Front-of-Pack Food Labelling and the Politics of Nutritional Nudges

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**Abstract**
This paper examines the potential for new front-of-pack nutrition labelling initiatives to “nudge” consumers towards healthier food choices. The libertarian-paternalist approach to policy known as *nudge* initially developed by Thaler and Sunstein is discussed, with its emphasis on designing spaces (including the space of the food label) to shape the behaviour of individuals while not restricting consumer choice or imposing restrictions or penalties on producers. In the context of concerns over diet-related chronic diseases and obesity, new front-of-pack interpretive nutrition labels have been proposed or implemented in an attempt to shift consumer dietary choices, including the multiple traffic light labelling system (MTL) in the U.K. and the Health Star Rating (HSR) system in Australia. We identify some of the characteristics, the underlying nutritional philosophies and the limitations of these front-of-pack labelling schemes. We suggest that the potential of these schemes is compromised by the co-existence on the food label of many other forms of nutrition information and food marketing. Some alternative ways of labelling and communicating the nutritional quality of foods are also discussed.

**Introduction**

Richard Thaler and Cass Sunstein begin their influential book, *Nudge: Improving Decisions About Health, Wealth and Happiness* (Thaler and Sunstein 2009) with a simple scenario: “Carolyn” is food services director for a number of schools. She notices that where food is displayed in the cafeteria has a significant impact on which items children choose. Should she use her knowledge and power to consciously design the way the food is laid out to “nudge” the children towards choices that are better for them? Sunstein and Thaler argue that Carolyn should indeed embrace her role as “architect” of the choices available to these children and design the cafeteria in the way most likely to promote the children’s health, while simultaneously preserving their range of choice.

*Nudge* points out the existence of architectures of choice: people’s decisions are always influenced by the way their options are presented to them, and their behaviour shaped by the design of the spaces in which it occurs. Thaler and Sunstein define a nudge as,

any aspect of the choice architecture that alters people’s behaviour in a predictable way without forbidding any options or significantly changing their economic incentives. To count as a mere nudge, the intervention must be easy and cheap to avoid. Nudges are not mandates. Putting the fruit at eye level counts as a nudge. Banning junk food does not. (Thaler and Sunstein 2009, 6)
Nudge is based on the insight of behavioural economics that people are not as rational in their choices as they could be, but they are irrational in ways that can be predicted through psychological research and behavioural observation. Therefore interventions and environments can be designed that help people make better decisions by taking into account predictable biases and heuristics in their thinking. The frequently cited example is the fly painted on the men’s urinals in Schipol airport that encourages customers to aim squarely into the middle of the trough and reduces spillage and cleaning up (Thaler and Sunstein 2009). Similarly, the way information is presented on a retail label or financial product disclosure statement will prime people and nudge them towards certain behaviour. Any time where a piece of information is made more prominent and prompts a consumer to make a conscious choice could count as a nudge such as putting calorie counts or lists of nutrients on the front of a packet of breakfast cereal.

Nudge has been influential on its own terms. Both British and Australian governments have introduced behavioural change units aimed at encouraging the use and evaluation of nudge strategies, and Nudge has inspired much discussion in policy and scholarship around the world (Halpern 2015). It has prompted a broad array of policies and policy proposals aimed at hitting the ‘sweet spot’ of influencing people to behave more rationally without coercion. Policy proposals have been made and implemented in the areas of public health, environmentally friendly behaviour, financial decision-making and urban design (Jones, Pykett, and Whitehead 2013).

Nudge is proposed as a “real” “third way” between the polarities of government regulation and free markets. Thus Thaler and Sunstein label their strategy “libertarian paternalism” (Thaler and Sunstein 2009, 5). It is “libertarian” because it preserves freedom of choice in a marketplace. Yet it is also paternalistic because it asks architects of choice – whether they are private managers or public officials - to design environments that they have evidence will influence “people’s behaviour in order to make their lives longer, healthier, and better” (Thaler and Sunstein 2009, 5). It fits broadly with neo-liberal policies which encourage individuals to take care of themselves and proposes market mechanisms to help individuals do so. But rather than relying on rational consumers making rational and informed choices based on the best available information at hand, nudge emphasises the need for clear and automatic signals.

