HUNGRY FOR CHANGE: THE LAW AND POLICY OF FOOD HEALTH LABELING

Shmuel I. Becher, Hongzhi Gao,** Alana Harrison*** & Jessica C. Lai*****

While food consumption is a prerequisite for human life, the effects of the modern diet can be dire. Modern unhealthy diets have been linked to a variety of negative health conditions. These include diabetes, ischemic heart disease, stroke, cancer, and the obesity epidemic. Globally, an unhealthy diet is considered to be a factor in one-fifth of deaths. Alas, 69 percent of Americans are either overweight or obese. This may lead to further negative externalities, imposing significant costs on public health systems. For instance, the total annual cost of the obese population in the United States alone is estimated to be more than $315 billion.

In light of this reality, regulators around the world have been striving to create markets where consumers are more informed of their nutritional choices. Front-of-package food labeling is a prime example. Such labeling is designed to simplify food choices for consumers and help them make healthier decisions.

Indeed, regulators in several countries have implemented labeling systems that provide consumers with an explicit label that aspires to communicate the health-related value of foods. Nonetheless, the current regulatory efforts are underdeveloped, ununified, partial in scope, and under-theorized. This Article bridges some of these gaps.

The Article is organized as follows: Part I provides an overview. Part II introduces the law and policy landscape of food health labeling, focusing on the notions of information

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* Shmuel I. Becher, School of Accounting and Commercial Law, Victoria University of Wellington. J.S.D., LL.M. (Yale University).

** Hongzhi Gao, School of Marketing and International Business, Victoria University of Wellington.

*** Alana Harrison, Honours student, Victoria University of Wellington—Faculty of Law.

**** Jessica C. Lai, School of Accounting and Commercial Law, Victoria University of Wellington. We thank Denise Conroy, Kai Purnhagen, and Anne-Lise Sibony for helpful suggestions and comments, Victoria Business School for generous financial support, and William Britton for excellent research assistance.

asymmetry, credence qualities, and dual reasoning. Part III then discusses the problems with, and limitations of, the Health Star Rating system. The Health Star Rating system, currently implemented in Australia and New Zealand, is the most recent system to be introduced in a common law country. Next, Part IV looks into three other key food health labeling methods employed in different parts of the world. Thereafter, Part V provides specific legal recommendations and policy suggestions. Subsequently, Part VI addresses some important critiques with respect to our proposals.

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I. INTRODUCTION

Food consumption is a prerequisite for human life. Regardless of religion, ethnicity, gender, political ideology, age, or social status, we all need to nourish our bodies. While food is a necessity, it can also generate rewards and be a source of pleasure or guilt. Indeed, what we eat affects our minds as well as our bodies.

The last century brought about huge changes in food consumption and what we regard as food. For starters, we are presently eating more processed food than ever before.[1] Snacks, frozen food, fast food, fizzy drinks, and margarine did not exist for most of human history. Sugar (sucrose) has become readily available and cheap.[2] As a result, in the last two hundred years we have witnessed a dramatic increase in refined sugar intake in many regions.[3] Unsurprisingly then, the average Western person consumes significantly more than the recommended amount of sugar.[4]

The effects of the modern diet can be dire. True, robust long-term nutrition studies are hard to undertake, and many of these studies suffer from methodological limitations. Nevertheless, food consumption and modern unhealthy diets have been linked to a variety of negative health conditions, including diabetes, ischemic heart disease, stroke, certain cancers, and the obesity epidemic.[5] Diets may also affect mental health and mental illnesses.[6] Overall,

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1. Barry M. Popkin, *Contemporary Nutritional Transition: Determinants of Diet and its Impact on Body Composition*, 70 PROC. NUTRITION SOC'Y 82, 83 (2011).

2. *See* Alva Noë, Opinion, *Sugar's Transition from Nice to Nasty*, NPR (Oct. 30, 2016, 11:44 AM), https://www.npr.org/sections/13.7/2016/10/30/499732163/sugars-transition-from-nice-to-nasty (noting how sugar has become cheaper and more prevalent as a result of colonialism, slavery, and the plantation).

3. *See id.*

4. *See, e.g.*, Susie Burrell, *New ABS Data Reveals How Much Sugar Australians Really Consume*, NEWS.COM.AU (Apr. 28, 2016, 11:00 AM), https://www.news.com.au/lifestyle/health/diet/new-abs-data-reveals-how-much-sugar-australians-really-consume/news-story/979263910569a4c55bb0051551bdce1a ("The Australian Health Survey found that in 2011-2012, Australians were consuming an average of 60g of sugars each day, or the equivalent of 14 teaspoons of white sugar."); Kris Gunnars, *Daily Intake of Sugar – How Much Sugar Should You Eat per Day?*, HEALTHLINE (June 28, 2018), https://www.healthline.com/nutrition/how-much-sugar-per-day (noting that "[t]he average intake was 76.7 grams per day, which equals 19 teaspoons or 306 calories"); *NZers' Sugar Intake Six Times Daily Recommendation*, RADIO N. Z. (Aug. 6, 2017, 2:26 PM), https://www.radionz.co.nz/news/national/336577/nzers-sugar-intake-six-times-daily-recommendation (noting that "New Zealanders consume an average of 37 teaspoons of added sugar per day each, . . . six times the recommended amount"); *Sugar 101*, AM. HEART ASS'N (Apr. 17, 2018), https://www.heart.org/en/healthy-living/healthy-eating/eat-smart/sugar/sugar-101 ("The American Heart Association recommends limiting the amount of added sugars you consume to . . . about 6 teaspoons per day for women and 9 teaspoons per day for men . . . .").

5. *See, e.g.*, Peter Scarborough et al., *Modelling the Impact of a Healthy Diet on Cardiovascular Disease and Cancer Mortality*, 66 J. EPIDEMIOL COMMUNITY HEALTH 420, 421 (2012); VicHealth, *Obesity and Healthy Eating in Australia Evidence Summary* (Evidence Summary, 2016) 4.

6. Jim E. Banta et al., *Mental Health Status and Dietary Intake Among California Adults: A Population-Based Survey*, INT'L J. FOOD SCI. & NUTRITION 1 (2019); Adrienne O'Neil et al., *Relationship Between Diet and Mental Health in Children and Adolescents: A Systematic Review*, 104 AM. J. PUB. HEALTH e31, e31 (2014). For further discussion, see also *About*, FOOD & MOOD CTR., https://foodandmoodcentre.com.au/about/ (last visited Dec. 5, 2019). The Food &

unhealthy diets are among the main risk factors of prevalent noncommunicable diseases.[7] These diseases, in turn, are the leading cause of death, affecting industrialized countries most intensely.[8]

The United States has the highest levels of obesity—more than 65 percent of American adults are either overweight or obese.[9] Unfortunately, this problem is not limited to adults. Approximately one in five children in America are likely to suffer from similar problems.[10] In the United States alone, an unhealthy diet contributes to approximately 678,000 deaths per year.[11] This may further lead to negative externalities, imposing significant costs on public healthcare systems. For example, in 2008 the estimated annual medical cost of obesity in the United States was $147 billion.[12]

The situation in many other Western countries is also alarming. For example, 60 percent of Australian and New Zealand adults are overweight or obese.[13] In the United Kingdom, more than 60 percent of adults and one in three children are obese or overweight. [14]

Mood Centre is a Nutritional Psychiatry research center that studies "the ways in which what we eat influences our brain, mood, and mental health." *Id.*

7. *See* WORLD HEALTH ORG., GLOBAL STATUS REPORT ON NONCOMMUNICABLE DISEASES 2010 vii (2011), https://apps.who.int/iris/bitstream/handle/10665/44579/9789240686458_eng.pdf.

8. Olivier De Schutter, *Foreword* to ALBERTO ALEMANNO & AMANDINE GARDE, REGULATING LIFESTYLE RISKS: THE EU, ALCOHOL, TOBACCO AND UNHEALTHY DIETS, at xiii (2015).

9. *See, e.g.*, Katherine M. Flegal et al., *Trends in Obesity Among Adults in the United States, 2005 to 2014*, 315 J. AM. MED. ASS'N 2284, 2286 (2016); Christopher J.L. Murray et al., *The Vast Majority of American Adults are Overweight or Obese, and Weight is a Growing Problem Among US Children*, INST. FOR HEALTH METRICS & EVALUATION (May 28, 2014), http://www.healthdata.org/news-release/vast-majority-american-adults-are-overweight-or-obese-and-weight-growing-problem-among; *Overweight & Obesity Statistics*, NAT'L INST. OF DIABETES & DIGESTIVE & KIDNEY DISEASES, https://www.niddk.nih.gov/health-information/health-statistics/overweight-obesity (last visited Dec. 5, 2019).

10. *See National Obesity Monitor*, STATE CHILDHOOD OBESITY, https://stateofchildhoodobesity.org/monitor/ (last visited Dec. 5, 2019). The situation in some other Western countries is also severe. In Australia, for instance, one in four children are overweight or obese. *Overweight & Obesity*, AUSTL. INST. HEALTH & WELFARE, https://www.aihw.gov.au/reports-data/behaviours-risk-factors/overweight-obesity/ (last visited Dec. 5, 2019). In New Zealand, one in eight children are obese. *Obesity Statistics*, MINISTRY HEALTH, https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/obesity-statistics (last visited Dec. 5, 2019).

11. *Why Good Nutrition is Important*, CTR. SCI. PUB. INTEREST, https://cspinet.org/eating-healthy/why-good-nutrition-important (last visited Dec. 5, 2019).

12. *Adult Obesity Facts*, CTRS. FOR DISEASE CONTROL & PREVENTION, https://www.cdc.gov/obesity/data/adult.html (last visited Dec. 5, 2019).

13. *See* VicHealth, *supra* note 5, at 2; *see also Obesity Statistics*, *supra* note 10.

14. *See infra* Subpart IV.A.

Globally, an unhealthy diet is considered to be a contributory factor in one-fifth of deaths.[15]

Acknowledging the scope of the problem, regulators in the United States and elsewhere are seeking solutions. Among other things, some governments are striving to arm consumers with valuable information to inform their nutritional choices. For instance, many policymakers have mandated disclosures in the form of nutrition facts labels and lists of ingredients.[16] Some regulators have moved further, implementing systems that offer explicit labels aspiring to communicate the health-related value of foods.[17] Other recent measures to combat obesity include taxes on sugar-sweetened beverages[18] and other tax reforms,[19] public health campaigns,[20] incentives to consume healthier foods,[21] and restrictions on advertising (particularly to children).[22] Indeed, these initiatives reflect regulators' and governments' willingness to address the growing obesity epidemic.

Nonetheless, the regulatory efforts in this domain are currently underdeveloped, ununified, partial in scope, and undertheorized. This Article bridges some of these gaps. It critically reviews and

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15. Nicola Davis, *Poor Diet a Factor in One-Fifth of Global Deaths in 2017 – Study*, GUARDIAN (Nov. 8, 2018, 6:30 PM) https://www.theguardian.com/society/2018/nov/08/poor-diet-a-factor-in-one-fifth-of-global-deaths-in-2017-study; *see also Health Effects of Dietary Risks in 195 Countries, 1990-2017: A Systematic Analysis for the Global Burden of Disease Study*, 393 LANCET 1958, 1961 (2019).

16. *E.g.*, *Food Labeling & Nutrition*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/Food/LabelingNutrition/default.htm (last visited Dec. 5, 2019); *Food Standards Code*, FOOD STANDARDS AUSTL. N.Z., http://www.foodstandards.gov.au/code/Pages/default.aspx (last visited Dec. 5, 2019).

17. *See infra* Parts II and III.

18. Cabrera Escobar et al., *Evidence That a Tax on Sugar Sweetened Beverages Reduces the Obesity Rate: A Meta-Analysis*, 13 BMC PUB. HEALTH 1, 2 (2013); Jennifer Falbe et al., *Impact of the Berkeley Excise Tax on Sugar-Sweetened Beverage Consumption*, 106 AM. J. PUB. HEALTH 1865, 1865 (2016); Y. Claire Wang et al., *A Penny-Per-Ounce Tax On Sugar-Sweetened Beverages Would Cut Health and Cost Burdens Of Diabetes*, 31 HEALTH AFF. 199, 199–200 (2012).

19. *See e.g.*, Stop Subsidizing Childhood Obesity Act, H.R. 7342, 115th Cong. (2018) (denying tax reduction for advertising/marketing poor nutritional quality food to children).

20. *See e.g.*, Reducing Obesity in Youth Act of 2018, H.R. 6586, 115th Cong. (2018) (amending the Public Health Service Act to promote healthy eating and physical activity among children).

21. *See, e.g.*, JO JEWELL ET AL., LAW AND OBESITY PREVENTION: ADDRESSING SOME KEY QUESTIONS FOR THE PUBLIC HEALTH COMMUNITY 10 (2013); Corinna Hawkes et al., *A Food Policy Package for Healthy Diets and the Prevention of Obesity and Diet-Related Non-Communicable Diseases: The NOURISHING Framework*, 14 OBESITY REV. 159, 160–62 (2013).

22. *See e.g.*, ROGER MAGNUSSON ET AL., ADVANCING THE RIGHT TO HEALTH: THE VITAL ROLE OF LAW 256–57 (2017); Allyn L. Taylor, et al., *The Increasing Weight of Regulation: Countries Combat the Global Obesity Epidemic*, 90 IND. L.J. 257, 280–82 (2015).

compares four important regional and national examples of food health labeling: (1) the Australian/New Zealand Health Star Rating ("HSR") system,[23] (2) the UK Multiple Traffic Lights ("MTL") system,[24] (3) the Chilean front-of-package Warning Label ("WL") system,[25] and (4) the US/Canadian Guiding Star ("GS") initiative.[26] Of course, this is not an exhaustive list. Many other countries, mainly in Europe and Latin America, have implemented—or are in the process of implementing—similar schemes.[27]

Food markets are complex and various players are involved. On the demand side, consumers presumably seek food that is aligned with their preferences. On the regulatory side, governments are interested in supporting local businesses while also developing efficient and competitive markets, which offer consumers healthy products. On the supply side, manufacturers, marketers, distributors, and vendors have a strong profit incentive in the market. These players are therefore motivated to influence public policy in a way that will produce more favorable circumstances for profit maximization.

It has thus been argued that the food industry controls consumers' choices.[28] It has further been opined that the industry

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23. *Health Star Ratings*, N.Z. FOOD SAFETY, https://www.mpi.govt.nz/food-safety/food-safety-for-consumers/understanding-food-labels/health-star-ratings/ (last visited Sept. 14, 2019).

24. *See Looking at Nutrition Labels*, BRITISH NUTRITION FOUND., https://www.nutrition.org.uk/healthyliving/helpingyoueatwell/labels.html (last visited Dec. 5, 2019).

25. *See* FOOD & AGRIC. ORG. OF THE U.N. & PAN AM. HEALTH ORG., APPROVAL OF A NEW FOOD ACT IN CHILE: PROCESS SUMMARY (2017), https://www.paho.org/chi/index.php?option=com_docman&view=download&slug=approval-of-a-new-food-act-in-chile-1&Itemid=1145.

26. *Guiding Stars*, https://guidingstars.com/ (last visited Dec. 5/, 2019).

27. *See, e.g.*, Samuel Becher et al., Opinion, *Improving Front-of-Package Food Health Labeling*, REG. REV. (May 3, 2019), https://www.theregreview.org/2019/05/03/becher-gao-lai-harrison-front-package-food-labeling/ (detailing some of the initiatives in Europe); *see generally* Claudio A. Mora-García et al., *The Effect of Randomly Providing Nutri-Score Information on Actual Purchases in Colombia*, 11 NUTRIENTS no. 3, 2019 (detailing initiatives in Colombia). One interesting example to keep in mind is the new French Nutri-Score initiative. Since this scheme was implemented only recently, the empirical evidence regarding its effectiveness is limited. Emerging data, however, suggest that this labeling performs well. *See, e.g.*, Manon Egnell et al., *Objective Understanding of Front-of-Package Nutrition Labels: An International Comparative Experimental Study Across 12 Countries*, 10 NUTRIENTS no. 10, 2018, at 12 [hereinafter Egnell et al., *Experimental Study*]; Manon Egnell et al., *Objective Understanding of Nutri-Score Front-of-Package Nutrition Label According to Individual Characteristics of Subjects: Comparisons with Other Format Labels*, 13 PLOS ONE no. 8, 2018, at 1, 8–12 [hereinafter Egnell et al., *Comparisons*]; Mora-García et al., *supra*, at 1, 16.

28. *See generally* MICHAEL MOSS, SALT SUGAR FAT: HOW THE FOOD GIANTS HOOKED US (2014) (examining the influence of the food industry on public health); Joseph Mercola, *The Concentration of Power in the Food Industry: What We Eat is Dependent Upon Who's in Control*, SIGNS TIMES (July 30, 2017, 12:00 AM),

deprives consumers of their money, health, and freedom to choose whatever food they want.[29] In line with these concerns, this Article asks whether the current tools are adequate in protecting consumers' interests and promoting their well-being.

To answer this question, this Article is organized as follows: Part II introduces the law and policy landscape, focusing on notions related to information asymmetry, credence qualities, and dual reasoning. Part III then discusses the problems with, and limitations of, the HSR system as currently implemented in Australia and New Zealand. This system serves as our starting point for three main reasons. First, it is a relatively fresh regulatory attempt, made by a common law country, to directly address food health labeling. Second, though it is a recent initiative, the five years that have passed since its implementation have yielded some interesting empirical studies. Third, this system was officially reexamined in 2019 to evaluate its efficacy.[30] Next, Part IV examines three other key food health labeling methods employed in different parts of the world. Subsequently, Part V provides specific legal recommendations and policy suggestions. Thereafter, Part VI addresses some important critiques with respect to our proposals.

II. THE LAW & POLICY LANDSCAPE OF FRONT-OF-PACKAGE HEALTH LABELING

For many years, individuals grew, hunted, gathered, prepared, and stored the food they consumed.[31] This meant that, historically, people were equipped with a lot of source and preparation information about their food. But for most of human history, scientific knowledge around nutrition and food was virtually nonexistent.[32]

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https://www.sott.net/article/357990-The-Concentration-of-Power-in-the-Food-Industry-What-We-Eat-is-Dependent-Upon-Whos-in-Control (arguing that "[m]ost of us have little to no idea how behind-the-scenes forces control the food we buy, and the depth of the corruption involved").

