. Tremblay, 2019). “High-fibre” foods are conceived here as having the potential to act on and modulate bodily components and functions.

people's susceptibilities to diseases, may transform yet more healthy people into patients requiring monitoring, testing, and proactive treatment" (Scrinis, 2013, p. 164).

Biomedicalization contributes to making health an individual responsibility, which means that it needs to be taken care of by the adoption of preventive action and by the acquisition of the perceived necessary knowledge, goods and services (Clarke et al., 2010). Individuals are not any more passive in regards of their health, but rather enjoined to act on it "before it is too late" (Clarke et al., 2000). Within biomedicalization processes, food becomes a "tool" for transforming bodies from the inside, through the integration into bodily materials and biochemical processes of food nutrients.

The biomedicalized food culture

My analysis of the contemporary biomedicalized food culture is inspired by the work of Clarke et al. (2010), who present biomedicalization through its constitutive processes rather than through a set of fixed, limited characteristics. I will therefore present the deployment of the biomedicalized food culture through some of its constitutive processes, which I identify as being mediatization, molecularization and commercialization processes. By the exploration of these processes at work, I highlight and question what informs the development of this food culture and, subsequently, the creation of particular links between food and bodies. This approach to presenting the biomedicalized food culture through its constitutive processes is also coherent with the cultural studies perspective, understanding that culture is constantly (re)negotiated and that a multiplicity of forces and processes contribute to its constitution and to the production of certain knowledge and specific relationships, at the intersection of food and bodies.

Food knowledge is currently massively produced and put into circulation on a multitude and heterogeneity of media platforms. This biospecific knowledge, at the intersection of nutritional, biochemical and medical sciences, is not any more limited to these fields of production and application, but is now part of popular culture. Consequently, nutritionists (e.g., Geneviève O'Gleman who became famous as host of a Quebec TV show and is now launching a food magazine (<http://cuisinefuteeparentspresses.telequebec.tv/a-propos>; <https://savourer.ca/>)); celebrity chefs (e.g., celebrity chef Ricardo Larrivée, who has now web-sections such as "Eating well" and "Food chemistry" (<http://www.ricardocuisine.com/en/articles/food-chemistry>));

doctors (e.g., Martin Juneau, cardiologist and prevention director at the Montreal Heart Institute Foundation (Handfield, 2018)) or scientists in biochemical, pharmaceutical or biomedical research fields (e.g., the "Pharmachien", famous pharmacist in Quebec who "deconstructs" the "myths" of "pseudoscience", <http://lepharmachien.com/a-propos-de-moi/>, or Sébastien Sauvé, professor in environmental chemistry at Université de Montréal, who regularly acts as an expert in media intervention, <https://sebastiensauve.com/vulgarisation/>) are examples of mediatized figures who are authorized to enunciate food "truths". The intensification of the production and circulation of knowledge constitutive of "healthy eating" contributes to what Goodman et al. (2017) conceptualize as mediated foodscapes. These researchers adopt a biopolitical approach to situate "everyday food practices within a media-saturated environment where responsibility for well-being—of the individual, nation, and planet—is downloaded to self-regulating individuals who navigate a foodscape filled with devastating inequality, powerful media and food corporations, contradictory advice, and the shame of "bad" food choices" (Goodman et al., 2017, p. 4). For these researchers, this mediated foodscape contributes to the production of food "truths," as much as it informs the choices and the understanding of people regarding what constitutes food (its matter as much as its symbolism) and its related practices.

I conceive that the constitution of this mediatized foodscape is made possible thanks to the mediatization process, one of the key processes of biomedicalized food culture. Mediatization is a meta-process that accounts for the hyperpenetration of media and technologies in society, and the ways in which this hyperpenetration contributes to transforming cultural and social relationships (Hjarvard, 2008) and local practices. Mediatization thus participates in the production of meanings and knowledge constitutive of food's definition (Is it good for health? What is it constituted of? How is it treated by bodies?) as much as it informs practices related to, and linking, food and bodies.