As the example of Carolyn implies, food labelling is one area in which nudge strategies might be employed to encourage both healthier eating and a better food system. Thaler and Sunstein also applaud the laws introduced in New York city that mandated fast-food restaurant chains to post the calorie content of their foods, on the assumption that it helps them make informed choices (Thaler and Sunstein 2009). In the public health nutrition literature, changing the nutrition information on the food label has also been seen as one of many means of shaping behaviour and trying to shift consumption patterns. In recognition that the standard nutrition information on food packaging has not been effective in deterring unhealthy food choices or over-consumption in general, reforms such as more prominent energy labelling on food packages or restaurants have been proposed and implemented in many countries (WCRFI 2016). The multiple traffic light (MTL) labelling system introduced in the UK is often put forward as a paradigmatic example of a nudge policy (Liu et al. 2014). By placing red, amber and green traffic lights for salt, sugar and fat on food packaging, traffic light labelling provides quick and easy to interpret visual cues to
the consumer that do not require much understanding of nutrition. In this sense it provides an explicit nudge to the consumer, while not in any way restricting their access or right to choose a particular product. The MTL is also an example of an interpretive nutrition label, in that the architects of this scheme have pre-interpreted the healthy choices and clearly sign-posted them for the consumer.

There has been much debate and criticism of nudge policies applied to food and public health, particularly in the UK in response to the present government’s embrace of this approach (Marteau et al. 2011). One of the criticisms relates to whether nudge-type policies for shifting citizen or consumer behaviour are used instead of implementing other policies or regulations that mandate standards, place restrictions, or provide economic incentives or penalties on companies or citizens. For Thaler and Sunstein, policies that assist consumers to make better food choices mitigate the need to impose restrictions on food producers. Commenting on the New York city fast-food restaurant calorie labelling regulation, Thaler and Sunstein state that they “prefer the mandating of nutrition information to mandating food ingredients.” (262). Yet they also tend to gloss over the food industry’s power in shaping consumption, and the immense profitability of selling cheap and poor quality foods. As food policy experts Geof Rayner and Tim Lang argue: “How can “nudge” reshape the agri-food business’s long commitment to lower the price of fat, soft drinks, or high calorie readymade foods or the ubiquitous “offer” of food at every newsagent, station platform, and petrol station?” (Rayner and Lang 2011).

In their cafeteria example above, Thaler and Sunstein simply assert that the cafeteria should not be solely driven by the goal of profit maximisation, but should also seek to promote healthy foods. But as David Yosifon observes, “having granted that market actors have the ability to induce preferences, Sunstein and Thaker leave no reason to believe that market actors will have the incentive to induce healthy consumption rather than deleterious consumption. All evidence, in fact, is to the contrary.” (Yosifon 2008). Critics of nudge policies also argue that nudge approaches place too great an emphasis on personal responsibility for making healthy food choices, in contrast with population health strategies that focus on creating healthy food environments (Magnusson 2010).

While food or menu labelling—and other such informational nudges—are indeed being promoted by neoliberal governments as an alternative to regulating the practices and products of the food industry, innovations in food labelling do not necessarily preclude other ways of regulating food production and consumption. Many public health experts who argue for the need to impose greater regulation and restrictions on food companies also promote improved food labelling as part of a suite of measures necessary to tackle the problems of obesity and diet-related chronic diseases (Hawkes et al. 2013).

While nutrition labelling is primarily aimed at nudging consumers’ food purchasing and consumption behavior, it also has the potential to encourage the food industry to improve the quality of their existing and new products. Food producers and manufacturers may seek to produce better quality products that can be portrayed favourably on the nutrition label, and avoid the stigma of negative nutritional information such as red traffic lights. For example, labelling regulations requiring \textit{trans}-fat to be listed on the nutrition facts panel in the U.S. in 2006 are considered to have hastened the reduction of \textit{trans}-fat content in the ensuing years (Unnevehr and
This potential for interpretive nutrition labelling to nudge food manufacturers into improving their products perhaps accounts for the strong support from public health experts for these innovations.

The aim of this essay is to examine the architecture of nutrition labelling, and the attempts to nudge consumers towards healthier choices through the use of front-of-pack labelling systems. The design and regulation of these schemes—and the architecture of the food label itself—are all important in this respect. Should these labelling schemes seek to provide pre-determined and automatic choices to consumers, and thus nudge them paternalistically? Is the type of information and criteria for ranking foods appropriate and effective? Can labelling nudges be effective if they are voluntary for the food industry to implement, and while other forms of nutrition information and marketing continue unrestricted? What type of consumers and citizens are such labelling systems constructing: are they nutritionally informed and empowered, or dependent on expert advice and vulnerable to the food industry’s nutritional marketing practices?

The Architecture of the Food and Nutrition Label

Since the early 2000s the so-called “obesity epidemic” has generated a degree of moral urgency and persuaded many governments of the need to intervene in the food system in order to improve the diets of the population. The over-consumption of unhealthy foods, and indeed the over-consumption of food per se, has become the focus of concern of nutrition experts and policy makers. A range of policy innovations and actions have been proposed or implemented over the past decade to attempt to improve people’s diets that involve regulating food, the broader food environment and individual choices (Hawkes, Jewell, and Allen 2013). These include making better quality foods more available, accessible and affordable, while limiting the availability and increasing the cost of poor quality foods, such as through taxes and the removal of subsidies (Capacci et al. 2012). There has been one notable attempt to mandate the nutritional profile of foods—the regulation of trans-fat content in foods, beginning in Denmark in 2004 (Astrup 2006). But rather than impose limits on nutritional composition, governments have mostly attempted to encourage the food industry to reformulate their products on a voluntary basis, thorough the gradual reduction in salt, sugar, trans-fats and saturated fats (Marotta, Simeone, and Nazzaro 2014).

