

On Consuming and Constructing Material and Symbolic Culture:
An Anthropology of Pictorial Representations of Food-Based Dietary Guidelines (FBDGs)

THESIS

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Abstract

If we are what we eat, what might it mean if what we eat is not necessarily under our control? My research—motivated by the 2015 release of the *Dietary Guidelines for Americans*—presents a qualitative analysis of 33 pictorial representations of food-based dietary guidelines (FBDGs) from around the world. FBDGs provide food intake recommendations to achieve adequate nutrition levels. These documents are typically summarized as single images that represent pages of dietary guidance.

I ground my work in the theories and methodologies of Victor Turner, Clifford Geertz, Sherry Ortner, Roger Keesing, Pierre Bourdieu, Eric Wolf, Sidney Mintz, John and Jean Comaroff, and John and Malcolm Collier. Through analyses rooted in symbolic anthropology and political economy, I argue FBDG images convey more than just recommendations as to what and how to eat: they reflect socioeconomic and political realities, as well as what it means to be a healthy citizen. Furthermore, I claim the very selection and inclusion of specific imagery suggest a problematic negotiation of power (among branches of government, industry, and the marketplace) in the construction of culture.

*For my family, friends, and food that have helped shape who I am today
And for Feisty: I look forward to a life full of sandwiches and chocolate fondue.*

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Chapter 1: Introduction

“Unless care is exercised in selecting food a diet may result which is one-sided or badly balanced—that is, one in which either protein or fuel ingredients are provided in excess. If a person consumes large amounts of meat and little vegetable food, the diet will be too rich in protein and may be harmful. On the other hand, if pastry, butter, and such foods are eaten in preference to a more varied diet, the food will furnish too much energy and too little building material.” (Atwater 1902:45)

“Through recipes or diets the aim is to reintroduce a normative logic into everyday eating, a coherent system of reference, a rule, in short, an order. Modern French terminology states this with great clarity: one needs a régime (diet), a regimen, a term which, in its full meaning, implies complete control” (Fischler 1988:290).

“No matter how they are designed, dietary recommendations carry little practical significance for the promotion of health if they are not applicable in the everyday lives of the people towards who they are directed” (Nielsen et al. 2008:178).

Food-related behaviors—ranging from what people eat to how they eat, and from where they eat to why they eat what they eat—reflect humanity’s wide range of variation and have long been of interest to anthropologists. So, too, should food-based dietary guidelines (FBDGs) also be of interest, though anthropological research in this field is practically non-existent. FBDGs, and pictorial representations thereof, are of considerable value as they are models of (and for) healthy eating, citizenship, and culture.

FBDGs provide recommendations, based on current scientific research, that inform consumers of the kinds and quantities of foods to eat in order to take in the proper amount and variety of nutrients (Hunt *et al.* 1995:315; Jeppesen *et al.* 2011:7; Smith *et al.* 1999; Welsh *et al.* 1992, 1993:1). I specifically adopt the European Food Information Council's (EUFIC) definition of FBDGs, which considers them as “simple messages on healthy eating, aimed at the general public” (EUFIC 2009).¹ Today, countries around the world also turn to FBDGs to address, respond to, and attempt to alleviate increasing rates of non-communicable diseases (NCDs)² (Julia *et al.* 2014:1699; Keller and Lang 2007:867; Sharma *et al.* 2003:1195; Vorster *et al.* 2013:S3). This is done by framing proper dieting as a response to health-related concerns facing a given nation, by mitigating chronic disease through healthy food and beverage intake (e.g., Philippi 2005:79). In theory, then, observing FBDGs should mean lowering the risk of contracting NCDs. FBDGs thus have important implications, linking food, nutrition, and health policy and promotion (Hyslop 2014; Schneeman 2001a:55).

Planned for the late fall of 2015, the United States Department of Health and Human Services (HHS) and the United States Department of Agriculture (USDA) will release the eighth edition of their joint FBDG known as the *Dietary Guidelines for Americans* (DGA). Applicable to Americans over the age of two, the DGA is based on the work of the Dietary Guidelines Advisory Committee (DGAC) and serves as the foundation for the education and initiatives of food and nutrition policy at the federal level (Davis and Saltos 1999:35; Davis *et al.* 2001:883; health.gov 2015; Jeppesen *et al.* 2011:8; Schneeman 2001b:742; USDA and HHS 2010:i). Inspired then by the upcoming DGA, this timely

¹ See also section 4.4.2 of the “Preparation and Use of Food-Based Dietary Guidelines” (WHO/FAO 1996), a landmark text which serves as the basis for FBDG development around the world, as well as Montagnese *et al.* 2015:913.

² The four major NCDs include cardiovascular diseases, cancers, chronic respiratory diseases, and diabetes (WHO 2015).

release offers an opportunity to explore on national and international levels the significance of consuming food as material and symbolic acts.

Dietary guidelines are not new phenomena, nor are they restricted to the food system of the United States. People have long been guided as to what and how they should eat. The Greek physician and father of Western medicine Hippocrates wrote about the positive relationship between food as medicine and medicine as food in the late 5th century BC, while the Greek historian Plutarch advised five centuries later on the benefits of fasting (see Weeks 2012:119). As far as science is concerned, Barbara Schneeman chronicles (2003) how the history of contemporary dietary guidance begins in the late 19th century with issues of sanitation *à la* germ theory and the work of Louis Pasteur. In the early 20th century, dietary guidance addressed an assured need for greater vitamin intake to combat health deficiencies, while the 1950s saw the importance of limiting excess food consumption at the risk of affecting diet and chronic diseases. And since the 1990s, attention has turned to the impact of diet and lifestyle on health and well-being (Schneeman 2003).

However, FBDGs of any kind are not simply limited to concerns over health and nutrition. Practicing Hindus, Jews, and Muslims around the world continue to adhere in various degrees to Dharmaśāstra, kosher, and halal teachings, for reasons of social organization and hierarchy (Appadurai 1981, 1988), physical or spiritual health (Douglas 1966), or even economics (Harris 1985). In the United States, dietary recommendations throughout the Depression emphasized economic food selections, while food scarcity during war times ushered the need for appropriate substitutions (Davis *et al.* 2001:881; Smitasiri and Uauy 2007:S142). Multidisciplinary research over the last two decades lends further support to the fact that food-related behaviors (inclusive of food consumption and adherence to FBDGs) vary based on socioeconomic, demographic, and lifestyle attributes (e.g.,

Deshmukh-Taskar *et al.* 2007; Kirkpatrick *et al.* 2012; Park *et al.* 2005:848; Schoenberg 1997; Sharma *et al.* 2003). Indeed, the respective ecologies³ in which food guidance operates create tension between so-called objective, scientific progress and the lived realities of consumers.

An important component of FBDGs is the use of “language and symbols that the public can easily understand” (FAO 2007). Both governmental and non-governmental organizations accordingly develop various tools to distill pages upon pages of recommendations, in an attempt to help facilitate consumers’ comprehension of and adherence to the plethora of dietary guidelines. Advertisements, bulleted lists, and interactive websites are common mediums for presenting more visually appealing and digestible chunks of information. Another popular approach is a single graphic or set of graphics that pictorially represent FBDG messages. No one image alone can capture all bites of data or reflect the dietary patterns and needs of all individuals of a given country. Instead, each set of guidelines depicts an average or composite set of typically “healthy” food-related behaviors aimed at the general public (e.g., see Davis *et al.* 2001:882).

³ I understand individuals as operating within a system of component parts or social “ecologies,” whereby each landscape interacts with the others rather than acting in isolation. (David Goodman and Michael Redclift recognize, for example, that the tendency when talking about the food system is to consider it in relation to the component parts of geography, culture, and concept, rather than to see the three as interdependent [1992:xi]). This exists in two interacting phases. The first is the individual’s micro-ecology, whereby decision-making is made within an environment influenced by multiple competing factors including but not limited to socioeconomic status, religious affiliation, ethnic heritage, and/or the political climate. As such, adherence to food-based dietary guidelines operates in nuanced ways for any given individual. Thus, variation on a macro scale is expressed in terms of varying degrees of these agents’ adherence to national, etc. food guidance. In other words, normalized FBDGs are not accepted equally across all individuals because their experiences and motivations are inconsistent. Social ecologies in this context thus become cases for political economy, as suggested by Constance deRoche in her study of voluntary organizations and the anthropology of complex society (1987), whereby individuals must negotiate material conflicts (what to purchase and consume) that arise from competing social environmental forces; FBDGs essentially create a formal organization comprised of competing interests and resources. By reviewing FBDGs on a global scale, Marshall Sahlins’s discussion of cultural praxis, as further discussed by Deroche, captures the sense of specified context in which behavior is “guided, not scripted” (Deroche 1987:144). Ultimately, my view of ecology is intrinsic to James Greenberg and Thomas Park’s discussion of political ecology, whereby political economy’s “insistence on the need to link the distribution of power with productive activity” and cultural analysis “with its broader vision of bio-environmental relationships” intertwine (Greenberg and Park 1994:1). The complexity and application of this view are further illustrated by Gary Polis, Wendy Anderson, and Robert Holt’s (1997) understanding of the food system that is, at least in part, defined by the integration of two ecologies: landscape and the food web.

There exists a relatively overwhelming number of images ripe for analysis, as FBDGs and their pictorial representations continue to mature in response to assessments of FBDG implementation, efficiency, and effectiveness (e.g., EFSA NDA 2010:3; EUFIC 2009; Estaquio *et al.* 2009; Fogli-Cawley *et al.* 2006:2908; Levine *et al.* 2012; McNamara *et al.* 1999; Montagnese 2015:913). Advances in nutritional and medical science over time (Davis and Saltos 1999:46; Davis *et al.* 2001:884; Shaw *et al.* 2000:111), as well as technology (Neuhauser *et al.* 2007), further spur regular evaluation. Many nations have developed their own FBDGs, following the recommendations of the WHO and FAO's joint publication *Preparation and Use of Food-Based Dietary Guidelines* (1996). Others have since adopted the American pyramid model (Painter *et al.* 2002:483), with as many as 100 different variations of the pyramid having existed by 2004 (Leitzmann 2004; Oberitter *et al.* 2013:24). More recently, countries like the Philippines have used the 2011 American MyPlate model as inspiration for an updated FBDG image (Crisostomo 2013), while many Puerto Ricans have been exposed to Spanish-adapted versions of the United States' Food Guide Pyramid, MyPyramid, and MyPlate (Painter *et al.* 2002:486; Palacios and Angleró 2013). Subsequent documents guiding regional FBDG development have also been produced, leading to similar messages being conveyed, NCDs being addressed, and resources being drawn upon (e.g., FAO 2007).

I have thus elected to largely focus my study on contemporary pictorial representations, so as to update previous studies on international FBDG images (chapter 2). I also pay closer attention to national and government-developed and/or -endorsed representations (rather than those created by the private sector) as governments directly shape public policy and have been identified elsewhere as an important stakeholder in FBDG development (Keller and Lang 2007:868). Previous research has similarly focused on government-endorsed FBDG images (e.g., EUFIC 2009; Montagnese 2015; Painter *et al.*

2002; see also Boylan 2015). I do refer in many cases to FBDG images created by independent, non-governmental organizations, which use the same national FBDGs and scientific research as their respective governments. Examining differences between governmental and non-governmental FBDG images provides points of discussion that emphasize variations in interpreting and presenting the latest scientific research and recommendations, as well as the multiple stakeholders who influence FBDG development.

