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BEET IS THE NEW BLOOD: an analysis of plant-based meats market mainstreaming process

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INTRODUCTION

The utopia of a mainstream global vegan diet can allow us to glimpse benefits and solutions to sundry problems faced at the contemporaneity: from animal ethics to food security and starvation reduction, from climate change mitigation to quench new pandemics imminent risk (LAZARIN, 2018; SPRINGMANN et al., 2016; ALEKSANDROWICZ et al., 2016). But it is plausible to consider a mainstreamed ethical and sustainable transformation of a so culturally and economically entrenched and succulent as the meat market?

Our society are facing climate and environmental challenges and opportunities that can only be solved through transformations in market dynamics (GIDDENS, 2010; IPCC, 2014). Among various markets with high environmental impact – energy, mobility, construction and clothing –, food market draws attention to the complexity and magnitude of its direct and indirect impacts, chiefly when we consider the animal origin food segments (ALEKSANDROWICZ et al., 2016).

Concerning to the complexity of food market impacts, environmental sustainability, human healthy and food security are convergent questions that are urging us to rethink the direction that this market has been taking in the last decades. The high level of food processing, the intensity of livestock production and the focus on animal products over diversified vegetables and plant-based proteins are causing health and social problems that affect the whole world, with a growing population.

The challenging of feeding this growing population ensuring security, healthiness and well-being to 10 billions of human beings – or 9,73 billion (VOLLSET et al. 2020) – is often a concern of several stakeholders engaged in the food system, from the Food and Agriculture Organization (FAO) to new foodtech startups, from new social movements (NSM) to traditional food companies.

Considering protein conversion rates and food productivity, the vegetarian movement longtime proposes a solution where eating proteins from plant origin guarantees more food in less land, with lowers resources uses and impacts (STUART, 2007; HARRIS, 1978; LUSK, NORWOOD, 2009). But that "vegetarian" solution implies changing food culture, tradition and habits, beyond a series of unconventional daily practices, requiring the consumer to cope with barriers at different levels (LAZARIN, 2018).

To deal with these questions, new foodtech startups engages in researching using food engineering and biotechnology to develop and produce textured and flavored meat from plants, to be marketed and consumed in a quite similar way of the traditional meat food, in an attempt to significantly reduce the resources use and impacts in this segment. The idea is to transform the production side without implying a significant change in consumption patterns.

We are seen in the last 3 years a fast evolution of the plant-based meat industry, and, specifically in Brazil, in the last year. The engagement of several stakeholders, including universities and some of the biggest global meat processors, are strengthening this promising food solution. This essay proposes to present and understand this plant-based meat market formation and proposes the question: can plant-based meats be mainstream? Can plant-based meats arise about be implying a reduction in the externalities of the current intensive livestock production model and guaranteeing meat from the growing global population?

Given that this is not a completed research, the theory involved in market and food system transformation and some aspects of the current plant-based meats market in (U.S., global and Brazilian) will be presented and discussed, in order to generate theoretical insights and foster this relevant discussion between marketing and agribusiness areas.

THEORY *(or: How does can a market change?)*

Increasing scientific advances in several areas such as climate (SCARBOROUGH, et al., 2014), environmental (TILMAN, CLARK, 2014), health (DINU, et al., 2017), economics (SPRINGMANN et al., 2016.), marketing (BEVERLAND, 2014) and interdisciplinary approaches (ALEKSANDROWICZ et al., 2016), allow us to be aware and make clear the importance in improving the food market. The urgency of the improvements is confronted by the complicacy of changing meat-centric food production and consumption ingrained patterns.

Scarborough et al. (2014) estimates that GHG emissions in kilograms of carbon dioxide equivalent per day are around 7kg for consumers of diets with more than 100 grams of meat per day, 6kg per day for consumers of diets between 50-99 grams of meat, 5kg for consumers of diets with less than 50 grams per day of meat, 3.9kg for consumers of fish diets, 3.8kg for vegetarians (containing milk and egg derivatives in diets) and 2.9 kg for vegans (strictly vegetable diets). By changing diets patterns from meat-centric to vegan, besides healthy benefits and other benefits, a single consumer avoid emitting more than 1,5 ton of carbon per year. Obviously, this estimative is model and context dependent, but several another studies are consistent with these results, highlighting too another problems of the meat producing process: significant more land use and more water use and pollution (ALEKSANDROWICZ et al., 2016).

"The food system is responsible for more than a quarter of all GHG emissions, of which up to 80% are associated with livestock production. The aggregate dietary decisions we make thus have a large influence on climate change." (SPRINGMANN, et al. 2016) Because, animals, in food production system, implies in an additional trophic level that emits GHG and intensify land use.

Particularly to chicken and pork produced in intensive systems, is important to attempt to sanitary risks related to the massive applications of antibiotics, that may be generating antibiotic resistance in humans, in addition to generating a favorable environment for new super viruses and bacteria with the real risk for introduction of epidemic diseases (MAES et al., 2019).

