SUPERMARKET HEURISTICS
BEHAVIORAL INSIGHTS INTO THE U.S. NUTRITION LABELING POLICY

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This article seeks to establish a dialogue on nutritional labeling between the fields of behavioral science, law, and policy, in order to put into place a nutrition labeling policy informed by and tailored to the behavior of consumers. Improving disclosure has long been the purview of behavioral science. Rarely has this consideration been translated into the field of law and policy making. It is now essential to establish this dialogue; an Executive Order from September 2015 encourages the Federal Government to integrate insights from behavioral science (behavioral economics and psychology) into policy making to understand how people make decisions, and how they use and respond to government policies.

The recommendations found in the Executive Order are of particular relevance to the recent efforts of the Food and Drug Administration (FDA) to reform its two-decade old Nutrition Facts Label. Against this background, this article demonstrates that insights from behavioral science have the potential to contribute to creating a robust nutrition disclosure that better informs consumers, improves their ability to make healthy decisions, and effectively helps fight against obesity and chronic diseases.

In practice, this article argues that nutrition labeling in the U.S. needs to be complemented by a highly simplified, standardized and visually appealing nutrition labeling scheme. This scheme should be government-led and disclosed on the front of food packages. It brings to the attention of policy makers recent studies in the sphere of behavioral science. Such an initiative would facilitate access and use of nutrition information, eventually nudging consumers stronger toward healthier consumption decisions.

INTRODUCTION

CHRONIC diseases,[1] the main cause of death and disability in the U.S., are increasing,[2] and obesity is reaching unprecedented levels.[3]Communicating better nutrition information has now become ur-

[1] Diet-related chronic diseases include cancers, cardio vascular diseases, diabetes, and osteoporosis.

[2] Food Labeling: Revision of the Nutrition and Supplement Facts Labels, 79 Fed. Reg. 41, 11879, 11885 (proposed Mar. 3, 2014) (to be codified at 21 C.F.R. 101) [hereinafter FDA Rule 1].

gent. The Food and Drug Administration (FDA), which regulates the majority of nutrition labels in the U.S., has recognized this urgency. It has recently submitted a proposal to reform the two-decade old Nutrition Facts Label (NFL) present on nearly every food package in the U.S. and, *inter alia*, to "revise [its] format and appearance."[4] This proposed reform has drawn interest from a wide spectrum of stakeholders; the FDA received more than 280,000 comments on its proposal within the five-month consultation period.[5]

In this context, the Executive Order dated September 15, 2015 sheds a new light on ways to reform the NFL. Indeed, the text encourages the Federal Government (executive department and agencies) to integrate insights from behavioral science (behavioral economics and psychology) to understand how people "engage with, participate in, use, and respond to [government] policies and programs."[6] The objective is to design policies that improve "the effectiveness and efficiency of Government" and "better serve the American people."[7]

More specifically, insights from behavioral science help to evaluate how people process information, understand it, and use it to make their decisions. In return, it is possible to adjust information according to these insights and facilitate consumers' understanding, processing and use of this information. According to George Loewenstein, Cass R. Sunstein, and Russell Golman's article *Disclosure: Psychology Changes Everything,* tailoring information to consumers' psychology has the po-

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[3] *Id.* (according to the sources quoted by the FDA, sixty-eight percent of American adults are obese or overweight, as are thirty-two percent of children ages two to nineteen).

[4] FDA Rule 1, *supra* note 2, at 11880.

[5] As of October 27, 2014, 287,873 comments had been received. Food Labeling: Revision of the Nutrition and Supplement Facts Labels Docket Folder Summary, REGULATIONS.GOV, http://www.regulations.gov/#!docketDetail;D=FDA-2012-N-1210 (last visited Oct 27, 2014). Note that the reforms proposed by the FDA in February 2014 consist of two rules. The FDA Rule 1 focuses on a revision of the NFL that updates the nutrients listed, adjusts the nutrient references for food aimed at a specific population (pregnant women or children), discloses revised daily reference values, and finally, "revise[s] the format and appearance" of the NFL. The second rule focuses first on adjusting the serving size that is disclosed on the NFL to better reflect the quantity people now eat and to subsequently update the reference amount customarily consumed. It also adjusts the NFL to take into account the per serving and per package nutrition information. While both of these rules could be commented on from a behaviorally-informed point of view, the length of this paper requires a more restrictive approach and focuses on the first rule, and more specifically on the formatting of the NFL. The reference for the second rule is the following: Dual-Column Labeling; Updating, Modifying, and Establishing Certain Reference Amounts Customarily Consumed; Serving Size for Breath Mints; and Technical Amendments, 79 Fed. Reg. 41, 11879, 11959 (Mar. 3, 2014) (to be codified at 21 C.F.R. 101) [hereinafter FDA Rule 2].

[6] President Barack Obama, Executive Order: Using Behavioral Science Insights to Better Serve the American People (Sept. 15, 2015), https://www.whitehouse.gov/the-press-office/2015/09/15/executive-order-using-behavioral-science-insights-better-serve-american.

[7] *Id.*

tential to make disclosure more effective.[8] The resulting disclosure is called *behaviorally-informed disclosure.* Applied to nutrition labeling, tailoring information to consumers' psychology could eventually encourage healthier consumption choices.

Improving the substance and format of nutrition disclosure is a way to reach behaviorally-informed disclosure. This article's main focus is on the format of nutrition disclosure, since the FDA's reform of the NFL includes revising its "format and appearance." The format of the NFL may be regarded as a secondary concern, but according to behavioral science, the format in which information is disclosed has a significant impact on consumers' decisions. Hence, altering the format of disclosure could be one of those "small, inexpensive policy initiatives can have large and highly beneficial effects".[9]

Although this article is set in the backdrop of the NFL reform, it does not purport to be yet another comment on the FDA's recent proposal to revise the NFL. Rather, its aim is twofold: 1) to identify the limits of the current NFL and the FDA's proposed reform from the standpoint of behavioral science; and 2) to explore how the format of nutrition labeling could be further tailored to consumers' psychology so as to provide a robust behaviorally-informed disclosure. To clarify, this article focuses only on the *mandatory labeling* as required by law of certain nutrients and calories on packages of food bought at *grocery stores* (as opposed to the labeling of food consumed in restaurants).

The key message of this article is that it is time for the FDA to consider implementing a common front-of-pack nutrition labeling scheme. Located at the front of food packages, front-pack labels would thus be directly visible from the shelves of grocery stores. Front-of-pack labels would complement the NFL currently positioned on the back of packages by offering extra-simplified, standardized, and visual nutrition information. Front-of-pack labels would more easily catch consumers' attention, facilitate their processing of information, and contribute to healthier diets.

The argument in favor of front-of-pack nutrition labeling as a complement to more detailed back-of-back labeling is in line with the joint findings of the Institute of Medicine and the Center for Disease Control and Prevention ("the Institute of Medicine Report"). This research, conducted under a mandate from Congress to study front-of-pack labels, recommended a government-sponsored front-of-pack initiative.[10] The

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[8] George Loewenstein, Cass R. Sunstein& Russell Golman, *Disclosure: Psychology Changes Everything* (Harvard Pub. Law, Working Paper No. 13-30) [hereinafter *Disclosure: Psychology Changes Everything*].

[9] Cass R. Sunstein, *Nudge.gov: Behavioral Economics and Regulation*,in The Oxford Handbook of Behavioral Economics and the Law 719, 719 (EyalZamir& Doron-Teichman eds., 2014).

[10] Ellen A. Wartella, Alice H. Lichtenstein, Ann Yaktine& Romy Nathan, COMMITTEE ON EXAMINATION OF FRONT-OF-PACKAGE NUTRITION RATING SYSTEMS AND SYMBOLS (PHASE II), INST. OF MED., FRONT-OF-PACKAGE NUTRITION RATING SYSTEMS

FDA, in its Strategic Plan for 2012-2016, subsequently expressed its willingness to "[e]xplore front-of-pack nutrition labeling opportunities" as part of its goal to "[p]rovide accurate and useful information so consumers can choose a healthier diet and reduce the risk of chronic disease and obesity."[11]

Research arguing for the implementation of extra-standardized and simplified nutrition disclosure in the form of front-of-pack labels already exists. However, the current literature originates primarily from within the community of life science – with a focus on nutrition – and advocates for front-of-pack labels based on scientific experiments. Additionally, behavioral scientists, by focusing on how to tailor disclosure to consumers' behavioral insights, have led to more advocacy for more simplification and standardization in disclosure. Yet, few legal scholars and policy-makers have envisioned behaviorally-informed disclosure as a regulatory tool for healthier diets. In practice, this article brings to policy makers the recent recommendations of behavioral scientists; it also supports and reinforces the Institute of Medicine's Report by offering additional arguments, based on behavioral insights, in favor of front-of-pack nutrition labels.

Section I of the article sets the stage and explains that behavioral insights on nutrition labeling could serve as a springboard for the development of behaviorally-informed nutrition disclosure. Section II argues that the format of nutrition labels, as first conceptualized in the U.S. in the 1990s and as about to be reformed, represents a significant but insufficient step toward behaviorally-informed disclosure. Section III delivers the key message of this article by looking beyond the suggested reforms of back-of-pack nutrition labels and examines how the addition of front-of-pack nutrition labels can enhance behaviorally-informed nutrition disclosure.

I. SETTING THE STAGE: BEHAVIORAL INSIGHTS ON NUTRITION LABELING

This section starts by briefly outlining the context in which behaviorally-informed policy emerged in the U.S. It then explains why food consumers are appropriate recipients of behaviorally-informed disclosure. This section eventually details why disclosure of nutrition information may be a vehicle for behaviorally-informed policy.

AND SYMBOLS: PROMOTING HEALTHIER CHOICES 3 (2011), [hereinafter INSTITUTE OF MEDICINE FOP REPORT], http://www.nap.edu/openbook.php?record_id=13221.

[11]FDA (Office of Foods, Ctr. for Food Safety & Applied Nutrition, Ctr. for Veterinary Med., Office of Regulatory Affairs), FDA FOODS AND VETERINARY MEDICINE PROGRAM STRATEGIC PLAN 2012-2016 (Apr. 2012), www.fda.gov/downloads/AboutFDA/CentersOffices/OfficeofFoods/UCM273732.pdf.

A. The Context: The Increasing Influence of Behavioral Insights In Policy-Making

As a large body of literature already explains, behavioral economics has been built on the assumption that individuals do not make rational decisions and have a "bounded rationality." Behavioral economists conducted research alongside psychologists to study the behavior of consumers and the psychology behind decision-making. For decades, economists had been assuming individuals could collect all possible informa-information available, process it and factor this information rationally into decision-making. In reality, as behavioral economists showed, individuals are not fully rational individuals. These individuals have a "bounded rationality" which means that some factors detailed later in this section impact on the way they, in theory, are expected to process information and make decisions.[12]

In 2005,a group of distinguished behavioral economists explained that research on psychology and behavioral economics could help inform policy-making and serve as groundwork to the implementation of behaviorally-informed policies.[13] They conciliated their views in a foundational article entitled *Psychology, Behavioral Economics, and Public Policy*. These behaviorally-informed policies are defined by Eldar Shafir as "[t]he application of experimental findings and concepts emanating from behavioral research to the design and implementation of policy."[14] Further research has explored how law could be used to act "directly on the bounded rational behavior and attempting to help people either to reduce or to eliminate it."[15]

Behaviorally informed policies have benefited in the past decade from a significant uptake. In particular, the publication in 2008 of *Nudge*, the bestseller from Richard Thaler and Cass Sunstein, disseminated the approach to a larger public.[16] Since then, various governments, including in the U.K., U.S., and Germany, as well as the European Union, have

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[12] They built on the work of Herbert Simon, as reformulated by Daniel Kahneman and Amos Tversky. *See* FLORISHEUKELOM, BEHAVIORAL ECONOMICS: A HISTORY (2014) (on the history of the behavioral economy); *see also* MARK KELMAN, THE HEURISTICS DEBATE (2011) (on the heuristic debate between the "Heuristic and Biases School" and the "Fast and Frugal School").

[13] On Amir et al., *Psychology, Behavioral Economics, and Public Policy*, 16 MARKETING LETTERS 443, 452 (2005);*see also* Loewenstein, Sunstein& Golman, *supra* note 8, at 5 ("Psychology and behavioral economics provide a new rationale for regulation that supplements traditional economic accounts.").

[14]Eldar Shafir, *Introduction*, in THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY 1, 2 (Eldar Shafir ed., 2012).

[15]Christine Jolls& Cass R. Sunstein, *Debiasing through Law* 2 (NBER, Working Paper 11738, 2005); see also *id.* at 3 ("The central idea of debiasing through substantive law is that in some cases it may be desirable to understand or to reform the substance of law – not merely the procedures by which the law is applied in an adjudicative setting – with an eye toward debiasing those who suffer from bounded rationality.").