My thesis draws upon anthropological theory (chapter 3) to examine negotiations of power (political economy) and the influence of contemporary pictorial representation of food-based dietary guidelines on creating culture around the world. Here, I consider FBDG imagery first and foremost as stand-alone, cultural artifacts⁴ comprised of public symbols constructed by corporations and negotiated by consumers. Anthropologists have established that food as symbols convey meaning, especially in terms of food as being communicative (i.e., semiotic, as in the case of Appadurai 1981 and Douglas 1972), symbolic of collective belonging (e.g., Fischler 1988 and Goode 1989), and having specific meaning for those in the shared collective (e.g., Barthes 1975 and Shields-Argelès 2004). Other scholars have analyzed visual components of illustrated food guides both in print and online (Hess *et al.* 2012; Neuhauser *et al.* 2007; Noland and Meirelles 2008). I position these streams of research as a platform for analyzing FBDG images as symbolic systems of power.

In total, I reviewed 33 different depictions of dietary guidance (chapter 4), of which seven served as my core sample (chapter 5). The images I chose were based upon a variety of factors including, but not limited to, presentation format (overall structure, how foods are

⁴ By introducing the term “cultural artifact,” I mean to consider FBDG images as human-constructed objects which reflect the ideals and norms of those inhabiting a specific temporal and spatial context. In this way, I argue studying FBDG images (e.g., FBDGs during wartime) informs us about the culture of those who create and/or use them (see Habib and Wittek 2007:260-272, as well as Sterne 2006 on the mp3 as a cultural artifact).

arranged, etc.), geographic location, the availability of supplementary information, and my ability to read non-English FBDGs or ascertain accurate translations.

In chapter 6, I conduct a qualitative analysis of the symbols and political economy thereof to capture the cultural values, meaning, and use of nutritional and dietary recommendations (Andersson and Bryngelsson 2007; Davis and Saltos 1999:35; cf. Davis *et al.* 2001:881). Throughout my thesis, I pay attention to the specific selection and orientation of FBDG-related iconography, as well as the groups—governmental and otherwise—who decide which depictions and messages are included. This is done within the context of situating FBDGs as powerful symbols of national identity, belonging, and meaning-making.

Studying these images builds upon our anthropological understanding of food and healthy eating as a “cultural system,” i.e., a system of symbols, categories, and meanings used in daily life (Appadurai 1981:494-495; cf. Schneider 1980:133; see also Sewell 2005:160). To understand food as a cultural system, I explore symbolic meaning, considering healthy dietary practices (e.g., choosing what foods to eat) akin to ritual and deconstructing FBDG images into component parts (Turner 1973, 1977). I present these symbols as models of—and for—cultural systems (Geertz 1966a), before I situate them within a framework of political economy (Wolf 1982). My analysis considers the role of symbols and food guide illustrations as mechanisms in which power is produced and reproduced (Mintz 1985, 1995). I interrogate the relationship between nation and citizen (Comaroff and Comaroff 2003) through Pierre Bourdieu’s conception of symbolic violence (Weininger 2002), whereby FBDG imagery again produces and reproduces systems of inequality.

Ultimately, I argue the overall structures of FBDGs and their constituent parts are all symbols, i.e., carriers of meaning (Cohen 1993:196). My aim is to account for graphic variation and the scientific and political messages connoted by the specific selection and

arrangement of these symbols (see Keller and Lang 2007:868; Noland and Meirelles 2008:4; Smith *et al.* 1999:188). I view FBDGs as more than dietary guidelines which reflect dietary recommendations and the biological need to consume nutrients (Fischler 1988; Fly and Gallahue 2002). They are vehicles of power in the negotiation of individual and cultural identity and complicit in sociocultural processes involving national ideals and beliefs about health and consumption (see Ortner 1984). FBDGs and their visual imagery represent both material and symbolic realities as they relate to food choices and consumption patterns, decision-making, health and “good eating,” the negotiation of power, the establishment of norms, and the creation of hegemonic culture by what Claude Fischler identifies as “a tutelary and quasi-totemic authority – Government” (Fischler 1988:290). Given the importance placed on selecting appropriate imagery to construct visual representations of dietary guidance, deconstructing and analyzing FBDG images for what they are (i.e., symbols built of smaller symbols), how they have been chosen, and by whom, becomes important tasks which are fit for qualitative, anthropological analysis.

Chapter 2: Background



Figure 1. The “Basic 7” (USDA 1943)



Figure 2. Anna Britt Agnsäter beside the Swedish Food Pyramid (Coop 1974)

In the United States, FBDGs made their official appearance in the early 20th century.⁵ The first was developed by Caroline Hunt as a list of food groups and subsequently published by the USDA in 1916 (Davis *et al.* 2001:881; Johnston 2005). The following year, Hunt and Wilburn O. Atwater provided the general public with guidance on how to select foods (Davis and Saltos 1999:35). In the 1940s, the USDA developed the first illustrated

⁵ The first set of dietary standards in the United States dates back to 1894 when chemist and human nutritionist Wilburn O. Atwater published “Foods: Nutritive Value and Cost” in the *Farmers’ Bulletin* (Boylan 2015:301). In the late 19th century, Congress had provided the USDA with funds to “enable the Secretary of Agriculture to investigate and report upon the nutritive value of the various articles and commodities used for human food, with suggestions of less wasteful and more economical dietaries than those in common use” (Atwater 1894:2). The concepts of variety, proportionality, and moderation were also developed by Atwater in 1902 (Davis and Saltos 1999:34). Atwater’s dietary standards and what is considered today as dietary guidance differ in the fact that the latter answers the question of what (and how much) food is needed to fit the nutritional needs of an individual (Welsh *et al.* 1993:1).

guide, which accompanied the “Basic 7” (Figure 1).⁶ The Basic 7 aided consumers with wartime rationing, while establishing a foundation for achieving nutrient (but not necessarily caloric) adequacy; it also included suggested (though not specific) daily serving sizes for each food group (Davis and Saltos 1999:36; Hunt *et al.* 1995:317; USDA CNPP 2011).

The Basic 7 model had international appeal and informed the images and food programs of other countries including Sweden. Sweden officially began using the USDA’s 1940s food circle model in the early 1960s (Bergström 1995:26). With rising food prices challenging consumers’ earnings into the 1970s, the Swedish government charged the *Socialstyrelsen* (Sweden’s National Board of Health and Welfare) to determine whether their citizens could eat healthy (i.e., follow the guidelines) while on a low budget. To help consumers in their decision-making, the *Socialstyrelsen* divided foods into two categories: “basic,” defined as those essential for well-being (i.e., cheap and nutritious), and “supplementary” or foods which provided nutrients not necessarily found in basic foods (see Baofu 2012:149; Smallwood 2013). While the work of the *Socialstyrelsen* reflected the dietary guidelines of the times, there was still room for improvement.

Anna Britt Agnsäter (pictured in Figure 2)⁷ built upon the *Socialstyrelsen*’s work and situated basic foods such as potatoes and root vegetables at the wide base and supplementary foods such as seasonal, non-root vegetables further up the now-familiar triangular shape. The hierarchical organization of foods in Agnsäter’s 1970s Swedish icon

⁶ The Basic 7 groups included: green and yellow vegetables... [ellipses in the original]; oranges, tomatoes, grapefruit...; potatoes and other vegetables and fruits; milk and milk products...; meat, poultry, fish, or eggs...; bread, flour, and cereals...; and butter and fortified margarine.

⁷ Agnsäter worked as head of the test kitchen for the non-governmental *Kooperativa Förbundet* (KF), a Swedish Cooperative Union comprised of retail and grocery outlets.

ushered changes in the way food could be more effectively and efficiently portrayed.⁸ In the United States, the 1992 Food Guide Pyramid (FGP [Figure 3])⁹ developed as a response to consumer criticisms of circular formats in that they lacked proportionality, were considered fairly complex, and failed to denote serving sizes (Hunt *et al.* 1995; USDA CNPP 2011).

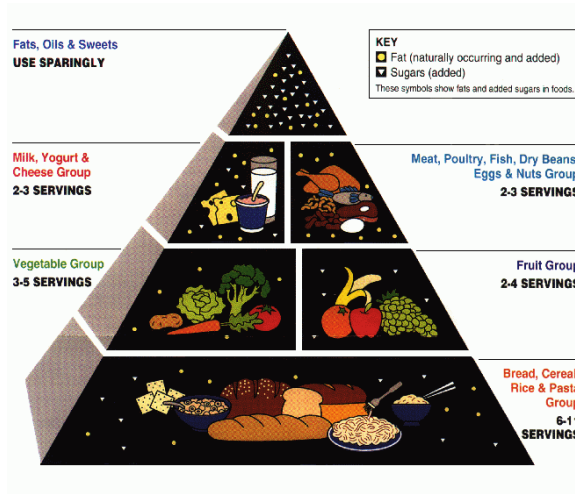


Figure 3. United States FGP (USDA 1992)



Figure 4. United States MyPyramid (USDA 2005)

The FGP organized food groups in the form of a pyramid and emphasized recommended daily food (and by extension nutrition) intake and portion sizes (Gustafson 2011; Hess *et al.* 2012). Moreover, the FGP reflected a total diet approach to nutrient adequacy and moderation, as well as foci on variety and proportion (Britten *et al.* 2006:S79; Davis and Saltos 1999:37; Davis *et al.* 2001:882; Dixon *et al.* 2001; Fly and Gallahue 2002; USDA CNPP 2011). Shortly after the release of the USDA's FGP, the Oldways Preservation and Exchange Trust (OPET) published various pyramids which pictorially represented the

⁸ Despite its appeal in Sweden and elsewhere, the Swedish Food Pyramid remains an unofficial model (Bergström 1995:27). The government has previously promoted the Food Circle (*Matcirkelein*) model, since 1992 (van Dooren and Kramer 2012:12). Most recently, the Swedish National Food Agency (*Livsmedelsverket*) has developed a list-based FBDG (NFA 2015; refer to Table 4, Appendix).

⁹ The FGP, as is the case with other FBDGs, was based on the eating patterns of Americans broadly defined (Davis and Saltos 1999:42; Painter *et al.* 2002:483; USDA CNPP 1997)

diets of cultures known for maintaining good health.¹⁰ Concurrently, others had also developed pyramids reflecting Puerto Rican, vegetarian, and “soul food” dietary habits (USDA CNPP 1997). This demonstrated such pyramids have the ability to represent pre-existing cultural patterns. The Center for Applied Research in Anthropology (CARA) at Georgia State University was another group that sought to make the FGP more culturally relevant. CARA’s bilingual pyramids varied the arrangement and types of foods depending on the cultural group, but all within the same pyramid structure (Fly and Gallahue 2002:194).