Governments also continue to focus on providing citizens with nutrition information to enable them to make healthy food choices, in the form of dietary guidelines and food guides, and nutrition labelling on food packaging and in restaurants (Guthrie, Mancino, and Lin 2015). To date nutrition labelling has either taken the form of quantified nutrition information on the nutrition facts label that is mandated in many countries, or the nutrition and health claims voluntary added to food packaging by food companies to promote their products. But the current dietary health crises have led to a range of proposals and innovations in food labelling, including calls for the expansion of calorie/kilojoule labelling on food products and in restaurants; revised nutrition information panels on the back of food packaging; and clearer front-of-pack labels (Watson et al. 2014, Guthrie, Mancino, and Lin 2015). Before analysing these more recent schemes and proposals, the characteristics and limitations of earlier forms of nutrition labelling will be examined.
The back-of-pack nutrition information panel is mandatory in many countries, while being voluntary in others (Hawkes 2004, Perez and Edge 2014, Hawkes and Albert 2010). Nutrition labels provide quantified information on the levels of key nutrients, and a listing of the key ingredients in food products (Hawkes and Albert 2010). This nutrient-content information primarily focuses on the quantity of energy, fats, carbohydrates, protein, sugars, vitamins, minerals and fibre, and may include information on the percentage of daily recommended intake of each nutrient within a single serve of the product. This nutrient information tends to be in larger type, and thereby prioritised, over the ingredients list that typically sits underneath or alongside it. The prioritisation of nutrient information over the ingredients list is itself an important decision on what form of knowledge is important in the understanding and communication of food quality—and a manifestation of the ‘ideology of nutritionism’ discussed below. This type of quantified nutrient and ingredient information requires a degree of nutritional literacy to interpret. Yet the people consuming the poorest quality diets, and who would potentially benefit most from this information, are also likely to have the lowest levels of nutritional literacy. Several studies have demonstrated the difficulties that consumers have interpreting these nutrition labels (Cowburn and Stockley 2005, Mandle et al. 2015, Kleef and Dagevos 2015). Consumers may also need to study the packaging information of several products in order to compare their nutritional benefits. A common limitation of nutrition labels is that there is no regulation of the serving size that is displayed on the panel, thereby enabling food companies to list smaller servings that underestimates the quantities of particular nutrients or components being consumed on most occasions (Temple and Fraser 2014, Zhang, Kantor, and Juan 2015). In response to some of these concerns, the U.S. Food and Drug Administration have developed proposals for a revised nutrition facts panel, including listing the quantity of added sugars for the first time (Laquatra et al. 2015, Dallas, Liu, and Ubel 2015).

The second type of nutritional information that has graced food packaging for several decades is the nutrient-content claims, ingredients claims, health claims, and nutrition logos that food companies choose to place on the front and back of the food package, primarily for marketing purposes (J. van buul and Brouns 2015). Examples of these types of claims are: ‘low fat’, ‘high in calcium’, ‘source of omega 3’, ‘builds strong bones’, ‘reduces cholesterol absorption’, and ‘contains whole grain’. This type of information is voluntarily and selectively used by food companies to highlight the claimed benefits of their products. This marketing has—like the nutrition information panel on the back of the pack—tended to focus on nutrients, rather than the type and quality of ingredients in the product. The types of nutrient-content and health claims that are permitted are typically tightly regulated by governments to ensure they meet certain standards. For example, in Australia a “low-fat” claim is only permitted on foods that contain no more than 3 grams of fat per 100 grams of solid food (FSANZ 2013). Regulations permitting direct health claims have only recently been introduced in the European Union and Australia, thereby providing food companies with yet more persuasive marketing tools. The ubiquity of these voluntary nutrition and health claims suggests that food companies are convinced of the effectiveness of these claims in influencing consumer purchasing and consumption behaviour (Salazar 2012, Chandon and Wansink 2011). The nutrition claims on the front of the labels are certainly more prominent than the quantified nutrition information in fine-print on the back of packages. Nutrient-content and health claims can be understood as a form of interpretive labelling, in that food companies decide to abstract and highlight
particular components in their products, and in doing so directly or indirectly imply the health benefits of these components and products. Some nutrition experts and public health institutions consider these voluntary nutrition and health claims to be misleading, in the sense that they may exaggerate the health benefits of particular components of products, thereby creating a “health halo” around products that may be of overall poor nutritional quality, and also giving consumers a license to eat more (Chandon 2013, CSPI 2010, Bellati and Simon 2011, Nestle and Ludwig 2010, Guthrie, Mancino, and Lin 2015).