Vegetarian diets are proposed by different studies as solution, although utopian. In a previous initiative to cohere this question, by studying the transformation of individual food consumption patterns, Lazarin (2018) concludes that NGOs and new social movements (NSM) concerned with the promotion of vegan/vegetarian diets tend to attribute too much responsibility and overestimate the agency capacity of consumers. In that sense, efforts in advertising and strategies tend to blame consumers and focus too much on consumer identity and on individual changes performed alone – or at most aided by the mediation of internet devices, minimizing food materiality, conventionality and aspects of supply chain. This overestimation of agency capacity would be responsible for the production of frustration and even a bunch of new ex-vegetarians and ex-vegans.

New market urban manifestations, with *prossumeristic* character, usually associated with short-chains and small scale, mainly derived from the vegetarian consumption ideology, are important but markedly as alternative and selected. They are associated with NSM and can guide more consumers and society to reflexivity towards consumption and unsustainable, unethical and unhealthy practices, concluding on the importance of changing a market logic (WEIJO et al., 2018). Can they, however, change a mainstream market logic?

Martin and Schouten (2014) investigated the emergence of a market driven by consumers, the minimoto and minibike one, inclusive noting the establishment of networks with material subsidiaries, professional technicians, events, media, etc. Although, the market under investigation lost strength and did not institutionalize, demonstrating a more relation to ephemeral creativity in the consumption world. Given that, these studies don't present a transformation in the daily consumption practices in a perennial way. Kjeldgaard et al. (2017) investigate a prosumer movement that starts to challenge and local changing the beer market, highlighting that "actors have a shared interest in the maintenance of the field. Therefore, the unit of analysis is not so much the actions of individual actors. Rather, the analysis examines the dynamics of collective strategic action that reproduces predominant field logics." (p. 4). In that way, the movement under investigation have the potential to really challenge the institutionalized logic of mass production and consumption, but they do that being a group of producers, extrapolating the role of consumers.

The assumption that consumer alone can, not only radically transform their eating habits but, be leaders of a radical market transformation, finds base in social and sometimes even scientific ideas fomented within consumer research in marketing science. Even in research streams that proposes to understand consumers as more than rational decision makers or *homo œconomicus* (BOURDIEU, 2005), as the Consumer Culture Theory (CCT) in marketing science, it is common to falls into a trap of an "hyperindividualizing, overly agentic, and sociologically impoverished mode of analysis that impedes systematic investigations into the historical, ideological, and sociological shaping of marketing, markets, and consumption systems." (THOMPSON et al., 2013, p.1).

Consumer research in general adopts a narrative that takes consumers as stable and a priori defined actors, relegating to a background context – sometimes not even mentioned – the practices of diverse market devices which in fact shapes markets dynamics and consumer behavior itself (COCHOY et al., 2016). Zwick and Cayla (2011) stand out that the work of marketing and market formation processes has received relatively scant attention from social sciences. The "work" of the consumer and of consumption itself, on the other hand, has received much more attention, time, resources and energy from researchers. According to these marketing authors, a "minor effort has been made to study the growing army of economic actors whose work it is to define markets and give shape to the consumer culture as we know it" (ZWICK, CAYLA, 2011 p.5).

Thus, considering both the current market challenges and the scientific advances and lacks, a more complex and systemic approach that accounts for the dynamic interrelations that act and make it act between the various actors that constitute markets and consumption patterns is essential. The role of consumers is always very important and recognized by marketing science and organizations, in no way is intended to limit or de-characterize this power. However, novel perspectives in the economy, more specifically from economic sociology – which began to be drawn with Granovetter in 1985 –, allow us to understand markets as more complex than a simple and direct relation between demand and supply.

Economic sociology proposes perspectives in which markets are social practices par excellence – and as such, regardless of whether they are more or less conventional or alternative, are permeated by social values. "Such a view, we might say, opens a more optimistic horizon for the degree to which [agrifood] markets can be socially traded"

(WILKINSON, 2016, p. 54) and transformed.

Michel Callon (2007), with a novel perspective rooted in Science and Technology Studies (STS), reinforce this non-reductionist approach to markets, permitting us to glimpse an analytical overcoming of the assumed common dualism between markets and society inherent in most economic theories. As Wilkinson (2016) critically observes, such antagonistic dualism also occurs in agrifood system studies, sometimes opposing market versus society, sometimes conventional/mainstream markets versus alternative/embedded markets.

Through the advances in economic sociology – considering especially Fligstein (2001) and his approximation with the bourdieusian theory – the boundaries between market and social spheres are evidenced as highly fluids (WILKINSON, 2016). In the same sense, it becomes manifest the increasing number and complexification of constituency of relevant market actors and their practices.

Cochoy et al. (2016, p. 4) explain that the callonian perspective address the notion of "a single yet multidimensional socioeconomic world". In this way, analysis that opposes society versus "the supposedly corrosive and 'de-socializing' forces of markets" (p. 4) are clearly limited. "Rather, market settings should be regarded as an ongoing collective experiment in which the political and economic (or even techno-scientific) concerns are continuously articulated and revised" (COCHOY et al, 2016, p. 4).