These mediatization processes inform the production and circulation of knowledge constitutive of "healthy" food, as well as the development and use of technological devices that allow the production of organizational data (Durham, 2016) on food and bodies. I am referring here to technologies such as self-tracking applications for instance, which allow the tracking of food or body

data (e.g. MyFitnessPal); kits for testing organic materials and evaluating food intake processes (e.g., VIAMEDEX, <http://viamedex.com/>); mobile devices for people with diabetes (Freestyle Libre, <https://www.diabete.qc.ca/fr/actualites/nouvelles/freestyle-libre-maintenant-disponible-en-pre-commande-au-canada>), to name a few. However, as Crawford, Lingel and Karppi (2015) point out, self-monitoring is not a new phenomena. What is new is, on the one hand, the intensification of the production and circulation of knowledge constitutive of “healthy food” and, on the other hand, the multiplication of technologies and tools allowing the acquisition of personalized knowledge about bodies and their biochemical components and processes, and the perceived possibility to act on them. The mediatization processes thus inform the ways in which food and bodies are understood and put in relation to each other, through the production of biospecific (food and body) knowledge, but also in the ways they become the object of practices and preventive measures aimed at characterizing and evaluating them.

On this matter, Yates-Doerr (2011) has analyzed the transformations of the ways in which bodies are put in relation with food in a context informed by the recent developments in health and nutrition sciences (such as in epigenetics⁷). In the context of her research in Guatemala, she thus criticizes how the knowledge that is produced within these fields of practices contributes to reorienting the ways in which “well-being” is defined. For instance, from a definition that was traditionally associated with taste and the creation of intimate relationships through food preparation, “well-being” is now thought in terms of health issues and concerns. For Yates-Doerr (2011), the technologies used to characterize and evaluate this “well-being” refer to a wide range of tools (not necessarily digital) for measuring, calculating and comparing bodies, food, and the characteristics of each other: “These technologies situate dietary well-being not through tastes and intimacies, but through quantitative measures such as weight, blood sugar, caloric energy, centimeters of abdominal fat, and grams of carbohydrates or proteins” (p. 301). Yates-Doerr (2011) criticizes, among other things, how the development of this knowledge and its related technologies are changing ways by which food

is prepared and consumed, while also engendering a shift in knowledge initially reserved for the medical spheres towards kitchens: “And then there was a range of technologies derived from equipment in far-away laboratories: the calorie, the serving size or portion, the recommended daily allowance of vitamins, minerals, fats, and carbohydrates” (Yates-Doerr, 2011, p. 301).⁸ I read this through the lenses of mediatization processes, which contribute to the production of knowledge and practices that mediatize food and bodies, and thereby produce the conception of bodies that can be transformed from within, by the ingestion of foods deemed appropriate.

Mediatization processes help in redefining health and the ways in which it is conceived and addressed through, among other things, the biospecific quantification of food and bodies, which orient the ways in which they are understood and practiced. These bodily quantification and characterization means are not only the result of mediatization processes, but also of molecularization processes, which inform the new possibilities of intervening on the living at a molecular level (Rose, 2007). For Edwards et al. (2010), development in genetics (Rabinow, 1996) and biomedicine contribute to new ways in which bodies, and life itself, are conceived and made apprehensible or “workable.” “Reading” bodies using technologies that analyze body components and processes unobservable to the naked eye (at a micro or internal level) is not new. However, for Edwards et al. (2010), the multiplication of technologies to mediatize and visualize bodies provokes new ways of apprehending them by producing “new awareness of the body and of the self, new regimes of power and knowledge, new possibilities for the enhancement of human life, and new fears for its degradation and destruction” (Edwards et al., 2010, p. 2). While these technoscientific practices are initially deployed in controlled environments such as laboratories (e.g., those related to specialized fields of practice such as biochemical sciences, nutrigenomics, etc.), the knowledge they produce opens up to broader spaces within the biomedicalized food culture.

7 Nutritional epigenetics seeks to explain “how food functions as an ‘epigenetic’ factor in the regulation of gene expression; the field is particularly concerned to elaborate how nutrients affect regulation of genes whose expression is linked to cancer, metabolic syndrome, obesity and diabetes” (Landecker, 2011, p. 167).

8 Yates-Doerr (2011) is particularly interested in these changes as they participate in the redefinition of women’s responsibilities, especially mothers’, as they are expected to adopt “‘modern’ styles of food preparation, recent technologies through which to evaluate food (and health), and new ways of relating to their bodies” (p. 293), to insure their own health and those of their children. For Yates-Doerr (2011), these socio-technological changes need to be thought at the intersection of gender issues that inform them and contribute to reinforcing pressures on individuals (here, particularly women) in relation to health. These gender related issues, which I address in the broader context of my research, are beyond the scope of this paper.