29. GARY E. MARCHANT ET AL., THWARTING CONSUMER CHOICE: THE CASE AGAINST MANDATORY LABELING FOR GENETICALLY MODIFIED FOODS 4–5 (2010); Liz Bailey, *Food Addictions: Marketing That Manipulates You*, CORE HEALTH PROD. (Nov. 20, 2017), https://www.corehealthproducts.com/food-addictions-marketing-that-manipulates-you/; Sarah Boseley, *At Last, A Sound Plan to Tackle Obesity. The Food Industry Must Not Ruin It*, GUARDIAN, (June 25, 2018, 11:30 AM), https://www.theguardian.com/society/2018/jun/25/obesity-food-industry-junk-food-ads-corporate-power; Sarah Morrison, *Too Much Power in Too Few Hands: Food Giants Take over the Industry*, INDEPENDENT (Feb. 24, 2013, 1:00 AM), https://www.independent.co.uk/life-style/food-and-drink/news/too-much-power-in-too-few-hands-food-giants-take-over-the-industry-8508259.html.

30. *See infra* note 116 and accompanying text.

31. MAGUELONNE TOUSSAINT-SAMAT, A HISTORY OF FOOD 1 (Anthea Bell trans., 2008); Ann Gibbons, *The Evolution of Diet*, NAT'L GEOGRAPHIC, https://www.nationalgeographic.com/foodfeatures/evolution-of-diet/ (last visited Dec. 5, 2019).

32. Darius Mozaffarian, *History of Modern Nutrition Science–Implications for Current Research, Dietary Guidelines, and Food Policy*, 361 BMJ 1, 1 (2018).

Times have changed. The evidence and data concerning diet and nutrition are growing exponentially.[33] Simultaneously, people are becoming more and more remote from the food they consume. In fact, the twentieth century brought about significant changes in what we consume and regard as food.[34] Along these lines, it has been opined that "a minimum of 40 percent of the stuff in American supermarkets wouldn't really qualify as food by the dictionary definition".[35] This goes to show we no longer grow the food that we consume. Nor do we hunt for or gather it. Too often, we do not even prepare it.[36]

This fundamental change entails that people typically suffer from "asymmetric information" with respect to their food. Simply put, the economic term "asymmetric information" refers to situations in which parties are differently informed.[37] When applied to market transactions, asymmetric information means that one party to the transaction is better informed than the other. This can lead to market failures. Consumers may make decisions that are not aligned with their preferences, while firms may produce low-quality foods.

In the context of food consumption, consumers are unaware of many aspects of the food they eat. Take, for instance, an ordinary jar of Nutella chocolate spread. The average consumer will not know which ingredients make the spread; how much protein, sugar, or fat it contains; where it was produced; when it was first distributed to retailers; whether farmers received fair compensation for their cocoa beans or sugar cane; whether workers in the production line earned fair wages; or how the product was handled throughout the production and distribution process. Most typically, consumers will find it very resource intensive—if not impossible—to bridge such information gaps.

The idea of credence qualities further explains the information asymmetry at play. In general, credence qualities are the aspects and dimensions that consumers cannot authenticate.[38] Even with repeat

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33. *Id.*

34. Guy Raz, *The Food We Eat*, TED RADIO HOUR, (Nov. 18, 2016), https://www.npr.org/podcasts/510298/ted-radio-hour.

35. *Id.*

36. *Kiwis Eating More Food on the Go*, STATS N.Z., http://archive.stats.govt.nz/browse_for_stats/economic_indicators/prices_indexes/fpi-review-2017-ns-kiwis-eating-on-go.aspx (last visited Dec. 5, 2019) ("More than a quarter (26 percent) of the food-spending pie is now spent in restaurants and on ready-to-eat meals, such as takeaway hot drinks and takeaway pizzas (compared with 23 percent in 2014). About one-third of the pie (34 percent) goes on grocery foods (compared with 37 percent in 2014).").

37. *See* George A. Akerlof, *The Market for "Lemons": Quality Uncertainty and the Market Mechanism*, 84 Q.J. ECON. 488, 489 (1970).

38. See the seminal work by Philip Nelson, *Information and Consumer Behavior*, 78 J. POL. ECON. 311, 311–29 (1970); *see also* Asher Wolinsky, *Competition in Markets for Credence Goods*, 151 J. INST. & THEORETICAL ECON. 117, 117–19 (1995) (explaining market functioning as it relates to credence goods); Uwe Dulleck & Rudolf Kerschbamer, *On Doctors, Mechanics, and*

use, it is unlikely that consumers will be able to accurately verify where the spread was produced. They are also unlikely to know much about the compensation received by farmers and workers. Nor will consumers be able to correctly evaluate the impact of chocolate spread intake on the environment or their health.

Many consumer protection laws address information asymmetries in general and credence qualities in particular.[39] In the context of food labeling, the law imposes a variety of mandated disclosures on producers.[40] In the case of the chocolate spread, the producer is legally required to detail multiple factors on their product labels. These factors typically pertain to nutrition information, country of origin, list of ingredients, weight, expiration date, and more.[41]

As a starting point, it seems fair and efficient to impose disclosures on the party who enjoys superior information. Such disclosures will supposedly allow the less informed party, in this case the consumer, to make better decisions. Such disclosures may also be pertinent to consumers' safety as well as to healthy markets in which firms can compete effectively. Moreover, disclosing nutritional information is often believed to be a cost-effective means of communicating information to consumers.[42]

Although theoretically compelling, disclosing nutrition information and lists of ingredients has proven to be insufficient to elicit healthier dietary outcomes across all consumers. In the 2014 Food and Drug Administration Health and Diet Survey, merely 50 percent of respondents reported that they used Nutrition Facts labels

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Computer Specialists: The Economics of Credence Goods, 44 J. ECON. LITERATURE 5, 5–9 (2006).

39. *See, e.g.*, The Truth in Lending Act of 1968, Pub. L. 90-321, 82 Stat. 146 (1968); Pure Food and Drug Act of 1906, Pub. L. 59-384, 34 Stat. 768 (1907).

40. In the European Union, for example, it is mandatory for firms to disclose the name of the food, the list of ingredients, allergens, the quantity of (certain) ingredients, the net quantity, a date marking, any special storage conditions and/or conditions of use, the name and address of the food business operator, the country of origin or place of provenance (if necessary), appropriate instructions for use, beverages with more than 1.2% of alcohol, the actual alcoholic strength, and a nutrition declaration. European Parliament and Council Regulation 1169/2011 of Oct. 25, 2011, on the Provision of Food Information to Consumers, 2011 O.J. (L 304) 18, 28 (EU).

41. *See FDA Food Label Requirements in a Nutshell*, FOOD PACKAGING LABELS 5, https://www.foodpackaginglabels.net/downloads/fda-food-label-requiremens-in-a-nutshell-foodpackaginglabels.net.pdf (last visited Dec. 5, 2019); *Label Claims for Conventional Foods and Dietary Supplements*, U.S. FOOD & DRUG ADMIN., https://www.fda.gov/food/food-labeling-nutrition/label-claims-conventional-foods-and-dietary-supplements (last updated June 19, 2018); *Labelling*, FOOD STANDARDS AUSTL. N.Z. (May 2017), http://www.foodstandards.govt.nz/industry/labelling/Pages/default.aspx.

42. Lisa M. Soederberg Miller & Diana L. Cassady, *The Effects of Nutrition Knowledge on Food Label Use. A Review of the Literature*, 92 APPETITE 207, 208 (2015).

"always" or "most of the time" when purchasing food products.[43] Other findings indicate that while 40 percent of European consumers claim they look at nutritional information during the shopping process, less than 10 percent actually do so.[44]

Indeed, many consumers do not have the education and nutritional knowledge required to effectively read these disclosures.[45] This makes tabular forms of nutrition labeling "difficult for most consumers to comprehend."[46] Other consumers may have the knowledge but lack the time, motivation, or patience to do so.[47] Some may be forced to focus on other types of information, such as price. In many cases, less affluent consumers channel their attention and efforts to identifying cheap foods rather than nutritious ones.[48] In short, food labels largely fail to help those who need them most.[49]

Moreover, rules requiring disclosure of ingredients and nutrition information assume that consumers are rational agents. Rationality, as employed in this context, means that consumers will seek valuable information on which to base their purchasing decisions.[50] However,

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43. *See* CHUNG-TUNG JORDAN LIN ET AL., FDA, 2014 FDA HEALTH AND DIET SURVEY 7–8 (2016), https://www.fda.gov/media/96883/download.

44. Egnell et al., *Comparisons*, *supra* note 27, at 2.

45. OMRI BEN-SHAHAR & CARL E. SCHNEIDER, MORE THAN YOU WANTED TO KNOW: THE FAILURE OF MANDATED DISCLOSURE 91 (2014); Raksha Goyal & Neeta Deshmukh, *Food Label Reading: Read Before You Eat*, 7 J. EDUC. & HEALTH PROMOTION 1, 1 (2018); Sheena Leek et al., *Consumer Confusion and Front of Pack (FoP) Nutritional Labels*, 14 J. CUSTOMER BEHAV. 49, 55 (2015).

46. Caoimhín Macmaoláin, *Regulating Consumer Information: Use of Food Labelling and Mandatory Disclosures to Encourage Healthier Lifestyles*, *in* REGULATING LIFESTYLE RISKS: THE EU, ALCOHOL, TOBACCO AND UNHEALTHY DIETS 46, 59 (Alberto Alemanno & Amandine Garde eds., 2015).

47. Erica van Herpen & Hans C.M. van Trijp, *Front-of-Pack Nutrition Labels. Their Effect on Attention and Choices When Consumers Have Varying Goals and Time Constraints*, 57 APPETITE 148, 155 (2011).

48. Kai Purnhagen et al., *The Potential Use of Visual Packaging Elements as Nudges: An Analysis on the Example of the EU Health Claims Regime*, *in* NUDGING - POSSIBILITIES, LIMITATIONS AND APPLICATIONS IN EUROPEAN LAW AND ECONOMICS 205 (Klaus Mathis & Avishalom Tor eds., 2016); Johannes Haushofer & Ernst Fehr, *On the Psychology of Poverty*, 344 SCI. 862, 862 (2014); *see also* SENDHIL MULLAINATHAN & ELDAR SHAFIR, SCARCITY: THE NEW SCIENCE OF HAVING LESS AND HOW IT DEFINES OUR LIVES 24–27 (2014) (noting that scarcity of a resource creates a "focus dividend," such that an individual will make decisions with that resource in mind); van Herpen & van Trijp, *supra* note 47, at 158 ("Our results also confirm that nutrition labels are generally not the most intensively attended to information on pack.").

49. *See, e.g.*, Dario Gregori et al., *Evaluating Food Front-Of-Pack Labelling: A Pan-European Survey on Consumers' Attitudes Toward Food Labelling*, 65 INT'L J. FOOD SCI. NUTRITION 177, 177 (2014) ("[T]here is no convincing evidence that food labels are an effective means to achieve the desired effect at population level.").

50. GARY S. BECKER, THE ECONOMIC APPROACH TO HUMAN BEHAVIOR 14 (1976) (observing that human participants are expected to behave in ways that "maximize their utility from a stable set of preferences and accumulate an optimal amount of information and other inputs in a variety of markets").

this is often not the case. As the behavioral literature documents, consumers are not always rational.[51] Among other things, their behavior is not always aligned with their own preferences.[52] To be sure, individuals generally highly value their health, yet many display self-destructive behaviors and consume unhealthy foods.[53]

A large body of evidence demonstrates that individuals depart from rational decision-making models in systematic and predictable ways. Within this broad concept, one popular paradigm is the concept of two systems of reasoning, also known as dual reasoning.[54] Daniel Kahneman and others differentiate an automatic and intuitive process—dubbed System 1—from a controlled and deliberative process—labeled System 2.[55] System 2 reflects planning, thinking, and self-control.[56] Conversely, System 1 represents mostly unconscious behavior that is more focused on present needs and desires.[57]

People may believe that they mainly use System 2 to make informed and careful decisions. Nonetheless, the literature shows that often people are prone to unconsciously use, or be influenced by, System 1.[58] Recognition of the role of automaticity in decision-making lies at the heart of what is now known as "behavioral economics."[59]

Behavioral economics insights further clarify why cognitive failures may prevent consumers from effectively using disclosures.[60] For instance, overly-optimistic consumers may have a false belief in their relative immunity from harm.[61] At the same time, consumers

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51. *See id.* at 153.

52. *Id.*

53. Alberto Alemanno, *Nudging Healthier Lifestyles: Informing the Non-Communicable Diseases Agenda with Behavioural Insights*, *in* REGULATING LIFESTYLE RISKS: THE EU, ALCOHOL, TOBACCO AND UNHEALTHY DIETS, *supra* note 46, at 309, 318.

54. *See, e.g.*, DANIEL KAHNEMAN, THINKING, FAST AND SLOW 20 (2011).

55. *Id.* at 20–24.

56. *See id.* at 21.

57. *See id.* at 20. The legal literature in general, and the literature on consumer law in particular, has been employing these concepts quite extensively. For one example in the context of non-verbal market manipulations, see Shmuel I. Becher & Yuval Feldman, *Manipulating, Fast and Slow: The Law of Non-Verbal Market Manipulations*, 38 CARDOZO L. REV. 459, 470–71, 476 (2016).

58. *See, e.g.*, KAHNEMAN, *supra* note 54, at 31.

59. Becher & Feldman, *supra* note 57, at 470.

60. While we focus in the following paragraphs on behavioral economics insights, there are additional important insights to be drawn more generally from other disciplines. For one example see Maria D.G.H. Mulders et al., *Label Reading, Numeracy and Food & Nutrition Involvement*, 128 APPETITE 214, 214–15 (2018). We incorporate some of these insights in our analysis below.

61. For a detailed discussion see TALI SHAROT, THE OPTIMISM BIAS: A TOUR OF THE IRRATIONALLY POSITIVE BRAIN 69–71 (2011).

may improperly discount their future self, overly focusing on the present.[62]

Moreover, consumers may suffer from information overload in light of the amount and variety of information presented on packages.[63] The human brain is limited in its capacity to absorb and analyze information. Information overload reflects a situation in which the amount of information that consumers face exceeds this limit.

In our context, nutritional labels communicate a variety of things about a product, including fat, sugar, calories, carbohydrates, serving size, and ingredients. On top of that, consumers are being inundated with an increasing number of unhelpful labels more generally.[64] Too many labels, in turn, may confuse consumers and thus limit their effectiveness.[65] In such a situation, consumers are likely to ignore the information provided and base their decisions on intuition and emotion (System 1).

These behavioral failures may be exacerbated by people's general over-confidence regarding their knowledge. As the Dunning-Kruger effect illustrates, people tend to overestimate their knowledge and underestimate their ignorance.[66] In the context of nutrition, we all consume food all the time. This could lead people to erroneously

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62. *See* Shane Frederick et al., *Time Discounting and Time Preference: A Critical Review*, 40 J. ECON. LITERATURE 351, 352 (2002); David Laibson, *Golden Eggs and Hyperbolic Discounting*, 112 Q. J. ECON. 443, 445–46 (1997); Ted O'Donoghue & Matthew Rabin, *Doing it Now or Later*, 89 AM. ECON. REV. 103, 104, 106 (1999); R. H. Strotz, *Myopia and Inconsistency in Dynamic Utility Maximization*, 23 REV. ECON. STUD. 165, 165 (1955).

63. Purnhagen et al., *supra* note 48, at 202 ("For many consumers, there is too much information present on product packages."); Leek et al., *supra* note 45, at 56; Nelene Koen, *If Food Labels Aren't Simple, Consumers May Ignore Them*, THE CONVERSATION (June 21, 2016, 11:05 AM), https://theconversation.com/if-food-labels-arent-simple-consumers-may-ignore-them-60480 ("[S]ome consumers struggle to interpret the nutrition information on labels. They find the different nutrition label formats and the information overload on labels confusing.").

64. For instance, in the context of sustainability, consumers are faced with an estimated 455 eco-labels, ranging from food products, to energy, clothing, and household cleaners. Lucy Atkinson, *'Wild West' of Eco-Labels: Sustainability Claims Are Confusing Consumers*, GUARDIAN (July 4, 2014, 2:00 AM), https://www.theguardian.com/sustainable-business/eco-labels-sustainability-trust-corporate-government.

65. Klaus G. Grunert et al., *Sustainability Labels on Food Products: Consumer Motivation, Understanding and Use*, 44 FOOD POL'Y 177, 177 (2014); Leek et al., *supra* note 45, at 51–55.

66. Justin Kruger & David Dunning, *Unskilled and Unaware of It: How Difficulties in Recognizing One's Own Incompetence Lead to Inflated Self-Assessments*, 77 J. PERSONALITY & SOC. PSYCHOL. 1121, 1121–22 (1999).

believe they possess reasonable expertise about food and nutrition,[67] a belief that can be linked to the general knowledge illusion.[68]

Perhaps a concrete example can clarify. Consider the assertion that consuming one serving of sugar-sweetened beverages a day is associated with an 18 percent increase in incidences of Type 2 diabetes.[69] Many consumers are unaware of these alarming figures. Others may be aware but will still disregard such information, believing these risks will not affect them. Some may believe these risks are too remote to consider. Yet others may lack the mental capacity and attention span to address these risks due to other pressing matters. Some may well succumb to social pressure, consuming sugary drinks as a way to conform to herd behavior. Still others may believe that consuming such drinks in moderation does not pose any health risks.

As noted, food consumption and modern unhealthy diets have been linked to various negative health conditions.[70] Diet also impacts longevity, life satisfaction, sleep quality, ability to focus, mental illness, and much more.[71] Poor diets may therefore bring about negative externalities.

