

Food industry degrowth as a public health strategy: the case of ultra processed baked goods

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TITLE PAGE:

TITLE: Food Industry Degrowth as a Public Health Strategy: The Case of Ultra Processed Baked Goods.

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Not applicable

ABSTRACT:

Evidence associates ultra-processed food and beverage (UPF) diets to diverse non-communicable diseases, including obesity, diabetes, cardiovascular disease and mental health disorders. Efforts to reformulate by reducing salt, sugar and unhealthy fats in such foods, have not changed the fact that UPFs are an increasing proportion of population diets. The UPF industry is rooted in growth – a fundamental logic at the heart of publicly traded and for-profit private corporations. Our longitudinal analysis of supermarket trade journals from the US and UK spanning 30 years finds that growth in this sector is not demand-led, but industry driven. Our analysis uncovers four dynamics of this growth paradigm, which we call combatition., swotification, the fashion spiral, and demand-pumping. Our findings show that, while public health policies result in individual products becoming more ‘healthy’, these benefits are likely to dwarfed by the aggregate (overall) growth of the UPF category itself.

We propose a powerful counter paradigm: de-growth. While having gained recognition in ecological economics, we demonstrate its potential for public health, especially its concepts of decoupling and overproduction. While many public health interventions exist within a growth paradigm, a degrowth perspective proposes that the UPF industry cannot innovate its way out of health harms, and that the production of the entire category must decrease.

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INTRODUCTION:*ULTRA-PROCESSING AND THE FOOD VALUE CHAIN*

Foods classified as ultra-processed (UPF) encompass a broad range of ready to eat products including packaged snacks, breakfast cereals, and ready-made meals, and account for more than 50% of dietary intake in some countries, including the US and UK (1). The world shift towards diets high in UPFs has been recently associated with several adverse health outcomes, including cancer, mental health and cardiovascular disorders, and increased mortality (2). The 'ultra' of food processing has a number of specific characteristics: firstly, when bulk commodities such as maize, wheat, sugarcane and fat are extracted from their whole sources and chemically modified by processes including industrial heating, use of enzymes, fractionation, and extrusion, resulting in a bulk commodity that has a substantially degraded food matrix. Secondly, the bulk commodity is enhanced to flavor it, or disguise unpleasant flavors, and texturisers to improve sensory mouthfeel such as bulking, gelling or foaming agents. Thirdly, such food is characterized by the removal of ingredients like fiber, water and protein) that usually slow down the absorption of rewarding ingredients (like sugar or fat) into the human body (5-7).

Ultra-processing is a specific activity within what is known as the food value chain. The food value chain comprises the growing , manufacturing, processing, branding, distributing, retailing, consuming and disposing of food (3). There is a difference between processing (for preservation, safety, and food security) and ultra-processing (for sensory enhancement

and repeat consumption, see (4)). Ultra-processing generates the deepest profit pools in the food value chain for at least three reasons. Firstly, the per unit cost of ultra-processing is cheap, because the firm's aim is to simulate real ingredients, thus keeping raw material costs to a minimum. In other words, producing cheese flavoring is much cheaper than producing cheese. Secondly, UPFs are designed to deliver doses of rewarding ingredients (salt, sugar, fat, flavours and additives) as rapidly as possible, bypassing biological satiety systems. They are thus highly reinforcing to the body, stimulating repeat and increased dose/consumption (8). Thirdly, UPF producers can command higher mark-up due to business operations not related to nutrition, such as branding, packaging and channel distribution. These activities prime consumers to regard the product as desirable, while also enabling firms to exert structural dominance in food value chains, ultimately crowding out whole or unprocessed food consumption (9, 10). These three characteristics mean the profit pools in this part of the food value chain are especially attractive, and UPFs have thus been the growth-engine and profit generator for food businesses globally (11, 12). The UPF industry is dominated by a small number of publicly traded corporations (13). The primary strategic aim of these organizations is to generate a financial reward in return for investment in the corporation by maximizing profits and/ or earnings per share – in general the primary fiduciary responsibility of Boards of Directors in publicly traded corporations.

IN SEARCH OF THE CAUSES OF CAUSES: THE PARADIGM OF GROWTH

It is clear that increasing the availability, reducing the price and engineering novel and highly reinforcing foods increases exposure to health-harms globally. Deregulation, privatization, financialization, globalization, corporate power, capitalism and neoliberalism have been variously pin-pointed as the root commercial dynamics that propel disease (14-16). In this paper, we sought to explore the extent to which the imperative for commercial growth is a fundamental *paradigm* from which the above phenomena arise. As we will detail later below, we can understand paradigms to be worldviews which have three components (i) something with its own literature or ‘canon’, (ii) its internally coherent and valid arguments or logic, and (iii) its successful outputs, which in turn reinforces its worldview (17). To achieve this aim, we analysed industry discourse from two trade magazines over 30 years, pertaining specifically to the “baked goods” sector. We adopted this approach as we anticipated that trade journals would be less guarded and more focussed on building a community of peers, offering a more authentic industry voice regarding the imperative for commercial growth that is not heard in its publicity or its interaction with governments.