Thus, markets result from relationships, practices and ongoing social interactions, so it should be evident that markets can be changed and shaped in accordance with agent interests, social interests and democratic interests. "Market boundaries are temporarily stable; they are determined as a consequence of the calculations undertaken within, as objects in their versions as goods are continually qualified and requalified, related and re-related, ranked and re-ranked" (FINCH, GEIGER, 2010, p. 242).

It becomes more evident that through the transformation of practices and devices, markets can be transformed, in such a way that: "Markets can be submitted to control and power of individuals and society, and not the opposite, as may happen and as are make believe by those who resemble markets to the invisible hand" (MARQUES et al., 2016, p. 12).

Specifically in marketing theory, Luis Araujo and Hans Kjellberg elaborates theoretical work dealing with markets as ongoing productions, as social performances, claiming to a "reconnection of marketing to markets" – Araujo (2007), Araujo, Kjellberg and Spencer (2008), Araujo and Kjellberg (2009). In that way, marketing researchers should be aware that various practices shape markets and consumption patterns, not restricting studies to activities traditionally associated with marketing practitioners and consumer behavior.

Cochoy (2011) implements an historical analysis of material devices that make up not only the product (or service) marketing mix, but the shopping setting (e.g.: shelves display, shopping carts), demonstrating how this material devices frame buyer and consumer behavior, managers, marketers and market constituency itself. Therefore, aligned with Callon et al. (2007), Cochoy enlighten the agency of market objects and technologies, evidencing how crucial is to analyze material devices for a sociological understanding of markets and markets transformations. Thus, the notion of multiple and hybrid agents in the market analysis becomes more palatable: "social meaning and social agency are thus both distributed between people and things. So if we want to fully understand consumption, we need to study marketers, consumers, and market-things at the same time" (COCHOY, 2011, p. 80).

The importance of studying the material devices and understand their performance to comprehend marketing and markets lies in the fact that in most of the time, the "relationships between producers and consumers, buyers and sellers, are enacted or performed in market spaces and can only be indirect, as they are mediated by a market's objects" (FINCH, GEIGER, 2010). And in that sense, STS approach is relevant.

Finch and Geiger (2010) explain that, although market and marketing objects are similar, they are, in fact, distinct. Marketers' and managers' practices involve influencing and shaping markets through marketing objects (product qualification through positioning practices is an example). Differently from the market object, a marketing object extrapolates the market domain. In accordance to Slater (2011) propositions, a marketing object is a hybrid object that holds both cultural and economics properties, challenging the dualistic opposition settled between economics and culture – both ends taken as pure, in an antagonistic studies tradition, similarly as previously cited in markets and agrifood systems. "Economics, on the one hand, has expelled all cultural logics in its analysis of formal rationality, while cultural disciplines, on the other, have focused on marketing as ideology and meaning, thus ignoring marketing as a commercial practice." (ZWICK, CAYLA, 2011, p.9).

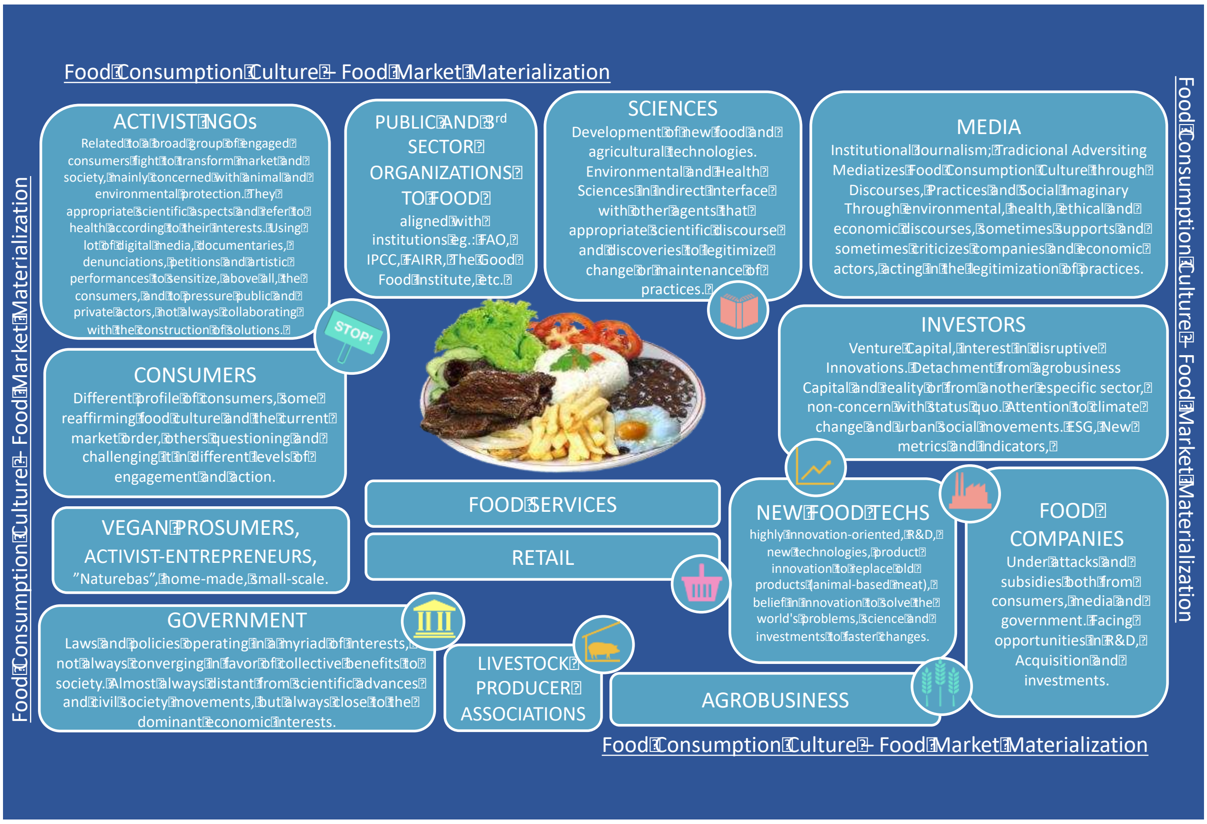
Zwick and Cayla (2011), in accordance with a growing group of researchers, proposes that marketing activities must be understood as an "amalgamation of institutional, cultural, economic, and technical processes by which goods and markets—and objects and categories—are determined, contested, and provisionally given stable forms" (p. 6). With this broad understanding of market and marketing phenomena, marketing operation "cannot be reduced to an analysis of the production and consumption of signs, ideologies, myths, and codes" (p.6).