**Front-of-Pack and Interpretive Labelling**

With the rise in concern since the early 2000s over obesity levels and diet-related diseases, governments and food companies have responded by proposing or introducing new front-of-pack (FOP) labelling schemes to provide consumers with more readily available and easy to understand nutrition information (Institute of Medicine 2012, Kleef and Dagevos 2015). These FOP schemes typically take a graphical approach to nutrition labelling in order to increase the visibility and ease of interpretation of nutrition information (Hawkes and Albert 2010, Hawley et al. 2013). The assumption underpinning these initiatives is that consumers need more assistance in making healthier choices, implicitly acknowledging that the existing back-of-pack, quantified forms of information are ineffective or inadequate (Cowburn and Stockley 2005). There has also been much research into how consumers interpret these existing and proposed front-of-pack schemes. While there is yet to emerge a clear expert consensus on the best schemes in terms of consumer understanding, there is considerable evidence that consumers prefer interpretive labels that provide simple and clear direction (Hodgkins et al. 2012, Dean et al. 2014).

The FOP schemes proposed and implemented by governments and public health experts on the one hand, and food company and industry organisations on the other, have been quite distinct. The food industry’s FOP initiatives have taken one of two forms. In the USA, Australia and Europe, the food industry has introduced Guideline Daily Amount (GDA) labelling (or ‘Daily Intake Guide’ in Australia), which typically provide the quantity and percentage daily value (%DV) per serving of sugar, salt, saturated fat, energy, vitamins and minerals. In the UK the Tesco supermarket chain has also adopted GDA labelling on their private label products (Van Camp, de Souza Monteiro, and Hooker 2012). Some food companies are also embracing more prominent calorie labelling on the front of the pack, such as Coca Cola’s announcement in 2013 to place calorie information on all of their beverage products globally (Stanford 2013). These FOP schemes largely involve making more prominent some of the quantified nutrient information typically listed on the back of the pack. Alongside the listing of the ‘nutrients to limit’, food companies also aim to highlight the beneficial components in their products, particularly vitamins and minerals. However these schemes largely amplify the quantified information on the nutrition facts label, and rely on consumers having sufficient understanding and time to evaluate this quantified nutrient-level information. GDA labels also maintain the focus on single nutrients. GDA labelling has been criticised by public health experts for failing to assist consumers to make healthier choices, and because food companies’ selection of the nutrients and serving sizes may mislead consumers (Lobstein, Landon, and Lincoln 2007). Public health nutrition experts have also argued that the food industry schemes are being introduced to pre-empt and to avoid the introduction of government-mandated schemes that clearly sign-post poor quality
products, and not just better quality products. Indeed the food industry has explicitly promoted the GDA front-of-pack labelling as an alternative to traffic light labelling (White and Signal 2012, Kleef and Dagevos 2015).

The second type of FOP labelling the food industry has embraced is the use of logos intended to promote the healthier products in their product range. This includes Kraft’s ‘Sensible Solutions’, Pepsico’s ‘Smart Spot’, and the controversial ‘Smart Choices’ program adopted by several food corporations in the USA (Schor et al. 2010, Emrich et al. 2015). There are also third party logos, such as the Australian Heart Foundation ‘Tick’ program, that are allowed to be displayed on foods that meet product-specific nutrient criteria(Williams and Mummery 2013). These logo schemes can be understood as a form of interpretive labelling, as they assure the consumer that the product has met certain nutritional criteria. However all of these logos only promote the better products in a company’s portfolio, while remaining silent about poorer quality foods, thereby undermining the potential of these schemes to nudge producers to improve the quality of these products. Another limitation of these schemes is that food companies may develop their own nutrient profiling systems that set relatively low standards for defining which foods qualify for these endorsements (CSPI 2010). The ‘Smart Choices’ program, for example, lost all credibility and was very quickly withdrawn after Kellog’s ‘Froot Loops’—a high sugar breakfast cereal—received a Smart Choices logo (Neuman 2009). Interestingly, the Smart Choices program was co-developed and managed by the American Society for Nutrition, the peak body for nutrition researchers in the USA (Roberto and et al. 2011, Lupton and et al. 2010). Therefore the architects of this scheme were both food manufacturing companies and some of the leading nutrition experts and organisations in the US.