FROM ‘SHARED PIES’ TO ‘BIGGER PIES’: RESOLVING PROBLEMS OF GROWTH

To what extent is this commercial growth imperative problematic? At least since the pioneering modelling and reporting by the Club of Rome in the 1970s, there has been an internationally well-known theoretical and practical understanding of the various limits to economic growth (18). It

has taken longer for management theory and practice to take seriously this paradigm shift. In the 1990s there began a flurry of reflection in management theory and practice in recognition of the impacts of businesses on ecological and human health. While other models of business existed, the primary duty of all privately-owned, for-profit enterprise was to provide a return on shareholder investment, but this immutable imperative came up against extensive critique, leading as it did to short-term planning, negative externalities, and overstating the legal power of shareholders to maximize profit (19). The business world at this time considered if the limits to growth posed a paradigm shift, or if the evidence of planetary and public health externalities would be reincorporated into the existing paradigm of growth. In order to square the circle, many theorists and practitioners in the business community adopted a view that there was in fact a deep connection between health, planetary stability, and economic growth. This belief became known as the 'win-win' hypothesis: firms that met the demands of human and planetary health could, in fact, achieve *greater* economic growth because they used their resources more efficiently, they attracted more consumer loyalty due to their social and environmental credentials, and they were favored by governments and regulatory bodies due to their proactive role as responsible corporate citizens (20, 21). This sentiment has been encapsulated in business concepts such as the triple-bottom line ('people-planet-profit', originally proposed by John Elkington in 1995), shared value (22), and 'stakeholder capitalism' (23).

The stakeholder model arguably ended the ‘stalemate’ that pitted economic growth against public health (20). ‘Win-Win’ has become a shorthand for the contemporary paradigm of growth in global business – that is, it is a core assumption with attendant literature, practices and normative vision held by the majority of scholars and practitioners within management.

In the intervening years there has been intensive research to empirically examine if industries can continue to grow while also regenerating the environment and contributing to a healthy, flourishing human population (24-26). Critics worry that the win-win model is a naive conception of business in society because it fails to see that the economic and the socio-ecological is not a balance to be struck, but in practice a zero-sum game of attention, resources and other capital, in which managers must always make decisions that prioritize one *over* the other (27-29). The need to do both, it is argued, results in an elaborate construction of corporation where the left hand ignores what the right hand is doing (30). In other words, a corporation can be perfectly at home with its sustainability division reporting on environmental, social and governance excellence while its financial division can report of new consumer markets, product innovation, and structural dominance (31).

The UPF industry is a prime example of the win-win paradigm, where the last fifteen years have been characterized with *both* the rise of apparently healthy food, mass reformulation, portion control, education campaigns

and industry codes to restrict marketing, along with the rise of obesity and non-communicable disease (32, 33). In recent years food reformulation (technical processes to reduce the sugar, salt, and unhealthy fats in UPF and replace them with new formulations and processes) has been a prominent policy solution to obesity and non-communication disease in many countries (34). Despite reformulation, the global share of UPF in the global diet continues to rise (35), chiefly because reformulated food arises from processes that also drive obesity and ill health (36, 37). This has created a fundamental conflict between corporations' economic mission, and the mission of public health (38, 39).

THE BAKERY - A CASE STUDY OF THE GROWTH PARADIGM:

To better understand the growth logics and dynamics that underpin UPF we chose baked goods as an industry for in-depth analysis. The 'baked goods' sector comprises four categories: bread and rolls, cakes and tarts (including doughnuts, muffins and biscuits), Viennoiserie (such as croissants, pastries, brioche) and savoury pies (40).

There are a number of reasons why this is an especially important category to evaluate. Baked goods, especially bread, are key boundary foods in the global debate on ultra-processed food, because sliced bread comprises an affordable staple in many populations' diets (41). The 1990s saw the baked goods sector transitioning from a fragmented, artisanal model of dedicated stores to an industrial model of centralised mass production through technological innovations, though this varies by region

(42). The baked goods' sector is valued at approximate \$507 billion in sales globally, with an average of 4.2% growth year on year since 2010

(43). Further, the reality of baked goods' production is far from its imagined connotations of fresh and home-made kitchens. Most "baked goods" contain a multitude of ingredients, advanced manufacturing processes, and the vast majority is not prepared from scratch in a supermarket. In fact, baked goods are the most important contributor to UPF volume sales (44). The overall value of baked goods in the US is nearly \$83 billion, with approximately \$36 billion coming from unpackaged baked goods in supermarkets. By far the fastest growing category is patisserie, with retail value sales up by 30% since 2017 (45). In the UK, the overall value of baked goods is nearly £8.5 billion, and the fastest growing category is cakes and tarts (46).

Recognizing the growth potential in the early 1990s, supermarkets developed capacity in the baked goods category, and a significant market share. A key strategy of the supermarket bakery is known as 'led-by-bread' – where bread acts an initial draw, leading consumers to buy from the other categories of cakes and tarts, Viennoiserie and savory pies.

While most bakery products are regarded by the public as an occasional 'treat', sales tend to be driven by impulse purchase of these treat items (47). While the energy, protein, fat, carbohydrate, sugar, salt and allergen content must be stated on all packaged food, non-packaged foods (baked goods) are exempt from both nutritional and calorie labelling regulations, requiring only relevant allergen information to be displayed beside the food. This exemption from labelling requirements for baked goods extends

beyond the site of the in-store bakery, to include food sold in 'loose' form throughout the retail area, such as delis, hot counters, sandwich bars, takeaways, and fridges. As a result, supermarkets have made the 'perimeter' the strategic focus of operations – i.e. areas of the supermarket that offer unpackaged produce (bakery, deli, hot counter, fruit and vegetable) as opposed to the 'center' which offers packed long-stable items. Perimeter foods command higher profit margins (48) and are often perceived by consumers as healthier than packaged food, evident in countless popular recommendations to 'shop the perimeter.'