I identify processes of molecularization, as defined by Rose (2007), at work in the deployment of this food culture. These processes reshape the ways in which bodies and life itself are apprehended: “(...) contemporary biomedicine envisages life at the molecular level, as a set of intelligible vital mechanisms among molecular entities that can be identified, isolated, manipulated, mobilized, recombined, in new practices of intervention, which are no longer constrained by the apparent normativity of a natural vital order” (Rose, 2007, p. 5). This is what I observe, for example, in: scientific advances in nutrigenomics which aim to establish causality and correlation between an individual's genes and foods ingested; the development of artificial foods, where their design is thought in terms of genetic modification or reproduction and where debates associated with these practices are articulated around the integration of these foods with human bodies (e.g., the documentary “Que mangera-t-on demain?” (“What will we eat tomorrow?”) on foods’ production future and ethical environmental concerns and issues); and the commercialization of organic foods, where the nature of food is put in relation with bodily components and processes, at the level of microbiological processes.⁹

The idea here is not to launch a discussion on the veracity of these affirmations. Instead, I mobilize them to illustrate how certain food knowledge is produced and made legitimate, participating in the constitution of particular practices (ethical debates, commercial practices, the establishment of new control policies, new certifications, etc.) and hence contributing to defining what is contemporarily conceived as “healthy” nutrition. All of these enunciations contribute to the creation of new considerations for the molecular components of food and bodies, and for the biochemical processes that take shape in between both (how these elements are integrated into body materiality, which biochemical processes are created through interactions between body molecules and those newly integrated, etc.). At the intersection of mediatization and molecularization

processes, bodily components and functions are subjected to the production of knowledge and practices that apprehend food and body materials in a biospecific, personalized and micro-scaled way. This also echoes what Scrinis (2013) has pointed out in terms of the current nutritional gaze shifting away from the sole consideration of consumption practices of individuals to the inside of the body, “in terms of a number of internal and external biomarkers, such as blood cholesterol levels, blood pressure, blood sugar, insulin, and body mass index (BMI)” (Scrinis, 2013, p. 14).

As food and bodies are thought, practiced and made visible as objects of knowledge at a molecular level, this biomedicalized food culture and its constitutive processes contribute to the development of a whole range of practices intended to intervene in the course of an apprehended future (by the establishment of diagnoses characterizing the present and/or future state of health of an individual, by the formulation of recommendations or specialized diets linking nutrients to ingest (or not) to the specific materiality of an individual, in the establishment of self-care or medical practices, etc.). In a context characterized by healthism discourses (Crawford, 1980) that make health an imperative to achieve, biospecific relationships and knowledge between food and bodies emerge, which make food a “tool” to mobilize in the attainment of “good” health, understood and evaluated at the micro level. This also contributes to the production of particular relationships between humans and non-humans, characterized by a will to control in order to optimize human health. Hence, I also see these processes of molecularization at work in the popularization of knowledge and practices that constitute microorganisms (e.g., in relation to the microbiome, bacteria, etc.). I think for instance of the craze for sourdough bread (see, for example, “Pourquoi le pain au levain est l'un des pains les plus sains ?” (“Why sourdough bread is more healthy”, March 2017)), the production of homemade products made out of fermentation processes (beers, ciders, sauerkraut, kimchi, etc.), the consumption of kombucha (e.g., “Bon pour la santé, le kombucha?” (“Good for health, kombucha?”, Caillou, 2018) or the commercialization of home-made cheese kits (<https://www.u-main.ca/collections/kits-fromage-maison>). The increased interest in microorganisms (either constitutive of food or of the human body, or for the interactions between both) is also part of the emergence of fields of research aiming to develop personalized diets based on a more bio-precise

⁹ It is, for instance, what runs through this enunciation: “Soils where non-organic commercial farming is practiced contain pesticides, herbicides, fungicides and synthetic fertilizers, and are thus deprived of their vitamins, minerals and enzymes. The foods produced, in addition to containing less nutrients, are often genetically modified, and contain chemicals and additives that contribute to the rise of certain degenerative diseases, allergies, brain dysfunctions and hormonal system, including infertility.” (My translation. Promotional text for organic food published on the website of NousRire, a company that commercializes organic food in bulk, <https://nousrire.com/demarche-ecoresponsable/>).

understanding of biological materials and biochemical processes at work in food digestion processes (such as those of nutrigenomics or microbiome studies, for instance).