The interpretive schemes now being introduced by governments, as well as by some retailers, are intended to offer direct and easy to interpret qualitative evaluations of both good and poor quality foods. The main scheme that has been promoted is the multiple traffic labelling (MTL) scheme—first introduced in the UK in 2006, with versions of the MTL now also being used in Ecuador and South Korea (WCRFI 2016). Traffic light labelling has also been applied in a food service context, such as in schools or workplace canteens, to indicate healthful choices to customers (Thorndike et al. 2014). Other types of interpretive schemes for food labels are the Australian Health Star Rating (HSR) system that scores products from 1 to 5 stars; the Guiding Star labelling system which award 1, 2 or 3 stars to foods used by some retailers in the U.S.; and the NuVal system also developed in the U.S. which scores foods from 1 to 100 (Lytton 2010).

The multiple traffic light scheme introduced in the UK focuses on the levels of four key nutrients or food components: saturated fats, total fats, sugar and salt (Sacks, Rayner, and Swinburn 2009a). These are components whose excess consumption has been linked to the rise of obesity and chronic diseases, and are considered ‘nutrients to limit’—i.e. the ‘bad’ nutrients—in dietary guidelines. Sugar and salt are key ingredients in highly processed foods, and therefore a red traffic light on sugar or salt indicates that the product is likely to be highly processed. The inclusion of ‘total fats’ is curious given the shift away from total-fat reduction dietary guidelines towards saturated fat reduction advice over the past two decades (Mozaffarian and Ludwig 2015). The use of red/amber/green symbols provides a clear visual interpretation of
what is claimed to be the most or least healthy choices with respect to these food components.

This MTL scheme meets a number of the criteria of nudge policies, and is often discussed as a paradigmatic example of a nudge-style intervention (Liu et al. 2014, Thorndike et al. 2014). Firstly, like all forms of nutrition information, it is libertarian in that it suggests healthier choices to consumers without in itself penalising or limiting other choices. Second, it is paternalistic in that it presents a qualitative determination of whether the salt, sugar and fat are at safe levels—and by extension whether foods are ‘good’ or ‘bad’—rather than leaving it to the consumer to interpret the quality of the product from the nutrition information on the back of the pack (Hector 2012). Moreover by providing a very quick and easy colouring scheme (red-stop, green-go), MTL labelling does not rely on the rational evaluation of nutrition information, but provides automatic and pre-rational signals (i.e. the red traffic symbols signify ‘red alert’). Even for those shoppers who are able to interpret the denser nutrition information already provided, MTL labels may be useful for speeding up the decision making process. This sign-posting—and particularly a red traffic light—may also encourage consumers to more closely examine the nutritional and ingredient composition of a food, though there is little of evidence of this to date.

The evidence from consumer studies as to whether MTL labelling “works” and effectively shapes and redirects consumer choices is somewhat mixed, with studies largely involving short term exposure to labels and measuring consumer behaviour in experimental settings (Brownell and Koplan 2011, Sacks, Rayner, and Swinburn 2009b). How MTL labelling shapes consumption choices in real world situations, and in the context of the various other competing information and claims on labels, is more difficult to determine. One recent study concluded that consumers in an experimental situation primarily used the MTL label to avoid foods with red lights, rather than to choose foods with green lights (Scarborough et al. 2015). Some studies suggest that interpretive labels such as the MTL may only trigger the consumer to substitute one product for another similar product within the same product category—rather than substantially changing dietary choices, particularly in the context of highly processed food consumption (Galizzi 2012).

In 2014 Australia introduced the Health Star Rating (HSR) system, which awards food products between one-half of a star and up to 5 stars based on an evaluation of its nutrient profile (Carrad et al. 2015, Maubach, Hoek, and Mather 2014). The HSR logo also incorporates GDA symbols within its format, thereby conveying multiple pieces of information. The aim of the HSR is to allow consumers to identify healthier choices within a product category. A food product with many stars is not necessarily a ‘healthy’ food, only ‘healthier’ than other foods in that same product category. Like the U.K.’s MTL scheme, the Australian HSR is voluntary, with Health Ministers only threatening make the scheme mandatory if food companies are slow to adopt it (ANZMFFR 2013). There has been considerable criticism of the scheme from many public health experts in Australia, particularly due to the way the nutrient profiling algorithm awards a high number of stars to some highly processed foods (ABC 2015, Lawrence and Pollard 2015).

The MTL and HSR schemes potentially allow consumers to quickly and clearly distinguish between better and poorer quality products, and therefore nudge away from poor choices. However both the UK MTL and the Australian HSR are currently
voluntary giving food producers the option of not labelling their poorer quality products. By allowing food companies to only use these interpretive labels on their better quality products, these voluntary schemes could simply be used by food companies as a marketing device. The voluntary nature of these schemes also undermines their ability to nudge producers to reformulate and improve the quality of their poorer quality products.