[16]RICHARD H. THALER& CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH AND HAPPINESS 6 (2008).

created special units dedicated to designing behaviorally-informed policies.[17] The OECD and World Bank have also committed to integrating behavioral science into their policies.[18] The American Executive Order from September 2015 represents an additional step in the same direction: it encourages behavioral science to penetrate the multiple levels of the Federal Government in an unprecedented way.

Little has been written on ways to integrate behavioral insights into nutrition labeling policy-making. There are some studies generally discussing how to integrate behavioral insights into health policy-making.[19] As for nutrition, studies mostly focus on using behavioral insights to analyze the influence of the environment where the food is consumed. The comprehensive work of Brian Wansink, Professor of applied economics and specialist on eating behaviors, provides useful guidance on that topic.[20] Other studies suggest using behavioral insights to tailor nutrition food programs, reduce obesity and improve health, only mentioning food labeling incidentally as a tool to achieve these goals.[21]

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[17] *Behavioural Insights*, EUROPEAN COMMISSION JOINT RESEARCH CENTRE: THE EUROPEAN COMMISSION'S IN-HOUSE SCIENCE SERVICE, https://ec.europa.eu/jrc/en/research/crosscutting-activities/behavioural-insights (about the European Union); The Behavioural Insights Team, *Update Report 2013–2015*, http://38r8om2xjhhl25mw24492dir.wpengine.netdna-cdn.com/wp-content/uploads/2015/08/BIT_Update-Report-Final-2013-2015.pdf (about the United Kingdom); *Merkel will die Deutschendurch Nudging erziehen*, DIE WELT (Mar. 12, 2015), http://www.welt.de/wirtschaft/article138326984/Merkel-will-die-Deutschen-durch-Nudging-erziehen.html (about Germany).

[18] WORLD BANK GROUP, WORLD DEVELOPMENT REPORT 2015: MIND, SOCIETY, AND BEHAVIOR(2015), http://www.worldbank.org/content/dam/Worldbank/Publications/WDR/WDR%202015/WDR-2015-Full-Report.pdf; OECD, REGULATORY POLICY AND BEHAVIOURAL ECONOMICS (Jan. 9, 2014), http://www.oecd.org/gov/regulatory-policy-and-behavioural-economics-9789264207851-en.htm.

[19] BEHAVIOURAL INSIGHTS TEAM, APPLYING BEHAVIOURAL INSIGHT TO HEALTH (2010),https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/60524/403936_BehaviouralInsight_acc.pdf; *see also* Alberto Alemanno et al., *Nudging Healthy Lifestyles – Informing Regulatory Governance with Behavioural Research*,3 EUR. J. OF RISK REG. 1 (2012).

[20] Brian Wansink, *Environmental Factors that Increase the Food Intake and Consumption Volume of Unknowing Consumers*, 24 ANN. REV. OF NUTRITION 455 (2004); *see generally*Brian Wansink, *Turning Mindless Eating into Healthy Eating*, *in* THE BEHAVIORAL FOUNDATIONS OF PUBLIC POLICY, *supra* note 14, at 310.

[21] *See, e.g.*, NOUVELLES APPROCHES DE LA PRÉVENTION EN SANTÉ PUBLIQUE: L'APPORT DES SCIENCES COMPORTEMENTALES, COGNITIVES ET DES NEUROSCIENCES [NEW APPROACHES TO PUBLIC HEALTH PREVENTION : THE CONTRIBUTION OF BEHAVIOURAL SCIENCES, COGNITIVES SCIENCES AND NEUROSCIENCES] (Olivier Oullier& Sarah Sauneron eds., 2010); Adam Olivier & Peter Ubel, *Nudging the Obese: A UK–US Consideration*, 9 HEALTH ECON., POL'Y& L. 329 (2014) (for an overview of current nudge policies existing in the U.S. and the UK to fight obesity); DAVID R. JUST, LISA MANCINO& BRIAN WANSINK, USDA, COULD BEHAVIORAL ECONOMICS HELP IMPROVE DIET QUALITY FOR NUTRITION ASSISTANCE PROGRAM PARTICIPANTS? (ECONOMIC RESEARCH REPORT (U.S. DEPT. OF AGRIC. ECON. RESEARCH SERV. N.43); Alberto Alemanno, *A Behavioural Approach to Health Prevention: Informing the Global NCD Agenda with Behavioural Insights*, *in* REGULATING LIFESTYLE – EUROPE, ALCOHOL, TOBACCO AND UNHEALTHY DIETS (Alberto Alemanno& Amandine Garde, forthcoming) (exploring the potential of

Overall, the literature that clearly advocates for the integration of behavioral insights in nutrition labeling is scarce.[22] It relies on scholarship that originates mainly within the life science and behavioral science communities, but not from the legal community.[23] Yet lawyers, given their preeminent role in policy-making, must be made aware of existing research on behavioral insights in order to draft, tailor, and implement effective policies.[24] This is particularly true of nutrition labeling policies, as they could benefit greatly from behavioral insights thus informing the next nutrition labeling reforms.

B. The Subject: Food Consumers, their Biases and Use of Heuristic Shortcuts

To understand the reasons why nutrition labeling policies need to take into account consumers' behavior when purchasing food, the following section uses topical examples to show how consumers' behavior departs from the model of rational consumers. This section does not set out a full review of consumers' bounded rationality, as this has already been well-mapped and often presented.[25] Neither does it seek to offer an

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behaviorally-informed policy-making to fight non communicable diseases); *see also* HOUSE OF LORDS, SCIENCES AND TECHNOLOGY SELECT COMMITTEE, BEHAVIOURAL CHANGE, 2ND REPORT OF SESSION 2010-12 (July 2011) (examining different types of policy interventions that would foster behavioral change, including a very brief account of nutrition labels); W. Bruce Traill, *Presidential Address, Economic Perspectives on Nutrition Policy Evaluation*, 63 J. OF AGRIC. ECON.505 (2012) (examining policy options to fight against obesity and discussing the author's choices, including behavioral economics and mainstream economics).

[22] The closest to such an integration may be CaoimhínMacMaoláin, *Regulating Consumer Information: Use of Food Labelling and Mandatory Disclosures to Encourage Healthier Lifestyle*, *in* REGULATING LIFESTYLE, *supra* note 21. However the trend recently started to change. *See, e.g.*, Christina Roberto &NehaKhandpur, *Improving the Design of Nutrition Labels to Promote Healthier Food Choices and Reasonable Portion Size*, 38 INT'L J. OBESITY S25–S33 (2014); Anne N. Thorndike et al., *Traffic-Light Labels and Choice Architecture*, 46 AM. J. PREVENTIVE MED. 143 (2014).

[23] *See, e.g.*, Jessica Wisdom, Julie S. Downs & George Loewenstein, *Promoting Healthy Choices: Information versus Convenience*, 2 AM. ECON. J. 164 (2010); Julie S. Downs, George Loewenstein& Jessica Wisdom, *Strategies for Promoting Healthier Food Choices* 99 AM. ECON. REV. 1 (2009); Theresa M. Marteau, Gareth J. Hollands& Paul C. Fletcher, *Changing Human Behavior to Prevent Disease: the Importance of Targeting Automatic Processes* 337 SCI. 1492, 1493 (2012) (noting that information-based interventions are limited by the fact that human behavior is not driven by deliberation on the consequence of actions but by automatic stimuli, and thus suggesting that these automatic processes be targeted).

[24] Jolls& Sunstein, *supra* note 15.

[25] THE CAMBRIDGE HANDBOOK OF PSYCHOLOGY AND ECONOMIC BEHAVIOUR(Alan Lewis ed., 2008); Christine Jolls, Cass R. Sunstein&RichadThaler, *A Behavioral Approach to Law and Economics*, 50 STAN. L. REV. 1471 (1998); Amos Tversky& Daniel Kahneman, *Judgment under Uncertainty: Heuristics and Biases*, 185 SCI.1124 (1974) (describing three categories of heuristics: representativeness, availability, adjustment and anchoring); Cass R. Sunstein, *Empirically Informed Regulation*, 78 U. CHI. L. REV. 1349, 1369 (2011).

extensive study of food consumers' psychology.[26] Rather, it provides examples of biases and heuristics that serve to explain consumers' limited capacity to integrate nutrition information into their decision-making.

A given individual makes between 200 and 300 decisions a day related to food consumption but is barely aware of a tenth of them.[27] To use behavioral terminology, when selecting their food, consumers appear to be less driven by their reflective and rational system (system 2) and more driven by their automatic, instinctive, impulsive, and emotional system (system 1).[28] As a result, the premise that consumers maximize their own utility (and well-being) by taking into account combined constraints, such as the environment, health, the price of food, or their income, is often the exception rather than the rule.

Insights from psychology show that consumers are influenced by a number of biases that distort their rationality. For instance, the procrastination bias leads consumers to defer the moment they start a diet, and thus to defer when they select healthy products; closely related, inertia encourages consumers to think that they will, for example, stop drinking soft drinks with their dinner, a resolution they rarely pursue.[29]Consumers also have difficulties exercising self-control, in particular when choosing between food associated with pleasure rather than food perceived as more utilitarian. For that reason, consumers are more likely to choose a cookie or an ice cream for dessert rather than an apple.[30]

Furthermore, consumers who are on a diet today may choose to indulge in unhealthy food, thus discounting the future utility of their weight loss in favor of the short term utility (i.e. pleasure) of eating food that they like but may not be unhealthy food. Confirmation bias may lead consumers to pay attention only to information that supports their choices. For instance, when selecting fish and chips with mushy peas, consumers will convince themselves that they made a healthy choice, because their meals come with vegetables. But they may fail to acknowledge the amount of fat and calories in their meals. Motivated attention means that consumers have their attention directed to the information that they want or need to see while disregarding the information that they do not want or feel less urgency to see. Typically, consumers trying to

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[26] Brian Wansink& Jeffrey Sobral, *Mindless Eating: The 200 Daily Food Decisions We Overlook*, 39 ENV'T& BEHAV. 106 (2007); David R. Just, *Behavioral Economics and the Food Consumer*, *in* THE OXFORD HANDBOOK OF THE ECONOMICS OF FOOD CONSUMPTION AND POLICY 99, 100 (Jayson L. Lusk, Jutta Roosen& Jason F. Shogren eds., 2011).

[27] *See* Wansink&Sobral, *supra* note 26.

[28] For a description of the systems, *see* DANIEL KAHNEMAN, THINKING FAST AND SLOW 21 (2013).

[29] Sunstein, *supra* note 9, at 721.

[30] *See* JUST ET AL., *supra* note 21, at 101 (providing a review of literature on hedonic goods, i.e. goods that are associated with pleasure and sensory experience, and utilitarian goods, i.e. goods that are associated with the fulfilling of some function).

eat more calcium focus their attention on calcium-related information on a nutrition label and may disregard the rest of the nutrition information. Consumers indulging on cookies may choose not to look at the nutrition labels on the box of cookies. Even if given exhaustive information that they want to read, consumers have limited attention spans and do not pay sufficient attention to the information they receive.[31] Besides, people are generally inattentive to missing information, meaning that consumers may not pay attention or even notice the absence of certain information on food products.[32]

As for heuristic shortcuts, they allow consumers to rely on limited information to make their choices. Put simply, in the context of food consumption, it means that consumers, in the absence of advanced or even basic knowledge on how to evaluate a product, will rely on shortcuts operating as rules of thumb to make quick decisions. These shortcuts, called heuristic shortcuts, enable consumers to avoid spending time looking for information and processing it.[33] For instance, consumers may believe a pre-prepared meal to be healthy because the package is green, or because the labels states that it is high in fiber, even though this particular meal actually hides a quantity of salt that is higher than that in other meals. Heuristic shortcuts may also lead consumers to think that a cookie is healthy since "reduced fat" is written on the package. The use of heuristics appears to be more important in the event of low food literacy (i.e. consumers' knowledge of nutrients, of calories, of daily intakes, of the impact of food in general and of various nutriments and calories on consumers' health, etc.) and of low food numeracy (i.e. consumers' ability to calculate calories, to process percentages, etc.).[34]

Besides heuristic shortcuts and biases, Wansink explains that two environmental factors may reduce consumers' ability and motivation to make healthy choices as regards both the quality and quantity of food they eat.[35] One is the way in which food selections are made. Consumers are affected by time constraints, the size of the grocery store, the range and variety of food offered, the music and lighting in the store, social norms, their personal cravings, or even hunger.[36] The other environmental factor is the way in which "the food itself is arranged, labelled, pack-

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[31] *Id.* at 12.

[32] *Id.*

[33] Tversky& Kahneman, *supra* note 25, at 1124 ("[P]eople rely on a limited number of heuristic principles which reduce the complex tasks of assessing probabilities and predicting values to simpler judgmental operations.").