METHODS:

DATA SOURCES

Our data comes from two leading food industry trade journals. *The Grocer* (UK), a subscription-based magazine for the supermarket sector in the UK, and *Supermarket News*, which provides a similar subscription-based service in the US. Industry trade magazines are important sources of "closed talk" between commercial actors: in such publications, discourse is less guarded, potentially providing more authentic, business-driven views of issues (49). Longitudinal studies of trade industry journals offer thick and deeply situated insight of the justificatory arguments and the outputs in an industry, which in turn allow us to see clearer leverage points in a system (50, 51).

DATA CODING

We ran keyword searches in both trade journals using “Baked goods” and “In-store bakeries”, between 2000 and 2023 for the *Grocer* and between 1994 and 2023 for *Supermarket News*. The two lead authors undertook an initial immersion by reading all of the identified entries. Because the format of the entries in *The Grocer* did not permit upload to qualitative coding software, the two lead authors conducted line-by-line coding of the data set. Specifically, the first 50 articles were coded for each magazine, and then checked against each other to discover (i) incompatibilities in coding and (ii) emergent themes. The code book and entire data analysis is publicly archived here: <https://osf.io/av2de/>. The keyword searches returned 503 articles that were published between 2000 and 2023. The themes evolved from data-driven categories which the two lead authors identified inductively. This process was deeply informed by the constant comparative method in grounded theory (52). Specifically, the initial coding framework was informed by critical marketing. Critical marketing is a sub-field of marketing which focuses on the negative health and ecological externalities attributable to marketing, in particular the design of products, profiling and targeting technologies, predatory pricing, advertising and distribution strategies (53, 54). However, as coding progressed, themes emerged not in the domain of critical marketing, such as the concern the industry had with constant variety and novelty. Each data entry was excerpted, followed by a note written by one of the two lead authors that justified its code. This in turn resulted in a 157-page data document that the entire author team read individually, then met three times to discuss the (i) conceptual coherence and clarity of these

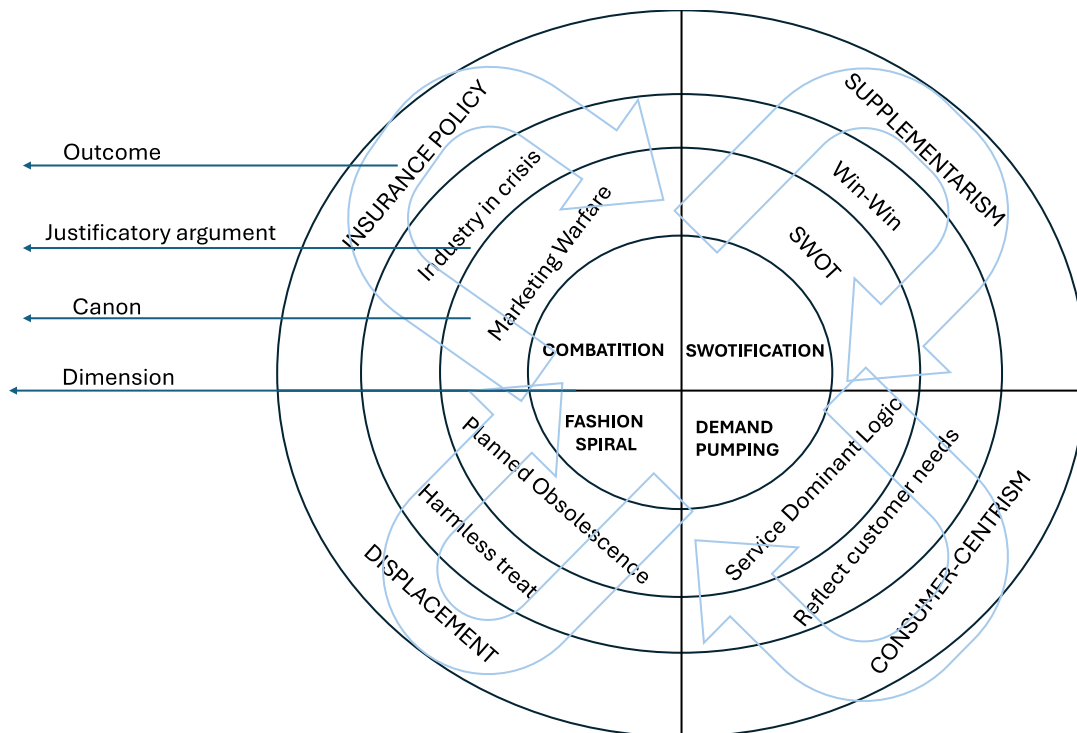
categories and (ii) debate if particular data corresponded to categories. The coding resulted in 8 first-order themes and 26 sub-themes (Table 1).

IDENTIFYING DYNAMICS FROM THE THEMES

Because we were interested how the industry responded to trends and threats, and not the trends or threats themselves, we sought to identify *dynamics* that were consistent over a thirty year period, which is consistent with a paradigm – a community of knowledge and practice. We aggregated the themes into four consistent and enduring industry responses to its environment, which we discuss below. These four dynamics make up the drive towards year on year growth. The paradigm of growth was so pervasive in the data that it was rarely named: it was completely taken-for-granted, an all-embracing philosophy that was that deeply assumed it did not bare mentioning.

RESULTS

In what follows, we give an account of these four dynamics that emerge from the industry data, depicted in Figure 1 The Growth Paradigm.