In fact, poor diets contribute to obesity and other health-related issues. This results in significant costs imposed on the workplace, public healthcare systems, and the economy.[72] The public expects

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67. Douglas Buhler & Sheril Kirshenbaum, *Wealthy Americans Are More Likely to Be Influenced by Nutrition Pseudoscience*, REAL CLEAR SCI. (Apr. 18, 2018), https://www.realclearscience.com/articles/2018/04/18/wealthy_americans_more_likely_to_be_influenced_by_nutrition_misinformation_110615.html; Stephen J. Dubner, *There's a War on Sugar. Is It Justified? (Ep. 285 Rebroadcast)*, FREAKONOMICS (Nov. 21, 2018, 11:00 PM), http://freakonomics.com/podcast/sugar-rebroadcast/. *But see* Samira Gijsman, Overconfidence in Your Ability, a Potential Reason for Front-of-Package Information Usage of Consumers 27–28 (Nov. 2017) (unpublished Master's thesis, Wageningen University),http://edepot.wur.nl/426211.

68. According to this illusion, people think they know more than they actually do. For a detailed discussion see STEVEN SLOMAN & PHILIP FERNBACH, THE KNOWLEDGE ILLUSION 8–9 (2017).

69. Fumiaki Imamura et al., *Consumption of Sugar Sweetened Beverages, Artificially Sweetened Beverages, and Fruit Juice and Incidence of Type 2 Diabetes: Systematic Review, Meta-analysis, and Estimation of Population Attributable Fraction*, 351 BMJ 496, 499 (2015).

70. Scarborough et al., *supra* note 5, at 420; VicHealth, *supra* note 5, at 1, 4.

71. *See* Christina Chrysohoou & Christodoulos Stefanadis, *Longevity and Diet. Myth or Pragmatism?*, 76 MATURITAS 303, 303–06 (2013); Michelle D. Florence et al., *Diet Quality and Academic Performance*, 78 J. SCH. HEALTH 209, 214 (2008) (noting the effect of diet quality on academic performance); Richard J. Stevenson, *Psychological Correlates of Habitual Diet in Healthy Adults*, 143 PSYCHOL. BULL. 53, 69 (2017) (noting the effect of diet quality on mental health).

72. *Cost of Obesity on the Rise*, MINDFOOD (Oct. 10, 2017), https://www.mindfood.com/article/cost-of-obesity-on-the-rise/ ("If preventative measures are not taken, the yearly medical costs for treating obesity-related diseases will top US$1.2 trillion by [2025]. In New Zealand, the cost of obesity will reach US$3.5 billion by 2015 [sic, likely intended as 2025], while in Australia

policymakers to make significant efforts in tackling obesity,[73] and many regulators believe that disclosures can make consumers more informed of their nutritional choices.[74]

Intriguingly, mandated disclosures frequently impact suppliers more than they impact consumers.[75] One possible explanation is the "spotlight effect." According to this effect, disclosures lead the vendor to focus on the information disclosed.[76] This brings the vendor to attribute high salience to the information at stake.[77] As a result, the vendor will overestimate consumers' attention to the disclosure.[78]

One way or another, there is a growing consensus that nutrition facts labels and lists of ingredients are not as effective as policymakers hope.[79] Despite evidence of a positive association between label use and healthiness of products purchased, many consumers do not make good use of nutritional labels.[80] Nutritional labels tend to be used by consumers who already have prior information and who actively care about their diets.[81] As a result,

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it will reach $17 billion."); Anita Lal et al., *Health Care and Lost Productivity Costs of Overweight and Obesity in New Zealand*, 36 AUSTL. & N.Z. J. PUB. HEALTH 550, 553 (2012) (observing that loss of productivity costs attributable to overweight and obesity in New Zealand lie between $98 and $225m in 2006, while health costs were estimated to be $623.9m); Medibank Health Solutions, *Obesity in Australia: Financial Impacts and Cost Benefits of Intervention* (Report, Mar. 2010) 4 (Austl.) (finding that in Australia, the loss of productivity cost of $6.4 billion in 2008 and 2009 was associated with "productivity losses (both absenteeism and presenteeism) and premature mortality" due to obesity and the total direct medical cost of obesity was $1.3 billion).

73. *Cf.* Gregori et al., *supra* note 49, at 179 (discussing survey results indicating that EU interviewees show a low satisfaction with regards to the efforts made by their governments in fighting obesity).

74. *See, e.g.*, Macmaoláin, *supra* note 46, at 46–47.

75. *See* George Loewenstein et al., *Disclosure: Psychology Changes Everything*, 6 ANN. REV. ECON. 391, 398 (2014).

76. *Id.* at 404.

77. *See id.*

78. *See* Thomas Gilovich et al., *The Spotlight Effect in Social Judgment: An Egocentric Bias in Estimates of the Salience of One's Own Actions and Appearance*, 78 J. PERSONALITY & SOC. PSYCHOL. 211, 214 (2000) (finding that the spotlight effect "distort[ed] . . . [participants'] estimates of how much . . . [a potentially embarrassing t-shirt] would command the attention of others" and "led them to substantially overestimate" the number of people who paid attention to their shirts).

79. BEN-SHAHAR & SCHNEIDER, *supra* note 45, at 12; Delvina Gorton et al., *Nutrition Labels: A Survey of Use, Understanding and Preferences Among Ethnically Diverse Shoppers in New Zealand*, 12 PUB. HEALTH NUTRITION 1359, 1364 (2008); Jayachandran N. Variyam, *Do Nutrition Labels Improve Dietary Outcomes?*, 17 HEALTH ECON. 695, 704 (2008).

80. *See* Cliona Ni Mhurchu et al., *Do Nutrition Labels Influence Healthier Food Choices? Analysis of Label Viewing Behaviour and Subsequent Food Purchases in a Labelling Intervention Trial*, 121 APPETITE 360, 364 (2018).

81. Sarah Campos et al., *Nutrition Labels on Pre-Packaged Foods: A Systematic Review*, 14 PUB. HEALTH NUTRITION 1496, 1502 (2011); Miller & Cassady, *supra* note 42, at 213; van Herpen & van Trijp, *supra* note 47, at 158.

regulators have been experimenting with some other, more novel, means. These means are designed to better communicate with consumers and nudge them toward making healthier choices.[82]

In this respect, one of the most interesting and important regulatory developments is "the emerging focus on 'targeted transparency.'"[83] Regulators have gradually come to realize that the maxim "the more [information] the better" is often incorrect.[84] Acknowledging people's cognitive limitations, regulatory initiatives seek to provide decision makers, at the point of decision-making, with effective information.

Specifically, some regulators have adopted schemes that provide consumers with an explicit label to communicate the health-related value of foods.[85] Such means often take the form of front-of-package labeling.[86] These labels are designed to simplify food choices for consumers, by helping them quickly identify the healthiness of products.[87] Slightly restated, such labels relieve consumers of the burden of navigating technical language and dense text. The labels present consumers with important information (which would otherwise go unnoticed)[88] in a visual and user-friendly way.[89] In short, these labels are presumed to be quick and easier to notice, understand, and incorporate into consumers' decision-making processes.[90]

In 2009, the Australia and New Zealand Food Regulation Ministerial Council commissioned a Review of Food Labelling Law and Policy.[91] The review was undertaken by an independent expert

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82. *See, e.g.*, On Amir & Orly Lobel, *Liberalism and Lifestyle: Informing Regulatory Governance with Behavioural Research*, 3 EUR. J. RISK REG. 17, 19–20 (2012); Purnhagen et al., *supra* note 48, at 210–12 (finding that visual elements on packaging can influence consumers' product choice).

83. Daniel E. Ho, *Fudging the Nudge: Information Disclosure and Restaurant Grading*, 122 YALE L.J. 574, 578 (2012).

84. *See infra* Subpart III.C (discussing a variety of cognitive and behavioral phenomena that may lead consumers not to effectively process nutrition labels and tables).

85. *See, e.g.*, Chantal Julia & Serge Hercberg, *Development of a New Front-of-Pack Nutrition Label in France: The Five-Colour Nutri-Score*, 3 PUB. HEALTH PANORAMA 712, 712–13 (2017).

86. *See, e.g.*, *id.*

87. *Id.* at 712.

88. van Herpen & van Trijp, *supra* note 47, at 150.

89. *Cf.* Becher & Feldman, *supra* note 57 (discussing how nonverbal market manipulations subtly influence consumer decisions); Purnhagen et al., *supra* note 48, at 208–09 (observing the importance of visual packaging elements in easily capturing consumers' attention and conveying information about a product).

90. Mark W. Becker et al., *Front of Pack Labels Enhance Attention to Nutrition Information in Novel and Commercial Brands*, 56 FOOD POL'Y 76, 85 (2015); Cliona Ni Mhurchu et al., *Effects of Interpretive Nutrition Labels on Consumer Food Purchases: The Starlight Randomized Controlled Trial*, 105 AM. J. CLINICAL NUTRITION 695, 703 (2017).

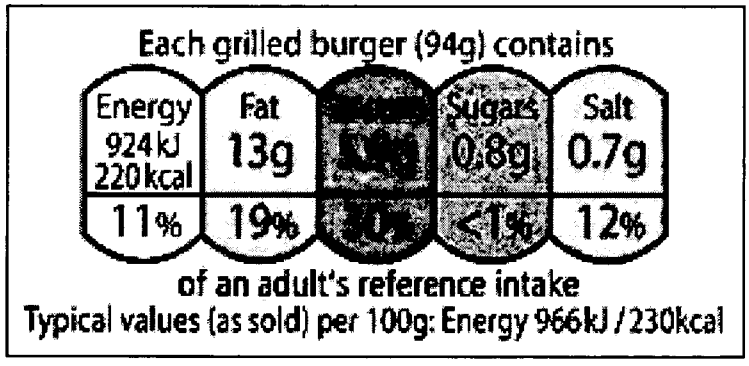
91. Neal Blewett et al, *Labelling Logic: Review of Food Labelling Law and Policy* (Final Report, 2011) at vii (Austl.).

panel.[92] In 2011, the panel published their findings in a report titled *Labelling Logic*.[93]

Following the United Kingdom's experience, the report recommended that an MTL front-of-pack labeling system be introduced.[94] The panel also recommended that the MTL system should be generally voluntary.[95] The report suggested, however, that such labeling should be mandatory where "general or high level health claims are made or equivalent endorsements/trade names/marks appear on the label."[96]

The rationale behind the MTL system is related to the way System 1 (our quick and intuitive decision-making system) operates. The idea is that the colors employed by the MTL system can help consumers easily determine the overall healthiness of products. Below is an image of the MTL label, demonstrating this point.[97] In the example image, "Energy" is in white, "Fat" and "Salt" are both in orange, "Saturates" is in red, and "Sugars" is in green.

IMAGE 1. EXAMPLE OF THE MTL LABEL



The panel's recommendation to implement the MTL system was opposed by manufacturers and ultimately rejected.[98] It was asserted that there was no evidence that such a system would effectively help consumers.[99] It was also argued that the MTL system is overly focused on specific nutrients—such as fat, salt, and sugar—as opposed to the healthiness of foods as a whole.[100]

92. *Id.*
93. *Id.* at iii.
94. *Id.* at 13.
95. *Id.*
96. *Id.* at 124.
97. We return to discuss the MTL system in more detail *infra* Subpart IV.A.
98. *See* John White & Louise Signal, *Submissions to the Australian and New Zealand Review of Food Labelling Law and Policy Support Traffic Light Nutrition Labelling*, 36 AUSTL. & N.Z. J. PUB. HEALTH 446, 447 (2012).
99. *Id.* at 447–48.
100. *See, e.g.*, Simone C. Rosentreter et al., *Traffic Lights and Health Claims: A Comparative Analysis of the Nutrient Profile of Packaged Foods Available for*

Rather than adopting the MTL system, the Australian and the New Zealand governments developed a new labeling system. This system, dubbed the HSR system, was implemented in 2014.[101] The HSR system is voluntary. Firms can choose whether to participate and display the HSR symbol on their product packaging.[102]

The HSR label ranges from 0.5 stars (denoting the least healthy score) to 5 stars (indicating the healthiest products).[103] The rating is essentially determined by evaluating the overall nutritional value of the product.[104] The rating compares the content of "good" ingredients (i.e., fiber, protein, fruit, vegetables, nuts, and legumes) with the "bad" ones (i.e., saturated fat, energy, total sugar, and sodium).[105]

Once again, the adoption of such a label may be best explained by recalling how System 1, our automatic and intuitive decision-making system, works. Presumably, the system provides consumers with one overall easy and intuitive signal as to a food's healthiness. Arguably, this can help consumers make more informed decisions, nudging them toward healthier choices.[106]

The system offers five different labeling options.[107] Among those options, the "graphic only" label is the most frequently displayed.[108] An image of this label is below.

Sale in New Zealand Supermarkets, 37 AUSTL. & N.Z. J. PUB. HEALTH 278, 278, 283 (2012) (explaining that a multiple traffic light system that looks specifically at certain nutrients can be represented as unhealthy via a red light when other systems label the food healthy in general).

101. mpconsulting, *Health Star Rating System Five Year Review Report* (Report, May 2019) 4 (Austl.).

102. *Id.* In November 2019, the Australia and New Zealand Ministerial Forum on Food Regulation opted to keep the system voluntary. *See* Stephanie Dalzell, *Politicians Reject Push to Make Health Star Ratings Mandatory Amid Customer Confusion*, AUSTL. BROADCASTING CORP. (Nov. 15, 2019, 2:12 AM), https://www.abc.net.au/news/2019-11-15/ministers-dismiss-calls-for-mandatory-health-star-ratings/11709874.

103. mpconsulting, supra note 101, at 11.

104. *Id.* at 4.

105. *Id.* at 11–12.

106. *See About Health Star Ratings*, HEALTH STAR RATING SYS., http://healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/content/about-health-stars (last updated May 21, 2019).

107. Health Star Rating System, *Style Guide* (December 2017) 3–6 (Austl.).

108. *Id.*

IMAGE 2. THE MOST FREQUENTLY USED HSR SYSTEM LABEL

Employing behavioral jargon, HSR and similar labels are assumed to counter-nudge consumers by targeting and engaging System 1. Absorbing such labels does not require significant mental effort. This economizes on consumers' scarce time and attention, helping them to overcome cognitive biases and information gaps.[109] Interestingly, this is somewhat similar to other popular rating systems, which are widespread in online reviews and rankings.[110]

Clearly, manufacturers have an inbuilt incentive to use unhealthy components such as sugar, salt, and saturated fats. Foods that contain generous amounts of these ingredients are more tempting to eat: they produce pleasure and hedonia while inducing cravings.[111] It has been hypothesized that by using these components, companies are able to produce "craveable" foods.[112] Such foods, the argument goes, create rewards in the brain in the form of dopamine production, thus making the food addictive.[113] Of course,

109. *See* van Herpen & van Trijp, *supra* note 47, at 157.

110. Similar rating systems using stars have been used by Amazon, Google, Uber, and eBay. *See About Comments, Feedback, & Ratings*, AMAZON, https://www.amazon.com/gp/help/customer/display.html/ref=help_search_1-1?ie=UTF8&nodeId=201889150 (last visited Dec. 5, 2019); *Google Play*, GOOGLE, https://play.google.com/store?hl=en_US (last visited Dec. 5, 2019); *Rating a Driver*, UBER, https://help.uber.com/riders/article/rating-a-driver?nodeId=478d7463-99cb-48ff-a81f-0ab227a1e267 (last visited Dec. 5, 2019); *Seller Ratings*, EBAY, https://www.ebay.com/help/buying/resolving-issues-sellers/seller-ratings?id=4023 (last visited Dec. 5, 2019).

111. *See* MOSS, *supra* note 28, at 3–5.

112. Pingfan Rao et al., *Addressing the Sugar, Salt, and Fat Issue the Science of Food Way*, 2 NATURE PARTNER J. SCI. FOOD 1, 1 (2018).

113. A.Y. Onaolapo & O.J. Onaolapo, *Food Additives, Food and the Concept of 'Food Addiction': Is Stimulation of the Brain Reward Circuit by Food Sufficient to Trigger Addiction?*, 25 PATHOPHYSIOLOGY 263, 264 (2018).

the food industry also has a strong incentive to blur reality and portray such foods as healthy and natural.[114]

Ideally, the HSR system should mitigate the industry's incentive to produce unhealthy foods. It should incentivize producers to offer consumers better, healthier products. Firms that opt to manufacture healthy food would be able to signal that quality using the HSR label. These firms would also be able to better distinguish their healthy products from unhealthy ones.

On the face of it, all of this can be achieved while preserving both firm and consumer choice.[115] Firms can keep producing unhealthy products, with or without the HSR image. Consumers, of course, are free to purchase whatever food they wish. They can select healthy or unhealthy products, with the HSR symbol on its package or without it.

More than five years have passed since the introduction of the HSR system, and the Australian and New Zealand governments have recently conducted a system review.[116] Legislation, even when well-intended, sometimes fails to produce the desired results. Revisiting a regulatory framework after a trial period is a wise approach that we strongly support.[117] It can also be beneficial for other jurisdictions, such as the United States, which can learn from the experience of others. Let us see how and why.

III. THE HSR SYSTEM: PROBLEMS, LIMITATIONS, & CRITICISM

Part II explained why the HSR and similar systems have the potential to advance market efficiency and public health. In essence, such systems provide consumers with a clear and easy signal, which they can intuitively use without much effort.

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114. For discussions on attempts to regulate such behaviors see, e.g., Douglas W. Hyman, *The Regulation of Health Claims in Food Advertising: Have the FTC and the FDA Finally Reached a Common Ground?*, 51 FOOD & DRUG L.J. 191, 204 (1996) (noting that it will no longer be possible to make health claims without sufficient evidence to prove the accuracy of the claim); *see also* U.S. CHAMBER INST. LEGAL REFORM, THE FOOD COURT: TRENDS IN FOOD AND BEVERAGE CLASS ACTION LITIGATION 1 (2017), https://www.instituteforlegalreform.com/uploads/sites/1/TheFoodCourtPaper_Pages.pdf (focusing on class actions); Timothy T. Hughes, *The Federal Trade Commission's Approach to Regulating Health Claims in Food Advertising*, 3 LOY. CONSUMER L. REV. 4, 4 (1990) (discussing the FTC and FDA's approach to regulating the health claims in food advertising).