[34] David R. Just & Collin R. Payne, *Obesity: Can Behavioral Economics Help?*,38: suppl.1 ANNALS OF BEHAV. MED. s47–s48 (2009) (explaining that consumers have little knowledge of the impact of their eating habits on their health).

[35] Brian Wansink, *Environmental Factors that Increase the Food Intake and Consumption Volume of Unknowing Consumers*, 24 ANN. REV. NUTRITION 455, 456 (2004); Just & Payne, *supra* note 34, at s51.

[36] JUST ET AL., *supra* note 21, at 108–10.

aged, placed, and becomes salient."[37] In other words, the producers and distributors contribute to frame this environment and attract consumers' attention on some products. Food advertisement is particularly influential in that regard.[38]

As a result of biases and heuristic shortcuts, as well as environmental factors, consumers have a limited capability to use their reflective and rational system (system 2) to process the overwhelming amounts of information they are provided about a product, or to engage in comparisons among multiple products.

These insights into consumers' psychology suggest that policy-makers cannot rely on consumers' rationality. Consumers often do not make informed decisions about food consumption and diet. As a result, the information provided to consumers at the point of purchase needs to be tailored to consumers' automatic system (system 1) and to their limited capacity to integrate nutrition information. Tailored information allows them to actually take advantage of the information to make more informed, educated, and healthy choices. This is why tailored information needs to be not only mandatory, but also behaviorally-informed.

C. The Means: Behaviorally-Informed Disclosure as a Regulatory Tool

In most cases, consumers lack the time, knowledge, and sometimes motivation to gather information related to the products they purchase. In other instances, consumers must rely on a third party, the producer or the distributor, to obtain information on the food they buy because food is mostly a credence good or, to some extent, an experience good.[39] This means that it is difficult, if not impossible, for consumers to evaluate the amount of proteins in a burger or how much salt it contains before buying it, and even after tasting it.

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[37] Just & Payne, *supra* note 34, at s51. On food environment and behavioral insights, *see generally* Brian Roe, Alan S. Levy & Brenda M. Derby, *The Impact of Health Claims on Consumer Search and Product Evaluation Outcomes: Results from FDA Experimental Data*,18 J. PUB. POL'Y& MARKETING 89 (1999); Wansink, *supra* note 20, at 312–14 (presenting the five environmental drivers of food consumption: the salience of food, the structure and variety of food assortment, the size of package and portion, the shape of serving containers, and stockpiling food).

[38] Frederick J. Zimmerman, *Using Marketing Muscle to Sell Fat: The Rise of Obesity in the Modern Economy*, 32 ANN. REV. PUB. HEALTH 285, 300 (2011);*see also* Pierre Chandon& Brian Wansink, *Does Food Marketing Need to Make us Fat? A Review and Solutions*, 70 NUTRITION REV. 571 (2012) (arguing that food manufacturers using psychology have contributed to more obesity).

[39] *See generally* Phillip Nelson, *Information and Consumer Behavior*, 78J. POL. ECON.311, 312 (1970) (presenting the distinction between credence, search, and experience goods). In the case of credence goods, the consumer must rely on a third-party, the producer or the seller, to obtain information—information he or she would otherwise have a difficult time obtaining, because of his or her lack of knowledge of nutrition or lack of time to obtain the information. In the case of experience goods, the consumer acquires the information based on his or her own experience of consuming these goods.

For those reasons mandatory disclosure on nutrition labels serves as a pre-contractual information tool to ensure better information transparency. It is a tool meant to help consumers make informed decisions about the food they buy based on the nutrition attributes disclosed to them. Mandatory disclosure, in the form of nutrition labeling, has been favored by policy-makers in both the U.S. and Europe.[40] It is often presented as an easy and inexpensive regulatory tool to improve consumers' decisions with little direct intervention on either products or on consumers, thus preserving individual autonomy.

However, simply improving access to information or providing more information may not improve the diet of consumers.[41] For mandatory disclosure not to turn into what Omri Ben-Shahar and Carl E. Schneider call "a lorelei luring lawmakers onto the rocks of regulatory failure,"[42] it should be adapted to consumers' bounded rationality, their limited literacy and numeracy. It should also take into account the information accumulation problem and difficulties consumers have in understanding and processing information.[43] For Sunstein, disclosure should be designed to take into account the fact consumers are not rational individuals—a fact economists have assumed for a long time.[44] Sunstein explains that "[c]larity and simplicity are often critical. In some cases, accurate disclosure of information may be ineffective if the information is too abstract, vague, detailed, complex, poorly framed, or overwhelming to be useful".[45] Overall, he considers that "disclosure should be concrete, straightforward, simple, meaningful, timely, and salient"[46]—hence the suggestion that a qualitative approach to disclosure should be chosen over a quantitative approach.

The behavioral biases of consumers call for regulatory approaches that are informed by empirical studies of consumers' psychology. Applied to disclosure, factoring biases and heuristic shortcuts into policy

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[40]*See generally* Loewenstein, Sunstein&Golman, *supra* note 8, at 4 (discussing the cost and benefit of mandatory disclosure). For an account of this regulatory choice in the EU, *see* COMM'N OF THE EUROPEAN CMTYS., IMPACT ASSESSMENT REPORT ON NUTRITION LABELLING ISSUES 19–22 (2008) (discussing alternative approaches: keeping the current status quo on food labeling regulation in the EU, deregulation, national regulation, or guidance). For an account of this regulatory choice in the U.S., *see* ELISE GOLAN ET AL., U.S. DEP'T OF AGRIC., AGRICULTURAL ECONOMIC REPORT NO. 793: ECONOMICS OF FOOD LABELING at v (2000) (detailing the contexts in which labeling is an appropriate policy tool, including, for instance, in contexts when consumer preferences differ, when information is a way to enhance safety, or when no political consensus on regulation exists).

[41] Julie S. Downs, George Loewenstein& Jessica Wisdom, *The Psychology of Food Consumption: Strategies for Promoting Healthier Food Choices*, 99 AM. ECON. REV.159, 159 (2009).

[42]Omri Ben-Shahar& Carl E. Schneider, *The Failure of Mandated Disclosure*, 159 U. PA. L. REV. 647, 681 (2011).

[43]*Id.* at 676.

[44]Sunstein, *supra* note 25, at 1369 ("disclosure requirements should be designed for *homo sapiens*, not *homo economicus*").

[45]Sunstein, *supra* note 9, at 729.

[46]Sunstein, *supra* note 25, at 1369.

making will create behaviorally-informed disclosure and facilitate effective and informed decision making. Loewenstein, Sunstein, and Goldman explain that the insights into consumers' psychology help cast new light on disclosure as a public policy.[47] More particularly, researchers from the Harvard Kennedy School Transparency Policy Project analyzed the effectiveness of transparency policies and suggested that "[i]f cognitive shortcuts lead users to ignore probabilities, over-estimate rare catastrophic risks, or tune out when confronted with information overload, policy-makers can design transparency systems that build in probabilities, limit information search costs, and expressly counter other cognitive problems."[48] Applied to nutrition labeling, it means that "[t]he heuristic component of food decision-making suggests that behavioral economics can inform not only the obesity epidemic but also food policy created to fight it."[49]

Tools for behaviorally-informed nutrition disclosure include, *inter alia*, simplification, standardization, comparative information, and salience.[50] Framing and presentation (including packaging and placement) are also essential to more effectively organize information and influence consumers' decisions.[51] Generally, disclosure should be "restructured in a way that alters not individuals' motivation but the actual process by which they perceive the world around them."[52] The rest of this article provides an operational focus on how the restructuring of nutrition labeling could be undertaken.

II. BACK-OF-PACK LABELS: A FIRST STEP TOWARDS BEHAVIORALLY-INFORMED DISCLOSURE

This section examines the existing format of nutrition disclosure in the U.S. as it was implemented following the adoption of the Nutrition Labeling and Education Act (NLEA) in 1990. Although the NLEA was a breakthrough in terms of adapting information, behavioral insights suggest that in view of contemporary research, the NFL and the current reform proposed by the FDA insufficiently foster healthier consumer habits. In particular, the NFL and the current reform proposal lack interpretative and visual cues.

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[47] Loewenstein, Sunstein& Golman, *supra* note 8; Sunstein, *supra* note 25, at 1366 ("A central point is that disclosure policies should be based on an understanding of how people process information.").

[48] David Weil, Archon Fung, Mary Graham & Elena Fagotto, *The Effectiveness of Regulatory Disclosure Policies*, 25 J. POL'Y ANALYSIS & MGMT. 155, 176 (2006).

[49] Just & Payne, *supra* note 34, at s48.

[50] Loewenstein, Sunstein& Golman, *supra* note 8, at 21–27; Cass R. Sunstein, Office of Info. and Regulatory Affairs, *Memorandum for the Heads of Executive Departments and Agencies: Disclosure and Simplification as Regulatory Tools*, June 18, 2010, http://www.whitehouse.gov/sites/default/files/omb/assets/inforeg/disclosure_principles.pdf.

[51] *See* JUST ET AL., *supra* note 21, at 109–10.

[52] Jolls& Sunstein, *supra* note 15, at 13.

A. Nutrition Labels as a Simplified and Standardized Disclosure

1. The NLEA as a Breakthrough Simplified and Standardized Format

The NLEA set a new format for nutrition labels that entered into effect in 1994. Prior to the implementation of the NFL, the FDA undertook studies to find the most effective way of disclosing information. The NLEA required information to be conveyed "in a manner which enables the public to readily observe and comprehend such information and to understand its relative significance in the context of a total daily diet."[53] For that purpose, as detailed in the Federal Register at the time, the FDA performed experiments and consultations with various stakeholders.[54] The elaboration of the NFL followed "a process of advance study, with careful investigation of consumer responses to different presentations of the relevant material."[55]

The FDA first chose to simplify the information, since "[m]ost comments strongly supported the view expressed in the format proposal that a simple, uncluttered nutrition label [was] highly desirable."[56] The FDA tried to avoid that disclosure on the NFL resulted in overloading consumers with information.[57] In designing its food labels, the FDA asked consumers to perform various interpretative tasks based on seven different labels.[58] David Kessler explains that once the format was determined, the FDA cooperated with design experts to prepare the final simplified label.[59]

In addition to having a simplified label, standardization was also an important breakthrough. The NFL became present on nearly all packaged foods. In earlier initiatives, nutrition information was provided on a voluntary basis and was only included on a limited number of packages.

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[53] Nutrition Labeling and Education Act of 1990, Pub. L. No. 101-535, 104 Stat. 2353 (codified as amended at 21 U.S.C. § 343 et seq. (2012)).

[54] Food Labeling; General Provisions; Nutrition Labeling; Label Format; Nutrient content Claims; Health Claims; Ingredient Labeling; State and Local Requirements; and Exemptions; Final Rules, 58 Fed. Reg. 3, 2079 (Jan. 6, 1993) (to be codified at 21 C.F.R. pt 5, 20, 100, 101, 105, and 130) [hereinafter *The 1993 Proposed Rule*].

[55] Sunstein, *supra* note 9, at 729.

[56] *The 1993 Proposed Rule*, *supra* note 54, at 2122.

[57] *See* David A. Kessler et al., *Developing the Nutrition Facts Food Label*, 4 HARV. HEALTH POL'Y REV. 13, 19 (2003) (for a detailed account of the development of the NFL).

[58] Alan S. Levy, Sara B. Fein & Raymond E. Schucker, *Performance Characteristics of Seven Nutrition Label Formats*, 15 J. PUB. POL'Y& MARKETING 1–4 (1996) (detailing their experiments, which consisted of testing seven formats of nutrition labels to evaluate the comprehension and acceptance of the information displayed on these formats); *see also The 1993 Proposed Rule*, *supra* note 54, at 2114–40 (generally weighing the pros and cons of various options for nutrition labels and their formats based on consultations with stakeholders and existing research).

[59] Kessler et al., *supra* note 57, at 19.

The NFL was designed to be standardized across all food products in the U.S.[60]

The FDA imposed detailed rules for the format of the NFL.[61] Nutrition information was to be presented in a tabular format with proportions and colors specifically set. A heavy bar was drawn to separate the nutrients on one side and the headings on the other. The typography had to be a single style, easy to read. The nutrients had to be listed along with their measurement units, and the order in which they appeared was also precisely set.

The simplification and standardization of information are essential features to help consumers with bounded rationality better process information. Simplification of disclosure may, in particular, help increase its salience. Standardization increases comparability, which is important, as people make more coherent and rational decisions when they can compare information.[62] The FDA, when discussing the format of the NFL, was "convinced that the specific elements mandated provide a visually integrated image that will give the nutrition label a uniformity of appearance across the various types of packages in the market and will enhance consumer use of the information."[63] These behaviorally-informed techniques of simplification and standardization have been replicated in other parts of the world, including in the European Union.[64]

2. Beyond the Original NLEA: A Behaviorally-Informed Reform of the Label Format

With its February 2014 proposal to reform nutrition labels, the FDA is taking a step further towards the simplification and standardization of the NFL. One of the aims of the reform is to "revise the format and appearance" of the NFL.[65] Indeed, "despite [twenty] years of providing comprehensive nutrition information on food labels in the United States,

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[60] With the exception of meat and poultry information, this information being regulated by the USDA.