These few examples demonstrate how the biomedicalized food culture must be understood also through the commercialization processes that inform its development. Knowledge and practices constitutive of contemporary “healthy” food and ways of thinking and acting on bodies and health take form in the middle of commercialization processes that make health something consumable¹⁰ and bodies something “workable” and “improvable” through the adoption of so-called appropriate practices. Scrinis (2013) has already criticized how the industry takes advantage of the biospecific knowledge produced at the intersection of food and bodies, as more food products are produced and marketed by the industry through the promotion of food knowledge associated with health. While bodily components and functions are conceived as being able to be modulated by the nutrients ingested (as therapeutic interventions), “[m]any food and pharmaceutical companies have rushed in to colonize, commodify, and control the body’s inner geography, offering products that claim to target and directly manipulate blood sugar levels, blood cholesterol, insulin, and satiety. These products include cholesterol-lowering margarine, low-GI¹¹ breakfast cereals, and high-protein appetite-quenching shakes.” (Scrinis, 2013, p. 167)

These commercialization processes also inform, as much as they are informed by, a multiplicity of technologized practices which aim to increase knowledge on bodies and on food (ingested or to be ingested). Companies market tests that seek to evaluate bodies’ materials (e.g. VIAMEDEX, <http://viamedex.com/>), or to offer personalized diet recommendations or products agreeing with one’s individual body characteristics (e.g. <https://vinome.com/>, “Your DNA Guide to Wines You’ll Love”). These commercialization processes also inform the development of economic sectors, which make food a good with a commercial and economical value,¹² and

the object of particular modes of production¹³ and/or of commercial practices.¹⁴

In short, this analysis is not intended to offer a flattening, homogenizing and exhaustive look at the processes at work in the deployment of this culture. Nevertheless, it aims to identify some of these processes as they participate in the creation of particular knowledge and practices, situated within and contingent on this emerging culture. Identifying some of these processes and their modes of effectivity underlines how bodies, food and health become the objects of particular knowledge and practices, which take shape and effectivity within this biomedicalized food culture. This type of analysis is necessary in order to highlight how constitutive knowledge involved in defining contemporary “healthy” food simultaneously articulates knowledge on bodies and health, and ways to understand and apprehend them.

A culture that participates in reproducing unequal power relationships

In this last section, I address critiques on how the biomedicalized food culture contributes to producing power relationships that affect the bodies that are produced and apprehended from within. More specifically, I highlight how it participates in (re)producing unequal relationships between bodies (human and non-human), which take various forms ranging from exclusions to discrimination and stigmatization, resulting from the establishment of new normativities and injunctions linking bodies, food and health. I emphasize how these power relationships need to be thought through with the processes that inform their development, as they are contingent and rendered effective through them.

Biomedicalized food culture intersects with healthism discourses as it reinforces existing pressures on the individual to take charge of his/her health through the adoption of a particular diet. With the multiplication of knowledge in circulation contributing to the production of “healthy” food, the individual is enjoined to acquire the “necessary” knowledge and adopt the measures

10 This has also been described by Clarke et al. (2010), among others, for whom the commodification of health is at the heart of biomedicalization processes.

11 Glycemic Index.

12 See, for instance, the economic-political orientation of Quebec’s new bio-food policy (<https://www.mapaq.gouv.qc.ca/fr/Ministere/politique/Pages/Politique-bioalimentaire.aspx>) which makes food an economic sector to sustain, in aims of financial and productive prosperity, and in the maintenance of population’s health.).

13 For instance, Radio-Canada (2018) has characterized the increase of the commercialization of organic food in ways that reproduce the production logic and commercial interests of “conventional” agriculture by the term “bio-business.”

14 See, for instance, the over-consumption of avocado in North America (which has been criticized for its related effects in countries where it is harvested (e.g., Rothman, 2018)), or the hype around Omega-3 (see critical works of Probyn (2016) and Abrahamsson et al. (2015) on the latter).

deemed “appropriate” to “eat well” (Brady et al., 2012; Goodman et al., 2017). The mediatization and commercialization processes described above allow and reinforce these injunctions, as they allow the production and circulation of knowledge (on various places and platforms, and in diverse means and modes) and the acquisition of tools making it possible to inquire about it and ensure a personalized follow-up and constant monitoring of bodies and diet. I observe the effectivity of these processes as they contribute to reinforcing pressures on the individual to take charge of his/her health, and to adopt the “opportunities” offered by new technoscientific advances and by the development of new food knowledge to eat “better.”