115. The rationale behind "libertarian paternalism" aims to help people to make good decisions while also preserving choice. *See* Cass R. Sunstein & Richard H. Thaler, *Libertarian Paternalism is Not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1160 (2003); Richard H. Thaler & Cass R. Sunstein, *Libertarian Paternalism*, 93 AM. ECON. REV. 175, 175 (2003). For a more extensive discussion of "libertarian paternalism" and its effect on decision making, see RICHARD H. THALER & CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS (2008).

116. *See* mpconsulting, *supra* note 101, at 4.

117. Shmuel I. Becher, *Unintended Consequences and the Design of Consumer Protection Legislation*, 93 TUL. L. REV. 105, 139 (2018).

However, as implemented today, the HSR system's effectiveness is largely questionable. In fact, a recent report prepared by New Zealand Food Safety opined that the impact of the system "does not currently translate to overall improvements in the healthiness of food purchased by New Zealand households (when weighted by food purchase data)."[118]

In this Part, we detail the main problems and limitations of the HSR system. This, in turn, sheds important light on how policymakers should approach the issue more generally. We group these problems into four loose categories. Subpart A addresses the main loopholes that allow firms to manipulate the system. Subpart B discusses the design problems embedded in the system. In Subpart C we shift our perspective and tackle the problems that can stem from consumer psychology. Subpart D briefly notes some macro problems that relate to the overall efficacy and consequences of the system.

A. *Loopholes: Manipulating the System*

While many consumers are probably unaware of this fact, the HSR system is compensatory.[119] This means that one negative nutritional attribute can be cancelled out, or balanced, by a positive attribute.[120] Thus, for instance, a manufacturer can receive a high HSR score for a product rich in sugar by adding a healthy ingredient such as fiber. This feature, once discovered by the general public, can lead to consumer distrust.[121]

As a concrete example, Kellogg's slightly changed the composition of its Nutri-Grain cereal in order to claim four stars.[122] Meanwhile, the product was still 27 percent sugar.[123] As a result, some media outlets have criticized the HSR system, calling it "a dishonest, misleading mess"[124] and identifying it as "freaking hopeless."[125]

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118. Nat'l Inst. for Health Innovation, *The Health Star Rating System in New Zealand 2014-2018* (New Zealand Food Safety, Technical Report No: 2018/09, Oct. 2018) at 3.

119. *See Health Star Ratings*, CONSUMER (Sept. 8, 2016) https://www.consumer.org.nz/articles/health-star-ratings.

120. *Id.*

121. *Cf.* van Herpen & van Trijp, *supra* note 47, at 149 ("Yet, trust and confidence need to be established because directive labels can be perceived as patronizing and/or raise distrust.").

122. Mark Serrels, *Australia's Health Star Ratings Are a Dishonest, Misleading Mess*, LIFEHACKER (Mar. 16, 2017, 11:30 AM), https://www.lifehacker.com.au/2017/03/australias-health-star-ratings-are-broken/.

123. *Id.*

124. *Id.*

125. Peter FitzSimons, *'It's Freaking Hopeless': Why the Health Star Rating System Has to Go*, SYDNEY MORNING HERALD, https://www.smh.com.au/opinion/its-freaking-hopeless-the-health-star-rating-system-has-to-go-20170611-gwp0mb.html (last updated June 13, 2017, 5:39 AM).

Interestingly, in 2018, the Australia and New Zealand Ministerial Forum on Food Regulation initiated a consultation on sugar labeling.[126] In a media release on July 19, 2018, Food Safety Minister Damien O'Connor stated:

> We want food labels to provide clear, contextual information about sugars to allow consumers to make informed choices in support of the dietary guidelines. The consultation canvasses options for improved sugar labelling including education on how to read and interpret labels, pictures such as teaspoons to convey the amount of sugar and advisory labels for foods high in added sugars.[127]

Apparently, this denotes that the HSR system does not sufficiently communicate to consumers relevant information about sugar in foods. As noted, part of the problem is that the HSR system allows firms to "compensate" for sugar content through other nutrients. This compensation yields a situation where unhealthy foods high in sugar receive a relatively high number of stars. We return to this in more detail in Parts IV and V below.

Another problem relates to yet a different component of the system that is largely unknown to consumers: the HSR rating is calculated on an "as prepared" basis.[128] "As prepared" basis means that a product can enjoy a high rating based on the nutritional value of preparatory ingredients.[129] As before, this can also undermine consumer trust in the system.

For instance, Milo displayed 4.5 stars on its chocolate and malt-based powder, though the powder itself clearly does not merit this rating.[130] The 4.5 star rating was based on consuming merely three teaspoons of powder combined with skim milk.[131] Yet the product

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126. Damien O'Connor, *Sugar Labelling Consultation Open*, N.Z. GOV'T (July 19, 2018), https://www.beehive.govt.nz/release/sugar-labelling-consultation-open.

127. *Id.*

128. *Summary of Public Submissions on 'As Prepared' Rules Under the Health Star Rating (HSR) System*, HEALTH STAR RATING SYS. (June 30, 2017), http://healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/content/6B596250A88252E0CA257FAE0004CD0F/$File/Attachment%203%20-%20summary%20of%20as%20prepared%20submissions.pdf.

129. *Stakeholder Consultation*, HEALTH STAR RATING SYS., http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/stakeholder-engagement (last updated Apr. 5, 2019).

130. *Health Star Rating to be Removed from Milo Powder*, CONSUMER (Mar. 1, 2018), https://www.consumer.org.nz/articles/health-star-rating-to-be-removed-from-milo-powder.

131. Rebecca Sullivan, *Nestle Drops Milo's 4.5 Health Star Rating After Criticism from Health Experts*, NEWS.COM.AU (Mar. 1, 2018, 4:02 PM), https://www.news.com.au/lifestyle/food/eat/nestle-drops-milos-45-health-star-rating-after-criticism-from-health-experts/news-story/e7f5c81ce450b8843b1df1dd505baf2c.

itself, which targets kids, contains 50 percent sugar.[132] A scandal ensued. Experts disagreed with the 4.5 star rating, pro-consumer organizations protested, and the media reported on the issue.[133] In the end, Milo dropped its star rating.[134]

B. *Misleading System Design Features*

Consumers are also probably unaware that HSR scores should only be used for comparison within product categories.[135] That is, the rating does not indicate a universally objective result. Rather, it is intended to allow comparison among similar products.[136]

For instance, a 4 star rating for a cereal cannot be compared to a 4 star rating given to milk. While the two products display the same number of stars, their healthiness may differ significantly. Similarly, a product with a high rating in one category is not necessarily healthier than another product with less stars from a different category. Consumers are unlikely to be aware of this nuance. The HSR slogan "the more stars, the healthier"[137] exacerbates this common misperception.

Finally in this respect, it has been alleged that the system is too rigid in its ratings.[138] Consider, once again, sugar. There can be an important difference between added sugar and intrinsic sugar.[139] The former is exceptionally bad for our diet and a serious threat to our health.[140] Yet the HSR system does not distinguish between the two,[141] making its rating less nuanced and perhaps misleading to some extent.

C. *Consumers' Biases & Bounded Rationality*

There are some other concerns about the effectiveness of the system that stem from consumer psychology. To begin, the HSR may bring about the halo effect. According to the halo effect, people are likely to rely on some kind of a global effect rather than distinguishing

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132. *Health Star Rating to be Removed from Milo Powder*, *supra* note 130.
133. Sullivan, *supra* note 131.
134. *Id.*
135. *See* Colmar Brunton, *Industry Uptake of the Health Star Rating System* (Ministry for Primary Industries, MPI Technical Paper No: 2017/34, October 2016) at 6.
136. *Id.*
137. *About Health Star Ratings*, *supra* note 106.
138. *See* Ninya Maubach, *Will the Health Star Rating Labels Improve People's Diets?*, U. OTAGO: PUB. HEALTH EXPERT (July 17, 2014), https://blogs.otago.ac.nz/pubhealthexpert/2014/07/17/will-the-health-star-rating-labels-improve-peoples-diets/.
139. *Sugar 101*, *supra* note 4.
140. *See id.* (noting the need to reduce intake of added sugar).
141. *Health Star Ratings Positive and Negative Nutrients*, HEALTH STAR RATING SYS., http://www.healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/news-20190731 (last updated Oct. 29, 2019).

between distinct and independent attributes of products.[142] Applied here, a high score on one product might create a positive perception vis-à-vis other products by the same brand or within the same category. Firms can manipulate this effect by using the HSR only with respect to their healthiest products.

Additionally, there is no guarantee that consumers will indeed factor in negative information presented by low HSR scores. At times, consumers exhibit "active information avoidance," which is a form of biased information processing.[143] This is related to the ostrich effect, a form of information avoidance.[144] According to this effect, people tend to ignore harmful and unpleasant information.[145]

The motivation for this behavior is self-preservation (i.e., evading psychological pain or suffering).[146] People often prefer avoiding information that can induce anxiety, undermine one's optimism, or lead to dissonance or regret. Additionally, people may avoid information so as not to face the need to behave contrary to their current preferences.[147]

As a concrete example, imagine a consumer who would like to consume an unhealthy 0.5 star product. This consumer may experience a conflict between his desire to have the unhealthy product and his realization that the product is unhealthy. The consumer may therefore ignore the rating altogether to avoid feeling uncomfortable or experiencing dissonance.[148]

Closely related, confirmation bias and motivated reasoning can further lead consumers to process information in a self-serving way.[149] Confirmation bias leads people to look for, and overvalue,

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142. Richard E. Nisbett & Timothy DeCamp Wilson, *The Halo Effect: Evidence for Unconscious Alteration of Judgments*, 35 J. PERSONALITY & SOC. PSYCHOL. 250, 250 (1977).

143. Russell Golman et al., *Information Avoidance*, 55 J. ECON. LITERATURE 96, 97 (2017).

144. Thomas L. Webb et al., *'The Ostrich Problem': Motivated Avoidance or Rejection of Information About Goal Progress*, 7 SOC. & PERSONALITY PSYCHOL. COMPASS 794, 795 (2013).

145. *Id.*

146. *See* Ben Harkin, *Improving Financial Management via Contemplation: Novel Interventions and Findings in Laboratory and Applied Settings*, FRONTIERS PSYCHOL., Mar. 7, 2017, at 1, 2.

147. *Id.*; Webb et al., *supra* note 144, at 795.

148. *See generally* ELLIOT ARONSON, THE SOCIAL ANIMAL 182–83 (8th ed. 1999) (describing the cognitive dissonance phenomenon, which suggests that in order to avoid conflicting evidence or ideas people will tend to devalue evidence that undermines their ex ante choice). For a more recent review of such literature see Peter Fischer et al., *The Theory of Cognitive Dissonance: State of the Science and Directions for Future Research*, *in* CLASHES OF KNOWLEDGE: ORTHODOXIES AND HETERODOXIES IN SCIENCE AND RELIGION 189, 189–96 (Peter Meusburger et al. eds., 2008).

149. *See* SCOTT PLOUS, THE PSYCHOLOGY OF JUDGMENT AND DECISION MAKING 233 (1993) (describing confirmation bias and its effect on decision making); Ziva Kunda, *The Case for Motivated Reasoning*, 108 PSYCHOL. BULL. 480, 480 (1990).

information that supports their beliefs or desires.[150] Consequently, individuals are likely to search for data that confirms their predetermined course of action rather than information that may challenge or contradict it.[151] They are also likely to interpret information and construct subjective narratives in a way that supports their preexisting beliefs or preferences.[152]

Assume a consumer has decided to have ice cream for dessert. The ice cream has a 2.5 star rating. Confirmation bias and motivated reasoning might lead the consumer to comfort himself by arguing that "2.5 stars is not that bad for a dessert." At the same time, a consumer that chooses to consume a sugary cereal may overvalue its 4 star rating, thus downplaying the amount of sugar and risks involved.

D. Macro Market-Based Problems

A key aspect of the system is that it is not mandatory. As noted above, sellers are free to choose whether to partake.[153] This entails that not all manufacturers are participating. It has been estimated that only some 20 percent of packaged goods available in Australian and New Zealand supermarkets were rated as of early 2018.[154]

Since the system operates on a voluntary basis, firms have the discretion to decide whether, when, and how to engage with the HSR system. As the graphs below illustrate, the voluntary nature of the system allows companies not to label food with lower star ratings. True, the rise in products displaying the HSR image led to an increased number of products bearing less than 3 stars. Nonetheless, a clear majority of the products with an HSR rating, some 75 percent of them, have at least 3 stars.[155] This means that consumers are less likely to form an accurate and rounded overall view of the healthiness of food. If almost all rated products are considered to be healthy or relatively healthy, the rating then becomes less meaningful.[156]

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150. PLOUS, *supra* note 149, at 233.

151. *Id.* ("[Confirmation bias] usually refers to a preference for information that is consistent with a hypothesis rather than information which opposes it.").

152. *Id.* at 233–40.

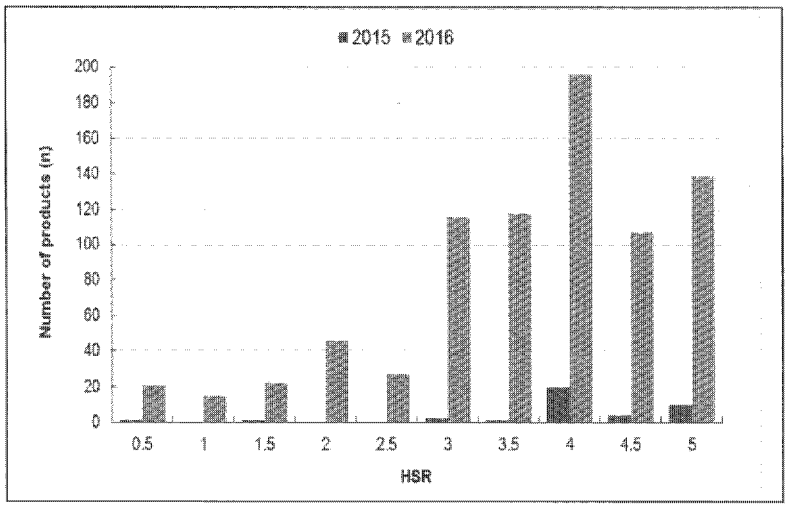
153. *See supra* note 101 and accompanying text.

154. Nat'l Inst. for Health Innovation, *supra* note 118, at 10; Alexandra Jones et al., *Uptake of Australia's Health Star Rating System*, 10 NUTRIENTS 997, 1001 (2018).

155. *See* Nat'l Inst. for Health Innovation, *supra* note 118, at 10; *see also* Jones et al., *supra* note 154, at 1002–03 (noting that companies "at the upper end of the HSR spectrum" are more likely to volunteer to use the system).

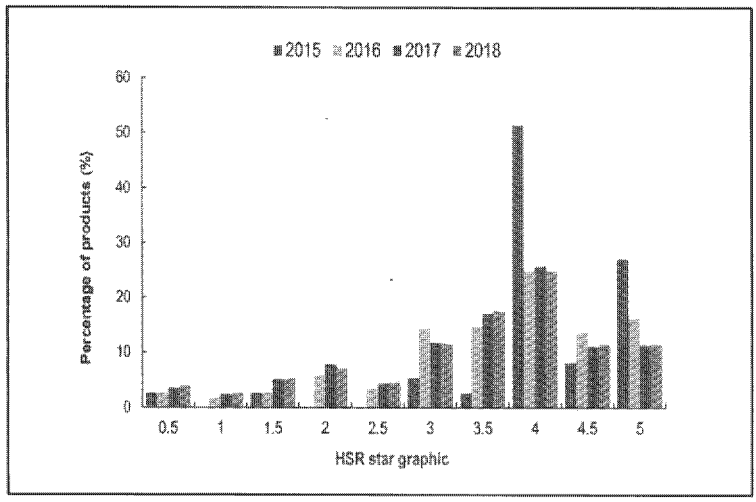
156. *Cf.* Ho, *supra* note 83, at 586.

GRAPH 1. NUMBER OF PRODUCTS DISPLAYING EACH HEALTH STAR RATING (AUSTRALIA, 2015–2016)[157]



157. National Institute for Health Innovation, *Report on the Monitoring of the Implementation of the Health Star Rating System in New Zealand, 2014-2016* (Ministry for Primary Industries, November 2016) at 14, https://www.mpi.govt.nz/dmsdocument/20546/direct. For a graph that displays percentages of products (rather than numbers) and that covers the years 2015–2018, see National Institute for Health Innovation, *The Health Star Rating System in New Zealand 2014-2018* (New Zealand Food Safety, Technical Report No. 2018/09, October 2018) at 26, https://www.mpi.govt.nz/dmsdocument/31635/direct.

GRAPH 2. NUMBER OF PRODUCTS DISPLAYING EACH HEALTH STAR RATING (NEW ZEALAND, 2015–2018)[158]



Notably, the system is also self-regulated.[159] Self-regulation has clear advantages as it reduces enforcement costs, preserves firms' choice, and minimizes government intervention.[160] However, it also gives rise to further skepticism toward the authenticity, reliability, and effectiveness of the system.[161] Combined with the problems delineated above, consumers might be less likely to credit self-interested firms that praise their own products.[162]

From yet another perspective, the currently implemented HSR system may harm competition. Employing the system inflicts some (unsubsidized) costs on interested firms.[163] Small businesses may not have the resources to participate in the HSR scheme. This may disadvantage them and make their products appear less attractive

158. *See* Nat'l Inst. for Health Innovation, *supra* note 118, at 26.

159. *See* Rebecca Doonan & Penny Field, *How Nutrition Sensitive Are the Nutrition Policies of New Zealand Food Manufacturers? A Benchmarking Study*, 9 NUTRIENTS 1373, 1373 (2017) (noting the "lack of independent monitoring and regulation by government or other organisations").

160. *See* John L. Campbell, *Why Would Corporations Behave in Socially Responsible Ways? An Institutional Theory of Corporate Social Responsibility*, 32 ACAD. MGMT. REV. 946, 955–58 (2007).