The existence of these images produced by non-governmental organizations (NGOs) as OPET confused Americans, as recommendations for maintaining a healthy diet did not align with the government (Davis and Saltos 1999:47; USDA CNPP 1997).¹¹ In contrast to the 1992 pyramid, the pyramids promoted by Oldways pictorially emphasized healthy lifestyle factors and behaviors (e.g., physical activity and moderation of alcohol intake) which are discussed in the DGA but did not actually appear in the FGP itself. Additionally, the design of the Oldways pyramids emphasized proportion sizes as opposed to specific quantities as illustrated in the FGP. Ultimately, the USDA CNPP acknowledged that no one pyramid can convey everything individuals need to know but the FGP offers the flexibility for individuals to choose the dietary pattern that works for them. Similarly in the case of Sweden,¹² this American example illustrates a divergence between the approaches taken by and interests of governmental and NGOs.

¹⁰ At the time, OPET developed pyramids based on Asian, Latin American, Mediterranean, and vegetarian diets. The first three are analyzed later in this thesis and are presented in Figures 23-25.

¹¹ Today, the presence of differing governmental and non-governmental visual iterations of national FBDGs remains an issue (e.g., see Downs and Willows 2008 regarding confusion among Canadians, as well as Vorster *et al.* 2013:S10 regarding conflicting sources of nutrition information).

¹² Despite the fact the KF worked with the *Socialstyrelsen*, the *Socialstyrelsen* wanted to maintain separation between its FBDG and that of the KF. As far as the KF was concerned, the *Socialstyrelsen*’s model was viewed problematically as a “cake divided into seven slices” (Baofu 2012:149).

Following its initial launch, the USDA and HHS updated the FGP to the MyPyramid (Figure 4), which was released alongside the 2005 *Dietary Guidelines for Americans*. This new image aimed to simplify the 1992 version and removed pictures of suggested foods (though such images were added in subsequent revisions). Relevant information pertaining to each food group was also moved to an online website (USDA CNPP 2011), where FBDGs could be more closely customized to one's caloric needs. The addition of a generic figure walking up a set of stairs was meant to emphasize the importance of physical activity, while the addition of "My" suggested individual personalization (Helm 2005; USDA CNPP 2011).

The new pyramid had many critics. Visual cues for proportionality and moderation were eliminated, while the image overall became difficult for consumers to understand (Noland and Meirelles 2008). Others argued the illustration did not help consumers make healthier food choices (Chiuve and Willett 2007; Johnston 2005; Mitka 2005). The editors of *Environmental Nutrition* went so far as to state that "[a]s a stand-alone symbol, the new graphic falls flat. The wordless rainbow pyramid is colorful, but says little; it doesn't even show foods" (Helm 2005:2). Furthermore, criticism toward transferring key messages online emphasized segments of the population have limited to no Internet access, as well as limited degrees of Internet literacy (Chiuve and Willett 2007:612; Frenk n.d.a.; Helm 2005:2; Mitka 2005; Johnston 2005; Lichtenstein *et al.* 2008; cf. Freeman 2006).

Neither the circle nor the pyramid is necessarily the only structure to influence consumers' dietary behaviors and patterns, though it has been argued some features are more effective or efficient than others. For example, an exploratory study by Rebecca Hess and colleagues suggested different shapes tend to draw one's attention to different areas of the image and emphasized specific regulations (Hess *et al.* 2012). Additionally, many countries have purposefully sought to tailor different formats to engage their citizens. The

Venezuelan food guide takes on the form of a trompo (Venezuela International 2011), the country's traditional spinning top, while the Chinese guide is set within a pagoda. In the case of France, the nine dietary steps coming from the French National Nutritional and Health Program (PNNS) are presented differently to various age groups. Referencing a typical outdoor activity played in schools, the PNNS embeds the steps in a hopscotch format (Figure 5) for children, as opposed to the tabulated list for adults (Figure 6).



Figure 5. *La Marelle* ("hopscotch") for children (PNNS 2011a)

VOS REPÈRES DE CONSOMMATION		
Fruits et légumes	au moins 5 par jour	<ul style="list-style-type: none"> à chaque repas et en cas de petits creux crus, cuits, nature ou préparés faits, surgelés ou en conserve
Pain, céréales, produits de terre et légumes secs	à chaque repas et selon l'appétit	<ul style="list-style-type: none"> favoriser les aliments céréaliers complets ou le pain bio privilégier la variété
Lait et produits laitiers (yaourts, fromages)	3 par jour	<ul style="list-style-type: none"> privilégier la variété privilégier les fromages les plus riches en calcium, les moins gras et les moins salés
Viandes et volailles, produits de la pêche et œufs	1 à 2 fois par jour	<ul style="list-style-type: none"> en quantité inférieure à l'accompagnement viandes : privilégier la variété des espèces et les morceaux les moins gras poisson : au moins 2 fois par semaine
Matières grasses ajoutées	limiter la consommation	<ul style="list-style-type: none"> privilégier les matières grasses végétales (huiles d'olive, de colza...) favoriser la variété limiter les grasses d'origine animale (beurre, crème...)
Produits sucrés	limiter la consommation	<ul style="list-style-type: none"> attention aux boissons sucrées attention aux aliments gras et sucrés à la fois (pâtisseries, crèmes desserts, chocolats, glaces...)
Boissons	de l'eau à volonté	<ul style="list-style-type: none"> au cours et en dehors des repas limiter les boissons sucrées (privilégier les boissons light) boissons alcoolisées : ne pas dépasser, par jour, 2 verres de vin (ou 1 à 2 pour les femmes) et 3 pour les hommes, 2 verres de vin sont équivalents à 2 verres de bière ou à 2 cl d'alcool fort
Sel	limiter la consommation	<ul style="list-style-type: none"> préférer le sel iodé ne pas réaliser saumure de saloir réduire l'usage de sel dans le saum de cuisson limiter les fromages et les charcuteries les plus salés et les produits transformés salés
Activité physique	au moins l'équivalent d'une demi-heure de marche rapide par jour	<ul style="list-style-type: none"> à intégrer dans la vie quotidienne (marcher, monter les escaliers, faire du vélo...)

Figure 6. *Le Tableau des Repères de Consommation* ("Consumption Reference Table") (PNNS 2011b)

Individually, each component represents something different: pictures of children playing different games symbolize specific activities such as jumping rope or juggling, and images of fish, beef, and eggs illustrate various ingredients. When considered in relation to other

images, they garner additional meanings, as multiple activities suggest ways to maintain an active lifestyle and the different animals and animal products distinguish possible proteins to consume. Set in the context of hopscotch, the recommended daily quantity of 1 or 2 is translated as what would otherwise be the first and second steps children would take when playing the game, while the activities themselves suggest the importance of regular activity and movement. Taken together, this visual representation of the nine steps symbolizes what the PNNS (as a national government agency) has determined as healthy dietary behaviors.

Previous Research

The work of food psychologist James Painter and colleagues (2002) is the only study I know that explicitly addresses variations of food guidelines on a global scale by systematically comparing visual differences among countries' FBDG illustrations. Painter *et al.* (2002) paid close attention to the shape, food groupings, and recommended serving sizes of 12 countries' FBDG illustrations. They expected global disparities in populations' food intake, food availability, and the nutrition status between countries to be reflected in the various food guide graphics and differences in recommendations. Overall, they were able to group pictorial representations into three general shapes: pyramid, circle, and unique (e.g., the pagoda shape shared by Korea and China at the time, as well as Canada's rainbow, the UK's plate, and Mexico's dish [Painter *et al.* 2002:487]). Painter *et al.*'s (2002) side-by-side comparisons revealed similarities in terms of food grouping and recommendations, as do their comparisons of quantitative recommendations (see Table 2) (Painter *et al.* 2002:487). This view is consistent with findings by Hess *et al.* (2012),¹³ who argue relatively little differences exist when considering the effectiveness and efficiency of FBDG shape.

¹³ In contrast to the work of Painter *et al.* (2002), Hess *et al.* (2012) focused more generally on FBDG shape and not a cross-country comparison of FBDG on an international scale.

Cultural differences aside, Painter *et al.* (2002) argued that grains, vegetables, fruits, milk, and meats are fundamental ways to group food. Differences in FBDG illustrations reflected differences in food systems and eating patterns, including the fact that certain countries express and understand fats and sugars as individual or paired categories. Sugar consumption is low in China, for example, so there are no actual sugar-related recommendations at the federal level; a similar case holds true for the Philippines, where milk and dairy do not appear as its own group on the pyramid since they are neither regularly consumed nor traditionally part of the diet (Painter *et al.* 2002:487).

Painter *et al.* (2002) noted data collection limitations which affected the applicability of their findings on an otherwise global scale, including the non-existence of government-sponsored images (e.g., Japan), or the inability to obtain images from South America. Japan has since released dietary guidelines and an accompanying pictorial representation, and the Brazilian government has opted not to produce a formal FBDG image (Barton 2014). Other countries have updated if not completely changed the shape and overall design of their FBDG pictorial representations: Korea changed its pagoda to a bicycle in 2010 (Baik *et al.* 2013:235; Lee *et al.* 2013:50-51) and the United States' longstanding pyramid was changed to a plate in 2011, influencing others such as the Philippines to also adopt the format (Crisostomo 2013). I have chosen to include among my data these countries' FBDGs, so as to update the work of Painter *et al.* (2002) (Table 2, Appendix A).

In 2009, the European Food Information Council (EUFIC) compiled an inventory of all available European FBDGs (Table 3, Appendix A).¹⁴ EUFIC identified the food pyramid as the most popular FBDG pictorial format, followed by food circles and unique

¹⁴ Again, I distinguish the work of EUFIC (2009) with that of Painter *et al.* (2002). EUFIC, as well as Montagnese *et al.* (2015), limited their reviews to European FBDGs (as opposed to surveying FBDGs on a global scale as I do in my thesis).

shapes such as the house of Hungary and steps of France (EUFIC 2009). Additionally, EUFIC paid particular attention to FBDG format, the number of food groups, type of supportive information, recommendations specific to fluid, salt, and specific nutrient intake, and commentary specific to lifestyle behaviors. EUFIC noted how FBDG components were expressed through a variety of visual cues, including carefully selected shapes, pictures, and colors. Including the right balance of text on pictorial representations is also important: “with a minimum amount of text, [FBDG images] are helpful but may imply that everyone should eat exactly the same amount from each food group every day” (EUFIC 2009). EUFIC emphasized the attention each country (or more accurately, each country’s government) pays to steering FBDGs toward nation-specific public health issues.

Most recently, Concetta Montagnese and colleagues analyzed the FBDGs and accompanying pictorial representations of nearly two-thirds of European countries. Their work updated data collected for EUFIC’s 2009 review¹⁵ and added data a 2009 review conducted by the European Food Safety Authority (EFSA)¹⁶ (Montagnese *et al.* 2015:913). Of the 34 analyzed images, the authors found that 22 countries utilize a pyramid model, seven use a circle, and three take alternative forms (France’s steps, Hungary’s house, and Turkey’s four-leaf clover), while Lithuania lacks a food guide graphic (Montagnese *et al.* 2015:909). Montagnese *et al.* (2015) concluded there is limited agreement among European countries as to what exactly comprises a healthy diet, how foods should be grouped, and how to incorporate ethnic food habits, despite the fact similarities exist among European FBDG illustrations in terms of regional dietary recommendations (Montagnese *et al.*

¹⁵ Data from Albania, Austria, Croatia, Estonia, and Italy were updated.