The adequacy with "markets as performance" theoretical approach, as proposed by Geiger, Kjjelberg and Spencer (2012), is therefore evident. This specify approach differs from neoclassic microeconomics, traditional marketing management, social networks approach, consumer culture theory, markets as networks, institutional approaches and Marxist Theory. According to "markets as performance", markets are constantly "in the making", been:

> practical outcomes of economic organizing processes involving parallel efforts to shape markets according to particular templates. Market agents are hybrid collectives whose capacities to act depend on how they are being constituted (equipped). Market objects and devices are central in this and are both shaped by and shape market practices (situated performances of interlinked activities) (GEIGER et al., 2012, p. 138).

The multiplicity of agents and devices that acts to structuring a market confers an idea of how complex a market change can be. Nevertheless, that theoretical understanding provides diverse ways to act towards a transformation. It is essential to understand the complex and multilevel dynamics that constitute a market change, and deal with this complexity involves marketing devices in diverse actors. Not only analyzing consumer needs and attitudes, but considering the large spectrum of possible practices and frames of practices that market actors can mobilize. To find convergence points for the actors in a changing market seems to be essential too. The figure in the appendix tries to demonstrate some of this stated complexity and current imbrications of actors in a mainstreamization of plant-based food in the market and provides a caught up of what follows in the discussion:

Figure 1: Scheme about human and institutionalized actors of the food market focused on meat that are challenged by the emergence of plant-based meat analogues (do not include marketing devices which are under the management of these different actors)



Source: The Author.

DISCUSSION ***(or: How does the beet-meat market are performing and challenging the blood-meat one?)***

An essential step to understand a possible transformation of a market is to map the main stakeholders and search for interrelations between them, comprehending practices and operationalization of market devices. In the growing plant-based meat market, instead of focusing in vegan, vegetarian or reducetarian (flexetarian)[i] consumers, we assume that startups (U.S. based ones) start and strengthen the "movement", by researching and developing a product made by plants with flavor, texture and mode of consumption quite similar of a traditional meat hamburger (and after sausage, nuggets, and even fried fish).

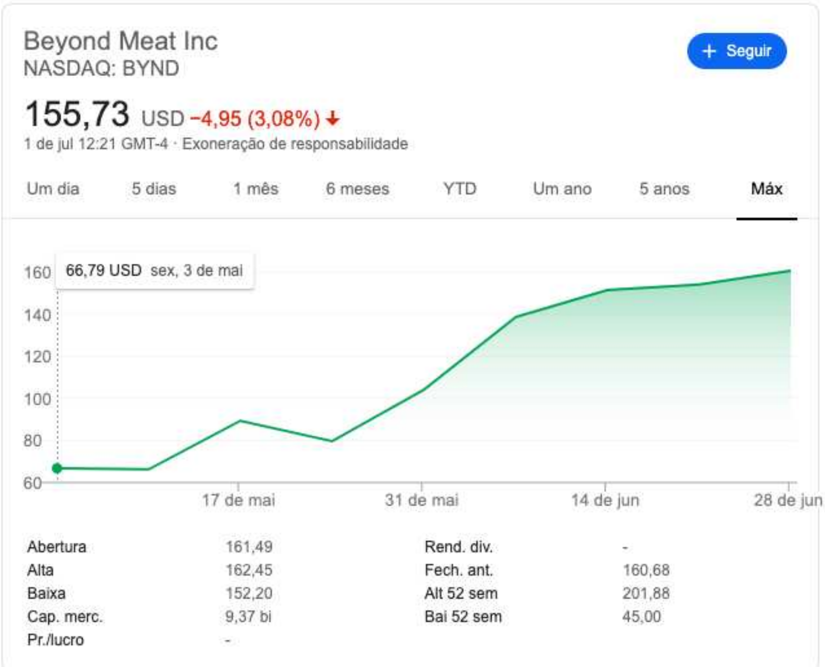
Although it is an institutionalized social movement, with centuries of influence in society (STUART, 2007), vegetarianism and its propositions of animal liberation (SINGER, 2010) was not able to transform the mainstream food market solely through consumer awareness and engagement (LAZARIN, 2018). That is because a market is a so complex entity that a single or a double stakeholder cannot pull and maintain a transformation, as the previous theoretical section could clarify.