Figure 1: The Growth Paradigm

1. COMBATITION

The Business of Marketing Warfare

Warfare was a discourse in marketing management that flourished in the 1970s and 1980s. It conceived the true nature of marketing not as ‘serving the customer’ but as a “war...the enemy is the competition and the customer is the ground to be won” (55). Such aggressive formulation fell out of favour with a new era of corporate social responsibility and stakeholder capitalism from the early 1990s onwards. Despite this, warfare is the dominant genre in both food industry magazines examined here. Market research reports are harbingers of disaster. Statistics are marshalled as alarms: baked goods’ categories take “hits”, shares of bread categories “tumble”, losses are “staggering”, profit is “wiped out,”

and category sales are announced to be at “all-time lows”. The current cost-of-living crisis is creating “collapse” in supplies such as wheat. At the same time, market research is also deployed to headline growth that is “whopping” “shot up”, “soaring”, with sales as ‘record’. These can often co-exist, leading to recommendations such as: “operators [should] not take their eye off the huge snacking mission and seek growth opportunities in a declining day-part”. (B57) Year-on-year (“YoY”) is the most used metric throughout the articles. The previous year is a constant benchmark in the minds of the retailers upon which percentage growth and decline is understood. In a state of warfare the position of the industry is one of *perma-crisis* and the appearance of constant threat creates a justification for growth: not as a striving for greater dominance and profit; rather as an *insurance policy* against the looming danger of industry collapse. Thus, YoY sets growth as not just an ambition, but an indispensable necessity. This growth-priming happens in three ways, through the constructions of enemy, and the target and capture of the consumer.

Firstly the enemy: the competition is a clear and present enemy that is evoked in many of the articles. Competition is “fierce”, “stiff”, “intensifying”, “exploding”, an “assault”, “lurk[ing] right around the corner”. In many cases, the enemy is not an identifiable other supermarket, but rather consumer behaviours that militate against sales. Thus, the enemy is “the family who eats at home”; “list shopping”;

“health-conscious young ones” “the controlled shopper” and “good habits”.

To safeguard against the imminent decline or even collapse of baked goods categories, creating new consumer segments is a necessary insurance policy. One of the main tasks of the trade journals is to “reveal” these potential segments and how to target them. New segments included the “childless Hallowe’en household”, the “office desk-faster”, the “back-to-school” market, and the “Covid home-baker”.

Consonant with the business literature of warfare, the articles construct the consumer as an entity to be captured, detained, and stimulated by impulse. As one executive puts it: “The competition really exploded recently, and it’s important that the in-store bakery has a point of differentiation, and knows how they’re going to go out and capture that consumer.” (A125) While supermarket areas (deli, butcher, aisles and so on) comprise stationary fixtures, the bakery lay-out is *mobile* which allows it to morph throughout the day to capture the buyer at different times, from “morning share” to “after work” segments. Detailed advice and technical description are offered of bakeries’ mobile fixtures. One principal goal of capture is to stimulate incidental purchase impulses. The euphemisms for generating impulsive consumer purchases in the data are “unplanned” shopping, or “trip triggers”. A recurring strategy to capture the shopper is cross-merchandising, which means the placing of baked goods in unexpected locations throughout the supermarket in order to

prompt food pairing, such as when “Italian bread is displayed next to the spaghetti sauce, while bread and sweet goods -- like honey buns -- can be found in front of the milk department” (A338).

Combation is a dynamic that primes the industry for growth through the staging of boom-and-bust cycles and through the presentation of the many enemies, and using scare tactics similar to sensationalist writing. The outcome is not as a striving for outright growth, but rather creating an insurance policy against imminent collapse.

2. SWOTIFICATION

The Business of SWOT

A constant concern in the data is how to convert public health threats into opportunities for the supermarket bakery. This concern was the backbone of the earliest tools of strategic planning: SWOT analysis. Developed systematically since the 1950s, SWOT is a managerial framework used to identify and assess strengths, weaknesses, opportunities and threats in an organisation’s external environment. SWOT was a creative process to convert threats into opportunities (56), and it quickly became a staple of all strategy textbooks. Several threats preoccupy the sector, such as consumer safety, commodity supply chains, food waste and threat of labelling transparency. The example of portion paradoxes we present below shows how threats are not perceived as a dilemma, or a set of guardrails, but rather are converted into a growth strategy.

Portion paradoxes

The data shows that public health strategies to reduce consumption by reducing portion size begin to concern the industry from the mid-2000s. However, portion control is creatively converted from a public health directive to reduce consumption to a strategy of *sub-sizing* to increase sales. The first way this is done is by the re-framing of 'portion control' to 'mini', 'treat', 'special occasion', 'limited', 'small indulgence,' 'single-serve'. In this way, the food industry sees the portion control threat as a new *opportunity* for customer segmentation. Smaller portions are introduced as a supplement to, not a substitute for, larger ones. One supermarket bakery emblematises this supplemental logic succinctly: "If we sell 200 boxes of the regular chocolate chunk, we'll sell 200 boxes of the mini chocolate chunk, actually doubling sales" (A43).

The second way threats are converted into opportunities is to use reduced portions as samples for larger orders: One retailing executive, reflecting on the growth of smaller portions, typifies such logic: "That growth can be attributed to innovation and creativity in anticipating the changing needs of the consumer. One example of that is marketing the smaller cakes...We want to get our cakes in the customer's mouth any way we can. If the quality and service is there and they had a good shopping experience, they will come back when they have a special event and buy from us" (A333). Thirdly, portion reduction is converted into convenience.

"Consumers are looking for portion sizes that are healthy and convenient and can be eaten on the go," summarises one executive (B77). Finally,

the supermarket bakery conceives portion control as a new channel innovation to capture consumers not intending to purchase any sweet items. It is worth considering an extended quote to illustrate this logic:

“While indulgent single-serve bakery sweets and snacks are appealing in and of themselves, retailer attention to detail has the potential to further increase the category’s draw and popularity by grabbing the impulsive shopper’s attention...[Single-serve treats] are screaming, ‘I’m lovely, eat me.’ And we’ve seen quite a lot of that with consumers [who] are shopping around the store — they almost never have the intention of going in and saying they’re going to get themselves a treat.” (A402).