¹⁶ Data were added from Iceland, Israel, Luxembourg, Malta, Moldavian Republic, Norway, the Russian Federation, Romania, Slovenia, and Portugal. Of these, I included Portugal in my thesis as Painter *et al.* (2002) had also reviewed it. Sweden was also included in my data set, as it had been changed since the publication of Montagnese *et al.*’s (2015) work and was also discussed by Painter *et al.* (2002).

2015:914; cf. WHO Regional Office for Europe 2000). EUFIC had also reached a similar conclusion in 2009, as did Charlotte Jeppesen and colleagues in 2011 upon their comparative review of circumpolar countries' FBDGs.

Some countries share similar agricultural, dietary, environmental, sociocultural, and political behaviors, climates, and trends, all of which encourage the development of regional FBDGs that transcend national borders. In 2000, the World Health Organization (WHO) Regional Office for Europe developed the *CINDI* (Countrywide Integrated Non-Communicable Disease Intervention) *Dietary Guide*. This FBDG created a comprehensive, adaptable framework that remained cognizant of differences in food variability across northern, Mediterranean, and southern Europe (WHO Regional Office for Europe 2000:2). The accompanying CINDI pyramid drew upon the relative strengths of different components found in many European models, including the use of the familiar pyramid shape and languages spoken in different European countries. Concurrently, countries are advised to develop their own FBDG given variations in food availability and accessibility, varied lifestyles, and differing health priorities (FAO 2007:3), despite shared attributes among countries within the same region.

Studying the similarities and differences among pictorial representations of FBDGs remains a meaningful endeavor, as countries' FBDGs continue to be influenced by and respond to those of other countries. My thesis contextualizes FBDGs as symbolic vehicles for communicating education and nutrition to the general public (FAO 2007:3; Smith *et al.* 1999:191) and as proxies for 1) analyzing national, regional, and international conceptions of healthy dieting, and 2) understanding how ideas of diet, health, and identity are negotiated on these various scales.

Chapter 3: Literature Review

I divide my qualitative analysis into two major “readings” or interpretations of FBDG illustrations and draw upon two branches in anthropology to do so. The first of these is symbolic anthropology. I begin generally with Victor Turner’s work on ritual (Turner 1973) and processual symbols (Deflem 1991; Turner 1977) and end with Clifford Geertz’s conception of cultural systems. The second major arc is political economy where I turn to the work of Eric Wolf (1982), Sidney Mintz (1985), and Jean and John Comaroff (1999).

Symbolic Anthropology

Studying symbols within ritual context permits researchers to uncover meaning amidst patterns of culture. Victor Turner defines ritual as “a stereotyped sequence of activities involving gestures, words, and objects, performed in a sequestered place, and designed to influence preternatural entities or forces on behalf of the actors’ goals and interest” (Turner 1973:1100). Moreover, and borrowing from linguistics, Turner argues the symbol as “the smallest unit of ritual which still retains the specific properties of ritual behavior[, ...] the ultimate unit of specific structure in a ritual context” (Turner 1967:19). It becomes the anthropologist’s job, therefore, to first determine what the symbol is and to then understand the meaning embedded in it.

Symbols can be divided as either “dominant” or “instrumental” (Turner 1967:30-32; see also Deflem 1991:5-6). Dominant symbols maintain relatively high degrees of “constancy

and consistency throughout the total symbolic system” (Turner 1967:31). That is, their meaning and purpose tend to remain static. Instrumental symbols, on the other hand, require study of the entire system in order to be understood (Turner 1967:32). The interdependency of instrumental symbols within ritual brings to mind the idea of constituent parts representing the whole. A concurrent task, then, is to consider not only dominant and instrumental symbols as operating within the same ritual, but also the possibility of a dominant symbol being broken down into instrumental symbols.

The complication here is that we are also ideally looking for meanings plural. Symbols function semantically insofar as they carry multiple, context-based, and otherwise discordant meanings, but interrelate harmoniously within a shared ritual framework (Turner 1973:1100). The multivocality or myriad meanings inherent of ritual symbols can be divided into three dimensions: the exegetic (how individuals explain a symbol’s meaning to the researcher), the operational (researcher-observed use of the symbol), and the positional (relations between and among symbols) (Turner 1973:1103). The strength in Turner’s approach lies in its holistic framework that validates both researchers’ and informants’ points of view. However, underlying this approach is the assumption that meaning is there to be discovered and is shared among all individuals of a given community. There are other meanings to consider, as gestures, words, and objects do not mean the same thing to everyone else at the same time.

Clifford Geertz also developed a paradigm for analyzing symbols and their role. In his conceptualization of religion as a cultural system, he defines religion as:

(1) a system of symbols which acts to (2) establish powerful, pervasive, and long-lasting moods and motivations in men by (3) formulating conceptions of a general order of existence and (4) clothing these conceptions with such an aura of factuality that (5) the moods and motivations seem uniquely realistic (Geertz 1966a:4).

Religion also maintains an “enabling circularity” (see Rennie 2009:342) built on Geertz’s distinction of cultural systems as models *of* and *for* reality: “cultural patterns have an intrinsic double aspect: they give meaning, that is, objective conceptual form, to social and psychological reality both by shaping themselves to it and by shaping it to themselves (Geertz 1966a:7). When individuals adhere to the cultural system which defines how one should act (i.e., what reality ought to be), such routine becomes normalized as far as what reality is (Rennie 2009:341).

Geertz argues symbols become points of negotiation for citizens who are agents and must make choices within the scope of the system itself (Geertz 1973a:353; see also Ortner 1984:130). The concern turns then to how symbols “shape the ways social actors see, feel, and think about the world, or in other words, how symbols operate as vehicles of ‘culture’” (Ortner 1984:129-131; see also Deflem 1991). To put this another way, to view religion as a cultural system is to explore the interconnected relationship among the symbol, society, and the individual (Pals 2006:273).

We must be careful, though, with strictly symbolic analyses. Roger Keesing writes that the meaning created by “a particular system of symbols” within ritual space, brings about “order, coherence, and significance upon a people, their surroundings, and the workings of their universe” (Basso and Selby 1976:3). Keesing warns of the assumption many symbolic anthropologists make: that individuals have “access to these meanings—and that rituals ‘work’ because they evoke and orchestrate shared understandings” (Keesing and Haug 2012:406).¹⁷ Ortner goes so far as to argue that symbolic anthropology can have “an underdeveloped sense of the politics of culture,” as well as a “lack of curiosity of concerning the production and maintenance of symbolic systems” (Ortner 1984:132).

¹⁷ Geertz, for example, outright assumes individuals need symbols to understand the cultural system in which they operate (Geertz 1966b:6).

Individuals, however, are involved in a political process of negotiating the system's very symbols. The system is more or less an actor-oriented, naturally occurring phenomenon to be interpreted, without much (if any at all) consideration for those responsible for orchestrating the symbols' material creation. The move, then, that needs to be made is one arguing for symbols as representing the construction of "culture" to symbols as representing very real power relations, as well.

Keesing's analysis of Kwaio ritual (2012) helps to bridge the leap from the symbolic to the political. In his work, Keesing highlights symbolic misunderstandings of culture: individuals do not necessarily understand symbols the same way (Keesing and Haug 2012:407). This means there are multiple interpretations as to what symbols do and should mean, which inevitably creates the potential for misreading and misusing them altogether.

Certain understandings or interpretations, however, are more correct than others. In *Distinctions: A Social Critique of the Judgement of Taste*, Pierre Bourdieu writes that food tastes depend on how groups view conceptions of health: taste becomes hegemonic and is defined as naturally-embodied culture (1984:190). Oftentimes, and in consideration of French *haute cuisine*, socially accepted distinctions in taste separate good food from bad food, one group from another, and the elite from the poor. This creates a problematic hierarchy determining who is (and who is not) important, who belongs (and who does not). But who gets to determine such distinctions?

Political Economy

Eric Wolf claims that symbolic analyses and their emphases on signification appeal to "the efficacy of symbols[...] as if these cognitive processes were guided by a *telos* all their own" (Wolf 1990:592). Nevertheless, there exists discordance when "the mutual signaling of

expectations is deranged, where opposite and contradictory interests come to the fore, or where cultural schemata come under challenge” (Wolf 1990:593). This reality becomes one mediated by power relations, in which power “is implicated in meaning through its role in upholding one version of significance as true, fruitful, or beautiful, against other possibilities that may threaten truth, fruitfulness, or beauty” (Wolf 1990:593). In short, there are competing views of meaning within the same system or of the same symbol. Studying the power built within symbols and cultural systems can be done through the field of political economy. Wolf identifies this as “a field of inquiry concerned with ‘the wealth of nations,’ the production and distribution of wealth within and between political entities and the classes composing them” (1982:7-8).

Sidney Mintz, who uses a political economic framework to study sucrose, argues that sugar has an insider (or emic) meaning, which is historically acquired, arbitrary, and culture-specific, as well as lifeless, unless considered alongside other symbols known to those who understand their reference (Mintz 1985:153). Moreover, sugar also has an outside (or etic) meaning that symbolizes the complex history of power relations embedded in it.

Viewed more generally, Mintz later refined emic and etic concepts in his approach to understanding the relationship between food and power. Given the latter form, Mintz offers the consideration of “the wider social significance of those changes effectuated by institutions and groups whose reach and power transcend both individuals and local communities: those who staff and manage the larger economic and political institutions and make them operate” (Mintz 1995:6). Mintz also turns to the concept of structural power, in an attempt to understand “the field of action [...which renders...] some kinds of behavior possible, while making others less possible or impossible” (Wolf 1990:586-587; see Mintz 1995:11). From these perspectives, it is pertinent to consider who has the power to construct

symbols and establish its meaning, as well as the contexts in which symbols may or may not be able to be adhered to.

Symbols as powerfully negotiated entities reflect and construct culture. As John Comaroff and Jean Comaroff have claimed of (ritual) symbols *à la* Turner, symbols are able to “reproduce and re-present meanings” (Elam 2001:48). Building upon Mintz, however, cultural symbols also mask the very politics which construct them (see Comaroff and Comaroff 1999:285). That is, there are underlying forces (economic and cultural capital) which establish social hierarchy and classification in relation to so-called “legitimate” culture, regardless of whether or not individuals recognize this (Weininger 2002:137). Here, this is also observed as Bourdieu’s conception of symbolic violence (Bourdieu 1991:242), or “the misperception of social space—which characterizes both the dominant [those who create symbols] and the dominated [those for whom symbols are meant], albeit to the advantage of the latter” (Weininger 2002:145). The dominated, in this view, do not necessarily realize they are in fact being dominated.

This haves-and-have-nots dichotomy is one which categorizes individuals into at least one of two social classes, in much the same way as Bourdieu first noted in *Distinctions* (1984). Such a hierarchical arrangement creates a space for an inequality of power and resources. For example, Jean Comaroff argues that despite proclaimed progress in post-apartheid South Africa, the existence of increasing rates of inequality may be due in large part to the combination of a neoliberal agenda and inherited industrial-capitalist economy (Bangstad *et al.* 2012:128-130). The schema of neoliberal capitalism “appears both to include and to marginalize in unanticipated ways[, ...]above all, to offer up vast, almost instantaneous riches to those who master its spectral technologies—and, simultaneously, to threaten the very existence of those who do not” (Comaroff and Comaroff 2000:8).