A new front of transformation started to be shape some years ago, with the engagement of startups, venture capital and food engineering in foodtech solutions to climate and food issues. The alleged mission of Beyond Meat (est. 2009) and Impossible Foods (est. 2011) are quite similar: to find a better way to feed (and save) the planet without to abandon meat. Different from consumer movements and prosumer-activist vegetarian organizations, these startups establish that the focus of change should be in the food itself and not in consumer practices or consumer identity. In doing so, they recognize that the food consumption culture is socially ingrained and that no matter how much it undergoes constant changes, abolishing meat in favor of a vegan diet is not for everyone not a *mainstreamized* option. Given that meat is the most prominent and central element of food culture in Western; it was formulated by centuries as the food par excellence (FIDDES, 1994).

So, with the advances in food science and engineering, developing ingredients and extrusion machines, was possible to create certain meat foods directly from vegetable origin ingredients. Investments in cell-based cultured meat took course too, but in the last years plant-based is proving to be a faster pace development.

Addressing the question of food engineering advances, venture capital has been a crucial issue in the progress of plant-based meats – given the development of disruptive innovation allowed by the reality of startups. The alternative dynamics, the cross-sector collaborative capacity and the expert management of innovation allying science and pretensions to change the world, besides, mainly, its detachment in relation to the traditional capital of agribusiness or agrifood industries, has allowed the development of meat analogues. In this context, brands such as Beyond Meat and Impossible Foods gain space in U.S. food market, proposing a particular industrial revolution by producing meat entirely from plants. Names as Tyson Foods, Google Ventures and Bill Gates was determinants in the start investments that allow Beyond Meat to take place. In this panorama there are some number in this market that need to be highlighted: market research data shows that "U.S. sales for plant-based meat have jumped 45 percent since March 2016 to $ 888milion in March 2019 according to Nielsen" (CBN, 2019). Beyond Meat open its capital in Nasdaq stock market in 2019 first semester (and the share price more than double in the first hour of trading). We can see the evolution of BYND's stock prices in its first two months in the stock market:

Figure 2: Beyond Meat's stock price variation



Source: Google, july 2019.

However, financial reports warn that Beyond Meat is not profitable yet and that it will only be if its marketing plans to win over ordinary consumers, bypassing the vegetarian niche, be successful (CBN, 2019). One of highlighted points in Beyond Meat strategy, besides intrinsic characteristics of the product such as flavor, texture and aroma identical to those of meat of animal origin, is it positioning in the shelf: along with frozen meat. The intensive distribution in more than 11,000 supermarkets in the USA aims to achieve not only vegetarians, but consumers who are looking for meat (MONEY TIMES, 2019). Nevertheless, do these similar strategies in devices like product, price, place and promotion enough to conquer meat consumers and ensure profitability?

The COVID-19 pandemic affect animal meat processors, considering the situation of slaughterhouses (or animal factories), given it is a favorable environment for the spread of the virus, with direct contact between employees who work side by side, permeated by blood. In the U.S., in more than 30 factories there was dissemination and serious contagion of employees. There was even a shortage of meat in some stores and a subtle boost of plant-based meat. In Brazil pandemics affects animal meat processing too. Important factories in countryside spread the virus and threaten the health of small towns.

However, the growth of plant-based meats in Brazil seem not to have a relationship with the pandemic of COVID-19. Before the pandemic, the year of 2019 was decisive for the shaped and quick widespread of various plant-based meat products in retail and foodservice.

In 2017, The Good Food Institute, aimed at the promotion of a market and consumption transformation in favor of plant-based foods, analyses that better quality plant-based meat was much needed in Brazil, as the products currently offered are expensive and mostly tastes bad: "They're [Brazilians] selling canned, plant-based meat that reminds me of the plant-based meat I was eating in the 1980s, and it's the equivalent of $6 a can." declares the director of the institute (QUARTZ, 2017). Besides that, accordingly to EXAME (2017), a Brazilian leading business magazine, The Good Food Institute has hired a representative in Brazil. He has the challenge of making Brazilian companies import (U.S.) alternative plant-based protein products.

We can analyze that a Brazilian startup Fazenda Futuro was launch following the same principles of Beyond Meat and Impossible Burger (using pea protein and beet blood). The Good Food Institute act closely in this project, connecting the Brazilian enterprise with Silicon Valley knowledge, startups and network. Few months after the first Futuro Burger launch, a second version, "Futuro 2.0" takes place, replacing the former product with improvements received from consumers, in a clearly analogue way of tech ventures. This culture of innovation is more than a language of communication, extrapolate the brand, the advertisings and packaging and seems to be inborn to the product development really take serious by companies.