The biomedicalized food culture and its constitutive processes make health something tangible, “workable” through food. The management of risks associated with poor health is being marketed, while a multiplicity of products (food, technological, medical) are available to allow consumers to optimize their health, present and future. I am inspired by, among others, Galesi (2014) and Harvey (Harvey, 2009, 2010, 2011), who have criticized how nutrigenomics participate in the individualization and in the commercialization of health, in the context where individuals are enjoined to become entrepreneurs of their health by the consumption of products allowing a micro-personalized control. Individuals are not only expected to be well informed about what they should or should not eat, but they are also expected to act on this newly acquired knowledge by the adoption of “good” practices (e.g., food choice, consumption, preparation, etc.) in order to ensure the maintenance of good health. These elements are also at the core of biomedicalization processes as described by Clarke et al. (2010), as health is produced as something that can be consumed, as “it demands of patients, consumers, and patient groups that we become more knowledgeable and responsible—essentially more “scientized”—vis-à-vis biomedicine” (Clarke et al., 2010, p. 16).

The increased accessibility to “healthy” food knowledge made possible through mediatization processes, and the perceived opportunities to seize it and act on bodies that take form at the intersection of mediatization and commercialization processes must be thought as they conflate with molecularization processes. The latter favour the production of biospecific knowledge (e.g., on the composition of foods, on the biochemical processes associated with their ingestion and their treatment by the body, on the biospecific components and functions

of bodies) aiming to personalize the recommendations made to the individual and the adoption of particular practices and the creation of new “risks” to prevent. These risks take shape, for instance, through the processes of molecularization and mediatization that help make bodies visible, subject to new forms of control and monitoring of biological materials. Hence, new populations “at risk” can be targeted, based on their bodily components, which would be associated with higher risks of developing health problems (such as chronic diseases, diabetes, etc.). Scrinis (2013) has criticized what he qualifies as “biomarker reductionism” (p. 41), referring to a form of reductionism that accounts for the interpretation of biomarkers as the direct indicators of an individual’s health status, along with food ingested or to be ingested. These biomarkers are interpreted by experts (doctors or dietitians, for instance) “not just as risk factors or indicators of possible problems with one’s diet or state of health, but are instead taken as definitive representations of one’s health, and even as determining one’s health (i.e., biomarker determinism)” (Scrinis, 2013, p. 41).

Many studies emerging from the critical fields on food and fat/obese bodies have criticized how stigmatization and exclusion processes occur in the identification and characterization of these “at risk” populations and in the deployment of measures aimed at monitoring or caring for their bodies and their related risks (see Evans and Colls, 2009; Guthman, 2011; Rich and Evans, 2005 to name a few).¹⁵ Normalization processes take place and achieve effectivity through the establishment of standardized bodily measures participating in defining what is a “healthy” body (e.g., biomarkers indicating “appropriate” levels of sugar and fat in the blood, identification of “at risk” genes, microbiome analysis, etc.). Some bodies are then problematized on the basis of norms and standards as comparative means that define, biologically, what constitutes “health”:

Biomarkers to assess ill health, such as blood glucose levels in the case of diabetes and

¹⁵ For Clarke et al. (2010; 2003), biomedicalization contributes to the creation and legitimization of differentiated practices between bodies, producing particular bodies as “at-risk” in the process: “Through emergent ‘dividing practices,’ some individuals, bodies, and populations are perceived to need the more disciplinary and invasive technologies of biomedicalization, as defined by their ‘risky’ genetics, demographics, and behaviors; others are seen as especially deserving of the customizable benefits of biomedicine provided through innovative assemblages, as defined by their ‘good’ genetics, valued demographics (e.g., insurance and income status), and ‘compliant’ behaviors.” (Clarke et al., 2010, p. 83–84).

the body mass index (BMI) in the case of obesity, are examples of the technologies of normalization to which Foucault refers (Evans and Colls 2009). Not only are these norms often based on white bodies, they lead to the twin assumptions that what is statistically abnormal is pathological and that pathology is absent in the statistically normal (Guthman, 2014, p. 1154–1155).