Neoliberalism offers a way out, a better life as it is, to those who have the ability to afford it at any and all cost. Those who are unable to reap the benefits of neoliberal policy are left to the margins (the poor, i.e., the dominated). As far as John Comaroff is concerned, these individuals are kept in a state of “structural conditions which permit the unthinkable: the alienation of increasing numbers of humans from the very condition of their humanity – [and] all this while the production of wealth and inequality proceeds apace” (Bangstad *et al.* 2012:131). What remains through constant replication in reality, then, are static (though not necessarily unchangeable) symbolic meanings with embedded cultural norms, unequal power relations, and by extension institutionalized inequality.

Inequality in South Africa also presents itself in the dualistic relationship of national citizen and ethnic subject (or other, i.e., not of the norm), which “configures the *practical* terms of national belonging” (Comaroff and Comaroff 2003:446-447). In the liberated scheme, individuals are concurrently free to do as they will as citizens of South Africa but are limited in their options before becoming ethnicized, stepping outside of the national group label and no longer simply being South African. This reality brings to the forefront a similar question posed in the preceding section: who gets to determine who belongs?

The confluence of symbolic anthropology and political economy permits an analysis of models of and for reality, and why things must be and ought to be a certain way. These models are comprised of component parts that reflect ideologies, the totality of which is historically grounded and placed in cultural context. The selection, allocation, and eventual organization of instrumental symbols into a core dominant symbol are inherently acts of political negotiation. Such power is controlled and mediated by a dominant and hierarchically superior class, which wields its power to create a hegemonic culture. The dominated, who are of this cultural system must choose whether to take part in all, some, or

none of its enabling circularity. In this process of transferring decision-making power to the individual, the veil of neoliberalism masks the economic, political, and social conditions governed by the dominant.

Chapter 4: Materials and Methods

I reviewed 33 different pictorial representations of food-based dietary guidelines for my thesis. I based my initial selection of these specific images on the countries and FBDGs that others before me had previously reviewed (e.g., EUFIC 2009; Montagnese *et al.* 2015; Painter *et al.* 2002), as I aimed to update their work and build upon their findings.

Current FBDGs of 16 countries comprised my sample. 11 of these are from Painter *et al.*'s (2002)¹⁸ review: Australia, Canada, China, Germany (both the German Nutrition Circle [GNC] which Painter *et al.* [2002] reviewed, and the 4-sided pyramid, of which the GNC forms its base), Great Britain (presented as the United Kingdom), Korea (presented as South Korea), Mexico, the Philippines, Portugal, Sweden, and the United States. All of these countries have since updated or completely changed their FBDG presentations.¹⁹ For additional historical context, I formally analyzed the original 1992 United States Food Guide Pyramid (reviewed by USDA CNPP 1997), as well as the 2005 MyPyramid, which preceded the current MyPlate. Moreover, the pictorial representation of Japan was added because it had not existed in 2002.²⁰ Additionally, the FBDGs of four other countries strengthened the international scope of this study: France for its unique FBDG shape (i.e., the staircase);

¹⁸ I have elected to exclude Puerto Rico from my review, as it adapts its food guide models directly from the United States of America (Palacios and Angleró 2013:214). The principal difference between the current Puerto Rican *MiPlato* and the American MyPlate is the use of colloquial Spanish instead of English.

¹⁹ Sweden updated its FBDG format after the publication of Montagnese *et al.*'s (2015) study, which had reviewed the same graphic as Painter *et al.* (2002).

²⁰ The lack of an FBDG in Brazil was also called out; it does not have a single FBDG representation, but is reviewed in chapter

Ireland as it was identified as typical of European food guide pyramids (EUFIC 2009); South Africa for its unique visual representation and ability to be relevant within and among its multicultural populations (Vorster *et al.* 2013); and Venezuela due to its status as one of the first countries to publish FBDGs (FAO 2007:4). In addition to these 19 government-endorsed, national FBDG representations, I analyzed four government-endorsed, indigenous FBDG illustrations (three from Canada and one from Venezuela). Additionally, I chose to review the WHO Regional Office of Europe's CINDI pyramid (2000) and the Mediterranean Diet Foundation's (MDF) Mediterranean Diet Pyramid (Bach-Faig *et al.* 2011). Both of these FBDGs reflect regional-level recommendations, the former of which was included in EUFIC's 2009 review. Finally, five pyramids produced by the Oldways Heritage Pyramids. Three of these (the Asian, Latin American, and Mediterranean Diet Pyramids) were originally discussed in USDA CNPP 1997. The Oldways' Mediterranean Diet Pyramid is distinct from the regionally-produced Mediterranean pyramid by the MDF.

This collection highlights global variation through the visualization of culturally-specific ways of presenting dietary recommendations. Concurrently, these images reveal similar patterns in terms of how guidance is displayed for general, national audiences. Different formats (food plate, food pyramid, food pagoda, etc.) are represented in this sample, as well as FBDG images that reflect anywhere from 4-16 different food groups, those which do and do not label food groups, and illustrations which suggest the importance of regular water consumption and daily exercise.

I borrowed Malcolm Collier's analytical model to organize and examine my data. I made an inventory of the images using categories that reflected and assisted my research goals, engaged in a structured analysis process, and searched for meaning and drew conclusions based on the entire visual record (Leavy 2009:217-218; see also Collier and

Collier 1986:179). My log appears in Table 4 (see Appendix A). The inventory categories I used were influenced by those developed by Painter *et al.* (2002; see Appendix A, Table 2) and EUFIC (2009; see Appendix A, Table 3). In total, 13 FBDGs are presented as pyramids, 11 make use of a circle, plate, or wheel format, and the remainder can be described as “unique” (Painter *et al.* 2002:487).

My sample, however, reveals a different pattern when only considering national, government-endorsed FBDGs: the data indicate countries around the world have transitioned their FBDG formats to observe a circular or plate model. Of the 16 national, government-endorsed FBDGs I reviewed (counting only Germany’s 4D pyramid and not its GNC [Montagnese *et al.* 2015:909]), seven of the 16 use a circle, two use a pyramid, and the rest use unique formats. This is in contrast to previous studies which note the popularity of the traditional pyramid. For example, Montagnese *et al.* found that 2/3 of European countries adopt the pyramid, compared to 24% that use a circle (2015:909). The WHO’s CINDI FBDG is also shaped as a pyramid. Of the 12 images Painter *et al.* (2002), reviewed, three countries’ triangular pyramids had changed to a circular format. The Korean pagoda image they analyzed also changed to a bicycle format which is also known as the food balance wheels.

I build upon John Collier and Malcolm Collier who used photography and photo essays as an approach to anthropological description (e.g., Collier and Collier 1986:106-108). In my approach, I concurrently conducted unstructured, open viewing analyses, structured analyses, and detailed or microanalyses (Collier and Collier 1986:181-183) of my “photos” (i.e., FBDG images). Using the unstructured, open viewing approach, I surveyed my data individually, in pairs, and as a collective, breaking up the data into different configurations. For example, I surveyed FBDGs by country and continent. This “unstructured [but not

casual] immersion in the visual record” allowed me to “respond to the images as they *are* and not simply as [I] expect[ed] them to be” (Collier and Collier 1986:181).

I coupled my unstructured analysis with a structured one, looking for salient features based on perceived similarities and differences, as well as attributes previous researchers had reviewed. Examples of these included the type of format or shape a country’s FBDG uses, the number of food groups that appear in each representation, how each group is labeled and arranged, the types of food that exemplify a given group, and whether these are displayed in a similar way among and between images of different countries. Focusing my analysis on these attributes of interest helped me make the move toward a structured, comparative approach of my data. My findings from this stage of research appear in Table 4 of Appendix A.

I then conducted microanalyses of seven of the 33 FBDG representations I reviewed, as the questions of my structured analysis became more refined (Collier and Collier 1986:182). I selected one national, government-endorsed pictorial representation from each continent (except Antarctica) from the initial pool to comprise a representative sample that accounts for equal geographic distribution and a variety of FBDG formats. I also analyzed a second North American example (the MyPlate) given the upcoming release of the United States’ upcoming DGA. These seven images, presented in Table 1, exemplify worldwide variation in terms of what governments consider healthy eating, as well as what visual cues are deemed appropriate to illustrate dietary guidance. I also drew upon alternative, pyramid models in my analysis, as they provided further context and/or brought about additional points of comparison. I relied on supplementary articles to instigate and further refine insights I gleaned from each image (Collier and Collier 1986:182). I deconstructed these composite representations into component images and interpreted them

to explain in turn the meaning of these symbols. In so doing, I drew upon strengths and attributes of microanalysis, i.e., “its basis in the unique requirements of clinical research and [...] a reductionist approach in which understanding of the whole is sought through study of its small components” (Collier and Collier 1986:183). This is done with the understanding that such analyses of FBDG imagery are spatial and temporal “fragments selected from the flow of culture which we use to attempt a reconstruction of the human context” (Collier and Collier 1986:183).

Continent	Country	First FBDGs	FBDG Pictorial Shape	In Use Since
Asia	Japan	2000	Spinning top	2005 (rev. 2010)
South America	Venezuela	1991	Trompo	2011
North America	Canada	1942	Rainbow	2007 (rev. 2011)
Africa	South Africa	2001	Circles	2012
Australia	Australia	1982	Circle	2013
Europe	France	2001	Staircase	2011
North America	United States of America	1916	Plate	2011

Table 1. Summary of microanalyzed national, government-endorsed FBDG images

I begin my exploration of FBDG imagery with the Japanese guide, as it is one of the (relatively) newest images. The Japanese guide does not have a non-governmental counterpart and is available in both Japanese and English (I reviewed the English version). The Japanese guide provided an initial orientation to FBDG messages through constituent and composite symbols. From there, I moved on to Venezuela and Canada, whose governments have elected to use culturally-defined symbols relevant to the needs and ideals of their indigenous populations. These cases exemplify ethnic diversity and the necessity for understanding FBDG images within specific cultural and political systems. The South African example further highlights this need for cultural sensitivity and inclusiveness and—

within the context of nation-building in the post-apartheid, multiethnic, and multilingual state—presents an approach currently being used to convey FBDG recommendations within a single image and across a larger demographic.

My analysis then switches focus from the images themselves to those who have the capacity to sway symbolic construction and positionality. In particular, I note those organizations that are responsible for steering government-sponsored images away from recommendations rooted in scientific data toward industrial, political, and/or private interests. By comparing the government-sponsored representations of Australia, France, and the United States against available independent, non-governmental, and alternative FBDG images, I reveal discrepancies between the two groups. I assume such differences are motivated by competing interests. Otherwise, uniform guidelines should theoretically produce more similar images since developers work with the same source material, i.e., objective, scientific findings and national FBDGs. I conclude my analysis with the food program of Brazil, which has taken a markedly different approach by electing to focus on meals and not nutrients (Barton 2014). Brazil also limits its use of images to examples of composed meals and does not have a single FBDG representation. This example provides a tangible, though perhaps problematic, alternative to the images currently being developed throughout the world and further illustrates the need to consider geographic resources and food diversity when creating dietary guidelines.