Portion control is creatively converted to a strategic opportunity for the supermarket bakery. It affords convenience, taste exploration, guilt minimization and variety-seeking. Swotification is a growth dynamic, taking threats and creatively converting them into opportunities to increase market share. It regards public health restrictions as an addition to (rather than an impediment of) growth, which creates a powerful (if flawed) justificatory logic of win-win for business and society.

3. THE FASHION SPIRAL

The business of fashion

The baked object is a blank canvas on which culturally powerful stories, myths and symbols are projected. The material of the baked object is similar to commodities such as water, which has been a marketing object *par excellence* as a store of easily changeable meanings (57). The malleable nature of baked goods makes it an excellent object to accelerate cultural meaning through foods that are high in sugar and saturated fats. The food spiral requires *intensification* (of flavours), *aestheticization* (of products), and increasing *variety* (of categories). Over the 30 years, we observed an acceleration of the baked fashion spiral, where industry preoccupations with a small number of “exotic” items such as bagels and doughnuts, evolved to hyper-competition for consumers’ sensory attention. To achieve the planned obsolescence that is required for the fashion spiral, the supermarket bakery strives to own and capitalize on two specific emotions: *nostalgia* and *excitement*.

Nostalgia

The consumer emotions that the bakery industry understands and stimulates more than any other are nostalgia and excitement.

“Romancing the product” is a retail term that recurs in the industry articles, and it variously refers to the ways in which the bakery can move products from the profane world of industrial production to the sacred world of social emotions. “Storytelling” is another key marketing device that is held as a holy grail, with an ability to give the product precious cultural depth. Both industry magazines include numerous articles on

visual merchandising, which is used to create daydreams of a simpler time by evoking associations with the kitchen, the hearth, or the oven. One bakery manager summarises it well: “I think just about everybody around here remembers their mother or their grandmother making a cake like that. In this area, it is something old-fashioned that people used to bake all the time at home...It'll work. We're going to sample the daylights out of it. I'm confident that when they taste it, they'll buy it” (A276).

Nostalgia is explicitly named in the data, and there is a sophisticated understanding of how crises drive populations to seek stability and comfort: “The appeal of cookies goes back to nostalgia and convenience,” one article reads. “Consumers associate cookies with their childhood days, and for many, cookies are a form of comfort food, which has gained favour since the Sept. 11 terror attacks” (A227). More contemporaneously there are multiple references, especially in the British data, to the crisis of Covid-19, as “consumers are seeking comfort from their food right now, and white bread provides this in buckets with strong emotional and nostalgic connections” (B4).

Excitement

“Building excitement” is a phrase that appears frequently in industry journal articles and refers to the powerful ways the bakery manages the pace of consumers’ experience of time. In other words, it sees its role as stimulating consumers’ states of interest, curiosity and delight which can be strategically peaked at requisite times. Bakeries are perhaps unique in

their ownership of *seasonality* – the parsing of the year into natural cycles – which facilitates a number of strategies. The first is to take cultural cues in the national and international calendar and embed them into eating rituals. The articles are replete with obvious profit times (Hallowe'en, Valentine's Day, Mother's Day), as well lesser-known ones which reflect the internationalisation of the ritual calendar: Quinseaneros (a Hispanic girl's 15th birthday), Mardi Gras, or pregnancy parties. One of the most important activities of the supermarket bakery described in the industry journal articles is to create “fever” around niche cultural holidays, by mediating consumers' experiences of an occasion. As one executive comments: “there wasn't much of a market for Mardi Gras-related sweets before they started selling Louisiana-style King Cakes, a sweet brioche topped with glaze and colorful sugar. “We created that market in Dayton...Sometimes you have to create holidays when there are none” (A4).

Trade articles are also preoccupied with how to “extend the seasonal curve” – strategies to stretch out eating rituals – and “avoid the shrink” – the post-occasion blues that result in sales' slumps. Hallowe'en is a good case in point: “With 31 October falling on a Monday”, writes *The Grocer*, “there's the opportunity to capitalise on a ‘duplicate occasion’ of partying on the preceding weekend and trick or treating on the day itself.” (B15). Bakeries strive to create a calendar of perma-occasions.

A second related activity of the supermarket bakery is to detect *daily* rhythms, either in a daily or annual calendar, and formalize them into rituals with ritual objects – namely food products – to bring them into consumers’ worlds. In other words, the consumer experiences the ritual by *eating* it. Such rituals range from “back-to-school,” to the “basketball season” and “strawberry season”. Innovation is thus temporal as much as physical, and involves parsing out rituals into ever smaller sequences, and constellating more product around them. As one executive discussing the back-to-school season says: “We try to hit the market with quick items for breakfast before school, lunch box snacks and after-school snacks. We want to hit in all three areas rather than just focus on lunch box snacks” (A248).

To achieve states of intensified experience, bakeries use variety, exoticization (particularly of flavor) and new product development. Flavors become more exotic over time: “There are so many out-of-this-world flavors available these days, like cappuccino and blueberry crumb. You can keep customers interested with them.” (A342). The supermarket bakery is the site of intense product engineering to create novelty, and industry journals are replete with new product development: duffins, cronuts, crookies, crolls, pizza pretzels, which leads to the sweetening or cakeification of previously mundane categories. The fashion spiral is purposefully superficial, at the level of the products’ appearance. This focus on superficiality is a useful justificatory argument because it

emanates from the realm of frivolity and fun; what results is harmless decoration that is thus protected from serious analysis or critique.