[61] *See generally* 21 C.F.R. § 101.9(d) (2015) (for a detailed list of the requirements to standardize the label).

[62] Loewenstein, Sunstein& Golman, *supra* note 8,at 21–24.

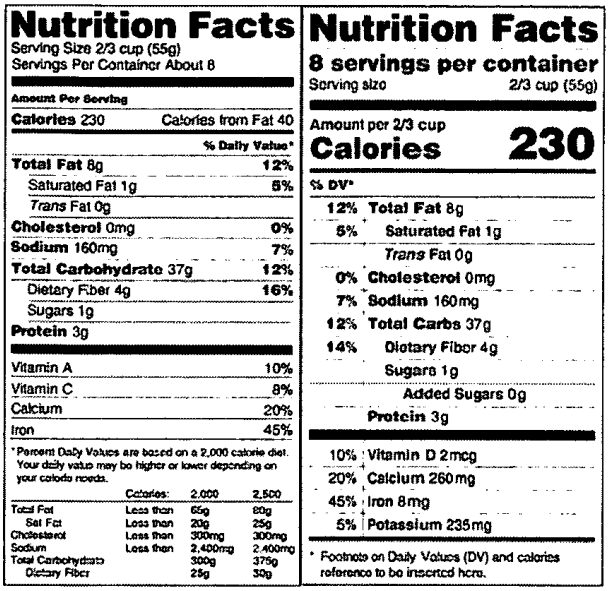
[63] *The 1993 Proposed Rule*, *supra* note 54, at 2137.

[64] The European Union adopted a standardized and simplified version of back-of-pack labels that will be used from 2016 onwards. *See* 2011 O.J. (L 304) 18 (discussing the provision of food information to consumers); EUROPEAN COMMISSION, ADOPTION OF THE REGULATIONS: CITIZEN'S SUMMARY 1 (2009), http://ec.europa.eu/food/safety/docs/labelling_legislation_qanda_application_reg1169-2011_en.pdf ("Labels have become more and more complex over the years and consumers are flooded with information. There is, therefore, a real need for a system that allows consumers, on one hand, to access easily the important information on food labels, and businesses, on the other, to keep being innovative.").

[65] FDA Rule 1, *supra* note 2, at 11880.

rates of obesity have increased and consumers express confusion about the way such information is conveyed."[66]

As the preliminary regulatory impact analysis expressly states, the FDA took into account behavioral insights to better adapt its labeling scheme to the cognitive biases of consumers and ease their processing of information.[67]



Nutrition Facts
Serving Size 2/3 cup (55g)
Servings Per Container About 8

Amount Per Serving	
Calories 230	Calories from Fat 40
	% Daily Value*
Total Fat 8g	12%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	12%
Dietary Fiber 4g	16%
Sugars 1g	
Protein 3g	
Vitamin A	10%
Vitamin C	8%
Calcium	20%
Iron	45%

*Percent Daily Values are based on a 2,000 calorie diet. Your daily value may be higher or lower depending on your calorie needs.

	Calories:	2,000	2,500
Total Fat	Less than	65g	80g
Sat Fat	Less than	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2,400mg	2,400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

Nutrition Facts
8 servings per container
Serving size 2/3 cup (55g)

Amount per 2/3 cup
Calories 230

% DV*	
12%	**Total Fat** 8g
5%	**Saturated Fat** 1g
	Trans **Fat** 0g
0%	**Cholesterol** 0mg
7%	**Sodium** 160mg
12%	**Total Carbs** 37g
14%	**Dietary Fiber** 4g
	Sugars 1g
	Added Sugars 0g
	Protein 3g
10%	**Vitamin D** 2mcg
20%	**Calcium** 260mg
45%	**Iron** 8mg
5%	**Potassium** 235mg

* Footnote on Daily Values (DV) and calories reference to be inserted here.

Current label **Proposed revised format**

Source: FDA Rule 1

The proposal shows that the FDA is trying to develop a behaviorally-informed format for the NFL. Consistent with the move toward behaviorally-informed disclosure, the FDA used behavioral insights in order to simplify the NLF and thus facilitate consumers' understanding of the label. In the proposal, the FDA refers either implicitly, or sometimes explicitly, to principles of behaviorally-informed policy, such as the proximity of two sets of information, salience, anchoring, familiarity of concepts, or primacy (meaning that an item listed first is stored more efficiently in memory). The FDA also refers to justifications based on empirical studies that are fully referred to in the Federal Register's accompanying bibliography.

The table below identifies thirteen main changes to the NFL that can be viewed as behaviorally-informed. It presents the changes in the first column, and the behaviorally-informed justifications—or expected be-

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[66] Josephine M. Wills et al., *Exploring Global Consumer Attitudes Toward Nutrition Information on Food Labels*, 67 NUTRITION REVS. S102, S105 (2009).

[67] FDA, NUTRITION FACTS/SERVING SIZES PRELIMINARY REGULATORY IMPACT ANALYSIS 5–8 (2014) [hereinafter FDA PRELIMINARY REGULATORY IMPACT ANALYSIS], http://www.fda.gov/downloads/Food/GuidanceRegulation/GuidanceDocumentsRegulatoryInformation/LabelingNutrition/UCM385669.pdf ("We note that the behavioral economics literature suggests that distortions internal to consumers (or internalities) due to time-inconsistent preferences, myopia or present-biased preferences, visceral factors (e.g., hunger), or lack of self-control, can also create the potential for policy intervention to improve consumer welfare.").

havioral effects of those changes—in the second column.[68] Examples of changes include the use of a larger and bold font for calories, increased prominence of the "serving per container," renaming "% daily value" as "% DV," and changing the position of some information (such as placing the % DV on the left, before the description of nutrients, rather than on the right). Based on Google searches by consumers, the FDA also decided to use concepts more evocative to consumers, such as "Total Carbs" instead of "Total Carbohydrates."

Proposed format amendments	Tentative behavioral justification/results
1. Increase the prominence of calories and serving size information by using larger and bold font size.	Increasing the **salience** of caloric information. **Anchoring** consumers' attention to the label and focusing their attention on this information.
2. Increase the prominence of "servings per container". Change the order of "serving size" and "servings per container".	**Reducing the effort** to find the number of servings per container. Using **proximity** of information as a graphic design, a principle that asserts that items closer together are perceived to be more related.
3. Right-justifying the quantitative amounts declared in the "serving size" statement.	Need for a less cluttered appearance, emphasis, and **improved readability.**
4. Change the "amount per serving" declaration to "amount per ___" with the blank filled in with the serving size expressed in common household measures (e.g. cup). Increase the font size of this information.	**Reducing time and effort** needed to locate target information. **Assisting consumers** in using the information.
5. Removal of the "calories from fat" declaration.	Absence of apparent impact of such disclosure on consumers' perception of healthy products.

[68] This table is based on the explanations from the FDA Rule 1 on the expected effects of suggested changes that serve as a basis meant for identifying behaviorally-informed justifications/expected results. These justifications/expected results being more or less explicit, this table serves to explain them.

6. Renaming "% daily value" as "% DV" and placing it above the nutrient listing. List % DV in a column to the left of the column with names of the nutrients, have the two columns separated by a thin vertical line.	**Information more salient.** Graphic design principle of **primacy**: item listed first is stored more efficiently in memory. Graphic design principle of **proximity:** white space to isolate elements requiring attention. Left positioning of % DV is expected to raise attention. Vertical line as a clunking technique: putting information in a small space to make it easier to process and remember.
7. Declaration of added sugar as an indented line beneath the declaration of total sugar.	**Salience** of information.
8. Declaration of the amounts for all mandatory and voluntary vitamins and minerals, in addition to the requirement of % DV declaration (with exception for small packages).	**Salience** of healthy nutrients.
9. Requiring dual-column labeling when the package contains at least two times the serving size and less than, or equal to four times the serving size (FDA Rule 2).[69] Overall, this rule is supposed to provide a more accurate information to both consumers that would only eat one portion of the food, and to those who would eat all the food in one standing,	**Reduction of food intake for consumers,** especially those not dieting. **Information easier to process**: easier to identify the number of calories per container and the number of nutrients per container and per serving.[70]

[69] FDA Rule 2, *supra* note 5, at 11883.

[70] *Id.* at 12002 (note that Rule 2 includes a more in-depth study on the impact of behavioral economics findings on the dual-column labeling and weighs the pros and cons of such a format).

10. Footnote at the bottom of the label on the DV and calories references: FDA plans to undertake research on possible adaptation of format and content of the footnote.	**Facilitating consumers' interpretation** of the meaning of % DV. Information **easier to process.** **Salience** of information.
11. Use of highlighting: keep the main nutrients in bold ("calories," "total fat," "sodium"). Highlight in an intermediate bold font the other nutrients so as to set them apart from the other information set in the label.	**Salience** of information.
12. Addition of a horizontal line beneath the nutrition facts heading.	Strengthen label **unity** and organization. **Salience**: direct readers' eyes to the serving sizes, break information into smaller pieces facilitating the **processing** and **remembering** of the information.
13. Replacing "total carbohydrates" with "total carbs".	More white space on the label increasing **salience** of the information and making **processing easier.** **Familiarity**: "total carbs" is a term more extensively searched in Google than "total carbohydrates" over these past 15 years.

The FDA expects the proposed reform to affect consumers in three principal ways. First, it will help better align the new scientific evidence on chronic diseases and on dietary recommendations with the nutrition information provided to consumers.[71] Second, by altering the design of the NFL, the reform will increase the salience of the information.. In return, as the preliminary regulatory impact analysis explains, it is expected that the "[c]hanges in labeling may also assist consumers by making the long-term health consequences of consumer food choices more salient."[72] Third, the proposed reform may lead food manufacturers to change the composition of some of their products that would otherwise appear, as a result of the disclosure, less attractive because of the new labeling requirements.[73]

One might ask whether the attempt to alter the presentation and framing of the NFL is sufficient to facilitate peoples' understanding of the label and prompt healthier choices. This question is of particular

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[71] FDA PRELIMINARY REGULATORY IMPACT ANALYSIS, *supra* note 67, at 6.
[72] *Id.*
[73] *Id.* at 9.

relevance in the context where most consumers' decisions are affected by environmental cues, consumers' illiteracy and innumeracy, and by the biases discussed in Section I. How useful it is to have an NFL whose format is based on behavioral insights if consumers do not look at the NFL in the first place? Building upon these questions, the next section assesses the success of the NFL.

B. Appraisal of the Nutrition Facts Label

1. A Difficult Assessment of the Nutrition Facts Label Success

It is extremely difficult to evaluate the extent to which consumers use labels and how the labels affect their diet in real world environments. Indeed, "[t]he evidence is mixed on whether information and labels actually improve the healthfulness of food choices."[74] The Institute of Medicine Report explains that although some studies suggest a correlation between healthier consumption habits and the reading of the label this correlation does not serve as evidence of causation between the act of reading the NFL and actual food intake.[75]

In addition, it is difficult for scholars to report on the reading, understanding and use of nutrition information in a real world context, as most of the experiments are conducted in laboratory conditions.[76] Studies may have exaggerated the reactions of consumers to nutrition labels. In particular, in a laboratory experiment it may be easier to take protective actions that in real life environments.[77] Also, "the disclosures in such studies tend to be much more salient than they typically are in real world settings."[78] The Institute of Medicine Report analyzed the experimental limits of several studies on the NFL and noted that "the actual label use is much less than what is reported."[79] Building on this idea, the reported use of labels in lab experiments should be discounted when transposed to

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[74] JUST ET AL., *supra* note 21, at 4(discussing this mix of evidence and presenting the experimental literature supporting both sides of the debate).

[75] For further development and referring studies, *see* INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 34.

[76] Kessler et al., *supra* note 57, at 23 (explaining that the impact of nutrition labeling "depends on the extent to which consumers use it to make healthier food choices. The absence of definitive assessment data is disappointing."); Loewenstein, Sunstein& Golman, *supra* note 8, at 12 (using a table to provide a taxonomy of research methodologies related to information and explaining the lack of studies focusing on the supply and demand side of disclosure in a field experiments setting).

[77] Loewenstein, Sunstein& Golman; *supra* note 8, at 12.