The Politics and Philosophy of Interpretive Nutrition Labelling

These various initiatives for interpretive or qualitative nutrition labels are occurring in a context where there is a proliferation of nutrition and food information on food labels, as well as other forms of nutrition information and marketing to sell food products. There are great disparities between the power, resources and influence of governments and public health experts on the one hand and food corporations on the other. To analyse the potential for interpretive nutrition labelling to nudge consumers towards healthier choices requires not only being attentive to the design and architecture of the nutrition label and these various labelling schemes, but also to these other influences.

The politics of front-of-pack labelling is often discussed by public health experts in terms of how particular schemes favour either public health or industry interests (Grunert, Bolton, and Raats 2012). Interpretive schemes such as the MTL are portrayed as promoting public health, while thumbnails and logos favour food industry interests. The opposition of the food industry to the MTL schemes in a number of countries certainly bears this out. In the UK, the Food and Drug Federation and some supermarket chains had opposed the introduction of the MTL labelling, and instead supported the use of GDA labelling (Schröder and Lyon 2013, FDF 2010). As Schroder and Lyon note, the position of these industry groups is that “consumers should be allowed to ‘interpret’ labelling for themselves rather than food choices being ‘dictated’ to them by the label” (Schröder and Lyon 2013, FDF 2010). The MTL has, however, since been embraced by a number supermarket chains and large food manufacturers in the UK, such as Tescos, Nestlé and PepsiCo (Scarborough et al. 2015).

In the European Union a proposal to introduce the MTL scheme was defeated following heavy food industry lobbying, with claims that the food industry spent over one billion Euros over many years fighting against it (Swinburn, Swinburn, and Wood 2013). In the USA, the Institute of Medicine has proposed the introduction of a star rating system, but the US Food and Drug Administration (FDA) has yet to act on these recommendations (IOM 2012). In Australia, a government-commissioned review of food labelling policy in 2011 recommended the adoption of the MTL system (Blewett et al. 2011). The Australian government was very quick to distance itself from this recommendation amid strong opposition from the Australian Food and Grocery Council, the peak organisation representing large food manufacturers. The Australian government instead supported the introduction of the Health Star Rating (HSR) system, a scheme which the food industry considered to be more palatable perhaps due to the absence of any ‘red’ traffic lights (AGDHA 2013, Swinburn, Swinburn, and Wood 2013, Magnusson 2010). The stated reason for not adopting a traffic light scheme was that there was inadequate evidence supporting its effectiveness, yet they opted for the HSR system that had no evidence behind it at all, and which suggests that there were other unstated reasons for the rejection of the MTL system (Swinburn, Swinburn, and Wood 2013). The difficulty in introducing
MTL schemes, and the introduction of voluntary rather than mandatory FOPs, is an indication that the powerful food industry lobby is able to override the recommendations of experts and the will of policy makers.

Beyond this divide between public health and food industry promoted schemes, there are a number of limitations of interpretive schemes that have to do with the underlying philosophy, design, regulation and implementation of these schemes. A key aspect of the architecture of nutrition labelling identified above is the overwhelming focus on nutrients in both government-mandated and food company labelling, both explicitly on the label as well as within the nutrient profiling systems that underpin labelling schemes. For example, the nutrition facts label, the nutrient claims on the front of the pack, and the multiple traffic light system, are all largely focused on single nutrients and food components. The reductive focus on nutrients has been a key feature of the dominant ‘nutritionism’ paradigm within nutrition science and dietary advice, (Scrinis 2013). One consequence of this nutrient focus is that it directs attention away from the ingredients list and composition of manufactured foods, and away from the quality and level of processing of these ingredients and of the food product as a whole. In this respect nutrient-focused labelling may inherently favour the interests of food manufacturing companies, as these companies are able to modify the nutrient composition of foods, and focus their marketing on particular nutrients, thereby distracting attention from the type and quality of the ingredients used in the production of their foods. It is important to note that the architects of nutritionism have in the first instance been nutrition scientists and public health policy makers. However by the 1980s the food industry had begun to understand how to use and manipulate this nutrient focus through the nutritional marketing and deliberate nutritional engineering of products (Scrinis 2013).