JBS has a brand in Brazil, Seara, which launch a version of plant-based burger within its premium line: Seara Gourmet. The Incrível Burger has a so good performance in the line that in few months became a line itself, with improvements for a new version, healthier, soy-free and using beet to emulate blood (no more artificial IV caramel coloring). Seara has a lab individual for the Incrível line, with a semi-independent management and marketing structure, which does not happen with any of the other lines of the company.

Marfrig in Brazil starts, in 2019, a fast and massive production of plant-based burgers using ADM ingredients technology to supply Burger King new launch: The Rebel Whooper. Similar to what Burger King performed in U.S. market in a partnership with Impossible Foods, a plant-based version of the classic sandwich, which "nobody can tell the difference" (THE GUARDIAN, 2019) was introduced Brazil too. A mention on the intensive media broadcasting to this new launch of the fast-food chain in Brazilian market must be added.

All this launches takes course in Brazil in 2019, being possible to consumers in diverse states of the country to eat plant-based meat analogues, either in restaurants or in supermarkets. Another brands such as Superbom, with a long tradition in vegetarian meat substitutes, developed and launch products too, with a different and more limited distribution channels. An interesting enterprise, Sotile Burger, mobilizes Embrapa and The Good Food Institute is a caju-fiber hamburger, that tries, in a less daring way, to resemble the texture of the meat while using an ingredient that was relegated to animal feed in the rich cashew chain in northeastern Brazil.

Thinking about ingredients, is relevant to point that soy has a well cement productive chain in Brazil. However, by several and controversial factors such as transgenic (genetic engineering) and its media repercussion, there are some indications of consumer avoidance. So, beans like pea, black-beans, chickpea and lentil, which has around 20-25% of protein, are been used as interchangeable ingredients by its properties. This kind of ingredient development mobilizes not only startups and food companies but also government agencies as Embrapa, institutes like The Good Food Institute and universities around the world, in hybrid projects that evince the promising and transformative character of this sector.

More recently, BRF launches its vegetarian line Sadia Veg&Tal with a Burger and some non-vegan dairy products, fact that was criticized in social media. Another Brazilian startups tries some space in this promising market and deserves some mention: The New Butchers has diverse products such as beef burger, chicken burger and chicken nuggets and minced beef. Behind the Foods in another enterprise biotechnology based with a burger. Much more should be arise and establish relations in the market. AGN Consultancy is active acting in the Brazilian plant-based market, promoting events about the theme and providing companies with research to match the market.

Leaving Brazil and expanding to a global scale, in a global trade context, The Farm Animal Investment Risk & Return (FAIRR) is an initiative to aware investors about the social and financial benefits of plant-based shareholds, acting with big companies like Nestlé too. The FAIRR report, produced to investors, presents these food-tech startups as competitive by highlighting its price strategy by being quite similar to traditional products, and its intensive distribution in retail and food services (FAIRR, 2018).

This is part of a broad movement to seek plant-based ingredients in big food industries, driven in part by pressures for sustainability and pressure from consumers and NGOs, and in part by scientific advances and climate concerns. For example, Nestlé is now committed in replacing animal-derived ingredients in existing product ranges where possible, dedicating a significant part of R&D budget to the topic of plant proteins. In an effort to ensure the strategic development of this initiative and to confer credibility investors, the food company starts to monitors what percentage of its proteins are derived from plant-based ingredients and what percentage of its R&D investments is dedicated to projects on these alternatives. Unilever is part of Plant Meat Matters, a consortium of companies and academic researchers to develop a plant-based steak, thus investing in science and cross-sectorial collaboration for innovation towards plant-based solutions (FAIRR, 2018).

In addition to R&D, food companies are facing opportunities in acquisition and/or venture investment strategies, funding new enterprises. For example, White Wave Foods acquired diverse plant-based food new companies, at the level of becoming the fastest growing food company in the U.S. (WILKINSON, DELLEPIANE, 2018). In 2016, it was acquired by Danone, becoming Danone Wave, and receiving a $60 million investment in its U.S. plant-based beverage plant. Besides that, Danone has launched an intensive investment marketing strategy to promote its newly acquired vegan ice cream brand, So Delicious, increasing product sales steadily (FAIRR, 2018).

Nestlé is also interested in the promising plant-based meat market. The company has recently launched soy protein based hamburgers in Europe, they will be sold under the "Garden Gourmet" brand. In the US, Nestlé launches a similar, the “Awesome Burger”, of the brand "Sweet Earth", which aim to compete directly with Impossible Burger and Beyond Meat in supermarkets (STARTSE, 2019).

Fuentes and Fuentes (2017) analyze a marketing strategy of a real Swedish plant-based milk brand, Oatly, seeking to change from a niche product to a product that appeal to a large group of consumers, being mainstream. The study is totally aligned with “market as performance” approach proposed here. The authors focus on analyzing marketing devices operation, through an object-focused ethnography conducted online and in retail settings. The study explains that the plant-based firm adopts two integrated but different moves. The oat-based milk product is qualified both alternativeness, through marketing communication discourses, especially online, and as a conventionalized alternative, through packaging and the position on retail display.