Symbols as Conveying Messages: The Spinning Top of Japan

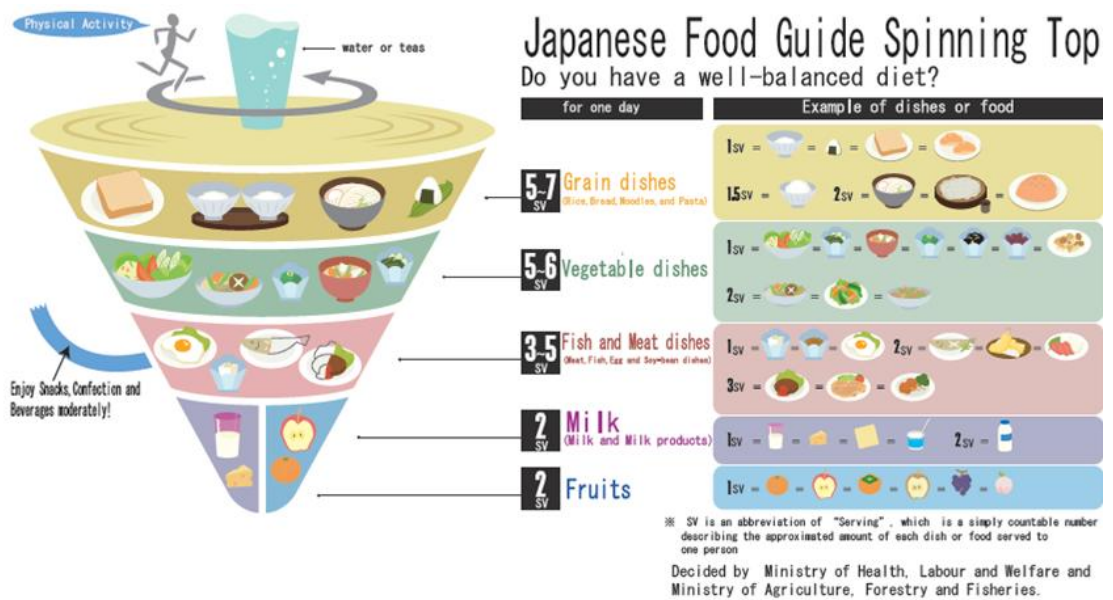


Figure 7. Japanese Food Guide Spinning Top (Ministry of Health, Labour and Welfare and Ministry of Agriculture, Forestry and Fisheries 2005)

Japan's inverse, triangular cone (Figure 7) recommends consumers eat from the top-down. Greater intake comes from the grain dishes illustrated on the widest band. Items to be consumed in least quantities (milk and fruits) are positioned at the bottom. This suggests these food groups are still important to maintain a balanced diet but only in moderation. The idea of balance is further suggested by the top's shape. The running graphic upon what appears to be a track and the counter-clockwise arrow suggests running and motion. This suggests physical activity is an important recommendation to observe alongside proper

dieting. Both are integral to a balanced lifestyle. The blue arc recognizes the importance of moderation and signals the place of snacks, confections, and beverages, while the handle of the top (i.e., the first image “read” from the top down) conveys the vitality of water or tea consumption. Japan’s graphic also includes examples of composed dishes to demonstrate the appearance of typical serving sizes.

The Ministry of Health, Labour and Welfare, and the Ministry of Agriculture, Forestry, and Fisheries jointly developed Japan’s spinning top food guide (Oba *et al.* 2009; Yoshiike *et al.* 2007:149). It is based on the 2000 *Dietary Guidelines for Japanese* and was released to the general public in 2005. The Ministries’ choice to format the guidelines within a spinning top is especially meaningful because of the top’s importance within Japanese culture (Yoshiike *et al.* 2007:151).

The image and its dish-based approach are comprehensible to both cooks and eaters, as nutrients become invisible to the consumer and foods are not necessarily eaten in isolation (Yoshiike *et al.* 2007:150-151).²¹ In other words, individuals are not always nutrient conscious while engaging in the act of eating. Consumption tends to be viewed in terms of mixed foods or complete meals instead of simply consuming a serving of rice or fish, for example. Japan’s model minimizes consumers’ confusion as to how to make sense of serving sizes when considering processed foods and dishes drawing upon multiple food groups (Yoshiike *et al.* 2007:151).

Images for/of the Other: The Trompo of Venezuela and the Rainbow of Canada

Venezuela also illustrates its dietary guidelines using a traditional spinning top known as *el trompo*. Trompos typically have distinctive, colored bands and are thrown from a long

²¹ As the WHO Regional Office of Europe wrote of the *CINDI Dietary Guide*, “[food-based] guidance is more practical; people purchase and eat foods, not nutrients” (2000:2).

piece of cord, which is initially “whipped” instead of spun to build momentum. The result is a distinctive lean that is mimicked in the FBDG image (Figure 8).



Figure 8. Venezuelan *Trompo de los Alimentos* (Food Trompo [INN 2011:1])



Figure 9. Venezuelan *Trompo Indígena de los Alimentos* (Indigenous Food Trompo [INN 2011:12])

The most updated Venezuelan food trompo includes pictures of actual foods that exemplify specific food groups. The National Institute of Nutrition (INN) holds responsibility for choosing those groups that should be eaten in greater or lesser abundance. Starches appear in the upper-most band, which indicates their importance in the overall diet. Images of fruits and vegetables grouped together in green convey the recommendation to eat these in greater quantities than others below it. A band of blue includes animal products, while the bottom two groups include foods to be consumed in lower quantities: honey, sugar, and *papelón* (panela, or unrefined whole cane sugar) as they appear on the left; and sources of fats and vegetable oil, inclusive of avocados on the right (INN 2011).

Water consumption and physical activity are important considerations for a healthy lifestyle. Here, the cord (or *guara*) has been replaced by a stream of water, suggesting the necessity of water consumption. This is further emphasized by droplets which appear to “sweat” off the moving top. Images of three silhouettes engaging in cardiovascular exercise place additional emphasis on physical activity.

To the right of the Venezuelan national food guide is one that has been produced for the country’s indigenous population (Figure 9). The *Trompo Indigena* replicates the same color scheme as the former, and presents similar food groups. Notably, the animal-source group depicted in the blue band includes alligator, capybara, and turtle. The inclusion of a hunting spear pointed at the water and a canoe in motion suggest activities performed by indigenous consumers, replacing those suggested in the national illustration. Both images were developed by the National Institute of Nutrition, in collaboration with universities and endorsements by the Ministry of Health and Ministry of Education (FAO n.d.a).

In Canada, both the federal- and territorial-level governments share responsibility for health care and food guidance (Jeppesen *et al.* 2011:22). The illustrated FBDG presented in Figure 10 is the national guide developed by the Ministry of Health in consultation with multiple stakeholders and closely advised in 2007 by an external Food Guide Advisory Committee, an Interdepartmental Working Group, and the Expert Advisory Committee on Dietary Reference Intakes (FAO n.d.b.). The FBDG is laid out in a rainbow format and is the front page of a six-page booklet. The image features four differently colored and sized bands with graphics that represent different foods (including fresh, processed, and frozen examples). The icon itself does not indicate names of food groups, but in their study of circumpolar FBDGs, Charlotte Jeppesen, Peter Bjerregaard, and Kue Young identify them:

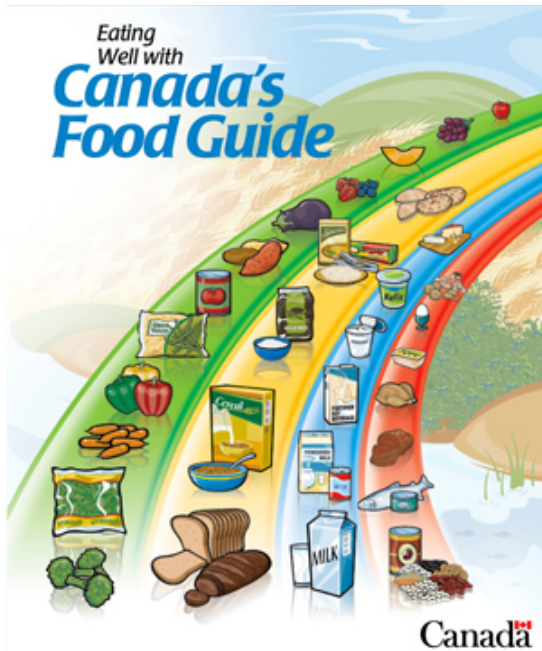


Figure 10. Eating Well with Canada's Food Guide (Health Canada 2011:1)

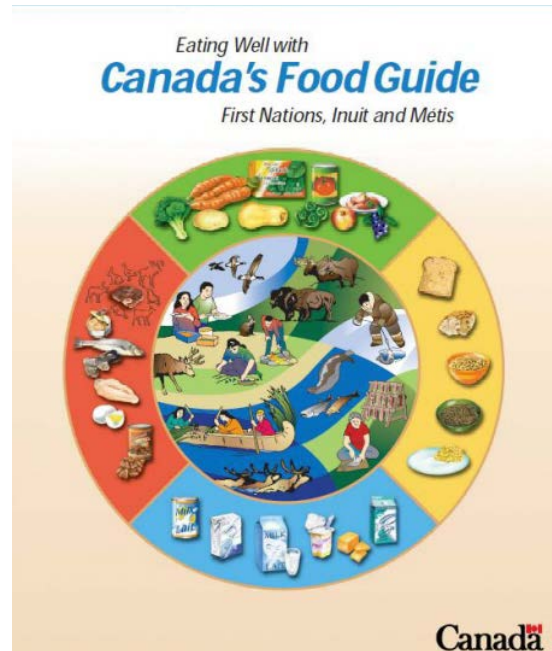


Figure 11. Eating Well with Canada's Food Guide: First Nations, Inuit and Métis (Health Canada 2007:1)

fruits and vegetables; starchy foods and grains; dairy products; and protein rich foods (Jeppesen *et al.* 2011:23).

In addition to the national guide, three other FBDGs (also reviewed by Jeppesen *et al.* 2011) highlight government-sponsored attention given to native/indigenous populations of Canada. These versions take into account shared available resources based on geography. Figure 11 represents the current food guide for the Aboriginal populations of First Nations, Inuit and Métis. Published in 2007, the circle-formatted FBDG illustration uses the same colors as the national FBDG, but divides the circle into four equal quadrants that circumscribe a central circle. The very center of the image emphasizes such traditional food-based practices as ice fishing and smoking meat. Additionally, many of the food images represent other Aboriginal foods (Jeppesen *et al.* 2011:24-25).