A limitation of this nutrient-focus is therefore that it can construct a narrow and potentially misleading way of appraising the nutritional quality of food products. For example, the vilification of fat and saturated fats within the UK’s the MTL scheme results in inherently high-fat foods, such as cheese and butter, receiving poor ratings, regardless of the quality of particular products within these food categories. The MTL system also has no way of providing guidance as to the quantities of food to consume. In 2013 in response to the proposal that the MTL be adopted by the European Union, Italy complained that the MTL discriminated against Italian produce such as Parmesan cheese, salami, prosciutto ham and olive oil, particularly due to their high fat content. Carlo Petrini, the head of the Italian Slow Food movement, commented on this proposal: “Food can be fatty, but it only becomes dangerous if that is the only food I eat…Giving information about food is one thing, but being aggressive and over simplistic is another thing…Food is complex and should not be guided by traffic lights but by the brain and by good sense.” (Kington 2013)

If a key aim of these interpretive systems is to nudge producers into reformulating their products, then the nutricentric approach—and the focus on single nutrients—may be open to manipulation by food producers. As the example of low-fat foods noted above, food manufacturers may simply replace one food component that is considered to be harmful with another poor quality ingredient (Scrinis 2013). On the other hand, the focus on sugar and salt within the traffic light system can serve as an indicator of food processing quality. Sugar and salt are key added ingredients in highly processed foods. Highlighting the levels of these nutrients/ingredients therefore may suggest to the consumer that the product may be highly processed and
of poor overall nutritional quality. An alternative—or at least a complement—to this focus on nutrient composition and on single food components would be to categorise and rank foods on the basis of the type and intensity of processing of the food and its ingredients. Some systems of categorisation have recently been proposed that differentiate three or four such categories (Scrinis 2013, Monteiro et al. 2010). For example a set of categories developed by Carlos Monteiro and colleagues has recently been incorporated into the new Brazilian national dietary guidelines released in 2014, which directly communicates to the public to avoid ‘ultraprocessed’ foods (Monteiro et al. 2015).

Another way of characterising types of nutrition labelling is in terms of the nature of the nutritional health claims associated with particular labelling schemes. FOP labelling schemes promoted by governments and public health experts tends to focus on and highlight the ‘bad’ or harmful nutrients or food components in food products, rather than the positive and beneficial nutrients and their claimed health-promoting properties. The MTL label is the best example of this, which only refers to 4 negative nutrients. This is in contrast with the nutrient-content claims voluntarily added to labels by food producers that only highlight the beneficial components in their products and—where permitted—make direct or implied claims regarding the health-enhancing properties of these foods or components. Food manufacturers also make low fat/sugar/salt claims on the labels, but such claims—which were so much a part of nutritional marketing practices in the 1980s and 90s—are giving way to more positive marketing claims that carry the promise of optimal health and targeted health benefits (Scrinis 2013, Heasman and Mellentin 2001). Given that the desire for health enhancement through the consumption of functional foods or nutrients is a defining characteristic of the contemporary nutritional era, positive nutritional messages may carry more influence than negative public health warnings. If that is the case, regulations limiting the types of positive claims on food labels may be more effective in shifting dietary patterns than adding negative messages.

A key question regarding interpretive nutrition labelling is the extent to which it empowers and enables citizens/consumers to better understand the nutritional quality of food products. The specific guidance provided by interpretive labels is determined by nutrition experts and based on the dominant paradigms and weight of evidence as to the evaluation of a food’s healthfulness. The decision to include fat, saturated fat, salt and sugar on the MTL is already based on a particular view of the role of these nutrients in health; the particular cut-off points for the red-amber-green lights is also a decision of particular nutrition experts. Such interpretive labels do not demand of consumers any specific nutritional knowledge. The power given over to nutrition experts here is in part intended to counter the power of the food industry to promote its products through advertising or nutrition claims on the label. In doing so, these automatic or unconscious triggers mirror the food industry’s own advertising strategies. One of the limitations of this approach is that while it may provide an immediate trigger for a consumer to purchase or not to purchase a food, this labelling requires that these cues be repeated at each purchase, rather than aiming to raise the nutritional literacy of the consumer, and to thereby enable them to make these decisions without these cues. On the other hand, by highlighting the levels of particular nutrients/ingredients, or the overall nutritional quality of a product, this may prompt a consumer to seek out more information on the ingredients and nutrient composition of a product.
While the traffic light system is narrowly focused on sugar, salt, and fat, it is at least transparent that these are the attributes being ranked, and consumers can clearly view the rankings of each component. This allows consumers who have specific concerns over any particular component to choose foods accordingly, such as avoiding high salt products. By contrast, schemes that provide a single overall score or ranking to a food, such as the HSR or the NuVal system, conceal the criteria being used to assess the nutritional quality of a food product. The consumer would need to search for the website and documents that disclose the complex nutritional algorithms used to generate the scores. In this sense such schemes ask the consumer to trust the ranking system, without contributing to their knowledge of why a food has received a particular score. An alternative or complement to such interpretive labels is to increase the public’s nutritional or food literacy by providing more detailed information of the composition and quality of ingredients in food products. This nutritional or ‘food quality literacy’ could include a greater focus on and understanding of the ingredients list, and of the quality and source of the ingredients that make up these packaged products (Scrinis 2013). This could involve governments mandating a more detailed ingredients list that provides more information on how the ingredients and foods are processed. As noted above, the latest Brazilian national dietary guidelines have already adopted this approach of aiming to educate the public on how to recognise and evaluate foods in terms of levels of processing.