That is being to be the case for plant-based meat produced by the mentioned foodtechs, starting with Beyond Meat and Impossible Foods in the U.S. market and being repeated by Fazenda Futuro, Incrível Seara and another brands in Brazil. In addition, through exploratory research already conducted, is possible to identify that these products are packaged in a similar way to the traditional premium meats and positioned in the retail in near places. In online communication, however, the plant-based, vegan, environmental and health advantages over the traditional product are constantly reiterated.

According to Fuentes and Fuentes (2017, p.13) “similar packaging allows Oatly’s products to work within the same socio-technical infrastructure as dairy products”, facilitating compliance with current consumer practices and inscribing similarity and exchangeability (COCHOY, 2004; FUENTES, FUENTES, 2017).

A look at the architecture of the stores and shelf positioning is also very important, given the agency of these devices (COCHOY, 2011). Along with this, Callon et al. (2007, p. 6) address that “Merchandising is a crucial management instrument that helps construct the encounter of supply and demand through a controlled arrangement of products at the point of purchase.” In that way, merchandising operates as a complex and hybrid marketing device that constitutes and shapes the market, being under a constant dispute and under the logic of negotiation and interests (that are not always convergent) between retailers and food producers. In an analogous way, we should consider that in food services context the dish location on the menu and the language used in the description are also elements that operate as marketing devices.

Researchers and marketers already notice that the use of adjectives such as “vegan” or “veggie” can reduce the interest in a product by consumers who do not associate themselves with those identities (BEVERLAND, 2014). Furthermore, studies in nutrition and marketing sciences demonstrate that labeling a food product as “healthy” or “nutritious” can reduce the interest and product appeal (BUBLITZ, PERACCHIO, 2015).

The World Resources Institute (WRI) is undertaking an initiative to engage academics and practitioners to work towards strategic language used to qualify plant-based products. The collective initiative assumes that “one potentially high-impact but low-cost strategy to help consumers shift their diets is changing the language used to describe food” (2018, p. 1). One of the findings, through an online survey experiment study, has shown that putting plant-based dishes in a vegetarian section of a menu can reduce consumer ordering by 56 percent, in comparison to order it merged like any other offer in the menu, in line with Beverland's (2014) propositions. However, the initiative ponders that any change in the use of language to promote plant-based foods must consider also the information needs of vegetarians and vegans, an important and growing group of consumers.

Considering brand and naming of industrial products, Fuentes and Fuentes (2017) demonstrate that Oatly's labeling strategy focus on convenience and food replacement, aligned with packaging strategy. Not the same but a clear convergence can be observed in Beyond Meat, Impossible Foods, Awesome Burger, Incrível (Incredible) Burger, Fazenda Futuro (Future Farm), and so on.

However, it should be mentioned that livestock associations are already mobilizing to restrain the marketing practices and competitive qualification of these plant-based products, summoning the government and institutional force, in favor of status quo maintenance, what could make marketing work for the mainstreaming of this market even more challenging.

The diverse livestock producer associations lobbying with politicians to impede the use of the term "meat" in plant-based meat analogues marketing devices, with bills stating concerns about "marketing integrity", is an example of these efforts. In the U.S. State of Missouri, the Missouri Cattlemen's Association has recently secured a law that punishes – even with prison – food companies and marketing professionals who use the term "meat" to promote products that are not "derived from harvested production livestock or poultry" as meat (CCN, 2018).

Even in countries like Brazil, with a more centralized legislative dynamic, that kind of reactionary initiatives to brake market transformation also occur. Federal Congresswoman Tereza Cristina (DEM-MS), indicated as Brazilian minister of agriculture from 2019, supports the bill drafted by the Brazilian Association of Milk Producers, which prohibits the use of the term "milk" and related ones in non-animal origin products (CÂMARA DOS DEPUTADOS, 2018). This bill drafted threatens not only the marketing of new vegan products but also products already consecrated in Brazilian food culture such as coconut milk.

Another recent initiative to restrict the advance of plant-based food alternatives in Brazilian market is a new bill project filled by a federal Congressman, Nelson Barbudo (PSL-MT). The project aims to ban the use of the word meat and its synonyms in packaging, labels and advertising of plant-based foods. According to the newspaper Folha de S. Paulo (2019), the deputy, who is a rural producer and a member of the House Committee on Agriculture, Livestock and Rural Development, argues that terms such as steak, hamburger, fillet, bacon and sausage must be restricted to "edible tissues of butchery, including muscle mass, with or without bone base, fat, kidneys, blood and viscera, which may be in natura or processed". Folha de S. Paulo (2019) highlights that the Sociedade Vegetariana Brasileira (SVB) stands against the project and acknowledges that the bill project is a response of a strong sector to the growth of demand and supply of plant-based food products.