[78] *Id.*

[79] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 34; Gill Cowburn& Lynn Stockley, *Consumer Understanding and Use of Nutrition Labelling: a Systematic Review*, 8 PUB. HEALTH NUTRITION 21 (2005) (for the U.S.); Klaus G. Grunert& Josephine M. Wills, *A Review of European Research on Consumer Response to Nutrition Information on Food Labels*, 15 J. PUB. HEALTH 385, 395 (2007) (for Europe).

a real shopping environment.[80] Thus, the origins and quality of empirical research that analyzes consumers' responses to the NFL and to nutrition labeling in general needs careful consideration—an observation that should be kept in mind for the remainder of this article.

2. External Critiques of the Nutrition Facts Label

Providing information clearly in a simplified and standardized way is not sufficient if it is not *read* by consumers.[81] The FDA seems to have designed, and then reformed, the NFL label assuming that consumers were actually paying attention to it. In aiming to "the design and content of the Nutrition Facts label such that relevant information is more salient and easy to understand for the purpose of informing consumer consumption decisions,"[82]the FDA focused on how to attract consumers' attention once they were *already* looking at the label. But the FDA neglected to focus on how to attract consumers' attention in order for them to look at the label *in the first place.* As a result, the efforts to adapt disclosure on the NFL may yield limited effects since the FDA is only focusing on internal improvements of the label instead of analyzing alternative ways to draw consumers' attention to the actual label. This is why the critiques presented below are external in the sense that they do not represent an assessment of the NFL itself, but an assessment of why consumers' attention is not directed to the NFL.

Consumers, owing to their insufficient nutrition literacy, may simply not be aware of the importance of looking at the NFL. They could also be aware of the label, but not be willing—or motivated—to read it. As a result, the label is ignored, influenced by consumers' lack of "motivated attention."[83] Consumers may also not be willing to cut their consumption of calories.[84] Environmental factors perceived as "noises" may also distract consumers' attention from the label. The noises may include cravings or even time constraints that direct consumers to use their system 1 instead of their system 2.[85] This situation is all the more problematic

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[80] Wills et al., *supra* note 66, at s102 (providing a review of the perception and use of the NFL in the U.S. based on a large number of studies that were selected based on their scientific quality).

[81] Susanna Kim Ripken, *The Dangers and Drawbacks of the Disclosure Antidote: Toward a More Substantive Approach to Securities Regulation*, 58 BAYLOR L. REV. 139, 146 (2006) ("In order for a disclosure system to be effective, not only must the information that is supplied be disclosed completely, clearly, and accurately, but it must also be read and comprehended by the consumer."). *Cf.* Loewenstein, Sunstein& Golman, *supra* note 8, at 21 (considering that Ripken's statement can be broadly applicable).

[82] FDA PRELIMINARY REGULATORY IMPACT ANALYSIS, *supra* note 67, at 5.

[83]Loewenstein, Sunstein& Golman, *supra* note 8, at 14.

[84]*Id.* at 31 (explaining that there is a need for qualitative research to prove the assumption that "people whose health would benefit from calorie reduction will *want* to cut calories").

[85]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 Constraint*, 57 APPETITE 148, 149 (2011).

because the people who ignore labels in the first place may be those who are in need of them most. To this external critique, an internal critique could be added: even if some consumers *read* the label, it does not necessarily mean they *understand* it.

3. Internal Critiques of the Nutrition Facts Label

Providing information clearly, in a simplified and standardized way, is not enough if it is not *understood* by consumers. Consumers may want to engage with the nutrition table disclosed on food packages but they may nonetheless have a low understanding of the nutrition information. For instance, the Institute of Medicine Report notes that "consumers are often confused by the information on the food label and have difficulty understanding serving sizes."[86] According to a study on U.S. consumers, 88 percent of consumers looking at the NFL mistakenly estimated the number of calories they consume per day; half of these consumers could not even formulate a broad estimate of their daily calorie needs.[87] This finding suggests that making calories more salient in the NFL may attract consumers' attention, but they may remain unable to infer from these numbers any dietary recommendations. Worse, in one real world experiment based on the consumption patterns of New York burger restaurants, the disclosure of the number of calories on menu items increased the overall intake of calories by consumers undertaking a diet.[88] This finding, despite being based on an away-from-home setting, could possibly be replicated if the salience of calories is increased as suggested in the recent FDA proposal.

Moreover, most people do not use the percentage daily values (% DV) because it is complex to understand. This is consistent with findings that people do not like to do math and do not easily make calculations.[89] In its proposed reform, the FDA acknowledges the difficulties consumers have processing % DV.[90] Some prefer metrics instead (i.e. "this yogurt contains 200mg of calcium"). However, there is little chance that a consumer who likes metrics would be able to make dietary infe-

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[86] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 34.

[87] Wills et al., *supra* note 66, at s103.

[88] Downs, Loewenstein, & Wisdom, *The Psychology of Food Consumption: Strategies for Promoting Healthier Food Choices*, *supra* note 41.

[89] Alan S. Levy & Sara B. Fein, *Consumers' Ability to Perform Tasks Using Nutrition Labels*, 30:4 J. NUTRITION EDUC. 210, 2010 (1998) (arguing that back-of-pack labels are not sufficient today to help consumers make healthy choices, and explaining this insufficiency through consumer's inability to deal with quantitative tasks. "Most consumers (78%) accurately compared two products, 58% accurately evaluated nutrient level claims, 45% comprehensively balanced nutrients over a daily diet, and 20% accurately calculated the contribution of a single food to a daily diet, a task that required complex math. The subjects who performed significantly poorer were over 55 years of age, non-white, and less educated than those who performed best. Not reading food labels and having a diet-related health condition were also related to poorer performance.").

[90] FDA Rule 1, *supra* note 2, at 11951.

rences from a product containing "200mg of calcium." Is it a low or a high amount compared to the daily-required intake of calcium? The use of metrics can be highly misleading.[91]

Most consumers of food products lack the necessary "food capabilities" to properly comprehend nutrition information. This is especially true of elderly or less educated individuals who have difficulties understanding nutrition labels,[92] or do not even use them.[93] Moreover, the Institute of Medicine considers that "[c]onsumers with limited resources are more likely to be concerned about cost instead of nutrition, and consumers who find the label difficult to understand are less likely to use the nutrition information."[94]

Some consumers who may have the ability to process information may still feel overloaded with the quantity of information or may accumulate so much information that they are eventually unable to process it efficiently. In particular, even if people are willing to read the NFL and understand it, their use and understanding of the NFL when selecting a product may be impeded by biases, their reliance on heuristics shortcuts, or by noises from their environment.

The above-mentioned studies evaluating the success of the NFL, and back-of-pack labels in general, demonstrate that food consumers do not necessarily read or understand the NFL. Researchers from the Harvard Transparency Policy Project found that information that could not be easily understood was less likely to be "embedded" into daily decision making.[95] The Project further suggested that nutrition disclosure requirements as introduced by the NLEA were only a moderately effective transparency system, insufficiently "embedded" in most consumers' decisions.[96] This evidence could be read in conjunction with a study

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[91] Kessler et al., *supra* note 57, at 15 ("Research had shown, for example, that because the recommended daily intake of sodium (2,400 mg or less) is a relatively large number, consumers often mistakenly identified low-sodium food (e.g., 140mg of sodium per serving) as containing a lot of sodium. Similarly, consumers often mistakenly identified foods that were relatively high in saturated fat (e.g., 5 grams per serving) as low in that nutrient.").

[92] Levy & Fein, *supra* note 89, at 215.

[93] Madhubalan Viswanathan, Manoj Hastak& Roland Gau, *Understanding and Facilitating the Usage of Nutritional Labels by Low-Literate Consumers*, 28 J. PUB. POL'Y& MARKETING 135, 143 (2009) (examining the use of nutrition labels by consumers with a low level of literacy, and showing that consumers with a level of literacy from 0 to 12th grade cannot use the NFL or can only use part of it); Alan R. Kristal et al., *Trends in Food Label Use Associated with New Nutrition Labeling Regulations*, 88 AM. J. PUB. HEALTH 1212 (1998) (+60 year-old people and less educated individuals found the labels more difficult to understand).

[94] The INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 3; *see also* Jonathan L. Blitstein& W. Douglas Evans, *Use of Nutrition Facts Panels among Adults Who Make Household Food Purchasing Decisions*,38 *J. NUTRITION EDUC. & BEHAV.*360, 364 (2006).

[95] Weil et al., *supra* note 48, at 161.

[96] Archon Fung, David Weil, Mary Graham & Elena Fagotto, *The Political Economy of Transparency: What Makes Disclosure Policies Effective?* 23, Ash Institute for Democratic Governance and Innovation, HKS, OP-03-04, (Dec. 2004) (put simply, the

reporting that 70% of people surveyed want labels that are easier to understand.[97] This moderate efficiency also has an impact on manufacturers, who have more incentives to react conservatively: since nutrition labels (and therefore the nutrition composition of a product) are not be fully "embedded" into consumers' decisions, manufacturers have fewer incentives to alter the composition of their food products.[98]

The FDA agrees that "modifying the Nutrition Facts [L]abel would require some re-education on how to read the Nutrition Facts [L]abel."[99] However, education programs and the organization of awareness campaigns have only yielded moderate to non-existent positive results.[100] Meanwhile, obesity is increasing and consumers continue to make choices based on biases, heuristics, and limited nutrition literacy. The NFL and its amended version may be the first step towards behaviorally-informed disclosure. Yet the NFL still relies too much on the reflective and rational system 2 of consumers, when consumers actually primarily use their automatic system 1 to make food-related decisions.

C. Absence of Visual/Interpretative Cues in the Nutrition Facts Label

Apart from its tabular format, there are no visual or interpretative cues on the NFL that would appeal to consumers' instinctive and emotional system 1 to make a more informed decision when choosing one product over another in a supermarket environment. Interestingly, the FDA considered introducing interpretative cues as part of its past and present reforms of mandatory nutrition labeling; but it swiftly rejected this option with limited justifications for its choice.

When the NFL was first designed, the FDA decided to disclose the percentage daily values, but chose not to rely on interpretative aids or visual cues, such as the highlighting of some nutrients or the use of the adjectives "low, high, medium" to indicate the quantity of nutrients.[101] The idea of using graphics, such as pie charts or bar charts, to present the percentage daily values was also abandoned.[102] Overall, the FDA was not particularly willing to use interpretative cues; it left decisions to in-

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article suggests that transparency systems are effective when they become embedded into decision making processes of users and disclosers, and when the disclosure affects the choice of user and discloser so as to advance a policy objective. It also suggests that biases can alter the effectiveness of transparency systems).

[97] Kristal et al., *supra* note 93, at 1215.

[98] *Id.*

[99] FDA Rule 2, *supra* note 5, at 12002.

[100] Wansink, *supra* note 20, at 318 (suggesting, as explained earlier, that education and awareness have not properly worked so far).

[101] *The 1993 Proposed Rule*, *supra* note 54, at 2114–40.

[102] Kessler et al., *supra* note 57, at 19–21 (providing for a detailed account of the development of the nutrition label).

[102] *The 1993 Proposed Rule*, *supra* note 54, at 2122.

clude additional displays in the hands of food manufacturers.[103] It can be surmised that this approach was taken by the FDA as they wanted to preserve, as far as possible, the freedom of choice of consumers and manufacturers. Interpretative cues could have potentially infringed on this liberty.

The FDA proposal rejected the idea of visual interpretative labels as *alternative* visual presentation formats to the current NFL tabular format. It relied on two studies that had concluded that there was insufficient evidence that consumers benefitted from graphical layout. [104] The FDA seems to have understated evidence from a larger body of literature that convincingly demonstrates that the use of visual aids can increase the understanding of labels and potentially promote healthier choices. In addition, the FDA could have explored the importance of front-of-pack visual and interpretative labels.

It is possible to interpret the FDA's reaction as a sign that it aims to stay focused on the reform of the back-of-pack labels. Another relevant consideration is the eventual pressure put by industry groups on the government-led interpretative scheme, as it could lead to the negative labeling of some products (e.g. the use of red traffic lights).[105] Yet the FDA seems open to reconsider the question as it "invite[s] comments on an alternative concept for the Nutrition Fact label that indicates "quick facts."[106] These "quick facts" would indicate the amount of the main nutrients in a given product combined with an indication such as "get enough," "avoid too much" for each nutrient.

The FDA has, however, left room to regulate front-of-pack nutrition labels in the future. As already explained in the introduction of this article, the FDA, in its Strategic Plan for 2012-2016, expressed its willing-

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[103] Admittedly, in its February 2014 proposal, the FDA called for comments on alternative concepts for its NFL format. This alternative back-of-pack format, whose design was already provided in the proposal, was similar to the principal design suggested in the FDA proposal and reproduced above. The main difference was the provision of information on which nutrients to avoid and which to encourage. But note that this alternative format concerns the back-of-pack, not the front-of-pack. *See* FDA Rule 1, *supra* note 2, at 11955 ("[W]e invite comment on an alternative concept for the Nutrition Facts label format that indicates 'quick facts' (e.g., amount of total carbohydrate, fat and protein) about a product's nutrient content first, and then explicitly points out nutrients to 'avoid too much' of as well as nutrients to 'get enough' of as a way to categorize the nutrient declarations in the Nutrition Facts label. . . . We request comment on how this display may or may not convey the information in a manner which enables the public to readily observe and comprehend such information. . . .").