161. *Id.*

162. *See id.* at 946–48; John Knight et al., *Quest for Social Safety in Imported Foods in China: Gatekeeper Perceptions*, 50 APPETITE 146, 154 (2007).

163. These costs may include the resources necessary for calculating the HSR rating, redesigning packaging, reprinting packaging, and possibly writing off existing stock. *See* Centre for International Economics, *Impact Analysis of the Health Star Rating System for Small Businesses* (Final Report, May 2014) at 20–22 (Austl.), https://foodregulation.gov.au/internet/fr/publishing.nsf/Content/E6C6919B62C492BCCA257F720076F4C8/$File/HSR%20system%20for%20small%20business.pdf.

even if they are essentially healthy.[164] So while some unhealthy products may receive a relatively high score under the HSR system, other healthy products may not be rated.

Lastly, one of the most troubling findings regarding the HSR—and as discussed below, some other systems—is its inequity effects. Evidence indicates that the system can help middle to high income consumers.[165] Indeed, studies indicate that consumers' prior knowledge greatly increases the use and effectiveness of front-of-package labeling.[166] Overall, therefore, it seems that the system mainly benefits consumers who are searching for nutritious products and are already health conscious.[167]

In contrast, empirical findings point to a lack of understanding of the system, particularly among consumers of low socioeconomic status.[168] This is of particular importance since it seems that the system leaves behind those low-income and vulnerable consumers who need it the most.[169] In New Zealand, for example, the system does not seem to sufficiently help low-income and elderly consumers.[170] These and other findings may support developing and

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164. This might be especially troubling where "a product prominently displays an unusual attribute for that category." Purnhagen et al., *supra* note 48, at 204. In such a case, "consumers may infer that competitive products do not have the attribute." *Id.*

165. *See* Gorton et al., *supra* note 79, at 1364 (noting the impact of household income on the ability to use and understand food labeling systems).

166. *See* Miller & Cassady, *supra* note 42, at 208 ("First, prior knowledge could enable consumers to pay attention to important information on a food label, and to ignore marketing features that do not reflect salient nutritional qualities, which in turn minimizes information overload. Second, prior nutrition knowledge can facilitate comprehension of, and memory for, food label nutrition information . . . . Third, prior nutrition knowledge could support the application of the comprehended and remembered information to food choice.").

167. *See* Andrea Freeman, *Transparency for Food Consumers: Nutrition Labeling and Food Oppression*, 41 AM. J.L. & MED. 315, 316 (2015); van Herpen & van Trijp, *supra* note 47, at 157.

168. *See* Colmar Brunton, *Health Star Rating Monitoring and Evaluation* (Health Promotion Agency, 14 Jan. 2016) at 29.

169. *See* Marion Devaux et al., *Exploring the Relationship Between Education and Obesity*, 2011 OECD J. ECON. STUD. 121, 140 (2011) ("The higher the individual's education relative to his or her peers, the lower is the probability of the individual being obese."); Stephen S. Lim et al., *Prevention of Cardiovascular Disease in High-Risk Individuals in Low-Income and Middle-Income Countries: Health Effects and Costs*, 370 LANCET 2054, 2054 (2007) ("There were an estimated 35 million deaths from heart disease, stroke, cancer, and other chronic diseases worldwide in 2005. 80% of these deaths were in low-income and middle-income countries, and this proportion is projected to increase further in the coming decades.").

170. *See* Letter from Tracey Ellis and Jacqui Yip to Jane McEntree, General Manager, Auckland Regional Public Health Service, and Michael Hale, Medical Officer of Health, Auckland Regional Public Health Service, regarding the Submission on Five Year Review of the Health Star Rating System (July 7, 2017) (N.Z.), https://www.arphs.health.nz/our-resources/five-year-review-of-the-health-star-rating-system/download?files=1529; Colmar Brunton, *2018 Health Star*

tailoring educational programs that target specific vulnerable groups. We return to this issue below in Subpart V.D.

IV. OTHER SYSTEMS: ENRICHING THE COMPARATIVE PERSPECTIVE

Consumers are in severe need of a system that will signal food healthiness. This interest is largely aligned with those of the government, which seeks to advance the public's health. It therefore seems safe to assume that governments are likely to keep searching for, and using, signaling systems around food healthiness.

In this Part, we look into the pros and cons of three other interesting systems employed in different jurisdictions. This comparative investigation seeks to examine whether there are superior systems in use that may be adopted more generally or rigorously. It will also provide us with important insights as to how current systems can be improved.

This Part addresses three additional food health labeling systems. First, we discuss the UK MTL system. We then review the Chilean WL system. Thereafter, we outline the US/Canadian GS initiative. We conclude this Part by providing a concise comparison of the three systems and briefly discussing the French Nutri-Score initiative.

A. *The UK Multiple Traffic Light System*

As in many other Western countries, most people in the United Kingdom consume too much saturated fat, salt, and sugar. In 2019, approximately 62 percent of UK females and almost 68 percent of males were classified as obese or overweight.[171] Additionally, 34 percent of children aged ten to eleven were identified as obese or overweight, with deprived children being disproportionally represented.[172]

Against this background, the UK Department of Health originally launched the MTL system in 2009.[173] This system employs the traffic light colors—green, amber, and red—to help consumers

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Rating Monitoring and Evaluation: Year 2 Follow-Up Research Report (Health Promotion Agency, June 2018) at 22; Catherine Gordon et al., *Health Star Rating Consumer Research and Message Testing* (Health Promotion Agency (October 2015) at 20. For a different view, see Lucy Kennedy et al., *Health Star Rating: Monitoring Implementation for the Five Year Review* (New Zealand Food Safety, Technical Report No. 2018/08, October 2018) at 31–43 (noting that low income shoppers exhibited more familiarity and understanding of the HSR system in 2018 than in 2015).

171. Carl Baker, *Obesity Statistics*, HC Briefing Paper No. 3336 (Aug. 6, 2019) at 4 (U.K.).

172. *Id.* at 9.

173. Elizabeth Dunford et al., *Color-Coded Front-of-Pack Nutrition Labels–An Option for US Packaged Foods?*, 9 NUTRIENTS 480, 481 (2017).

differentiate between healthy and less healthy products.[174] As noted earlier, this system was originally proposed for implementation in Australia and New Zealand.[175] However, the recommendation was opposed by the industry and ultimately rejected.[176]

The MTL color-coded nutritional label seeks to quickly inform shoppers if the food is high, medium, or low in energy, fat, saturated fat, sugar, and salt.[177] As one would intuitively assume, red means high in negative nutrients, amber signals a medium degree of healthiness, and green denotes healthy products.[178] Simply put, the more green that is found on the label, the healthier the product is. The more red on the label, the more people need to reduce product consumption.

The MTL system was found to assist consumers with low self-control in making healthier food decisions.[179] Furthermore, the MTL system has proven to be effective for consumers under time pressure.[180] This is of particular importance since many shoppers have limited time and may be hurried. Importantly, time pressure may prevent consumers from exercising healthy eating behaviors.[181]

On the whole, the MTL system has been found to guide people to key nutrients.[182] It channels shoppers' attention to the important nutrients when making healthiness judgments.[183] In other words, it reduces the cognitive workload necessary for making healthy decisions.[184] In light of the cognitive biases discussed above, this is another important finding to keep in mind.

Furthermore, and unlike the HSR system, evidence suggests that the MTL system is generally effective and beneficial across ethnic groups and income levels.[185] Given the high rates of unhealthy diets among poor and less-educated consumers, this is an important finding. This is also an important insight to keep in mind more generally. It demonstrates that price is not the only factor that low-income consumers consider.

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174. Nancy Babio et al., *Adolescents' Ability to Select Healthy Food Using Two Different Front-of-Pack Food Labels: A Cross-Over Study*, 17 PUB. HEALTH NUTRITION 1403, 1407 (2013).

175. *See supra* notes 94–96 and accompanying text.

176. *See supra* note 98 and accompanying text.

177. Joerg Koenigstorfer et al., *Healthful Food Decision Making in Response to Traffic Light Color-Coded Nutrition Labeling*, 33 J. PUB. POL'Y & MGMT. 65, 66 (2014).

178. *Id.*

179. *Id.* at 71.

180. Babio et al., *supra* note 174, at 1408.

181. van Herpen & van Trijp, *supra* note 47, at 155.

182. Gary Jones & Miles Richardson, *An Objective Examination of Consumer Perception of Nutrition Information Based on Healthiness Ratings and Eye Movements*, 10 PUB. HEALTH NUTRITION 238, 243 (2007).

183. *Id.*

184. *Id.*

185. Gorton et al., *supra* note 79, at 1364.

In one interesting study, the MTL system was compared against a simple traffic light (a single green, amber, or red rating for the entire food item), nutrition information panels, and percentage of daily intake.[186] In this study, users rated the MTL system as most preferred.[187] That said, one New Zealand study indicated a difficulty among some vulnerable people in understanding technical words included in the MTL, such as "saturates."[188]

Every system has its downsides, and the MTL system is no exception. For example, the MTL system does not recognize that balanced diets require consumption of a mix of foods including protein, fiber, vitamins, and minerals,[189] none of which are included in the system.[190] Along these lines, giving a particular food item a red light and dissuading consumption might be a "rough recommendation." This is because such a recommendation does not place the food item in the broader context of the consumer's whole diet.[191]

Another argument against the MTL system is that measuring health based on a fixed amount of product, such as 100 milliliters, may result in inaccuracies.[192] Oil, for example, is beneficial for a healthy diet when consumed in moderation. However, the amount of fat and calories that are found in 100 milliliters of oil would result in a red light.[193]

Moreover, researchers have opined that the presence of green and amber nutrients on the same product may lead to erroneous perceptions.[194] The concern, in this respect, is that participants might perceive the product to be healthier than it actually is.[195]

These and other criticisms have led to some interesting recommendations. One recommendation is to indicate the overall

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186. *Id.* at 1360.

187. *Id.* at 1363.

188. Louise Signal et al., *Perceptions of New Zealand Nutrition Labels by Māori, Pacific and Low-Income Shoppers*, 11 PUB. HEALTH NUTRITION 706, 710 (2007).

189. *See* Dep't of Health and Aging, *Eat for Health Australian Dietary Guidelines Summary* (February 2013) at 14, 20 (explaining the necessity of a balanced diet).

190. *See* Dep't of Health, 'Guide to Creating a Front of Pack (FoP) Nutrition Label for Pre-Packed Products Sold Through Retail Outlets' 5–6 (Nov. 2016) (U.K.).

191. Lorenzo Cuocolo, *The Questionable Eligibility of Traffic Light Labelling*, 9 EUR. FOOD & FEED L. REV. 382, 388 (2014).

192. *Id.* at 388–89.

193. *Id.* at 389.

194. *See, e.g.*, Neha Khandpur et al., *Are Front-of-Package Warning Labels More Effective at Communicating Nutrition Information than Traffic-Light Labels? A Randomized Controlled Experiment in a Brazilian Sample*, 10 NUTRIENTS 688, 698 (2018).

195. *Id.*

health value of the food like the HSR system does.[196] In the MTL context, the suggestion is to add an additional traffic light (that would denote the product's overall healthiness) to the current MTL label.[197] This, of course, requires an adoption of a standardized methodology for measuring the healthiness of diverse types of food.[198]

To conclude, the MTL system, though not a perfect scheme, is an effective front-of-package labeling system. It supports consumers' ability to judge the nutritional value of foods and beverages, thus helping them to identify healthier choices.[199] Importantly, this is also true with respect to low-income and less-educated consumers who typically do not benefit enough from such initiatives. In line with this, consumers also indicate their preference for this labeling system.

B. *The Chilean Front-of-Package Warning Label System*

In 2015, the World Economic Forum crowned Chile with the unflattering title of the world's leading nation in sugary drink consumption.[200] Approximately 67 percent of Chilean adults suffer from being overweight or obese.[201] Among the most significant noncontagious public health issues in Chile are cardiac problems, certain cancers, and diabetes.[202] These and other problems prompted the Chilean government to seek ways to modify the food purchasing environment for Chilean consumers.[203]

In 2016, the Chilean government implemented a front-of-package health labeling system based on warnings.[204] There were three main goals for the application of the WL system: (1) to protect children and minimize their unhealthy food and drink consumption,[205] (2) to

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196. Norman J. Temple & Joy Fraser, *Food Labels: A Critical Assessment*, 30 NUTRITION 257, 258 (2014).

197. *Id.*

198. *Id.*

199. Dunford et al., *supra* note 173, at 481.

200. Emma Luxton, *Which Countries Consume the Most Sugary Drinks?*, WORLD ECON. FORUM (Dec. 3, 2015), https://www.weforum.org/agenda/2015/12/which-countries-consume-the-most-sugary-drinks/.

201. Marie Ng et al., *Global, Regional, and National Prevalence of Overweight and Obesity in Children and Adults During 1980–2013: A Systematic Analysis for the Global Burden of Disease Study 2013*, 384 LANCET 766, 774 (2014). More specifically, 67.9% of Chilean men over twenty years old and 63.9% of Chilean women over twenty years old are overweight and obese. *Id.*

202. *See Chile*, INST. FOR HEALTH & METRICS EVALUATION, http://www.healthdata.org/chile (last visited Dec. 5, 2019).

203. *See* WORLD HEALTH ORG., EXPERTS CONSULTATION ON THE BACKGROUND DOCUMENT ON PROTECTING CHILDREN FROM THE HARMFUL IMPACT OF FOOD MARKETING 4 (2017).

204. *Id.*

205. Eileen Smith, *Chile Battles Obesity with Stop Signs on Packaged Foods*, NPR (Aug. 12, 2016, 7:00 AM), https://www.npr.org/sections/thesalt/2016/08/12/486898630/chile-battles-obesity-with-stop-signs-on-packaged-foods.

promote overall informed selection of food,[206] and (3) to decrease consumption of foods that contain excessive amounts of negative nutrients.[207]

Notably, unlike the other systems we review in this Article, the Chilean WL system is mandatory.[208] The Chilean government opted for signs in black octagons (similar to a stop sign).[209] If above the relevant threshold, a product must display a label advising "high in sugar," "high in saturated fat," "high in sodium," or "high in calories."[210] Both qualitative and quantitative studies supported this design.[211] It is presumably effective in terms of visibility, consumer understanding, and purchasing intent.[212] An image of the WL is below.

IMAGE 3. EXAMPLES OF THE CHILEAN WL SYSTEM

Unsurprisingly, the industry opposed the system. Among other things, it claimed that the intended labeling would lead consumers to feel less in control of their decisions.[213] However, the WL system was not found to evoke this type of response among consumers.[214] In fact, the WL was found effective in communicating to the public the need to minimize consumption of unhealthy products.[215] The warning signs shifted consumer intentions toward purchasing healthier options.[216]

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206. *Id.*
207. *Id.*
208. *See* Marcela Reyes et al., *Development of the Chilean Front-of-Package Food Warning Label*, 19 BMC PUB. HEALTH, July 8, 2019, at 1, 1.
209. *Id.* at 10.
210. Smith, *supra* note 205.
211. *See* Reyes et al., *supra* note 208, at 2–7.
212. This is in line with the benefits of using visuals when communicating with consumers. *See, e.g.*, Becher & Feldman, *supra* note 57, at 459; Purnhagen et al., *supra* note 48, at 198.
213. *See* Rachel B. Acton & David Hammond, *Do Consumers Think Front-of-Package "High in" Warnings Are Harsh or Reduce Their Control? A Test of Food Industry Concerns*, 26 OBESITY 1687, 1687 (2018) (noting that the President of the Canadian Federation of Agriculture made this precise argument in response to a similar system in Canada).
214. *Id.* at 1689.
215. Khandpur et al., *supra* note 194, at 696.
216. *Id.* at 696–97.

Overall, the warning signs have also been found to be more effective than the UK MTL system in improving participants' understanding of nutrient content.[217] The WL system was also more effective than the MTL system in reducing children's desire for certain categories of junk food.[218] In light of these findings, some researchers opined that the shape (octagon) and color (black) employed by the WL system is the most effective for attention capture and conveying perceptions of unhealthfulness.[219]

However effective, one study noted that the WL system was unable, once again, to change the eating habits of lower-income and less-educated consumers.[220] The study also pointed out that the WL system only seems to impact consumers' decision-making when the information provided was unexpected.[221] In other words, the warnings are not likely to be effective where consumers already know that the item they intend to purchase is unhealthy.[222]

Additionally, some features of the system were found to be potentially confusing. First, the WL system is calculated on 100g of a product.[223] However, some selling portions are smaller than this default amount. If consumers are unaware of this, they may err to believe that the portion sold has excessive negative nutrients.[224] Also, the warning may be confusing if "light" and "regular" product versions both carry warning labels despite noticeable differences in nutritional content.[225] In this respect, the warning may be viewed as too crude and lacking in sufficient interpretive content.[226]

Some suggest making the positioning of the label unified and compulsory. Specifically, the recommendation is to ensure that the WL symbol appears at the upper left corner of the packaging.[227] According to this suggestion, the upper left corner better captures

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217. *Id.* at 697–98.

218. *Id.* at 689; Alejandra Arrúa et al., *Impact of Front-of-Pack Nutrition Information and Label Design on Children's Choice of Two Snack Foods: Comparison of Warnings and the Traffic-Light System*, 116 APPETITE 139, 144 (2017).

219. Manuel Cabrera et al., *Nutrition Warnings as Front-of-Pack Labels: Influence of Design Features on Healthfulness Perception and Attentional Capture*, 20 PUB. HEALTH NUTRITION 3360, 3369 (2017).

220. *See* Sebastián Araya et al., Identifying Food Labeling Effects on Consumer Behavior, 13–14 (Nov. 16, 2019) (unpublished manuscript), https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3195500.

221. *See id.* at 3 (noting the system is more effective when it "provides new insights into the previous agent's information set").

222. *Id.*

223. *Id.* at 5.

224. Sofía Boza et al., *Recent Changes in Food Labelling Regulations in Latin America* 14 (World Trade Org., Working Paper No. 04/2017, 2017), https://www.wti.org/media/filer_public/3e/93/3e932c57-0f39-4f99-885e-20b5f7231748/working_paper_no_04_2017_boza_et_al.pdf.