These conflicts, however, do not constitute a reality that reduces market dynamics to a dualism. They, in fact, create a much more complex and dynamic reality, because the practices of a market agent are not always aligned with only one coherent interest (HAGBERG, KJELLBERG, 2010). A food company, a media company or, mainly, the state, with its wide and multiple apparatus, can operate against and in favor of a change at the same time in different levels and scopes.

We can consider, for example, that in the U.S., even if it is a state law now hampering marketing operations to promote plant-based meat, there is a new policy assigned by the governor of California, to promote plant-based meat, in which public institutions that provide food, including hospitals and prisons, are now obliged to offer vegan meals (THE DAILY CALIFORNIAN, 2018). In Brazil, public school lunch and popular restaurants has been target of proposals, laws and policies to offer vegan meals. The Brazilian version of the program "Meatless Monday", guided by the Brazilian Vegetarian Society, is an important player in this question, especially in the State of Sao Paulo. It is worth pointing out that government purchases are a significant supporter of a agrifood market order (MARQUES et al., 2016), and, thus, frequently under dispute.

CONCLUSION

Californian venture-capital funded food-tech startups emerge as an important actor proposing to catapult plant-based foods and reshape the food market in a vegetarian way. These startups positioned themselves (in language and product itself) as a solution to significantly reducing environmental, security and ethical animal-origin meat impacts and give greater productive and economic efficiency to the food market. Thus, they join the vegetarian ideology, but been supported and strengthened by venture capital and scientific knowledge in a deep business culture of innovation.

In just over a single year (2019), Brazilian market could meet a series of new initiatives such as Fazenda Futuro products, Incrível Seara line, Marfrig-Burger King sandwich, Sadia Veg&Tal line, and other minor startups, beyond partnerships and projects involving Embrapa, The Good Food Institute, AGN Consultoria, top Brazilian universities (such as INSPER) and other non-mentioned players.

The transformative potential of such business-productive-financial movements is noticeably stronger in comparison with consumer and prosumer isolated movements, given the complex and established social order through which markets operate. As exhaustively repeated, markets are complex social performances, mobilizing devices and diverse economic and cultural actors, which legitimize and confer stability to certain practices. Therefore, we assume that – notwithstanding challenging the current structure and the status quo of a market, and being a relevant actor to press for changes – consumers or prosumers does not have the agency capacity to change the food market.

Different from the vegan and vegetarian solutions, the plant-based food does not imply an identity to consumer (BEVERLAND, 2014) what means that multiple interests have space and can direct act and takes benefit in this market. Because there is not necessarily an ideological alignment with vegetarian causes and identity, organic activism, short-chains, small scale, local food movements, or whatever.

From that analysis, a series of questions can emerge, considering this currently complex market scenario in light of the mobilized theoretical approaches. Will be the plant-based meat market a global change in the food system?

It is relevant to understand that the changes already in courses in the food market for its reconfiguration based on proteins of plant origin are clearly hybrid, complex and cannot be reduced to dichotomous antagonisms. These changes are not occurring driven mainly by the interests and practices of consumers, nor do they are strictly based in responding to demands of engaged groups of consumers. The current (and future) changes are aligned with interests of the food industry and diverse actors that constitute it – primarily meeting the financial system's priority demands (e.g.: environmental, social and governance - ESG issues) (FAIRR, 2018).

To clarify: Tyson Foods, the second largest meat processor in the world[ii], is one of the top shareholders of Beyond Meat, a food tech plant-based startup, whose product, The Beyond Burger, is already on sale in more than 20,000 outlets in the U.S., admittedly proposing to revolutionize the current unsustainable food market (WILKINSON, DELLEPIANE, 2018; FAIRR, 2018). On the other hand, clashes promoted by livestock sector associations and animal food industries and their subsidiaries – such as chemistry and pharmaceuticals – mobilizes the state apparatus to limit the mainstreaming of alternative products and avoid market transformations, in intricate efforts to maintain the *status quo*.

Besides that, it is essential to keep in mind that plant-based meats will not replace nor extinguish animal farming and the livestock complex chain. Is a very long, with many decades of work and development of diverse segments to happen a replacement. On the other hand, the fast growth of the plant-based protein market can help to reduce the need of more animals and more impacts in the food system, and guarantee a little more food security in times of growing population.

This essay deals with diverse and broad questions related to market evolution. It is a process in the middle of a frisson, which makes very thought-provoking but also complicated. Marketing academics should not stand aloof in favor of such impartiality. These are important issues for the development of the market and a sustainable society. And the contribution of academic research into the strategic operation of the market, marketing and consumption in favor of a vegan logic is important at a time of so many novelties, uncertainties and constant challenges.

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[i] In short lines: vegans are consumers who avoid any products from animal origin, being strictly vegetarians; vegetarians are consumers who avoid to eat meat from any animals, which may be egg-lacto-vegetarians, consuming milk, eggs and other animal origin products; reducetarians, or flexetarians, are consumers who intentionally reduce the consume of animal origin products, especially meats, but sometimes consume it.

[ii] Behind JBS and ahead of Cargill, Smithfield Foods and Brasil Foods (BRF), which form the group of the world's top 5 largest meat processors in the last years.