Achieving states of excitement and nostalgia are a constant in the data. This fashion spiral is seen in other industries such as fashion, technology and automobility and is a ubiquitous driver of growth. However, in those other industries, the negative externalities are usually human rights and environmental costs. In the food fashion spiral, the negative externalities relate to human health. The intensification of flavors, the speed of product innovation, the aestheticization of mundane products and the extension of the seasonal curve all work to increase the consumption of unhealthy ultra-processed baked foods while also displacing less processed foods.

4. DEMAND-PUMPING

The Business of Service-Dominant Logic

The industry articles tell a story of the complex nature of 'demand'. In them, demand is a pump to be primed, after which the industry stands back and wonders at demand, as if it were an independent reality. This is an important dialectic that is central to a growth paradigm. The two actions – the pumping work and the servicing of the flow of demand – are separate in the minds of the producers.

An excerpt will serve well to demonstrate how these two actions are separated. An article reports on a supermarket bakery that introduced

“new, larger muffins” into its product line. To introduce the muffins the store had a buy-one-get-one-free campaign, the manager explaining that “[w]e had distribution ready and had a backup with what we needed to get in quickly to meet the demand.” “[A]side from its desire to respond to customers’ requests for better muffins, [we] chose to introduce the new program with such fanfare because it wanted to draw customers to the departments’ self-service cases” (A355).

It is extremely important for the industry to legitimize the narrative that it neither creates nor manipulates demand. To legitimize this position, two myths evolve over time: the consumer as discerning, fickle connoisseur and the baker as tireless, guiding servant.

Consumer as master: connoisseurship

Over the 30 years of data, the market for baked goods matures. Early articles are concerned with only a small number of items outside bread – bagels, croissants, doughnuts and muffins. Over the years the fashion spiral evolves, resulting in the speciality explosion. To legitimise this intensification, industry articles evolve over time to describe a new consumer – knowledgeable and discerning – who has travelled internationally or watched international cooking programmes. Such a construction flatters the consumer: “I feel like customers are more familiar with high-end pastry items than a few years ago”; “we cater to a very savvy clientele” (A148); consumers “turn their bread buying into a personal experience,” (A340) and so on. The connoisseur is also

understood to be fickle: “Not only has the pandemic prompted a huge spike in demand for bread and baked goods, but it’s also made shoppers more erratic” (B38), and exacting: “49% of shoppers will walk away if they can’t find what they want” (B26). The “reality” is “that people are demanding food that is flexible, convenient and lifestyle-driven” (A83). This argument provides the legitimization for the necessary bakery’s response: “to cater to kids’ whims” (A136); to serve Millennials who want “a now-consumable item that they want ‘right now’” (A7); to offer “[a]nything that involves less prep time...for today’s time-pressed consumer” (B55). The data are notable for their complete absence of any consumer who wants less.

Demand-pumping is a growth dynamic that describes the way consumer demand requires stimulation, but which appears miraculously as an independent, external reality ‘out there’ in the world of food industry journal articles. Its justificatory logic ennobles the cause of the supermarket bakery and sees growth as an indirect, consequent effect of consumer-centricity.

DISCUSSION: EVIDENCE OF A DEGROWTH PARADIGM?

This analysis, which documents the spectacular rise and consolidation spanning 30 years of the supermarket bakery offers a depth case on the strategies employed by an industry to expand a highly profitable yet disease-generating category of food. The strategies driving the global

proliferation of UPFs exemplify a pervasive but under-researched paradigm —*growth*—which operates so ubiquitously that it often escapes detailed scrutiny. We present a way to break down the monolith of growth into four distinct dynamics (Figure 1). We plot how these four dynamics flow through the ‘machinery’ of a paradigm – (i) its literature or canon, (ii) its arguments or logic, and (iii) its outputs, which in turn iteratively reinforce the paradigm. In this section, we situate our findings within a degrowth paradigm which advocates not for better problem solving within growth, but for the radical contraction of less essential industries, along with their products and services (58-60).

While ‘degrowth’ is a concept that has emerged as a post-capitalist economic model that proposes policies to avoid ecological breakdown and the subsequent collapse of human society (61), many degrowth ideas have been central to philosophical debates for centuries (62, 63). Degrowth is polysemous in the truest sense, with advocates not subscribing to one single philosophy. However there are some principles that unite degrowth: reducing material and energy throughput to bring economic production within the ecological carrying capacity of the planet; pre-distribution of wealth/income and resources; reducing working hours; investment in public goods and provision of universal basic services; foreground values of care and conviviality; and transitioning away from growth-dependency towards a well-being metrics in national governance (64-66).

Degrowth economics differentiates between some sectors that must grow and require investment (public health, education, clean energy) and those “less necessary” sectors that must “radically degrow” (59) or be temporarily globally disbanded until clean technologies-of-scale can be achieved (67). Degrowth also differs substantively from other concepts such as sustainability because it insists on a shift away from the ‘win-win’ paradigm that is dominant in global political economy discussed in our *Introduction*.

Degrowth is not a new concept, but it been almost exclusively considered in the context of the climate crisis. Given the syndemic relationship between the extraction, production and supply-demand loops on *environmental* systems, and the effects of those extraction, production and supply-demand loops on *biological* systems and population health (68-70), a focus on degrowth could (i) translate proposed policy solutions from the field of ecological economics into the field of public health, and (ii) reframe the root causes of non-communicable disease. We elaborate two reasons here.