The effectiveness of interpretive nutrition labels in shaping food choices ultimately needs to be understood in the context of other forms of information on and off the food label, as well as in terms of other competing influences on food consumption. A key limitation of these various front-of-pack and interpretive labelling schemes—as they are currently being regulated and implemented—is that they are simply being added to existing forms of food and nutrition labelling. For example the MTL coexists with a range of other information which governments continue to allow on food labels, including nutrition and health claims, GDAs, and company-own and third-party nutritional logos. These FOP schemes contribute to the proliferation of information and logos, and add to the existing ‘cacophany’ of nutrition information and dietary advice (Fischler 1993). These additional—and possibly conflicting—bits of information may increase ‘nutrition confusion’, thereby undermining any intended nudges towards or away from certain types of foods. A recent study by Bialkova and colleagues suggests that multiple pieces of nutritional as well as non-nutritional information on food packages—which they refer to as ‘competitive clutter’—reduce the attention-getting properties of any single message (Bialkova, Grunert, and van Trijp 2013). There is also the potential for conflicting information, such as when foods with red traffic lights or a low number of stars carry nutrient-content claims. It is pertinent that governments have allowed this proliferation to take place, albeit with a degree of regulation of the types of nutrition information and claims that can be made on particular products. Yet the question of limiting food company freedoms to make decontextualised nutrition claims is rarely proposed by nutrition experts and policy makers (Nestle and Ludwig 2010). Quite the opposite—the EU and Australia only recently introduced new regulations permitting high level health claims for the first time, thereby providing food companies with more marketing possibilities.

Alongside this proliferation of nutrition messages on the food label is the enormous resources companies devote to advertising their products through other media, and which governments around the world have so far shown little inclination to impose restrictions. The exception is the marketing of ‘junk food’ to children, where there has
emerged a consensus both amongst public and private sectors that children need to be protected from this marketing. However the initiatives to-date have largely taken the form of industry self-regulation of marketing to children, rather than government mandated restrictions. These industry schemes have been criticised by public health experts for the weak standards that these schemes employ to determine what types of products, what types of media, and at what times of the day junk foods can be advertised to children (Kunkel, Castonguay, and Filer 2015, Lumley, Martin, and Antonopoulos 2012).

While some forms of nutrition labelling and nutrition information may empower citizens to better understand and choose healthier products, these forms of nutrition information and education may also—and at the same time—constitute subjects in a way that may hinder or undermine these goals. This profiling of nutritional nudges in all its forms constructs citizens—in this case nutricentric citizens—as subjects in need of constant nutritional advice and management (Scrinis 2013). Citizens are actively addressed as being ‘nudgeable’ and nudge-dependent. Nutritional labelling nudges thereby maintain and create dependence on expert advice and scientific calculus, as if these are necessary to be able to eat healthy food and to construct a healthy diet. If traffic light labelling and public health nutrition messages focus on the negative and harmful components in foods, this emphasis may heighten the already substantial nutritional anxieties and fears that many people experience (Levenstein 2012).

**Conclusion**

If to nudge means to influence consumer choices without imposing restrictions or economic penalties on producers of poor quality foods and on their products, then it is doubtful that labelling will in itself significantly shift consumer behaviour, no matter how thoughtfully the label is designed. In this sense these narrowly framed nudges take for granted the broader socio-economic and power relations within the food system, and attempt to work within those constraints rather than challenge them (Leggett 2014). Providing more qualitative and interpretive information to consumers is more likely to be successful if the counter-veiling forces of advertising and marketing are reduced or eliminated. The food industry are the experts and heavy-weights when it comes to nudging consumer behaviour. What is the nature of consumer “choice” in a context whereby the power to influence dietary patterns—or dietary “choices”—is most strongly exercised by food corporations (Yosifon 2008)? Can public health driven nudges really compete with corporate nudges? An alternative policy option, therefore, would be to reduce or prohibit the use of nutrient-content and health claims and other nutritional logos, before attempting to counter-balance these claims with qualitative public health driven messages. Similarly products deemed to be unhealthy could be prohibited from carrying nutrient content claims and other health halos.

Ultimately what is required is an integrated approach to food and nutrition policy whereby the various dimensions of nutrition labelling regulations and approaches are aligned, and these are in turn aligned with policies addressing the nutritional composition, availability, cost and advertising of foods. Such an integrated approach would require tackling entrenched political and economic interests, and likely requires—amongst other policy measures—placing restrictions on the composition of
foods and the ways in which they can be marketed. In this respect it runs counter to the neoliberal orientation of nudge approaches and their attempts to use informational nudges as an alternative to the direct regulation of the practices and products of food companies.

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