[104] FDA Rule 1, *supra* note 2, at 11955.

[105] Marion Nestle, *FDA says Facts-Up-Front is OK?*, FOOD POLITICS (Feb. 27, 2012), http://www.foodpolitics.com/2012/02/fda-says-facts-up-front-is-ok/.

(suggesting the Facts Up Front Panel is evidence that the food industry is trying to avoid the development of a traffic lights scheme that could negatively impact on their sales as it could discourage people from buying their products).

[106] FDA Rule 1, *supra* note 2, at 11955.

ness to "[e]xplore front-of-pack nutrition labeling opportunities."[107] The next section looks beyond the NFL and its current reform to see how nutrition information should be organized so that it is even more tailored to the bounded rationality of consumers and better processed via their automatic system 1.

III. FRONT-OF-PACK LABELS: A NEW STEP TOWARD STRONG BEHAVIORALLY-INFORMED DISCLOSURE

The bounded rationality of consumers requires more significant changes than the current NFL and its proposed reform to reduce obesity and have consumers making more informed decisions. Disclosure that is visual, interpretative, and extra simplified could offset the current environmental noises that prevent consumers from giving full attention to the NFL, and the insufficient food literacy of some consumers. Front-of-pack nutrition labels can (A) help reach these two objectives and (B) nudge consumers harder towards healthier choices.

A. Front-of-Pack Labels as Increased Behaviorally-Informed Disclosure

1. Summary Presentation of Front-of-Pack Nutrition Labels

Front-of-pack labels ("FOPs") have become increasingly common in recent years and act as a supplement to back-of-pack labeling. FOPs are clearly visible on store shelves since they are positioned to directly face consumers. In the U.S., FOPs are private initiatives and are voluntarily adopted by manufacturers.[108] In other countries, FOPs can be mandatory, but more frequently they are voluntary and private initiatives (e.g. supermarkets or manufactures coming up with their own visual scheme). In some countries, the government may provide guidelines for a standardized label but the scheme remains voluntary and based on private initiatives.[109]

FOPs provide a combination of simple and didactic information that integrates color-coded or graphical elements and sometimes numerical-

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[107] FDA (Office of Foods, Ctr. for Food Safety & Applied Nutrition, Ctr. for Veterinary Med., Office of Regulatory Affairs), *supra* note 11.

[108] *See, e.g.*, FACTS UP FRONT, http://www.factsupfront.org/AboutTheIcons (the Facts Up Front Panel is a voluntary nutrition scheme initiated by the Grocery Manufacturers Association, a group that represents the nation's leading food and beverage companies).

[109] For an overview of the situation in the world regarding food labels, *see* EUROPEAN FOOD INFORMATION COUNCIL, GLOBAL UPDATE ON NUTRITION LABELLING, EXECUTIVE SUMMARY (Jan. 2014), http://www.eufic.org/upl/1/default/doc/GlobalUpdateExecSumJan2014%2013%20Jan%202014_FINALwebSummary.pdf. Note that in May 2011 Thailand became the first country to make FOPs mandatory for five snack categories. An initiative is currently underway to have a coherent FOP across the ASEAN region. Mexico, Ecuador, Chile, and Peru have all introduced different forms of mandatory FOP labeling. *Id.*

data related to nutrients. They can be classified into two categories. First, *nutrient-specific FOPs* display information about nutrients, such as sugars, fat, and salt that can be measured in quantity and/or in percentage of guideline daily values (i.e.: "eating one of these chocolate bars will provide a consumer 20% of his recommended daily sugar intake").[110] They can take the shape of a color-coded traffic light, a color-coded circular diagram or color-coded and monochrome tabs. Second, *summary-system FOPs* are based on algorithms that produce an overall nutrition score that is then transposed into pictorial form, such as health logos that look like a tick mark or, as in Sweden, the keyhole-shape.[111]

The Institute of Medicine identifies four attributes of FOPs that could, as this article claims, reinforce the behaviorally-informed properties of nutrition disclosure. First, FOPs are simple, in the sense that their "understanding does not require specific or sophisticated nutrition knowledge."[112] Second, FOPs are interpretative, with nutrition information "provided as guidance rather than as specific facts".[113] Third, FOPs are ordinal because "nutritional guidance is offered through a scaled or ranked approach."[114] Fourth, FOPs are "supported by communication with readily remembered names or identifiable symbols."[115]

A distinction can also be drawn between the level of "directiveness" of a FOP or the "degree to which a FOP provides normative information about healthiness."[116] Non-directive FOPs, such as the monochrome variety, communicate the level of nutrients in a product in percentage of daily values but do not indicate whether this level is low, medium or high. Directive FOPs, such as health logos or simple traffic lights, communicate an overall assessment of the healthiness of a product.[117] Finally, semi-directive FOPs, such as color-coded FOPs, provide information either on the amount of nutrients or percentage of guideline daily values, with a traffic light code that indicates whether this percentage is high, medium or low. This category is close to the "directive FOPs" category.

2. The Need for Visual and Interpretative Cues

A number of studies analyzed the understanding and use of the NFL by consumers and suggested introducing more interpretative aids in nu-

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[110] JAMES E. HERSEY ET AL., U.S. DEP'T OF HEALTH & HUMAN SERVS., POLICY RESEARCH FOR FRONT OF PACKAGE NUTRITION LABELING: ENVIRONMENTAL SCAN AND LITERATURE REVIEW 3 (Feb. 2011),http://aspe.hhs.gov/basic-report/policy-research-front-package-nutrition-labeling.

[111] *Id.*

[112] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 3.

[113] *Id.*

[114] *Id.*

[115] *Id.*

[116] CharoHodgkins et al., *Understanding How Consumers Categorise Nutritional Labels: A Consumer Derived Typology for Front-of-Pack Nutrition Labelling*, 59 APPETITE 806 (2012).

[117] *Id.*

trition labeling, notably by using visual cues. Gill Cowburnand Lynn Stockley were among the first to emphasize the need for interpretative aids in nutrition disclosure.[118] These interpretative aids (charts, colors, and logos) would further simplify disclosure and its interpretation.[119]

Indeed, FOPs that use a colorful display combined with a new framing of nutrition information could increase the salience of the information. The more vivid and salient the information, the greater the chance that consumers will read it and process it.[120] FOPs that combine simplified information with logos, color and design signals would catch the attention of consumers when they are choosing which products to purchase on store shelves. In general, FOPs have done better at attracting consumers' attention as compared to back-of-back labels.[121] Furthermore, studies have shown that consumers find it more difficult to ignore information on labels when they are in color.[122] Thus, FOPs that use colors, simplified logos, or traffic lights could nudge consumers to pay attention to nutrition information. FOPs could particularly assist consumers who would not otherwise pay attention to the label or would not be willing to engage with the NFL.[123]

Wansink has conducted experiments showing that a shorter health claim on a FOP combined with a longer back-of-pack label, was better processed than its longer counterpart found on the back-of-pack, and more importantly, that a shorter claim increased the persuasiveness of the claim disclosed on a product.[124] This finding suggests that a layered disclosure, one that combines longer information disclosure on the NFL with shorter information on the FOPs, can increase the potential of nutritional labeling to foster healthier choices.

FOPs could also mitigate the insufficiency of nutrition education and awareness since they could provide, through interpretative aids,

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[118] Cowburn& Stockley, *supra* note 79, at 21 ("Interpretational aids like verbal descriptors and recommended reference values helps in product comparison and in putting products into a total diet context.").

[119] Levy & Fein, *supra* note 89, at 210 ("The findings suggest that dietary guidance for consumers will be more effective if it does not require quantitative tasks but relies instead on tasks that are easier for consumers."); *see also* Norman J. Temple & Joy Fraser, *Food Labels: A Critical Assessment*, 30 NUTRITION 257 (2014).

[120] Vividness is also a tool for behaviorally-informed disclosure, *see* Loewenstein, Sunstein& Golman, *supra* note 8, at 27.

[121] Eye-tracking experiments reveal that the FOPs attract consumers' attention more than back-of-pack labels. S*ee generally* HERSEY ET AL., *supra* note 110.

[122]Grunert& Wills, *supra* note 79, at 393.

[123] Roe et. al, *supra* note 37 (arguing that consumers rely on FOPs and give more weight to information provided on these labels than on the NFL).

[124] Brian Wansink, Stephen T. Sonka& Clare M. Hasler, *Front-label Health Claims: When Less is More*, 29 FOOD POL'Y 659 (2004) (also finding that a shorter claim as compared to a longer health claim leads consumers to generate more attribute-specific and general evaluative thoughts about a given product; the experiment was conducted on 118 shoppers in an Illinois grocery store); *see also* Brian Wansink, *How do Front and Back Package Labels Influence Beliefs About Health Claims?*, 37 J. CONSUMER AFF.305 (2003).

pre-processed information. As the Institute of Medicine explained, an approach that would provide "nutrition information only and [that] is not interpretive would have limited success in encouraging healthier consumer food choices and purchase decisions."[125] This interpretative information could decrease the differences between lower and higher educated consumers in their selection of healthier products and increase the ability of both to differentiate the nutrition quality of products. FOPs are also expected to have three levels of transparency because they could enhance comparisons: 1) between food of different categories; 2) within food categories; and 3) for food evaluated in isolation and jointly.[126]

An increasing number of studies, in particular by regulatory agencies,[127] recommend disclosing visual and interpretative aids in the form of a FOP.[128] The Institute of Medicine supports a government-sponsored FOP symbol, arguing that "the time has come for a paradigm shift from information-based nutrition rating systems to one that encourages consumers to make more healthful food choices and purchasing decisions [that would be] easily understood and maximizes the opportunity to better inform and guide consumers' toward more healthful food choices."[129] A government-sponsored—and thus standardized—FOP scheme would replace the multiple FOPs that now exist and are managed by food producers (such as the recent Facts Up Front panel).[130] The Facts Up Front panel, for example, may not be the easiest type of FOP for consumers to

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[125] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 3.

[126] Erica van Herpen, Sophie Hieke& Hans C.M. van Trijp, *Inferring Product Healthfulness from Nutrition Labelling: The Influence of Reference Points*, 72 APPETITE 138, 148–49 (2014).

[127] FOPs have been subject to review by a number of regulatory agencies in the U.S., including the USDA, the Food and Nutrition Board, and the Institute of Medicine, who studied the development of FOP. *See generally id.* (providing a full and comprehensive analysis of the reasons why interpretative and visual labels should be implemented and advocating for a government-sponsored FOP symbol system); JUST, MANCINO&WANSINK, USDA, *supra* note 21 (examining the possibility of using FOPs in an away-from-home context). For a review of the literature regarding FOPs, *see also*- HERSEY ET AL., *supra* note 110; MERCER ET AL., INSTINCT AND REASON, LITERATURE REVIEW ON THE IMPACT OF LABEL FORMAT ON CONSUMERS' ATTENTION AND COMPREHENSION FOR MANDATED LABEL ELEMENTS (July 2013), http://www.foodstandards.govt.nz/publications/Documents/Literature%20review%20on%20label%20format%20-%20commissioned%20report%202013.pdf; BMRB SOCIAL RESEARCH, COMPREHENSION AND USE OF UK NUTRITION SIGNPOST LABELLING SCHEMES 4 (May 2009),http://webarchive.nationalarchives.gov.uk/20131104005023/http://www.food.gov.uk/multimedia/pdfs/pmpreport.pdf.

[128] Wills et al., *supra* note 66, at s102, s103 (lamenting the lack of understanding of the NFL and suggesting to clarify the nutrient-calorie relationships and the meaning of percentage daily values, to standardize serving sizes and terminology, and to move key information to a small panel on the front of the package); *see also* Grunert& Wills, *supra* note 79,at 393.

[129] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at ix–x.