Guthman (2014) also addresses relationships created between food, bodies and health, as they are informed by uneven power relationships (e.g., gender, race, age, body shape). These unequal relationships participate both in the establishment of measures that seek to evaluate bodies and put them in relation with food, and in the development of associated practices (such as diagnosis, monitoring, control, etc.) legitimated for the sake of their “health.” In this context, fat bodies (or any of those deviating from the biospecific norms and standards) categorized as “at risk” or even diseased are problematized and incriminated, since the individual is conceived as not having taken care of his/her health through the adoption of an appropriate diet.

Through such knowledge and practices, causal and decontextualized relationships (Scrinis, 2013) are created between food, bodies and health. Food becomes a tool to *act on* bodily materials and functions, so as to optimize or, at least, *influence* the state of an individual's health. In other words, food is not anymore understood from its generic nutritional functions (Galesi, 2014), but rather as performing biospecific functions acting on bodily components and processes in order to improve them or, more broadly, to prevent the risks associated with diseases or medical conditions.

Therefore, the type of relationships that is established between food, body, and health is limited and unidimensional. It does not allow consideration of the range of other relationships involved, among other things: in the treatment of food by bodies and their integration into body materials; in other processes (not diet related) that participate in an individual's health; or into other food practices that cannot be reduced to health purposes. I argue for a broadening of the relationships to be considered, those through which food, bodies and health co-inform each other. I am thinking, for instance, of the considerations of the environments in which foods are produced and marketed (and eventually consumed); of the relationships (environmental, emotional, social)

that inform ingestion and digestion processes;¹⁶ of other relationships (such as genetics, socio-economical, environmental, socio-cultural) that also participate in an individual's health, and which are informed and rendered effective at the intersection of issues related to race, gender, age, etc.

Thinking in a contingent and situated way about these multiple relationships that co-inform each other implies, for instance, thinking about the ingestion of foods that contain pesticides, whose treatment by the body is done at the intersection of social issues such as race or gender. These social issues participate in the ways in which food will be ingested, treated by the bodies, materialized in their components and functions. Thinking to these processes in a contingent and situated way also involves thinking about them in their multiplicity and in their complexity, and not in the sole mode of the efficient cause (Bardini, 2016). It involves thinking about these relationships in their multiple temporalities of emergence and effectivity, which extend beyond the single and temporally limited span of a human life. For example, recent work in epigenetics (e.g., Guthman and Mansfield, 2013; Landecker, 2011; Mansfield and Guthman, 2015) reflects on how unequal socio-cultural conditions inform ingestion and digestion processes through generations, extending the modes of effectiveness to be considered beyond a temporality limited to the scale of a human life and its individual health.

To think differently about the relationships that are at play at the intersection of food, bodies and health also means reflecting on their effectiveness beyond a logic of anticipation (Adams et al., 2009) that makes food a “tool” for present and future health risk management. It means thinking food as embedded in a global system, whose disproportion and imbalances are not necessarily directly observable at the level of a single body, of one's single individual health. It therefore entails a shift from decontextualization of the nutrients ingested and their effectivity in human bodies (as criticized by Scrinis (2013), among others) to re-inscribing them within a larger assemblage, which participates in their composition and in their effectiveness. I will conclude by emphasizing the importance of observing, analyzing and critiquing the biomedicalized food culture through

16 I think, for example, to these studies demonstrating how the processes of eating and digestion are informed by elements such as stress and the environment (social and physical). See works on environmental epigenetics or those interested in the materialization of stress in body and body processes (Guthman, 2014; Landecker, 2011; McEwen, 2012).

the wide array of (unequal) relationships that it brings to form, as well as through the power relationships that are negotiated therein, at multiple scales and under various modes of emergence and effectivity.

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Author bio

Myriam Durocher is a postdoctoral fellow at Carleton University (Ottawa, Canada) and at the University of Sydney (Sydney, Australia). Her PhD research thesis, anchored in a cultural studies perspective, questioned how “healthy” food is produced within the contemporary Quebec food culture, and how it contributes to the (re)production of uneven and unequal relationships in-between human and more-than-human bodies. Her research interests revolve around critically addressing the power relationships and issues that form at the intersection of (healthy) food, bodies, health, and environment. In her current postdoctoral research, Myriam is interested in questioning further the practices applied to bodies and food materials (such as blood and DNA tests or pesticides analysis) that aim to prevent health-related risks associated with the ingestion of particular foods in the context of what she has characterized as a biomedicalized food culture.