Firstly, a powerful policy solution in the degrowth field that is the concept of decoupling. Taking its cue from the original paradox posed by Stanley Jevon in 1865, degrowth scholars seek to investigate how sustainability measures (increasing efficiency in production, capturing waste resources, using alternative energy sources and so on) can be *overridden* by the addition of new capacities that offset efficiency gains and increase the

speed or frequency of consumption. A good example might be Ryanair, which claims to be the most sustainable airline in Europe with the lowest carbon usage per passenger – an impressive carbon decrease at the individual level – but with a doubling of passengers planned in the next decade, leading to an *aggregate* growth in overall carbon emissions.

Decoupling can differentiate between strategies that create fewer carbon emissions overall (absolute decoupling), and those which produce less carbon per product, while growing the aggregate product output (relative decoupling). An analogous situation exists in public health: per product nutrition of ultra-processed items is improving, but, as we have seen in the case of baked goods, it is the category that is growing rapidly, which displaces less processed food. Decoupling is an example of how concepts within the degrowth paradigm can help health policy differentiate the health claims of industries and actors.

Secondly, lensing problems such as obesity and overweight through degrowth fundamentally reframes categories and causes. Whereas most existing environmental policy focuses on the *overconsumption* problem and designs interventions to educate, nudge and tempt consumers to less environmentally intensive lifestyles, degrowth focusses on the *over-production* problem: the production of cheap, environmentally intensive goods and services. Degrowth researchers investigate the planned scaling down of less-necessary forms of production. In the case of public health, it is inarguable that the ultra-processed industry is a less-necessary type of food that could be scaled down. While this is the case, there are many

‘boundary foods’ such as commercial milk formula, sliced bread and breakfast cereals upon which populations depend; the benefit of the degrowth lens is that it is not focussed on stigmatising the use of these products, but rather the demand-pumping of them by their respective industries.

Degrowth is incommensurable with the claim that growth can be sustained if we just commit to *only* producing “good” products and services (65). The dynamic of the fashion spiral consistently showed that in our data, health issues were regarded as a “craze” (A72) or “the next big wave” (A332), or a “trend” (A3). Health in any form was seen as a strategic opportunity to produce “new”, “reformulated” or “healthier” ultraprocessed products. This demonstrates a fundamental paradox in food industry’s response– it is not about producing and consuming UPFs differently, but producing and consuming much *less of them*. To achieve this would require transnational food companies with portfolios of products that are ultra-processed to commit to a planned decrease of aggregate production, deploying global regulation similar to the Framework Convention on Tobacco Control, directing agricultural subsidies to support local food production that uses regenerative farming principles to produce smaller amounts of food (71, 72).

Although producing and consuming less is a fundamental principle of degrowth, there is much more to be achieved. Degrowth detractors rather disingenuously claim that degrowth will bring us ‘backward’ to times of

austerity. In response, degrowth communities emphasise that degrowth does not equate to economic recession rather it is about reorienting economies of social and ecological provisioning towards ones that focus on equity, sustainability, and shared prosperity. We have shown in these data how the degrowth goal of “providing healthy and affordable food for all” (73) is crowded out by the growth goal of UPF producers, in our case, the baked goods industry.

The framework presented in this paper showcases how difficult the concept of producing less is for an industry primed for continuous growth. When firms are compelled to pursue profits and growth above all else, or ‘growthism’ (the pursuit of growth for its own sake), rapid and continuous new product development will prevail, regardless of whether these products are ‘harmful’ or ‘healthy’. This ‘growthism’ often results in what critics call the ‘growth illusion’ (74, 75), which our findings speak to. The term ‘illusion’ refers to the little progress made in universal human welfare under the hegemonic ideology of growth (76) - from healthcare, to food, housing, education and other essential needs of humans despite repeated claims of the universal benefits of growth. In our findings, we highlighted how public health commitments by the sector did not manifest in strategies to reduce consumption, but as an opportunity to produce more product, in smaller portions, which supplemented rather than substituted for larger portions.

Degrowth offers a lens to present the interconnectedness of public health problems. The move away from conceiving the ecological crisis as a singular problem with carbon to nine interlocking categories is analogous to the move away from conceiving the problem of unhealthy food as the driver of obesity. Emerging research shows that consumption of UPFs is correlated with depression, dementia and frailty, among other problems (2). The policy wave of food reformulation (removing salt, sugar and saturated fat in food) is similar to the policy answers that attempt to deal with carbon as a standalone phenomenon. In other words, degrowth is particularly interested in mapping the rebound effects that come with interventions at the level of individual public health diseases (77). Finally, the social implications of degrowth – far from the misperception of sackcloth and ashes of sacrifice and gloom – is rooted in principles of both human hedonism and flourishing that highlight the benefits of slowing down the global economic system. Concepts in degrowth like short supply chains, slow food movements, consumption based on frugal abundance, and politics based on care are *inefficient*, in the sense that they slow down life itself, are less intensive on moving materials through biological and ecological loops, and foreground the interdependence of both. A public health perspective that adopted a degrowth paradigm would recognise that health is not an end in itself: we desire to be healthy as a means to living a fulfilled, and pleasurable life.

LIMITATIONS

Our work has a number of limitations. *The Grocer* journal yielded 84 relevant articles, and thus comprises just under one quarter of the results. While *The Grocer* has the greatest audience reach in the UK, it covers all categories of supermarket and thus a more targeted industry journal focussed only on supermarket bakery would have been warranted. Further, the findings are based in the qualitative method of grounded theory, but it would be important to formally quantify marketing phenomena such as intensification (of flavors), aestheticization (of products) and variety (of categories) These features emerge as social categories that are more important than shelf position, packaging or product claims, and are urgently necessary for policy makers to understand as the real locus of marketing's reach. The data come from the US and the UK, and it is possible that these dynamics and the growth paradigm are not as prevalent or do not feature in the baked goods industries of other countries. Finally, while there is a power in asking if 'more' health interventions within a paradigm not cognizant of growth would sufficiently address the problems caused by growth, there is a legitimate concern that 'growth' becomes too broad to gain the traction necessary for changes in short or urgent timeframes.