225. *Id.*

226. *See id.*

227. Cabrera et al., *supra* note 219, at 3368.

consumers' attention, particularly with respect to bigger labels.[228] This can be justified by the usual way of reading, i.e., from left to right in Western countries.[229]

C. The US/Canadian Guiding Star Initiative

Obesity rates in the United States are the highest among all of the high-income countries worldwide.[230] Sixty-nine percent of US adults are overweight or obese, with 36 percent obese and 33 percent overweight.[231] As is the case in other Western countries, the problem is more acute among some ethnic and racial groups such as those with African or Latin American ancestry.[232]

It has been estimated that if the current trends persist, approximately half of the adult population in the United States will be obese by 2030.[233] By that year, the combined annual medical costs associated with treating obesity-related preventable diseases is projected to reach $48–66 billion.[234]

Being obese or overweight is not as common in Canada as it is in the United States.[235] However, past decades have brought about dramatic increases in obesity and overweight rates in Canada. From 1979–2008, obesity rates increased from 14 percent to 25 percent.[236] Additionally, 37 percent of adults were categorized as overweight.[237] Similar to the situation in other countries where the problem is larger among ethnic and racial groups, obesity rates are higher among Canada's Aboriginal population.[238]

Many North American consumers have become aware of the importance of healthy nutrition as well as a healthy lifestyle more generally. Following this trend, the GS Nutrition Program was developed by a supermarket company.[239] The system was then

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228. *Id.*

229. *Id.*

230. *Obesity Trends*, HARV. T.H. CHAN SCH. PUB. HEALTH, https://www.hsph.harvard.edu/obesity-prevention-source/obesity-trends/.

231. *Adult Obesity*, HARV. T.H. CHAN SCH. PUB. HEALTH, https://www.hsph.harvard.edu/obesity-prevention-source/obesity-trends/obesity-rates-worldwide/.

232. *Obesity Trends*, *supra* note 230.

233. Y Claire Wang et al., *Health and Economic Burden of the Projected Obesity Trends in the USA and the UK*, 378 LANCET 815, 817 (2011).

234. *Id.* at 821.

235. *See Adult Obesity*, *supra* note 231.

236. *Id.*

237. *See id.*

238. Canada, Public Health Agency of Canada & Canadian Institute for Health Information, *Obesity in Canada* (Public Health Agency of Canada 2011) at 16.

239. *Loblaw Introduces an Innovative Program to Help Shoppers Make Healthier Choices*, GUIDING STARS (Aug. 3, 2012), https://guidingstars.com/news/loblaw-introduces-an-innovative-program-to-help-shoppersmakehealthier-choices/.

introduced in the United States and Canada.[240] As of 2017, its algorithm calculates healthiness scores for more than 55,000 food products, and the score is being updated weekly.[241]

Two of the system's unique characteristics should be noted at the outset. First, the system is based on a private initiative.[242] Policymakers and legislators do not promote, endorse, or adopt it. Second, the system does not offer a front-of-package label.[243] Rather, and as explained below, the label is offered on the shelf or on an app.[244]

The GS system rates food based on nutrient density per one hundred calories.[245] The program credits foods for positive attributes, which include vitamins, minerals, dietary fiber, whole grains, and omega-3 fatty acids.[246] It also debits foods for negative attributes, including saturated fat, trans fat, added sodium, and added sugar.[247] This implies that foods are individually rated against a fixed standard, rather than against each other.

An algorithm assigns a zero to three star rating.[248] "No stars" means that the food did not meet the minimum criteria to earn a star.[249] One star is considered "good" food, two stars is regarded as "better," while three stars is deemed to be "the best."[250] Once again, this purportedly allows consumers to make a snap, "at a glance" judgment as to a product's healthiness. An image of the GS system is below.

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240. *See About*, GUIDING STARS, https://guidingstars.com/what-is-guiding-stars/ (last visited Dec. 5, 2019); *Loblaw Introduces an Innovative Program to Help Shoppers Make Healthier Choices*, *supra* note 239.

241. Erin Hobin et al., *Consumers' Response to an On-Shelf Nutrition Labelling System in Supermarkets: Evidence to Inform Policy and Practice*, 95 MILBANK Q. 494, 502 (2017).

242. *Loblaw Introduces an Innovative Program to Help Shoppers Make Healthier Choices*, *supra* note 239.

243. *See id.* (noting that rather than a front-of-package label, GS ratings are displayed on "shelf tags for products in store").

244. *See id.*; *infra* notes 259–63 and accompanying text.

245. *About*, *supra* note 240.

246. *Loblaw Introduces an Innovative Program to Help Shoppers Make Healthier Choices*, *supra* note 239.

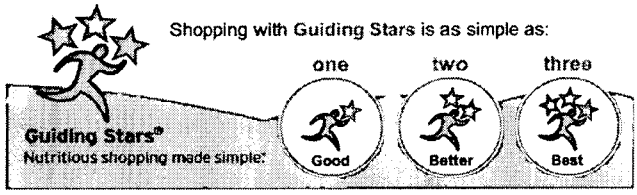
247. *Id.*

248. *Id.*

249. *Frequently Asked Questions*, GUIDING STARS, https://guidingstars.com/what-is-guiding-stars/frequently-asked-questions/ (last visited Dec. 5, 2019).

250. *About*, *supra* note 240.

IMAGE 4. GUIDING STARS



Potentially, the GS system might be successful in distinguishing between healthy and unhealthy foods. In one study, less than 24 percent of food products in the supermarket qualified for a GS rating.[251] Additionally, the GS system seems to be aligned with consumers' preference to use an easy to understand, simple icon that is tiered.[252] It is also in line with consumers' general preference to encounter positive information (indicating healthfulness) rather than negative or alarming notices.[253] That said, the fact that the system is aligned with consumers' preferences does not necessarily mean that it is more effective.

In terms of the system's effectiveness, a 2013 study seemed to confirm its stimulus on grocery shoppers' selections. According to this study, the demand for products rated as healthy increased at the expense of those that were not.[254] This was generally affirmed in a 2014 study, which found that the introduction of the GS system "led consumers to decrease purchases of less nutritious foods and increase the proportion of nutritious foods purchased."[255] Likewise, a 2017 study confirmed that the GS system steered consumers toward food items with less trans fat and sugar, and more fiber and omega-3.[256]

Overall, the introduction of the GS system seems to lead consumers to choose, at least to some extent, more nutritious foods. Relevantly, the system's positive effect gradually increased over the next two years thereafter.[257] This effectiveness, in turn, may create

251. Leslie M. Fischer et al., *Development and Implementation of the Guiding Stars Nutrition Guidance Program*, 26 AM. J. HEALTH PROMOTION e55, e62 (2011).

252. Lisa A Sutherland et al., *Guiding Stars: The Effect of a Nutrition Navigation Program on Consumer Purchases at the Supermarket*, 91 AM. J. CLINICAL NUTRITION 1090S, 1093S (Supp. 2010).

253. Fischer et al., *supra* note 251, at e61.

254. Ilya Rahkovsky et al., *Effects of the Guiding Stars Program on Purchases of Ready-to-Eat Cereals with Different Nutritional Attributes*, 43 FOOD POL'Y 100, 106 (2013).

255. John Cawley et al., *The Impact of a Supermarket Nutrition Rating System on Purchases of Nutritious and Less Nutritious Foods*, 18 PUB. HEALTH NUTRITION 8, 13 (2014).

256. Hobin et al., *supra* note 241, at 512.

257. Sutherland et al., *supra* note 252, at 1091S, 1092S.

an incentive for manufacturers to reformulate their products so to achieve, or improve, their star rating.[258]

To make it easier to use and more accessible for consumers, the GS system is also available in a mobile application ("app") called "Shopper."[259] If a consumer scans the Universal Product Code, the app will provide the GS rating.[260] Since the formula is applied to all food and beverage categories, the user can also compare ratings of GS rated items via the app.[261]

To increase transparency among stakeholders, the algorithm and its rating criteria are publicly available.[262] Furthering trust and objectivity, the GS system does not rely on buy-in from food manufacturers. This is because the label is not displayed on the front of the packaging but rather is presented on the shelf price or in the app.[263] Although developed by a supermarket for commercial use, it is independent of brand.

Yet again, the GS system has its own limitations and shortcomings. First, it is a private initiative which is not backed by any systematic governmental or regulatory scheme. This may significantly undermine the system's overall impact and credibility. Slightly restated, consumers may trust a government-supported or government-approved system more.[264] Indeed, a study that measured trust of the system found merely modest levels of consumer trust.[265] Second, like many other types of labeling, the GS scheme did not prove helpful for all ethnic groups. As one study reported, the increase in sales of healthier cereals was correlated with income,

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258. *Guiding Stars Celebrates 10 Years as North America's Leading Nutrition Guidance Program*, GUIDING STARS (Mar. 31, 2016), https://guidingstars.com/news/guiding-stars-celebrates-10-years-as-north-americas-leading-nutrition-guidance-program/.

259. *US: Guiding Stars Creates iPhone App*, JUST-FOOD (Oct. 2, 2009), https://www.just-food.com/news/guiding-stars-creates-iphone-app_id108254.aspx.

260. *Guiding Stars and Leading Mobile App Shopper Announce Enhanced Nutrition Guidance for the iPhone*, GUIDING STARS (Oct. 2, 2012), https://guidingstars.com/news/guiding-stars-and-leading-mobile-app-shopper-announce-enhancednutrition-guidance-for-the-iphone/.

261. *US: Guiding Stars Creates iPhone App*, *supra* note 259.

262. *Guiding Stars® Nutrition Rating Algorithm Goes Public*, GUIDING STARS, https://guidingstars.com/news/nutrition-rating-algorithm-goes-public/ (last visited Dec. 5, 2019).

263. Vangelis Karamanos et al., *Consumer Responses to Private Nutrition Signals*, 25 J. FOOD PRODUCTS MARKETING 111, 114 (2019).

264. *See* Tiziana de-Magistris & Azucena Gracia, *Do Consumers Care About European Food Labels? An Empirical Evaluation Using Best-Worst Method*, 119 BRIT. FOOD J. 2698, 2706 (2017) ("[C]onsumers value labelling schemes that are regulated by . . . law . . . , suggesting that if food labelling is based on regulations that lay down stringent requirements to guarantee the standards of the labelled food product . . . then consumers prefer products carrying these labels.").

265. The study measured trust on a 5-point scale, with 5 being extremely trustworthy and 1 being not trustworthy at all. Of those exposed to the system, the mean score was 2.8. Hobin et al., *supra* note 241, at 521.

while falling "with the proportion of population that is Black or Hispanic."[266] Third, concerns have been raised over the GS labeling being an oversimplified measure. In this respect, consumers expressed a preference for the MTL system, which provides more detailed nutrition information.[267]

Another concern regarding the system, which may be applicable with respect to other systems as well, is that the presence of a GS label may encourage people to be less prudent in their decisions. According to this logic, consumers who would otherwise have looked for detailed nutrition information may, instead, rely on the GS heuristic.[268] At the end of the day, this might lead to poorer and less informed nutritional choices.

D. Comparing the Four Health Rating Systems

The following table compares the main aspects and features of the four health rating systems discussed in this Article.

TABLE 1. COMPARING THE FOUR LABELING SCHEMES

	HSR	**MTL**	**WL**	**GS**
Country	Australia & New Zealand	United Kingdom	Chile	United States & Canada
Private/Public	Public	Public	Public	Private
Mandatory	No	No	Yes	No
Compensatory	Yes	No	No	Yes
Front-of-package	Yes	Yes	Yes	No
Binary or Range	Range: 0.5–5 stars	Range: red, amber, & green	Binary	Range: 0–3 stars
Dimension(s) communicated ("DS")	One overall score[269]	Energy, fat, saturated fat, salt, & sugar	Sugar, saturated fat, sodium, & calories	One overall score

266. Rahkovsky et al., *supra* note 254, at 107.
267. Karamanos et al., *supra* note 263, at 133.
268. *Id.* at 134.
269. The most commonly used HSR graphic only displays one overall score. However, they can also display additional specific nutritional information per 100g/mL (energy, saturated fat, sugar, sodium, and one other optional nutrient). *How to Use Health Star Ratings*, HEALTH STAR RATING SYS., http://healthstarrating.gov.au/internet/healthstarrating/publishing.nsf/Content/How-to-use-health-stars (last updated May 2, 2019).

	HSR	MTL	WL	GS
Nutrients tested	6 positive: fiber, protein, fruit, vegetable, nut, & legume 4 negative: saturated fat, energy, total sugar, & sodium	Same as 5 DS	Same as 5 DS	6 positive: vitamins, minerals, dietary fiber, whole grains, & omega-3 fatty acids 4 negative: saturated fat, trans fat, added sodium, & added sugar
Fixed amount of product	Yes (per 100g/mL)[270]	Yes (per 100g/mL)	Yes (per 100g/mL)	No (nutrient density per 100 calories)
Limited to category comparison	Yes	No	No	No
Positive/ negative framing	Positive	Positive, neutral, & negative	Negative	Positive
Effective with vulnerable consumers	No	Yes	No	No
Accompanied by technology	No	No	No	Yes (app available)

Before concluding the comparative discussion, we briefly introduce the interesting and newer Nutri-Score Front-of-Package nutrition label. This label was selected by the French government in March 2017.[271] Like the MTL system, the Nutri-Score label utilizes a color-coded grading format.[272] Unlike the MTL, but similar to the HSR, the Nutri-Score label provides a single summary valuation of the nutritional health quality of the food.[273] Like both the HSR and the MTL systems, the Nutri-Score label is a voluntary labeling scheme.[274]

270. *Id.*
271. Julia & Hercberg, *supra* note 85, at 713.
272. *Id.* (explaining the color-coded grading system of the Nutri-Score label); Egnell et al., *Experimental Study*, *supra* note 27 at 1543 (explaining the color-coded grading system of the MTL system).
273. Egnell et al., *Experimental Study*, *supra* note 27 at 1543.
274. Julia & Hercberg, *supra* note 85, at 713.

The label ranks food items on an A–E five-colored scale.[275] To illustrate, a green-coded A signals highly nutritious items, a yellow C indicates a medium nutritional quality, while a red-coded E denotes poor health quality.[276] Emerging data suggests that the Nutri-Score label works reasonably well. Studies indicate that this type of labeling is comparatively more efficient than other methods, in particular when it comes to vulnerable populations.[277]

IMAGE 5. NUTRI-SCORE LABEL

V. WHERE TO FROM HERE? KEY POLICY RECOMMENDATIONS

In Part III, we surveyed the problems and weaknesses of the HSR system as currently employed in Australia and New Zealand. This system served as our starting point since it is the most recent food health labeling initiative in a common law country. Considering the HSR system's problems and weaknesses, it comes as no surprise that its impact seems to be small and slow.[278] Part IV then examined three other schemes that have been implemented in the United Kingdom, Chile, and North America. It also succinctly pointed to the French labeling initiative. Each of these schemes has its own advantages and disadvantages. Keeping all this in mind, we next propose tailored policy recommendations for policymakers who employ—or may wish to adopt—a system like the HSR system.

A. Making the System Mandatory

Our first and perhaps most radical proposal to consider is making the food health labeling system mandatory. As we have seen, in the

275. Egnell et al., *Comparisons*, *supra* note 27, at 4.
276. *See id.*
277. *See id.* at 6; Egnell et al., *Experimental Study*, *supra* note 27, at 1551; Mora-García et al., *supra* note 27, at 494–95, 506.
278. Robert Hamlin & Lisa McNeill, *The Impact of the Australasian 'Health Star Rating', Front-of-Pack Nutritional Label, on Consumer Choice: A Longitudinal Study*, 10 NUTRIENTS 906, 913 (2018).

current voluntary regime sellers mainly used the labeling for healthy foods. Consumers, thus, cannot get a good appreciation of the market. Making the system mandatory will help consumers get a better overall impression of how healthy their food purchasing is. Indeed, consumers view mandatory food health labeling as a positive tool that can benefit nutritional knowledge.[279] Since manufacturers will not be able to place the rating only on their healthier products, it will also reduce the halo effect. This will likely increase use and awareness of the system, as the Chilean experience illustrates.

Empirical data supports making information disclosures around food healthiness mandatory, even with respect to more traditional labeling requirements. On one occasion, producers of salad dressing did not voluntarily label salad dressings with high fat content.[280] With mandatory disclosures under the Nutritional Labeling and Education Act,[281] however, their sales declined.[282] This is in contrast to the finding that, at the macro level, the HSR system did not yield healthier food purchasing.

As noted, some disclosures are known to have more of an effect on firms rather than on the information recipients (i.e., consumers). This insight may support the adoption of a mandatory regime as well. Even if a mandatory regime will not necessarily impact all consumers as anticipated, it may still encourage more firms to offer healthier products to consumers.[283]

Making the system mandatory entails a variety of costs. These include legislation costs, educational costs, monitoring and enforcement costs, and (if needed) litigation costs. These costs are important to consider when designing the system.

Disclosures are considered an inexpensive and less intrusive way to reduce information gaps.[284] In light of the stakes involved and given the government's interest in improving citizens' health, we suggest allocating greater central funding for the HSR system. This budget will subsidize and back the system. It will also better ensure

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279. Gregori et al., *supra* note 49, at 186.

280. *See* Alan D. Mathios, *The Impact of Mandatory Disclosure Laws on Product Choice: An Analysis of the Salad Dressing Market*, 43 J.L. & ECON. 651, 656–67 (2000).

281. Nutrition Labeling and Education Act of 1990, Pub. L. No. 101-535, 104 Stat. 2353 (1990).

282. Mathios, *supra* note 280, at 667.

283. An interesting manifestation of a similar effect can be linked to the introduction of sugar tax in the UK. Here, it has been reported that the introduction of this tax was helpful even before coming into effect, with producers striving to reduce the amount of sugar used in their products. *See* Rachel Arthur, *Sugar Tax Comes into Effect in the UK*, BEVERAGE DAILY (Apr. 6, 2018, 10:00 AM), https://www.beveragedaily.com/Article/2018/04/06/Sugar-tax-comes-into-effect-in-the-UK.