[130] The FDA appears to be referring to a similar format developed in the recent Facts Up Front Panel. This format is a voluntary nutrition scheme initiated by the Grocery Manufacturers Association, a group that represents the nation's leading food and beverage companies. *See* FACTS UP FRONT, http://www.factsupfront.org/AboutTheIcons.

understand and use to make informed nutrition choices.[131] Besides, FOP schemes managed by food producers may not be constructed with the best interest of consumers in mind; they may be driven by the interests of food producers and possibly operate as advertisements. These schemes also contribute to increased noise in the decision-making environment.[132]

3. Front-of-Pack Labels as a Tool for Healthier Choices

Many scientific studies have focused on consumers' reactions to FOPs. Across these different studies, a distinction can be drawn between consumers' liking, understanding and use of FOPs. In reviewing these studies, it appears that consumers like labels that provide interpretative cues, in particular those that combine traffic light colors and percentage daily values. On the other hand, consumers view the directive labels such as health logos (e.g. ticks or stars) and traffic lights not associated with numerical data as "too didactic" or "paternalistic."[133] Nevertheless, for the Institute of Medicine, FOP labeling, particularly when it uses a simple symbol, "might serve as a cue or signal for consumers, helping them distinguish between products of greater and lesser nutritional quality."[134] Studies actually show that information is generally processed easier and faster by consumers faced with directive FOPs, such as simple traffic light labels and health logos.[135]

This set of evidence suggests that consumers' reactions toward specific FOP formats should be considered carefully, as this may not be a reliable indication of their ability to use, understand, and process information to then make healthier choices.[136] The limits of empirical studies based on consumers' reactions to FOPs echoes those previously discussed with respect to the NFL. These empirical studies are conducted in a laboratory environment where consumers' attention is already fixed on the label for the needs of the experiment. Yet the Institute of Medicine considered, after analyzing various studies on consumers' reactions to FOPs, that "[a]lthough these studies provide no direct evidence about how consumers might process FOP food labels, they reinforce findings from traditional marketing studies that indicate that certain messages, designs, and labels on food products and packages can influence con-

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[131] *See* Christina A. Roberto et al., *Facts Up Front Versus Traffic Light Food Labels: A Randomized Controlled Trial*, 43 AM. J. PREVENTIVE MED. 134 (2012).

[132] *See* INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 67; *see also* Marion Nestle & David S. Ludwig, *Front-of-Package Food Labels: Public Health or Propaganda?*, 303 J. AM. MED. ASS'N 771 (2010).

[133] Grunert& Wills, *supra* note 79, at 391–92.

[134] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 3.

[135] HERSEY ET AL., *supra* note 110, at 24. In a European context, existing studies suggest that simplified FOPs incorporating traffic light color coding and corresponding text indicating "high," "medium," or "low" levels of nutrients could lead to better understanding compared to "check-mark" symbols.

[136] BMRB Social Research, *supra* note 127, at 4.

sumers' reactions to and experiences with a product".[137] Among the many studies analyzing the effects of FOPs, it is essential for the policy-maker to select carefully which ones to rely on.[138]

Directive FOPs, which provide extra-simplified and summarized information,[139] provide the greatest improvement in consumers' ability to understand the information and make comparisons.[140]This is especially true for older consumers or consumers of a lower socioeconomic background.[141] Research on UK consumers has shown that semi-directive labels associated with traffic light colors and nutrition data, such as percentage daily values, lead to the most correct answers when selecting healthy foods.[142] Overall this is consistent with the suggestion from many studies that a combination of semi directive and directive labels would reach the largest audience.[143]

Studies suggest that FOPs, combined with an increased understanding of information, can encourage healthier choices.[144] The Institute of Medicine Report concludes that a single and standardized FOP system would be the best option to encourage healthier food choice.[145] Indeed, studies suggest that consumers have greater ease identifying healthier products when they have a logo or traffic light signal.[146] Eye-tracking experiments provide further evidence that consumers who read FOPs make 20.3% fewer errors when choosing healthier foods than consumers

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[137]INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 62.

[138] To get around this methodological difficulty, this article relies on the research of established scholars in the field of nutrition labeling. These scholars select, according to a precise methodology, articles that have met a quality standard to be part of this compilation. *See* INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 34; Cowburn&Stockley, *supra* note 118, at 22–23 (for the U.S.); Grunert& Wills, *supra* note 79.

[139] About summary disclosure, *see* Sunstein, *supra* note 9, at 732.

[140]*See generally* Madhubalan Viswanathan&Manoj Hastak, *The Role of Summary Information in Facilitating Consumers' Comprehension of Nutrition Information*, 21J. PUB. POL'Y& MARKETING 305 (2002) (arguing that the use of summary information would help to better compare the same range of food products to consumers than the use of percentage daily values).

[141]*Id.*

[142]Grunert& Wills, *supra* note 79, at 393.

[143]Hodgkinset al., *supra* note 116.For a review for the U.K., *see* BMRB Social Research,, *supra* note 127, at 3–4 (indicating that the strongest FOP in term of understanding are those combining "low"/"medium"/"high" traffic light colors and percentage GDA). Yet, it is necessary to further test these labels on U.S. consumers to see if this finding could be transposable to American consumers whose culture and education may lead to a different use and understanding of information.

[144] For a wide review of the literature on this subject, *see* BMRB Social Research, *supra* note 127. *Cf.* Jessica Aschemann-Witzel et al., *Effects of Nutrition Label Format and Product Assortment on the Healthfulness of Food Choice*, 71 APPETITE 63, 63 (2013)(a recent study conducted in Germany and Poland by the main scholars in the field of nutrition labeling suggests that "formats did not influence consumers' motivation to choose healthful foods. Colour coding, however, increased consumers' perceived capability of making healthful choices.").

[145]INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 5.

[146]Grunert& Wills, *supra* note 79, at 392–93.

who look at standard back-of-pack nutrition labels.[147]FOPs can also lead to higher degrees of self-control of consumers in terms of thoughts, impulsive behavior and emotions leading to more healthy choices. Thus, since consumers do not necessarily have the knowledge to interpret nutrition information on back-of-pack labels, the traffic light system could help consumers to make informed decisions, thus "reducing their cognitive workload."[148]

Traffic lights FOPs can not only be correlated with healthier choices, but also with *sustained* healthier choices, according to a recent study conducted in the Massachusetts General Hospital cafeteria.[149] Based on the content of fat, fibers, whole grains, protein and calories, every item in the cafeteria was labeled with a red, yellow, or green traffic light. Three months after the introduction of the scheme, choice architecture was used: items were re-arranged to increase green item visibility. The healthier choices that resulted from this FOP scheme, combined with choice architecture, were sustained until the end of the study, two years later. These results suggest the positive effect of FOPs are combined with the convenience of choice.[150] A similar study would need to be undertaken in a supermarket environment to see if it would lead to comparable results.

Lastly, FOPs could negatively affect the sale of unhealthy products. Alan Mathios has shown that after the implementation of the NLEA and mandatory disclosure, the sale of high-fat salad dressings had decreased.[151] The use of visible FOPs could have a similar but even more powerful effect if consumers read FOPs more frequently than the current NFLs. They would be nudged into avoiding foods with unhealthy FOP ratings.

Based on the evidence suggesting that FOPs attract consumers' attention and that more informed decisions are taken under a directive FOP scheme, this article argues, in its next section, that the U.S. should introduce a directive FOP scheme even if consumers may not particularly appreciate this type of labeling scheme in the first place.

B. Strong Nudging through Front-of-Pack Labels

There is a major need for public policy that encourages healthier eating habits and for what we call "strong nudging" to address the increasing problems of obesity and chronic diseases. Nudging people means taking into account the bounded rationality that affects individuals so as

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[147] Gary Jones & Miles Richardson, *An Objective Examination of Consumer Perception of Nutrition Information Based on Healthiness Ratings and Eye Movements*, 10 PUB. HEALTH NUTRITION238, 242–43 (2007).

[148] *Id.* at 243.

[149] Thorndike et al., *supra* note 22.

[150] On the combination between disclosure and convenience, *see* Wisdom et. al, *supra* note 23.

[151] Alan D. Mathios, *The Impact of Mandatory Disclosure Laws on Product Choices: An Analysis of the Salad Dressing Market*, 43 J.L. & ECON.651, 670 (2000).

to design choice architecture that integrates this bounded rationality and influences individuals' decisions in a way that is predictable. Nudging people also implies that this intervention would safeguard their freedom to choose other options if they want to.[152]

We believe there are varying degrees with which it is possible to nudge people. What we call "strong nudging" is based on libertarian or asymmetric paternalism[153] but also take into account some of the concerns from authoritarian paternalism. Cass R. Sunstein and Richard H. Thaler developed libertarian paternalism as a theoretical framework, supported by the empirical results of behavioral economics. It promotes the development of strategies whose purpose is to influence consumers into making welfare-promoting choices while respecting their freedom of choice. Nudging people is in line with this approach. Contrary to the liberal and autonomy-preserving approach to paternalism, Sarah Conly, for instance, advocates for a more authoritarian paternalism. In particular, she suggests introducing a ban on some foods—or big food portions—on the grounds that people are not necessarily aware of the harm they are doing to themselves and to their health when taking some eating decisions.[154]

The point of this article is not to argue for a ban of some foods. This type of argument would prompt further questions about individual autonomy, what is healthier food, and who decides which food products to ban. However, a Conly-type argument would take the view that people may not be the best judges of what disclosure they need and what food they should consume to have a healthier diet. They may feel that they value autonomy, but actually make choices that hurt their health.

Some interventions and choices architecture can nudge consumers more or less effectively toward a given choice.[155]In the context of libertarian paternalism, people could be nudged towards a choice over another while remaining free to make their own choices. However, if the

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[152]*See also* RICHARD H. THALER& CASS R. SUNSTEIN, NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH AND HAPPINESS 6 (2008).

[153] Cass R. Sunstein& Richard H. Thaler, *Libertarian Paternalism is not an Oxymoron*, 70 U. CHI. L. REV. 1159, 1161–62 (2003) ("The libertarian aspect of our strategies lies in the straightforward insistence that, in general, people should be free to opt out of specified arrangements if they choose to do so . . . The paternalistic aspect consists in the claim that it is legitimate for private and public institutions to attempt to influence people's behavior even when third-party effects are absent."); Colin Camerer et al., *Regulation for Conservatives: Behavioral Economics and the Case for 'Asymmetric Paternalism'*, 151 U. PA. L. REV. 121, 121 (2003) ("A regulation is asymmetrically paternalistic if it creates large benefits for those who make errors, while imposing little to no harm on those who are fully rational. Such regulations are relatively harmless to those who reliably make decisions in their best interest, while at the same time advantageous to those making suboptimal choices"). *Cf.* Douglas Glen Whitman & Mario J. Rizzo, *Paternalist Slopes*, 2 N.Y.U. J.L. & LIBERTY 411 (2007) (examining the risk of the slippery slope from soft paternalism to hard paternalism).

[154]SARAH CONLY, AGAINST AUTONOMY: JUSTIFYING COERCIVE PATERNALISM (2013).

[155]*See* The Behavioural Insights Team, *supra* note 17 (presenting a variety of interventions tested to see which ones can best nudge consumers toward a given result).

nudge is not effective enough, it means people would be more likely to decide to depart from the direction into which they are nudged. In that event, they may not necessarily make choices in the interest of healthier consumption. This is all the more true in the absence of sufficient nutritional education and awareness. Hence, we suggest adopting a behavioral approach to nutrition disclosure that would strongly nudge people toward healthy choices. They would still be free to make less healthy choices, but less likely to do so as the nudge would be strong.

The approach of the FDA, as adopted in the NFL, does not sufficiently nudge consumers towards paying attention to nutrition information. Behaviorally-informed disclosure needs to be more robust to both offset the bounded rationality of consumers and mitigate the impacts of the environment and insufficient literacy on decision-making. This idea is supported by the Institute of Medicine Report. The Institute of Medicine noted that "for a government-sponsored FOP system to help achieve population health benefits, its goal cannot be to only inform consumers about detailed nutrition content, but more importantly to encourage healthier choices and purchase behaviors."[156] The FDA should endorse a single FOP format that would replace that of manufacturers. From the above, the question that arises is which type of FOPs might be most appropriate to strongly nudge consumers toward healthy choices.

This article considers that directive FOPs are tools for strong nudging. With their interpretative cues and colors they have the potential to serve as a government-sponsored official heuristic shortcut. They could eventually strongly nudge consumers into paying attention to nutrition labels and towards healthier choices.[157]

These FOPs would move beyond providing simplified and standardized information on the NFL. This article has presented evidence that directive FOPs may not be the choice preferred by consumers, who may find them too paternalistic and not informative enough. In addition, FOPs arguably impede consumer autonomy, insufficiently account for consumer heterogeneity, and may lack legitimacy, since they would be implemented by policy-makers who themselves have a bounded rationality.[158]Admittedly, directive labels come also with extra simplification. There might be healthy nutrients in a product that has a red traffic light for sugars, and the food may not necessarily be unhealthy if consumed occasionally.

However, an increased use of directive FOPs can attract consumers' attention in an environment full of other noises, and can yield the most

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[156]INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 1.

[157] MacMaoláin, *supra* note 22 (concluding as part of a more general study on food information in Europe for the appropriateness of traffic light FOPs for nutrition information).