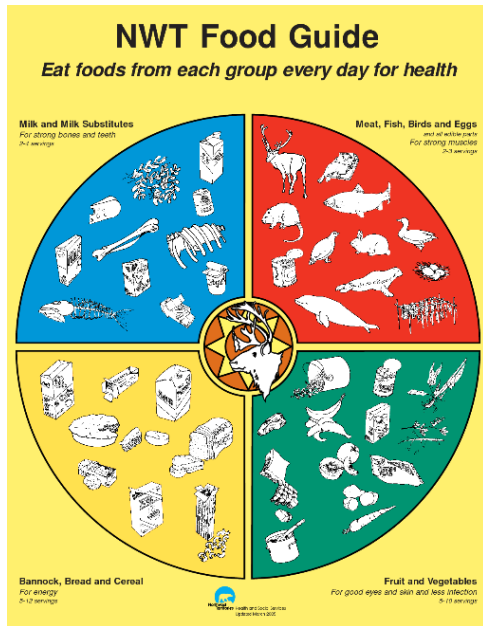


Figure 12. Northwest Territories Food Guide (NWT HSS 2005:1)

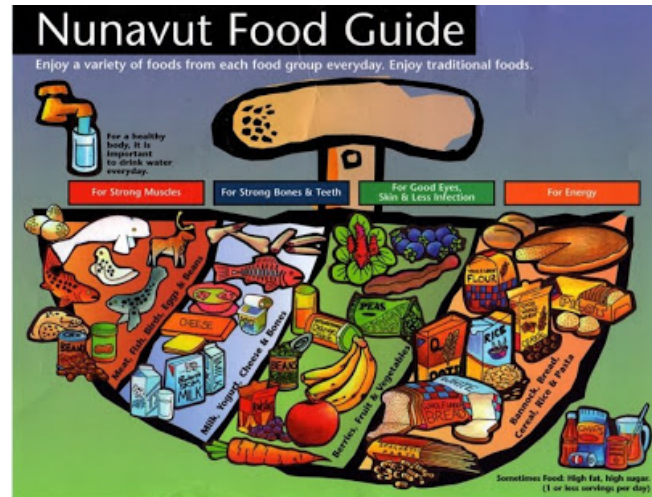


Figure 13. Nunavut Food Guide (Nunavut HSS 2001:1)

The Northwest Territories (NWT) Food Guide (Figure 12)—available in English, French, and Dogrib—was revised in 2005 and is based on a 106-page collection of fact sheets regarding traditional practices among indigenous populations of the area (Jeppesen *et al.* 2011:26). The same colors are used as the other Canadian FBDG images, and the circle image is divided equally in a similar manner to the *Eat Well with Canada's Food Guide: First Nations, Inuit and Métis* representation. Recommended serving sizes are included in the NWT food guide and each section is labeled and accompanied by a rationale for consuming each group: milk and milk substitutes for strong bones and teeth; meat, fish, birds and eggs and all edible parts for strong muscles; bannock, bread and cereal for energy; and fruit and vegetables for good eyes and skin and less infection. The center of this guide features images of what appears to be a caribou superimposed on the sun. Clive Tesar considers the caribou as “the iconic Canadian animal,” due to its past importance as a primary food resource, so much so that it might well be considered a national symbol (Tesar 2007). Additionally, J.

Michael Miltenberger, Minister of Environment and Natural Resources for the Government of the Northwest Territories, claims barren-ground caribou as one of the region’s “great resources,” while the value of this resource to the social, cultural, and economic well-being of its Aboriginal populations is “immense” (NWT Environment and Natural Resources 2011:5, 21; see also Tesar 2007:2). Considered with the sun which tends to symbolize life and appears for large portions of the day in northwestern Canada, I argue these icons refer to the importance of outdoor life and activity in relation to food and health, while establishing federal and territorial endorsement for the FBDG image.

The Nunavut Food Guide (NFG) utilizes categories similar to the NWT Food Guide, but situates them on a traditional woman’s knife known as an *ulu* (see Tompkins *et al.* 2009:106). When presented as a single image in 2001, the Government of Nunavut’s FBDG representation (Figure 13) incorporated both “country” (or traditional) foods and store-



Figure 14. NFG Food Ulu (Nunavut HSS 2011:2-3)

bought foods in the same ulu. As of October 26, 2011, however, the NFG presents two separate ulus (Figure 14) which distinguish country foods from store-bought ones (Nunavut Department HSS 2011; see also Davison *et al.* 2011 and Rogers 2011). Items that typify Nunavut diets and resources are included on the NFG, with emphasis placed on the traditional. The country foods page emphasizes the ideology that country foods are inherently healthy choices and traditional ways of eating are balanced. Consumption of any of these country foods is a healthy decision. The supplementary NFG *Educator's Handbook* additionally states the concept of “country food” does not necessarily fit within the 4 food group concept used in the healthy store-bought foods ulu. The concern the Nunavut government raises is the fact that only certain parts of animals are purchased at the store. Balance is attained from selecting from the 4 food groups (Nunavut HSS 2012:3-4).

Nationhood, Nation-Building, and National Identity: The Circles of South Africa

South Africa utilizes seven differently-sized circles (Figure 15) to “symbolically reflect the proportional volume that the group should contribute to the total daily diet” (Vorster *et al.* 2013:S7). Each circle represents a food group and correlated recommendations for healthy eating. The South African model represents what should be eaten, as opposed to what should be avoided (Vorster n.d.), in order to maintain good health.²²

South Africa's FBDG image is designed to be comprehensible and relevant to its multicultural population. It includes traditional foods shared across generations, genders, races, and ethnic groups, as well as affordable choices which could be made by poorer individuals (Vorster n.d.). Where graphics are not necessarily discernible, the names are

²² Vorster's point emphasizes the fact that other models tend to zero in on what should be limited or not eaten at all. Sugar, sweetened foods and drinks, and salt are not embedded in the image. This graphic may be compared to that of Australia and France, for example.

written in English, the *lingua franca* of the country (Canagarajah 2006) and one of its eleven official languages. Additionally, South Africa’s FBDG is intended for those over the age of five (Vorster *et al.* 2013:S7).²³

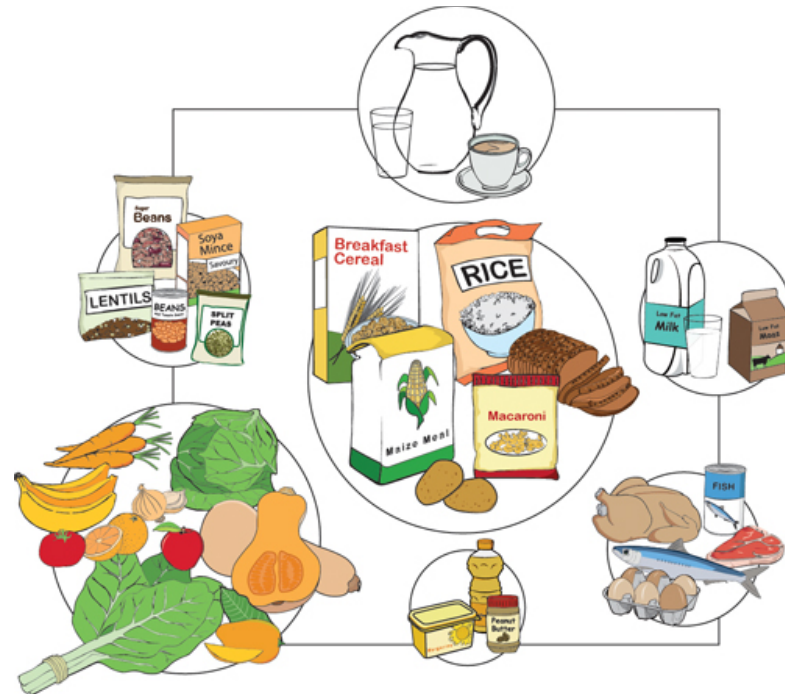


Figure 15. South African Food Group Circles (Department of Health 2012)

Food groups are not written on the FBDG image itself, but are otherwise indicated in the accompanying FBDG: starchy foods; vegetables and fruits; dry beans, peas, lentils and soya; chicken, fish, meat and eggs; milk, *maas* and yoghurt; fat and oil; water (Vorster *et al.* 2013). The central group is comprised of various grains and starches, as exemplified by ethnically-diverse staples as corn meal, rice, potatoes, and bread. The largest of the seven circles, these starchy foods make up a relatively large part of the suggested South African

²³ I consider age requirements an important metric to consider when taking into account the number of FBDGs a nation develops to reach its population. South Africa has a separate set of pediatric guidelines, in addition to the national framework for those aged 5+ years. Most nations’ guidelines are applicable to those aged 2+ years, while others have a third set of guidelines specific to adolescents.

diet. Fresh fruits and vegetables are pictured in the next largest circle; the total consumed volume should be somewhat equal to that of starches, as the circle is slightly smaller. By contrast, legumes, animal proteins, and dairy products, are to be consumed in relatively smaller quantities, as suggested by their smaller circle sizes. Socioeconomic realities and matters of convenience also appear in this graphic, as different foods are packaged in boxes, bags, cans, plastic jugs, and cartons. Not everyone can afford fresh ingredients. The smallest category is made up of fats and oils. Water and tea are situated at the top and in relatively larger proportion to other groups; the pitcher's placement in the FBDG image as the top-most graphic suggests the importance of regular water intake above all other guidelines.

Multiple stakeholders have contributed to the advancement of South Africa's food group circles. The FBDG and its accompanying image were developed by the South African Department of Health, the Association for Dietetics in South Africa, the Potchefstroom campus of Northwest University, and The Nutrition Society of South Africa. Distribution of the FBDG's launch was sponsored by UNICEF, the United Nations Children's Fund. Companies including Nestlé continue to promote the dietary guidelines on their website (<http://www.nestle.co.za/nhw/nutritionbasics/sa-food-based-dietary-guidline>).

Influenced by the Other?

I present in this section alternative, non-government-endorsed models produced by NGOs. These images are examined in addition to national, government-endorsed images.

The Circle of Australia and Nutrition Australia's Healthy Eating Pyramid

The Australian Guide to Healthy Eating's (Figure 16) circular format is divided into 5 slices. Each slice represents one of the five core food groups (Smith *et al.* 1999:189):



Figure 16. Australian Guide to Healthy Eating (Australian Government 2013)



Figure 17. Nutrition Australia's Healthy Eating Pyramid (Nutrition Australia 2015)

vegetables and legumes/beans; fruit; milk, yoghurt, cheese and/or alternatives; lean meats and poultry, fish, eggs, tofu, nuts and seeds, and legumes/beans; and grain/cereal foods. Emphasis is placed on reduced fat foods and consumption of wholegrain and/or high cereal fiber varieties. Varying slice sizes indicate different proportions of consumption despite the lack of specifically recommended amounts. Each slice exemplifies a variety of food choices, with otherwise ambiguous items labeled with text. The graphic includes an unspecified amount of water consumption, as well as images of foods that should be consumed regularly in small amounts. Lastly, the guide places emphasis on the conception of what it means to eat healthy, as indicated by the font color change of the word “Healthy” in the title itself.

Australia’s national FBDG image was developed following the 2013 release of the *Australian Dietary Guidelines*. It is available from the Australian government’s “Eat for Health”

website. The National Health and Medical Research Council (NHMRC) and the Department of Health and Ageing jointly published the document.

However, the first pyramid in Australia came from the independent NGO Nutrition Australia (originally the Australian Nutrition Foundation), which based its model on the 1970s Swedish pyramid (Nutrition Australia n.d.). Since its initial release in 1982, the group continued to develop its graphic through five iterations. This included a shift from the Healthy Eating Pyramid to the Healthy Living Pyramid following the release of the 2003 *Australian Dietary Guidelines*, and a return to the Healthy Eating Pyramid (Figure 17).