284. BEN-SHAHAR & SCHNEIDER, *supra* note 45, at 5–6.

a systematic, objective, and supervised application across the various producers and products.[285]

As a positive side effect, subsidizing the labeling will allow all businesses to participate in the program without raising operational costs. This will prevent a situation where less profitable or smaller businesses find it hard to participate. It will also eliminate the problem of rolling costs onto consumers. Lastly, it will allow a governmental agency to collate all HSR ratings and post all information under one single website. This may greatly assist shoppers who would like to seek and verify this information before making shopping decisions.

If the system is not made mandatory, we suggest, as a minimum, mandating a general "nonparticipation" label. Food products that do not display the HSR label will be required to show some kind of warning label. The exact words and design of this label should be carefully crafted to increase its salience and indeed be perceived as a warning.[286] For instance, the statement may read: "The manufacturer has chosen not to verify the health rating of this product." The label can employ a large font, be placed in the upper left corner, use black and red colors, and an octagon (stop sign) shape to maximize salience.

B. Closing Loopholes & Mitigating Manipulation

Whether or not the system is made mandatory, it is crucial to eradicate loopholes as much as possible. This, in turn, will improve consumers' ability to make informed decisions based on the labeling. It will also enhance consumers' trust, which will contribute to the system's overall effectiveness.

First and foremost, the HSR system should not always be compensatory, as it currently is. This is especially necessary with respect to discretionary food. Generally speaking, discretionary food is defined as those foods and beverages that are not essential to our diet. These products often harm our health. Prime examples of discretionary food include processed food, snacks, and fizzy drinks.

We make two proposals specifically tailored to such foods. First, we propose capping the HSR score for these foods. Capping the stars that discretionary food, such as salty and sugary snacks, can get (e.g., no more than two stars) will prevent more people from believing that such foods can be healthy. Second, we also propose not allowing one overall rating for discretionary, harmful products. Having one score is likely to dilute the effects of particularly negative components.

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285. Inspectors' discretion and inconsistency may have resulted in significant problems in other contexts. *See, e.g.*, Ho, *supra* note 83, at 641–42.

286. For instance, the system should allow producers to employ language such as "grade pending," "product under review," and the like. *See id.* at 629 (noting that in the context of restaurant sanitation grading, "the 'grade pending' option makes the system more palatable to restaurateurs").

Following the Chilean example, products loaded with harmful nutrients such as sugar, salt, or fat should be clearly marked so.[287] This is also in line with the government initiative discussed above,[288] which seeks to specifically address and improve sugar labeling. Overall, these and similar suggestions should strive to minimize producers' ability to game the system and offer unhealthy foods with relatively high health ratings.[289]

Additionally, the system should not allow ratings to be calculated on an "as prepared" basis. The HSR score should attest to the product on which it appears, and only to that product. Firms should not be allowed to make any assumptions as to accompanying products since this is beyond the producer's control. It also may, once again, dilute the problem of firms manipulating product contents and thus yielding misleading ratings.

C. *Improving System Design & Intricacies*

Improving the system while attending to its intricacies is a most challenging task. It requires an interdisciplinary examination of health-related findings, human psychology, consumer behavior, consumer law policy, public health, economic considerations, and unintended consequences. While we are not in a position to offer a thorough and detailed proposal, the preceding analysis does provide a few key lessons. We note four such lessons below.

First, it is important to acknowledge that much of what we know and believe to be accurate and valid today in regard to nutrition will prove not to be so in a few years.[290] Thus, the HSR algorithm should have a flexible design that will allow experts to revisit and redefine it. Simply put, the algorithm should be sensitive to new findings and emerging evidence. It should also be flexible enough to correct for current mistakes. For instance, an important and immediate improvement could be advanced by facilitating different treatments of added and intrinsic sugars.

Second, we recommend better tailoring the HSR design to consumer psychology. To increase the likelihood of targeting System 1, the HSR rating could be placed on the upper left corner of the packaging. Alternatively, it can be positioned next to the shelf price tag (as done with the GS system). Such a location, especially if

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287. Patrick Walker & Vu Nguyen, *How Many Stars Does Australia's Health Star Rating Earn for Promoting Healthy Eating?*, CROAKEY (Aug. 24, 2017), https://croakey.org/how-many-stars-does-australias-health-star-rating-earn-for-promoting-healthy-eating/.

288. *See supra* Subpart III.A.

289. *See* Ho, *supra* note 83, at 593–94 (noting that in the context of restaurant sanitation grading, restaurants may focus their efforts on measures that will help them achieve a better grading, rather than practices which will actually help reduce food-related illness).

290. SAMUEL ARBESMAN, THE HALF-LIFE OF FACTS: WHY EVERYTHING WE KNOW HAS AN EXPIRATION DATE 3–9 (2013).

unified, will make the health rating more salient from the consumers' perspective.

From another perspective, it is important to employ a single label. In this respect, empirical evidence indicates that when two different systems of traffic light signaling were used, the number of errors in interpreting the labels increased.[291] This suggests that consumers may struggle to correctly compare products when different indicators are used.

Third, we propose more variation in the visual appearance of the HSR. To further counteract the halo effect, we suggest that policymakers examine the impact of capping the number of stars presented as per the product's actual rating. This means that if a product has a rating of only 2 stars, only 2 stars will be depicted (as done with the GS system). An illustration of the proposal is depicted in Image 6 below.

IMAGE 6. ALTERNATIVE HSR LABEL

We further propose the integration of color into the HSR labels.[292] Following the example of the MTL system, we advocate categorizing the label into three groups. The first, encompassing the 0.5–2.5 star range, can employ a red background. The second, covering the 3–4 star range, can use an amber background. Finally, the 4.5–5 star products can use a green background. As explained earlier, the color-coded system also proves to be more effective with more marginalized groups of consumers.[293]

Fourth, it is counterintuitive that comparison can only be made within food categories, and people are unaware of this limitation. One

291. Leek et al., *supra* note 45, at 56–57.

292. For a similar argument in a somewhat different context, see Ho, *supra* note 83, at 655 (arguing that "A yellow 'C' grade, for example, may have quite different effects from a red 'C'").

293. Alternatively, and following the Nutri-Score example, we may categorize the label into five groups, using a similar color-coded logic. *See supra* notes 271–77 and accompanying text.

possible response is to have a system that does allow comparison among products from different categories. Apparently, this is the case with the other labels examined above. Another possible approach would be to better communicate the "only within categories" limitation to users and make the issue salient in other ways.

D. Adopting a Holistic Approach: Harnessing Technology, Social Forces, & Education

It is no doubt a challenge to eat healthily in 2019, and this might not change in the foreseeable future. Improving people's diets is a complex challenge. There is no magic bullet for achieving a sustainable behavioral change. Therefore, a holistic approach to the issue is imperative, and efforts in other domains should supplement any health labeling system.[294]

Numerous suggestions and initiatives could be explored.[295] Among other things, these may include food tax and subsidies, advertising restrictions, workplace food health programs, local nutrition counselling, and incentives schemes for producers and consumers.[296] While a detailed analysis is beyond the scope of this Article, we would like to succinctly highlight three main thoughts.

The first insight is education based. Rules, laws, and legislation form an important fabric of society. But they are merely one piece of a big and complicated puzzle. As many studies prove, laws are unlikely to suffice in achieving deep, long-lasting behavioral or societal change.[297] In the context of consumer protection and healthy

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294. *Cf.* Alemanno, *supra* note 53, at 329 (arguing that "behavioural change interventions focusing predominantly on lifestyle risks . . . appear to work best when they are part of a package of regulatory and fiscal measures"); *id.* at 330 (opining that in the context of behavior change "only a combination of policy instruments . . . may attain policy objectives"); Kai P. Purnhagen & Hanna Schebesta, Policy Dep't for Citizens' Rights & Constitutional Affairs, *Food Labelling for Consumers: EU Law, Regulation and Policy Options*, PE 608.871, at 40 (2019) ("[P]ublic policy research has meanwhile identified that in most situations policy mixes of different policy instruments are more effective.").

295. *See, e.g.*, De Schutter, *supra* note 8, at xxii (pointing out the need to go beyond behavioral economic tools and consider prices and taxes, social innovation, social integration, and the reduction of socioeconomic inequalities more generally).

296. *See, e.g.*, Stop Subsidizing Childhood Obesity Act, H.R. 7342, 115th Cong. § 3 (2018) (disallowing tax reduction for the advertising and marketing of poor nutritional food to children); Reducing Obesity in Youth Act of 2018, H.R. 6586, 115th Cong. § 3 (2018) (promoting healthy eating and physical activity among children); VicHealth, *supra* note 5, at 9.

297. *See, e.g.*, LINDA HIRSHMAN, VICTORY: THE TRIUMPHANT GAY REVOLUTION 353–55 (2012) (exemplifying the notion of the transformation of American marriage equality, one step at a time); Jeanita W. Richardson & J. John Harris III, *Brown and Historically Black Colleges and Universities (HBCUs): A Paradox of Desegregation Policy*, 73 J. NEGRO EDUC. 365, 365 (2004) (noting that despite court rulings and other laws, racial equality in education has yet to be fully realized).

diets, legal efforts must be supplemented with educational efforts.[298] Indeed, we have already seen that consumers' prior knowledge greatly impacts the likelihood of effectively using food labels.[299]

As noted earlier, many consumers are unaware of health labeling systems, such as the HSR.[300] Many do not understand these systems, do not know how to properly utilize them, or are otherwise disinclined to use them. Some may also exhibit unrealistic or erroneous expectations with respect to such ratings.[301] Thus, efforts should be made to educate the public about this program and its potential to better one's diet. These efforts should start at a young age and could include public campaigns, offline and online games, videos, ads, tutorials, social marketing, and the like.

Importantly, educational efforts should intensively and comprehensively target poor, vulnerable, and less-educated consumers. There are two important reasons for this. First, such groups are more likely to suffer from unhealthy diets, being overweight, and health risks.[302] Investing more resources in targeting these consumers will likely yield the largest return. Second, we have seen that health labeling ratings most often help the rich, educated, and mindful consumer, rather than the poor and marginalized.[303] Poor consumers might be focused on immediate costs rather than the long-term benefits of healthy foods. Tailored interventions for disadvantaged populations that address these health inequities are hence justified. This must be kept in mind when designing the educational campaigns and schemes.

The second insight is technologically driven. We are in the midst of a technological revolution; technology plays, and will continue to play, a predominant role in our lives.[304] As we have seen with the GS labeling system, mobile apps can be developed to accompany a rating system.

There are hardly any limits to the ways in which technology can assist. For instance, an HSR app could warn us from purchasing too many unhealthy foods. It could contrast what we are buying on any given day with the recommended guidelines of health professionals.

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298. This is indeed one of the recommendations made in mpconsulting, *supra* note 101, at 71. *Cf.* Gregori et al., *supra* note 49, at 184–85 (suggesting that improvement in education will increase consumer understanding of food health labeling).

299. *See, e.g.*, Miller & Cassady, *supra* note 42, at 213 ("The more consumers know about nutrition, the more likely they are to consult – and understand – nutrition information on food labels.").

300. *See supra* notes 43–49 and accompanying text.

301. *Cf.* Ho, *supra* note 83, at 592–93.

302. *See supra* note 169 and accompanying text.

303. *See supra* notes 165–67.

304. *See* Robert Hughes, Jr. & Jason D. Hans, *Computers, the Internet, and Families*, 22 J. FAM. ISSUES 776, 776 (2001); Wayne F. Cascio & Ramiro Montealegre, *How Technology is Changing Work and Organizations*, 3 ANN. REV. ORGANIZATIONAL PSYCHOL. & ORGANIZATIONAL BEHAV. 349, 350 (2016).

Or it could compare what we have in our shopping cart with our previous purchases, keeping us from lowering our health standards.

Shoppers could also use the app to set concrete targets or personalize their preferences and goals. The app could then help users to achieve said targets and provide them with positive and tailored feedback for doing so. As experienced in other health-related domains, such as tracking and sharing one's running or cycling goals, this could make healthy shopping more exciting, rewarding, fun, and enticing.

Another possible idea is to allow individuals who reach high standards of healthy food consumption on their app to reap a material benefit. For instance, vigilant and prudent consumers might enjoy free visits to the doctor or a discount on life or health insurance.[305]

In addition, such an app may allow a user to share and discuss successes with friends and peers. If the user does not meet neighbors' and community's standards of health purchases, the app might inform the user about this, perhaps creating some kind of social pressure. On top of that, local governments and other organizations may move beyond individual apps and set rewardable targets for a specific group, a local community, or a town to achieve. If done wisely and without raising concerns over privacy and paternalism, this can motivate people to achieve positive diets as part of a shared effort.

VI. FUTURE CHALLENGES & REPLIES TO SKEPTICS

Improving a food health rating system and designing a better scheme is a complex challenge. The previous Parts addressed some of the most conspicuous and important points to consider. However, some additional general issues are important to acknowledge.

In this Part, we next tackle three key challenges and general objections that have not yet been systematically confronted. First, we discuss the anticipated objection from the food industry, placing this opposition from the perspective of Public Choice Theory ("PC"). Next, we address general concerns around unintended negative consequences of mandated disclosures while considering whether market-based mechanisms may suffice to discipline sellers. Finally, we consider the potential problem of nudges that fail and consumers' compensating behavior.

A. *Industry Objections & Public Choice Theory*

Generally speaking, pro-consumer initiatives are likely to hurt businesses.[306] In particular, implementing effective food health

305. This would require complex systems integration by multiple agencies. Furthermore, it is important to implement such ideas only after ensuring the system indeed assists poor consumers. Otherwise, these rewards will end up enlarging the gap between the haves and the have-nots.

306. *See* Becher, *supra* note 117, at 110–11.

labeling or improving, for instance, the HSR system and closing its loopholes will impact the interests of the food industry. The industry therefore has a strong economic incentive to undermine any advancement of the system. In short, any attempt to advance consumers' interests via front-of-package health labeling will probably result in strong objections from the industry.

Certainly, consumer law policy is sometimes influenced by interest groups, lobbying, and short-term political considerations. According to PC, the legislative process can be regarded as an economic market, where legislation is mainly determined by demand patterns.[307] The demand, in turn, is assumed to be dominated by interest groups that cooperate in order to promote shared interests.[308]

The food industry in general—and firms that produce unhealthy foods in particular—are well organized. They have years of experience collaborating, objecting to consumer protection initiatives, and pressuring policymakers.[309] Unsurprisingly, the food industry has powerful interest groups that have been fighting for the industry's interests on various fronts.[310] As a matter of fact, this pressure contributed to the decision to reject the MTL system in Australia and New Zealand and to adopt the HSR system with its

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307. *See* WILLIAM N. ESKRIDGE, JR. ET AL., CASES AND MATERIALS ON LEGISLATION: STATUTES AND THE CREATION OF PUBLIC POLICY 54–57 (4th ed. 2007) (discussing public choice theory and the importance of groups in legislation, as well as criticizing the public choice vision); Paul J. Stancil, *Assessing Interest Groups: A Playing Field Approach*, 29 CARDOZO. L. REV. 1273, 1273–74 (2008) (discussing the power and dynamics of interest groups).

308. *See* Stancil, *supra* note 307, at 1276–78.

309. *See* Lawrence O. Gostin, *"Big Food" Is Making America Sick*, 94 MILBANK Q. 480, 481, 483 (2016); *Food Industry Tactics Shape Public Food Policies*, U. AUCKLAND (Jan. 24, 2017), https://www.auckland.ac.nz/en/about/news-events-and-notices/news/news-2017/01/food-industry-tactics-shape-public-food-policies.html; Steve Johnson, *The Politics of Meat*, PBS, https://www.pbs.org/wgbh/pages/frontline/shows/meat/politics/ (last visited Dec. 5, 2019); Anahad O'Connor, *Got Almond Milk? Dairy Farms Protest Milk Label on Nondairy Drinks*, N.Y. TIMES (Feb. 13, 2017), https://www.nytimes.com/2017/02/13/well/eat/got-almond-milk-dairy-farms-protest-milk-label-on-nondairy-drinks.html. *See generally* MARION NESTLE, FOOD POLITICS: HOW THE FOOD INDUSTRY INFLUENCES NUTRITION AND HEALTH (2013) (discussing how market competition influences the integrity of the food industry); KARL WEBER, FOOD INC. (2009) (documenting the influence of large corporations on the food supply chain as a whole).

310. *E.g.*, Diane Bartz, *U.S. Food Lobby Fighting Hard to Defend Kid Ads*, REUTERS (Nov. 7, 2011, 5:56 PM), https://www.reuters.com/article/us-advertising-children/u-s-food-lobby-fighting-hard-to-defend-kid-ads-idUSTRE7A66OA20111107; Melissa Davey, *Sugar Tax: Why Health Experts Want It but Politicians and Industry Are Resisting*, GUARDIAN (Jan. 9, 2018, 10:48 PM), https://www.theguardian.com/australia-news/2018/jan/10/sugar-tax-why-health-experts-want-it-but-politicians-and-industry-are-resisting; Martin Hickman, *Food Companies in Massive Lobbying to Block Colour-Coded Warnings*, INDEPENDENT (June 15, 2010, 12:00 AM), https://www.independent.co.uk/life-style/food-and-drink/news/food-companies-in-massive-lobby-to-block-colour-coded-warnings-2000523.html.

multiple flaws.[311] As another important example, the lobbying by the food industry influenced European Union food labeling regulation[312] and prevented the adoption of a mandatory front-of-package health labeling in the European Union.[313]

Consumers are likely to find it hard to counter the pressure that well-organized industry groups generate. Consumers form a dispersed group that is difficult to coordinate and time-consuming to organize.[314] Therefore, they would probably have no interest groups supporting their interests.

Applying the PC framework to our context yields a straightforward prediction that may explain the situation in the United States: legislatures will tend to concentrate benefits on specific interest groups such as the food industry.[315] Altogether, adopting a health labeling system, or improving it, distributes benefits broadly among all consumers. Legislatures, according to the PC model, will encounter industry opposition to such a move. They will hence underproduce public-inclined laws (i.e., laws that do not enjoy significant support from powerful interest groups).