[158]Jolls&Sunstein, *supra* note 15, at 32–37; Alemanno, *supra* note 21 (explaining the pros and cons of behaviorally-informed regulation in the area of health); *see also* Adam Burgess, *'Nudging' Healthy Lifestyles: The UK Experiments with the Behavioural Alternative to Regulation and the Market, Symposium on Nudge*, 3 J. RISK REG. (2012).

effective results in terms of understanding nutrition information and of making healthy choices. Directive FOPs would preserve consumers' autonomy since consumers would still be able to choose the products they want in a supermarket. In the meantime, the bigger and more visible the FOPs, the more vivid and salient they become. Salient FOPs combined with standardization and simplification can have the potential to strongly nudge consumers towards healthy choices.

A directive FOP under the form of a traffic light FOP, for instance, gives interpretative cues to consumers. It could influence consumers to use their automatic system 1 to process information when shopping. This type of FOPs would promote comparisons between products, and hopefully, between categories of products.[159] Further, consumers could be discouraged from buying food with red traffic lights for sugars or salt because red would be associated with the heuristic shortcut "bad food." They could similarly be discouraged by health logos combining colors and visuals that convey the implied message that "this is not the food you should eat." In addition, traffic lights could lead to "moral licensing"[160] with consumers feeling ashamed for having too many red traffic lights in their shopping cart.

Most of the studies performed in Europe show semi-directive labels combining percentage daily values and colors are the most appropriate to ensure consumers understand and use information.[161] Yet, this conclusion could be different in the U.S., as the reactions of consumers may differ across cultural and national sensibilities.[162] Besides, semi-directive FOPs require extra attention from consumers to read the labels, understand them, and then process them. Thus, it may not reach consumers who are note sufficiently motivated to engage with the information. Furthermore, the extent of obesity in the U.S. may prompt a more urgent and directive approach than the one taken in Europe.

For those reasons, this article argues that the implementation of directive FOPs by the government is worth exploring for their potential to

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[159] This is especially true for labels, such as traffic lights, that use point of references e.g. color or percentage, and less true for health logos. *See generally* Madhubalan-Viswanathan, *The Influence of Summary Information on the Usage of Nutrition Information*, 13J. PUB. POL'Y& MARKETING 48, 49 (1994); about overall heath logos *see* van Herpen, Hieke, & van Trijp, *supra* note 126, at 138 (arguing that the labeling schemes based on overall product healthfulness, such as logos, "can diminish consumers' ability to differentiate between categories, leading to a potential misinterpretation of product healthfulness").

[160] Loewenstein, Sunstein&Golman, *supra* note 8, at 16 (people want to be perceived as good people and are generally motivated in their action by other peoples' perception).

[161] *See, e.g.*, BMRB Social Research, *supra* note 127.

[162] Studies on larger and more diverse populations remain to be completed, but so far, the study by Christina Roberto et al. on an American population sample suggests a preference for semi-directive FOPs (color-coded FOPs with a traffic-light code plus an indication of whether the amount of a given nutrient is high, medium, or low). *See* Christina Roberto et al., *Evaluation of Consumer Understanding of Different Front-of-Package Nutrition Labels, 2010–2011*, 9 PREVENTING CHRONIC DISEASE (2012), http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3475525/pdf/PCD-9-E149.pdf.

strongly nudge consumers towards healthier choices. Nevertheless, with directive FOPs consumers would remain free to make their own choices, but they would be nudged more strongly toward healthier choices than with semi-directive FOPs.

The recommendations of the Institute of Medicine Report to develop a government-led standardized FOP scheme (reproduced in the Annex to this article) should serve as a starting point.[163] The aim of this article is not to suggest a turn-key FOP scheme for the FDA. Developing such a scheme would require solid and multiple experimentations, something that the FDA could conduct with research laboratories. The existing FOP schemes set by food producers—in particular the Fact Up Front labels—could serve as a first testing ground for the FDA to evaluate how consumers *understand* (rather than how they *like*) directive FOPs and how they are able to use them and make comparisons between products based on these labels.

C. Further Expected Effects to Consider

The use of directive FOPs can have side effects on consumers that the FDA needs to contemplate when designing its future FOP scheme. First, a directive FOP scheme could lead to a halo effect where consumers rate the product higher on other health attributes not mentioned on the FOPs.[164] Second, the use of green traffic lights—in the context of traffic lights for fat for instance—could have consumers abusively consume products that are perceived as healthy because of their low-fat content. Consumers could ultimately absorb too much fat.[165] In addition, FOPs have occasionally led to a "magic-bullet effect" consisting in attributing inappropriate health benefits to a product.[166]

An additional effect to consider is what Loewenstein, Sunstein, and Golman call the "pitfall of categorical ratings."[167] If consumers were to choose between a yellow or red traffic light item, they would tend to choose the highest calorie item, according to the logic that since they are in any event eating a high-calorie item, it should be the most fulfilling one possible. But this behavior may not be common, as it would require consumers to engage in more than the simple automatic thinking driven by their system 1.

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[163] INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 4.

[164] Richard Nisbett& Timothy Wilson, *The Halo Effect: Evidence for Unconscious Alteration of Judgments*, 35 J. PERSONALITY & SOC. PSYCHOL. 250 (1977) (theorizing the halo effect as "one of the oldest and most widely known of psychological phenomena" that consists of "global evaluation[s] [that] might color presumptions about specific traits or influence interpretation of a meaning or affective value of ambiguous trait information.").

[165] Brian Wansink& Pierre Chandon, *Can 'low-fat' Nutrition Labels Lead to Obesity?*, 43 J. MARKETING RES. 605 (2006).

[166] Roe, Levy & Derby, *supra* note 37.

[167] Loewenstein, Sunstein&Golman, *supra* note 8, at 22.

Still on the consumer side, another side effect of directive FOPs has been shown in the context of U.S. restaurants. Wisdom, Downs and Loewenstein show that increasing the convenience of choosing lower calorie meals can lead to compensatory effects on drinks and side orders.[168] Could the information provided on FOPs—especially in the case of the green traffic light—lead to similar compensatory effects in the context of supermarket shopping? The question also remains open whether the nudging effect could be sustained over a long period of time once consumers are used to the labels. At this moment, studies on the sustainability of a directive FOP scheme are limited to a two-year observation period and to a cafeteria setting.[169] Would the FOPs remain signposts for healthier choices, or would consumers stop paying attention to the FOPs once they got used to their presence on packages? Policymakers should also be concerned about the representation of FOPs as nudges and the marketing of companies that could alter the effect of these nudges.[170]

From the supply side, as mentioned earlier, FOPs could push food manufacturers to change the composition of their products so that they become healthier. Improving products in this way is one of the goals of the NFL reform. Manufacturers have generally been hostile to the use of directive FOPs, in particular traffic lights, precisely because it sends a signal to consumers to avoid negatively labeled foods. The directive FOPs could be a form of "regulation by shaming."[171] Manufacturers would fear being shamed by having red lights on their products. This situation could also create a new incentive for firms to compete to have the healthiest products.

In the event that consumers' attention to directive FOPs was not as strong as anticipated, the effect of a FOP scheme on manufacturers could still make the FOP initiative beneficial. It could make unhealthy products progressively disappear from store shelves. This disappearance could be facilitated by the "telltale heart" effect, manufacturers have an "inflated sense of the public salience of disclosures."[172]

Still from a supply side point of view, at the implementation stage of a FOP scheme, the question remains open as to whether FOPs could be challenged by food manufacturers on the grounds of the First Amend-

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[168] Wisdom, Downs &Loewenstein, *supra* note 23.

[169] Thorndike et al., *supra* note 22 (showing in the context of a cafeteria the sustained effects of traffic lights implementation that led to healthier choices over a two-year period); Alberto R. Salazar, *Libertarian Paternalism and the Dangers of Nudging Consumers*, 23 KING'S L.J. 51 (2012).

[170] *See, e.g.*, *Id*, at 60–67 (differentiating policy nudge and corporate nudge—the latter can be unhealthy—and suggesting that legislation should prevent unhealthy nudges and advertising from food companies).

[171] Loewenstein, Sunstein&Golman, *supra* note 8, at 26 (presenting examples of regulation by shaming and some possible perverse effects).

[172] *Id.* at 19.

ment.[173] The visual health warnings on tobacco packages issued by the FDA have been deemed to breach the First Amendment rights of tobacco manufacturers.[174] The policy-makers would need to give careful consideration when designing the FOPs so that they could not be challenged on the same ground.

Lastly, there are three main themes to be further investigated in order to prepare the ground for the implementation of FOPs that would be truly behaviorally-informed. First, an exact cost-benefit analysis has yet to be undertaken. Second, the exact positioning of the labels on the front of the food packages and their graphic forms, as well as their substance, should be subject to empirical testing on consumers. Third, policy-makers should determine how FOPs would weigh in the nutrition policy mix at present and in the years to come.[175]

CONCLUSION

Combining behavioral insights and nutrition labeling has the potential to provide a strong theoretical backbone to nutritional labeling; a backbone against which policy-makers could continue their efforts to adapt nutrition information to consumers' psychology. In particular, this article has highlighted the efforts of the FDA to make, as far as possible, the NFL simple, standardized and behaviorally-informed. Yet behaviorally-informed disclosure is behaviorally-informed only to the extent that people are willing to read the NFL. It is not possible to take for granted people's willingness and motivation to look at the NFL when shopping; consumers' comprehension of information is limited by their environment, their motivation, and their ability to process information. As a result, many consumers fail to use the NFL.

This article recommends the creation of a single, government-led front-of-pack scheme that would be simple, standardized, and interpretative. It thus supports the conclusions and suggestions of the Institute of Medicine in its 2010 report. Such a scheme would complement the NFL and would foster the understanding of consumers and their use of nutrition information. It would rely, in particular, on visual and interpretative

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[173] *See* Jennifer L. Pomeranz, *Front-of-Package Food and Beverage Labeling: New Directions for Research and Regulation*, 40 AM. J. PREVENTIVE MED. 382 (2011) (the author, a public health specialist and lawyer, also mentions this possibility).

[174] R.J. Reynolds Tobacco Co. v. FDA, 696 F.3d 1205, 1222 (D.C. Cir. 2012); *see also* David Orentlicher, *The FDA's Graphic Tobacco Warnings and the First Amendment*, 369 NEW ENG. J. MED. 204 (2013).

[175] This article does not intend to suggest that nutrition labelling should substitute for other nutrition policies. Instead, it would be possible to have a combination of libertarian and more paternalistic measures, as decided by policy-makers and Congress. These policies could include, *inter alia*, education campaigns, change of product composition, control of or even bans on certain ingredients, use of default options, taxation, subsidies, etc. On the combination of nudge with other policies, *see, e.g.*, Salazar, *supra* note 169, at 60–67 (advocating for a combination of policies to encourage healthy behavior); Wansink, *supra* note 20, 318–25 (offering key principles and policy ideas for academics, industries, and government to work on together).

cues, using charts, graphs, and colors – such as traffic lights – which would attract consumers' attention to food labels, offset the noise from their environment, and compensate for insufficient nutritional education. Consumers from various socioeconomic backgrounds would, on account of these types of labels, pay greater attention to nutrition information.

The ultimate goal of this front-of-pack scheme is to help consumers make healthier choices as opposed to simply providing simplified and standardized information on the NFL. An advanced form of behaviorally-informed disclosure, this labeling scheme would strongly nudge consumers toward healthy choices. In light of the urgency to fight obesity and diet-related diseases, the time has now come for strong nudging and for the use of front-of-pack labels as a new form of government-led nutrition disclosure.

ANNEX

The Institute of Medicine FOP Report 2 Recommendations[176]

Recommendation 1

FDA and USDA should develop, test, and implement a single, standardized FOP system to appear on all food and beverage products. The system should have the following eight characteristics:

- **One simple, standard symbol translating information from the Nutrition Facts panel (NFP) on each product into a quickly and easily grasped health meaning, making healthier options unmistakable;**
- **Displaying:**
  - **Calories in common household measure serving sizes** (shelf tags to be used on bulk items such as fruits and vegetables as well as packaged goods), and
  - **Zero to three nutritional "points"** (for saturated and *trans* fats, sodium, and added sugars);
- **Appearing on all grocery products, allowing consumers to compare food choices across and within categories** (universal implementation must be preceded by consumer testing and conducted in conjunction with an education and promotion program);
- **Appearing in a consistent location across products;**

[176]The INSTITUTE OF MEDICINE FOP REPORT, *supra* note 10, at 4, 7.

- **Practical to implement by being consistent with nutrition labeling regulations;**
- **Integrated with the NFP so that the FOP symbol system and the NFP are mutually reinforcing;**
- **Providing a nonproprietary, transparent translation of nutrition information into health meaning; and**
- **Made prominent and useful to consumers through an ongoing and frequently refreshed program of promotion integrating the efforts of all concerned parties.**

Recommendation 2

Implementation of a new FOP symbol system should include a multi-stakeholder, multi-faceted awareness and promotion campaign that includes ongoing monitoring, research, and evaluation.