CONCLUSION:

Our analysis of supermarket bakeries spanning thirty years in two trade magazines reveals four dynamics that make the growth of unhealthy commodities both normative and predictable. *Combation* describes how the industry is characterized by boom-and-bust cycles, replete with

enemies waiting to steal market share. This requires a response of year-on-year growth not as a way to accumulate profits but as an insurance policy against collapse and a means of survival. In *swotification*, growth happens by supplementarism, where health interventions are converted into additional product offerings rather than acting as substitutes for existing categories. This can result in perverse outcomes such as the portion paradox. The *fashion spiral* demonstrates how the supermarket bakery industry pursues an emotional strategy. Embracing the qualities of novelty and frivolity, it has successfully captured the emotions of excitement and nostalgia. In contrast, public health by default owns the more mundane qualities of stability and seriousness, and the emotions of boredom and vigilance. In *demand-pumping* growth happens through a dedication to consumer-centricity. Public health implicitly intervenes against the food industry's carefully constructed ownership of the mythical figure of the (tireless and attentive) servant. Conversely, public health 'owns' the problematic figure of the nanny – a figure which deemed to patronize populations (78, 79). Reclaiming ownership of the figure of the servant, with health-centricity as a counter to consumer-centricity is key to mobilizing population level support for degrowth in public health.

The findings link the ecological precepts of degrowth to public health. It reveals a deep analogy between decoupling production from carbon emissions, and decoupling food production from ultra-processing. We have shown with a depth case exactly *how* growthism becomes entrenched. The Growth Paradigm provides empirical support for how

growth evolves into communities driven by harried and frantic adaptations to serve growth as an end goal (80). It also shows how public health interventions based on technological solutions (reformulation), healthful consumer choices (education) or corporate responsibility (voluntary codes of conduct) do not get to the root cause of the global challenges of diseases linked to diet. Proponents of degrowth argue that no amount of consumer choice, green product innovation or corporate responsibility will solve the climate crisis; analogously our findings suggest we cannot consume, innovate, or moralize our way out of food-related health problems.

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Table 1: Major themes in a 30-year period of the baked goods industry strategies.

Major theme	Sub-theme	Explanation
1. Occasion-marketing	A. Extending the seasonal curve; avoiding the 'shrink'	Making the season important, or last longer; avoiding the post-season sales slump
	B. Micro-occasioning	Division of the day into edible occasions; (the 'morning share', the 'three squares', the 'day parts') Creating or finding new dates e.g. Strawberry Harvest, gender-reveal cake, Three King's Day.

2. Marketing-as-Culture-Making	A. Bakery is a blank canvas	On which to create or (re)-create cultural stories/myths/symbols.
	B. Internationalism	Travel/cookery shows; Cosmopolitanism; Exposing consumers to tastes.
	C. National treasures	Leveraging country-of-origin effects (challah, dulce-de-leche, macaroons etc.); Introducing international foods through dietary acculturation; Nation-building through baked food.
	D. Cornucopia	The myth of abundance and plenitude.
	E. Community	Focus on the family; The baked good as social glue; Comfort, remembering, and avoidance of 'aloneness'
3. Variety and Novelty	A. Aestheticisation of every-day objects	Charging mundane baked goods with extra toppings, fillings, flavors; 'Romancing the product'.
	B. The sweetening of everyday life	Baked goods become sweetened, coffee sugars in cake flavor; The cakeification of bread.
	C. Fun	Continuous novelty; Baked good as an edible toy; Baked good as edible cameo (eating meaning).
4. Health Halo	A. Euphemisms for unhealthy	'Indulgent', 'rich', 'authentic', 'health conscious', decadent, gourmet, 'premium'; 'Better-for-you'; Food safety as largest threat; Healthy trends.
	B. Clean labelling	Allergen-free; Gluten-free; Non-GMO; Kosher; Organic.

	C. Portion paradoxes	'Mini', 'treat', special occasion', 'limited'.
5. Freshness	A. Non-manufactured	Artisanal, craft, local, 'from-scratch'; Non-packaged; The 'perimeter' location of the bakery; Partnering with local bakery in-store.
	B. 'Natural'	Non-frozen; Newly baked; 'Ambient'; Bakery as sacred domesticity (oven, kitchen, hearth).
6. Ideologies of the Consumer	A. Consumer as demanding	Consumer is precious, exacting and time-conscious
	B. Consumer as a child	Consumer needs to be taught how to consume bakery, new innovations.
	C. Consumer as fickle	Trends are ever-changing; Failure to understand the consumer enigma.
	D. Consumer as connoisseur	Consumer is well-travelled and expectant.
7. Ideologies of the Baker	A. Listens carefully	Caters for consumer Increases 'accessibility' and 'convenience'
	B. Responsibility to serve demand	Tireless, hard-working; Service-servitude
8. Retail strategies	A. Enchantment	Exploration, experimentation, tasting; Display, visual merchandising, supermarket furniture; The theatre of the bakery
	B. 'Led-by-bread'	Bread gets consumer into the bakery section
	C. Cross-merchandising	Displaying meals/combination suggestions from other parts of supermarket; Stimulating impulse POP Place baked goods in multiple locations in-store
	D. Bakery lobby	Market research agencies; Generating news stories; Philanthropy.
	E. Offline and online integration	Pinterest, Instagram

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Figure 1: The Growth Paradigm