In summary, the lessons here are quite clear. The food industry is likely to oppose significant proposals by lobbying and pressuring policymakers. "Indeed, since the 1990s, the food and beverage industry has been one of the United States' biggest political campaign donors, spending almost $107 million on congressional and presidential campaigns."[316] Furthermore, the soda industry has poured millions into opposing sugar taxes[317] and was vehemently against a proposal to limit the portion size of sugary drinks to sixteen

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311. *See* Univ. Otago, *New Health Star Rating Nutrition Label May Not Be Best Format*, MED. XPRESS (June 30, 2014), https://medicalxpress.com/news/2014-06-health-star-nutrition-format.html (noting that while studies suggested that the MTL system was preferable, the food and beverage industries supported the adoption of the HSR system).

312. *See, e.g.*, Macmaoláin, *supra* note 46, at 62.

313. *See, e.g.*, Monique Goyens, *Using Behavioural Economics for Rather than Against Consumers – A Practitioner's Perspective*, 53 INTERECONOMICS 12, 14 (2018) (noting that "compulsory display [of front-of-pack food health labeling] was intensely (and successfully) opposed by food industry lobbyists during the adoption of the 2011 Food Information to Consumers Regulation"); *id.* at 16 (noting that "compulsory front-of-pack nutrition labelling with colour coding . . . was eventually dropped due to heavy industry lobbying").

314. *See* Gary E. O'Connor, *Rendering to Caesar: A Response to Professor O'Reilly*, 53 ADMIN. L. REV. 343, 370 (2001) ("[S]mall groups (industry) are better able to organize than larger groups (the public/consumers).").

315. *See id.* at 370–71.

316. Kimberly Halkett, *US Food Industry Battles Against Regulation*, COMMON DREAMS (Feb. 11, 2013), https://www.commondreams.org/views/2013/02/11/us-food-industry-battles-against-regulation.

317. Liz Szabo, *Soda Industry Steals Page from Tobacco to Combat Taxes on Sugary Drinks*, NBC NEWS (Nov. 7, 2018, 4:39 PM), https://www.nbcnews.com/health/health-news/soda-industry-steals-page-tobacco-combat-taxes-sugary-drinks-n932066.

ounces in New York.[318] Consumers, however, are not likely to get organized and counteract these forces.

Policymakers need to be aware of this reality. They should take seriously those organizations that try to represent consumers. These consumer organizations are likely to suffer from limited resources and be outperformed by the food industry. But their voice is crucial for the democratic process and the advancement of the public good.

B. Is Mandating Labeling Necessary & Efficient?

Even if we relax the concerns about the legislation process, reconsidering the wisdom of mandated health labeling may still be warranted. First, implementing the system on a mandatory basis as we propose comes with a cost, which should not be ignored. Second, if these costs are inflicted on firms and not assumed by central funding, they might be passed onto consumers. According to this argument, consumers will have to pay more for the same products. Third, such mandated labeling may distract consumers from other, perhaps more accurate, types of nutrition information disclosure.[319] In addition, health labeling might distract consumers from other aspects communicated on packages such as environmental statements.

These and similar frequently raised concerns with respect to consumer protection initiatives do not seem to hold in practice. As to the associated costs, we have suggested above that greater central funding should back the system. This will not only mitigate the problem of costs but will also ensure the system does not undercut competition. Done correctly, the positive externalities from government funding (such as reduction in healthcare costs and loss of economic productivity from poor diet-related health issues) might outweigh the input. But even without central funding, the financial costs of using a food health labeling system do not seem to be exceptionally high.

Furthermore, policymakers should keep in mind that consumers cannot be expected to detect the (un)healthiness of foods on their own. Additionally, communicating health-related aspects properly to consumers is of paramount social and economic importance. Moreover, this is merely a one-off (potential) cost that can serve firms, especially those who offer good products, for a significant period of time.

This also explains why we are not too concerned with passing costs onto consumers. The costs, if not born by a central funding source, are likely to be minimal and vastly distributed among all

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318. Michael M. Grynbaum, *New York's Ban on Big Sodas Is Rejected by Final Court*, N.Y. TIMES (June 26, 2014), https://www.nytimes.com/2014/06/27/nyregion/city-loses-final-appeal-on-limiting-sales-of-large-sodas.html.

319. As noted earlier, a similar concern has been raised with respect to the GS labeling. *See supra* note 267 and accompanying text.

consumers.[320] Against these minimal costs, consumers will be armed with important information that can benefit them considerably. The idea of asymmetric paternalism seems applicable here since the costs of applying the system do not seem prohibitive and can be distributed widely.[321] Put simply, it seems justified to impose little (or no) costs on sophisticated consumers while substantially benefiting many unsophisticated ones.

This analysis further explains why implementing a food health label system is not likely to divert masses of consumers from other forms of more accurate information disclosures. To begin with, disclosures of ingredients list and nutrition panels are generally ineffective.[322] Many consumers are likely to be confused, overwhelmed, or alienated by the many labels in use. Others are unlikely to process these labels properly.[323] Those few consumers who do use these disclosures can continue to use them. Educational efforts should hence encourage sophisticated consumers to combine the chosen health label with other disclosures when making purchasing decisions.

Another possible concern with a mandatory system is that a mandatory regime obscures the consumer's ability to distinguish between "revealers" (i.e., honest firms) and "concealers" (i.e., less honest ones). With health-related images displayed on all packages, consumers will not be able to interpret it as a signal of exceptional transparency. If the image appears on all products, the argument goes, its uniqueness might be undermined and its impact lessened.

Along similar lines, there is yet another more sophisticated criticism, which is based on the economic theory of skepticism. As per this theory, a rational consumer is expected to realize that sellers have an incentive to disclose positive information.[324] In the absence of disclosure, the rational consumer should assume the worst about any information that is not revealed. According to this line of logic,

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320. *See* Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case of "Asymmetric Paternalism"*, 151 U. PA. L. REV. 1211, 1219 (2003).

321. *See id.* at 1212.

322. *See* Gill Cowburn & Lynn Stockley, *Consumer Understanding and Use of Nutrition Labelling: A Systematic Review*, 8 PUB. HEALTH NUTRITION 21, 22 (2004).

323. *See, e.g.*, *id.* at 24, 26; Alexander Persoskie et al., *US Consumers' Understanding of Nutrition Labels in 2013: The Importance of Health Literacy*, 14 PREVENTING CHRONIC DISEASE, Sept. 2017, at 1, 4 ("In general, participants' ability to interpret nutrition label information was poor."); Russell L. Rothman et al., *Patient Understanding of Food Labels: The Role of Literacy and Numeracy*, 31 AM. J. PREVENTIVE MED. 391, 393–94 (2006); Sarah Sinclair et al., *Sociodemographic Differences in the Comprehension of Nutritional Labels on Food Products*, 45 J. NUTRITION EDUC. BEHAV. 767, 767 (2013).

324. *See* Paul Milgrom, *What the Seller Won't Tell You: Persuasion and Disclosure in Markets*, 22 J. ECON. PERSP. 115, 123 (2008).

this should yield an equilibrium where sellers are pressured to reveal everything.[325]

Let us now apply this economic theory to, for instance, the HSR system. If a manufacturer opts to not use the system, rational consumers should assume it is equivalent to the lowest rating possible (0.5 stars). If this were not the case, the producer would have opted to reveal the product's actual rating to begin with.

This argument carries a lot of analytical power. If consumers indeed behave in such a way, there would be no need to make the system mandatory. On the one hand, consumers could infer the health quality of the product even without the HSR disclosure. On the other hand, even without making it mandatory, sellers already have an incentive in place to communicate their products' healthiness to consumers.

While this critique is noteworthy, we do not find it persuasive. The main problem with the skepticism theory is that it attributes unrealistic degrees of rationality and sophistication to consumers. To use the strategy of skepticism, consumers are expected to satisfy the following three conditions: First, they should be aware of what information can be disclosed. Second, they should realize what information is missing.[326] Third, they should conclude that the missing information is disadvantageous.[327] Since consumers lack such astuteness, voluntary disclosures may not suffice and mandatory disclosure may in truth be warranted.[328]

The literature buttresses our skepticism toward the theory of skepticism. Empirical evidence reveals that consumers are generally unresponsive to missing information.[329] For starters, consumers often do not observe missing information. People tend to focus more on what is in front of them while often not paying attention to missing information.[330] Noticing missing information requires more conscious effort.

Even once consumers notice the nondisclosure, they do not suppose the worst or that the other party is trying to conceal it. In its

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325. Sanford J. Grossman, *The Informational Role of Warranties and Private Disclosure About Product Quality*, 24 J.L. & ECON. 461, 462–63 (1981); Paul R. Milgrom, *Good News and Bad News: Representation Theorems and Applications*, 12 BELL J. ECON. 380, 381–82 (1981).

326. *See* Milgrom, *supra* note 324, at 121; Hyun Song Shin, *Disclosures and Asset Returns*, 71 ECONOMETRICA 105, 108 (2003).

327. *See* Sunita Sah & Daniel Read, *Research: Missing Product Information Doesn't Bother Consumers as Much as It Should*, HARV. BUS. REV. (Sept. 28, 2017), https://hbr.org/2017/09/research-missing-product-information-doesnt-bother-consumers-as-much-as-it-should.

328. *See* David Dranove & Ginger Zhe Jin, *Quality Disclosure and Certification: Theory and Practice*, 48 J. ECON. LITERATURE 935, 945 (2010).

329. *See, e.g.*, Sah & Read, *supra* note 327.

330. *See id.*. *See generally* A. CONAN DOYLE, THE MEMOIRS OF SHERLOCK HOLMES (1894) (providing a classic example of this principle in the form of stories about the beloved fictional character, Sherlock Holmes).

place, when faced with missing information, consumers usually assume average quality.[331] For that reason, upon realizing information is missing consumers may "reduce their purchases—but not as much as it would if they were to learn bad news about the product."[332]

C. *Nudges that Fail & Consumer Compensating Behavior*

One last important concern is consumers' actual behavior in response to the system. Let us assume the system will be upgraded successfully despite industry objection. Let us further assume it creates the anticipated pressure, leading firms to offer a larger variety of healthy products. Let us even presume that consumers become aware of the system, comprehend it, and do not fall prey to information processing biases. Still, consumers may not respond to the system as positively as expected. Or perhaps more accurately, the system may not benefit consumers as envisaged. As some nudges fail, there is no guarantee that consumers will undeniably improve their diets.

As the literature points out, an increase in the number of healthy options does not necessarily mean that consumers will choose them. First, due to the halo effect, consumers might underestimate the calories in what may seem to be healthy foods.[333] Second, consumers may engage in "compensating behavior"[334] based on some kind of a "diet licensing" calculation. Thus, consumers may eat more unhealthy food alongside (or after) eating healthy ones.

For example, consumers may eat a dessert or have soft drinks alongside a healthy meal. This was found to be the case in a field experiment at Subway, the sandwich franchise. In this experiment, consumers were nudged toward lower calorie entrees while presented with a low-calorie menu.[335] However, consumers then tended to order more sweet beverages.[336]

Likewise, by choosing healthier foods, consumers might simply eat more, underestimating the impact of such a decision. Returning to the Subway example, assume consumers can choose between

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331. Sah & Read, *supra* note 327.

332. Milgrom, *supra* note 324, at 117. In line with that, studies show that negative information is not usually voluntarily offered by manufacturers of the *lowest* quality products. Rather, there tends to be a threshold of quality, under which firms will abstain from disclosing. Oliver Board, *Competition and Disclosure*, 57 J. INDUS. ECON. 197, 197–98 (2009).

333. Pierre Chandon & Brian Wansink, *The Biasing Health Halos of Fast-Food Restaurant Health Claims: Lower Calorie Estimates and Higher Side-Dish Consumption Intentions*, 34 J. CONSUMER RES. 301, 302 (2007).

334. *See id.*; Cass R. Sunstein, *Nudges That Fail*, 1 BEHAV. PUB. POL'Y 4, 21 (2017).

335. Jessica Wisdom et al., *Promoting Healthy Choices: Information Versus Convenience*, 2 AM. ECON. J.: APPLIED ECON. 164, 164–65 (2010).

336. *Id.* at 165.

healthy and less healthy sandwiches as well as between foot-long and six-inch ones. A consumer who would typically choose a six-inch yet less healthy sandwich might now opt for an apparently healthier yet foot-long one. Depending on the actual health differences between the two options, this might be a counter-productive decision.

Our response to this important and valid concern is fourfold. First, to the best of our knowledge, there is no empirical data supporting this concern in the domain of front-of-package food labeling. Further research is required here. Second, this concern should be considered when designing the educational campaigns that ought to accompany the system. Consumers should be cautioned about it, and apps can be developed to minimize the risk that this difficulty materializes. Third, this problem might occur with whatever labeling system we choose. Thus, this concern is a general one and cannot guide us in choosing among the different types of front-of-package-labeling. Fourth, this problem might only affect some consumers some of the time. That said, giving up on the global efforts of providing consumers with adequate information due to this concern seems like an overreaction. We believe it is wiser to try a system, periodically revisit its effectiveness, and improve it rather than giving up due to potential concerns.

VII. CONCLUDING REMARKS

The United States and many other western nations face obesity problems, which the World Health Organization defines as an epidemic.[337] Yet, consumers increasingly find it hard to make informed and healthy food purchasing decisions. In an attempt to assist consumers, improve public health, and reduce health costs, governments are in search of shrewd and effective labeling systems. Many of these systems are based on the fundamental idea that often "a picture is worth a thousand words."

Undeniably, presenting information in a salient, clear, and colorful way is more effective than employing statistical, technical, dry, or abstract presentation methods. In our context, front-of-package labeling is an important policy tool that can assist consumers who wish to make healthier food choices.[338] Consumers welcome such labels,[339] which have the potential to effectively assist shoppers.

Alas, however, the United States has not yet introduced a general front-of-package food health labeling.[340] True, a significant

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337. WORLD HEALTH ORG., OBESITY: PREVENTING AND MANAGING THE GLOBAL EPIDEMIC 4 (2000).

338. *See, e.g.*, van Herpen & van Trijp *supra* note 47, at 148.

339. *Id.* at 149 ("[C]onsumers generally like the idea of front-of-pack nutrition labeling, claim to understand the information conveyed, and state that they are using the information in actual purchase and consumption behavior.").

340. For recent attempts to improve and update food labeling and disclosures in the United States, see Food Labeling Modernization Act of 2018, S. 2647, 115th

improvement took place in 2016, when the Nutrition Labeling and Education Act of 1990 and its implementing regulations were amended.[341] However, the current nutrition label can lead consumers to not attribute sufficient weight to important nutritional aspects as well as make false inferences.[342] This is so, since the label highlights one aspect (calories), while not providing an overall signal of food healthiness.

Other countries, such as Australia, New Zealand, the United Kingdom, France, and Chile, have revealed a more proactive approach and adopted a variety of initiatives. These initiatives are far from being perfect. Yet they can provide imperative lessons policymakers in the United States and elsewhere may consider in devising better food labeling systems.

It is a rather difficult challenge to offset the negative impact that the food industry has on people's consumption of unhealthy foods. For starters, we believe that there is a strong case for making food health labeling systems mandatory. To avoid potential loopholes, ratings should be based on the nutritional properties of a product alone.

Moreover, harmful nutrients should be clearly indicated, and discretionary foods should be restricted in the rating they can receive. Furthermore, the employed algorithm should be flexible enough to change with emerging scientific research. On top of that, the graphic should be designed to maximize salience, following best practices for label positioning and the integration of color.

Last but not least, implementation should be accompanied by educational efforts and other regulatory tools. Special attention should be given to the need to design a system that better accounts for the behavior of marginalized consumers. Thereafter, significant resources should be channeled to inform low socioeconomic status consumers and the less-educated.

To further improve the chosen labeling scheme, we propose that healthy food production should be linked to corporate social responsibility ("CSR"). In other words, we believe that firms should provide their customers with healthy food also for ethical and social

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Cong. (2018) (proposing additional requirements for nutrition labels on food); *see also* Common Sense Nutrition Disclosure Act of 2017, S. 261, 115th Cong. (2017) (amending the disclosure requirements of retail food outlets and restaurants).

341. *See* 21 U.S.C. § 343 (2012); 21 C.F.R. § 101.9 (2019).

342. *See* Oren Bar-Gill, *Smart Disclosures: Promise and Perils*, BEHAV. PUB. POL'Y, July 11, 2019, at 8 ("The nutrition label, with its focus on calories, might result in a similar false inference problem. Consumers who see calorie information displayed in large font and bold type might believe that scientific research has established a strong link between calorie intake and health outcomes, and this inference will likely be false."); *id.* at 9–10 ("The prominence of the calorie disclosure raises a concern that consumers will focus excessively – even exclusively – on calories, and that other important nutrition facts, most notably whether the *source* of the caloric content is conducive for their health, will receive insufficient weight and might be ignored altogether.").

reasons. They should aspire to do so as part of their commitment to the society and the communities in which they operate.

That is not to say that there is no prospective economic gain from making this link. Admittedly, there seems to be a significant positive relationship between consumer awareness of CSR activities and consumers' purchasing intentions.[343] Associating the production of healthy foods with CSR is therefore likely to lead consumers to better value these firms. This will thereby strengthen the economic incentive firms have to offer consumers healthy foods.

In the meantime, governments do not have the privilege of sitting on their hands, succumbing to industry pressure while claiming public credit for ineffective disclosures. Policymakers also cannot wait for market forces to reach an equilibrium that properly incentivizes firms to offer healthier foods. The obesity epidemic is a genuine problem, and the complex markets consumers face make the situation even more acute.

A shift in the approach to food health labeling is not a utopian dream but a pressing necessity. Implementing a front-of-package health labeling system in the United States is an important regulatory tool that has the potential to better consumers' diets and lives. This potential should not be overlooked.

343. Ki-Hoon Lee & Dongyoung Shin, *Consumers' Responses to CSR Activities: The Linkage Between Increased Awareness and Purchase Intention*, 36 PUB. REL. REV. 193, 194 (2010).