The Healthy Eating Pyramid sub-divides its predecessor's three-dimensional pyramid into four levels. The new pyramid does not include qualitative recommendations for consumption. It also separates "Grains" from the "Fruit" and "Vegetables & Legumes" food groups.²⁴ Situated at the base behind the pyramid is a triangle; within each outlined triangle are recommendations emphasizing herbs and spices, and water, in one's diet. Restrictions on salt and added sugars are clearly labeled in a separate box. The italicized recommendation to enjoy dietary variation and daily activity underlines the pyramid.

A discrepancy arises between the two Australian FBDGs, in terms of attention paid to grains. The largest wedge of the government-sponsored Australian Guide to Healthy Eating places visual emphasis on grain and cereal food consumption. On the other hand, fruits, vegetables, and legumes form a foundational base in Nutrition Australia's Healthy Eating Pyramid, with grains and cereal foods sandwiched as a thin layer.

²⁴ The Healthy Living Pyramid grouped foods into one of three categories: "Eat in Small Amounts," "Eat Moderately," and "Eat Most." Grains, fruit, and vegetables & legumes belonged to the "Eat Most" category.



Figure 18. France's Escalier (Staircase) for Adults (PNNS 2011e)

As illustrated on the French food staircase (Figure 18; see van Dooren and Kramer 2012:10-11), the first “step” of the government’s dietary recommendations instructs consumers to eat from the “meats, eggs and fish” category once or twice per day. Subsequent step recommendations suggest consumption from the “milk products” category three times per day, “starches” at every meal according to one’s appetite, and at least five “fruits and vegetables” per day. Each step explicitly suggests more or less generic foods which typify each category (e.g., a can of sardines for “meats, eggs and fish,” or a sizeable slice of brie or camembert for the “dairy products” group). The *fécule*nts (starch) group includes a variety of starches which includes common staples of different ethnic traditions one might find in France, and the *fruits & légumes* include frozen and canned products

alongside fresh produce. A magnifying glass at the bottom-right of the graphic emphasizes the recommendation to limit consumption of sugar, fats, and salt.

Non-food-based recommendations also appear on the FBDG representation. At the top of the staircase is a faucet with flowing water and the recommendation to drink water at-will. Three individuals walking up the stairs carry with them the encircled instruction to “Move at least 30 minutes every day!” They symbolize physical activity, demonstrating what is being instructed. Finally, the phrase to the left of these walkers translates eating well and moving as key to protecting the consumer’s health. Responsibility is transferred to the individual in the case of this FBDG illustration to take care of his/her well-being.

Begun in 2001, *le Programme National Nutrition Santé* (the French National Nutrition and Health Program, PNNS) “deals with nutrition as a determining factor in health” (Ministère Chargé de la Santé 2012:5). Its most recent articulation coincides with the French Ministry of Health’s Obesity Plan (http://www.sante.gouv.fr/IMG/pdf/PO_UK_INDD.pdf). PNNS is one of the lead organizations responsible for its production; it is also one of the largest logos included at the base of the staircase. Other partners include *le Ministère de la Santé et des Solidarités* (the Ministry of Health and Solidarity), *l’Assurance Maladie* (Health Insurance), and *l’Institut National de Prévention et d’Éducation* (the National Institute for Prevention and Health Education, INPES).

An interactive website, www.mangerbouger.fr, maintains the most up-to-date nutrition information and dietary recommendations, in addition to cooking tips, grocery guides, and exercise suggestions. The current illustrated national food guide, though, can be found at the websites of INPES and the Ministry of Health and Solidarity. The French food staircase also complements *Le Guide Alimentaire pour Tous* (“The Food Guide for All”). This corresponds with the 9 steps of everyday consumer guidelines, i.e., the bulleted, condensed

form (Figure 6) of the 130-page nutritional FBDG current as of 2002 (www.inpes.sante.fr/CFESBases/catalogue/pdf/581.pdf).

Despite the longevity of PNNS in France, science journalist Thierry Souccar and dietician-nutritionist Angélique Houlbert write that the PNNS has not halted the progress of consumers' bad food habits. Souccar and Houlbert suggest each 5-year iteration of the National Nutrition and Health Program has been re-launched with the same goals, leadership, and results. They further argue that national food programs do not represent a nutritional ideal, despite the call upon governmental organizations to develop dietary recommendations (Souccar and Houlbert 2015:11). Instead, Souccar and Houlbert claim these resultant FBDGs offer abusive simplifications and surprising advice based on a reliance on outdated knowledge, inequivalent metrics (e.g., one whole fruit being equal to one glass of fruit juice), recommendations influenced by an agricultural era rooted in objective scientific data, and recommendations linked or strongly influenced by agro-food industries which tends to diminish any sense of objectivity (Souccar and Houlbert 2015:12).

Souccar and Houlbert present their *Pyramide Alimentaire* (Food Pyramid [Figure 19])²⁵ as reflective of a more nutritionally sound set of dietary recommendations. The foundational base is comprised of 1.5-2 liters of liquids per day. Tiers 1-4 emphasize daily consumption of fruits and vegetables, starches, oils and fats, and dairy products. Tiers 5-7 suggest weekly consumption of seafood, eggs, and proteins, with “occasionally-consumable” foods situated at the top. The authors also integrated vegetarian and vegan food habits into the *Pyramide Alimentaire*: tiers 4-7 are foods of animal origin and are not obligatory, as indicated by the starting recommendation of zero for each of these food groups.

²⁵ The *Pyramide Alimentaire* can be found in Souccar and Houlbert's book *La Meilleure Façon de Manger (The Best Way to Eat)*. It is also published on the independent, non-governmental website www.lanutrition.fr.

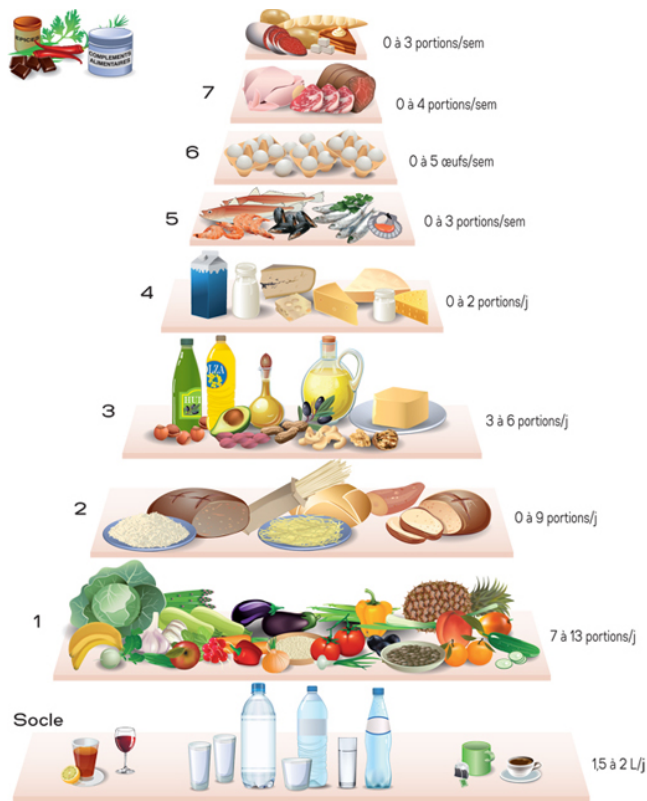


Figure 19. Souccar and Houlbert's *Pyramide Alimentaire* (Food Pyramid [LaNutrition.fr 2015])

Souccar and Houlbert further suggest in the upper-left corner the consumption of “recommended foods”: aromatics and/or spices at each meal, restricting the amount and type of chocolate, ingesting a daily multivitamin, and also taking a vitamin D supplement depending on altitude (see La Nutrition.fr 2015).

Discrepancies exist between the governmental and non-governmental FBDGs of France. Portion sizes generally differ between the two. The *Pyramide Alimentaire* offers the flexibility to exclude the consumption of certain food groups, including grains and starches. Souccar and Houlbert’s wide variation in starch consumption starkly contrasts with the national recommendation of daily intake with each meal. Interestingly, the baguette—a strong symbol of French culinary and cultural identity—appears in near-center focus in the *Escalier*, but is grouped in the occasionally-consumable category at the top of the *Pyramide*.

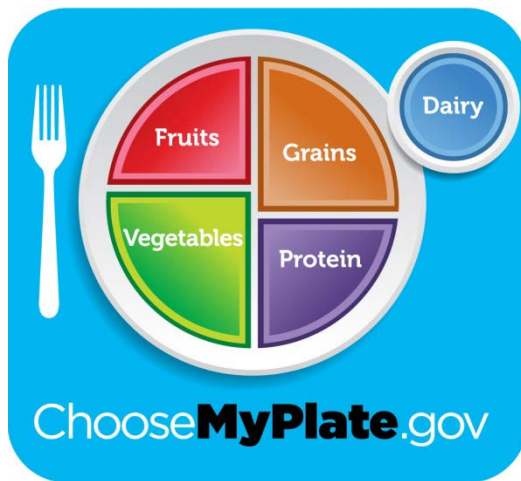


Figure 20. The United States MyPlate (USDA 2011)

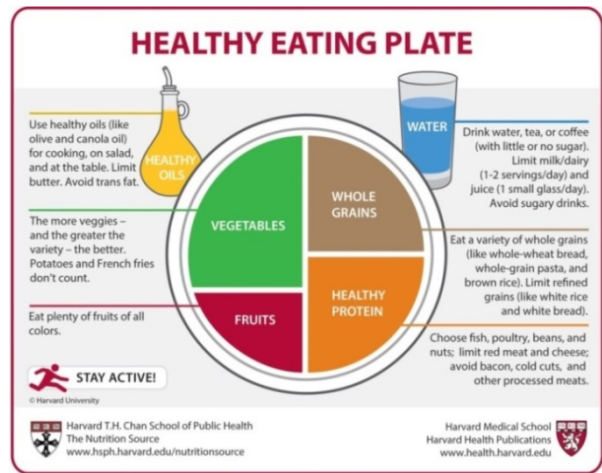


Figure 21. Harvard University's Healthy Eating Plate (Harvard School of Public Health 2011)

The MyPlate icon (Figure 20) was built upon the 2010 *Dietary Guidelines for Americans*. The image sought to simplify previous dietary recommendations and create a standardized set of base recommendations which could then be later personalized. The core component image of the current FBDG in the United States divides a circle into four colored sections. Each quadrant represents a different food group: fruits, grains, protein, and vegetables. While this may seem similar to other FBDGs which use a “total diet” circle (e.g., Australia and Sweden), the addition of the fork to the left of the circle transforms it to a plate sitting on a placemat (Frenk n.d.b.). This arrangement suggests an emphasis on a “balanced” meal (Layman 2014:128) and “real” and efficient eating. Michelle Obama praised the plate design when she first unveiled it in 2011: “when it comes to eating, what’s more useful than a plate? [...] This is a quick, simple reminder for all of us to be more mindful of the foods that we’re eating” (Sweet 2011). A second, smaller circle labeled as “dairy” appears in the upper-right corner of the graphic. This is presumably a reference to a glass of milk, as opposed to a

placeholder for water. The dairy label replaced what had been formerly known as “Milk” in the 2005 MyPyramid (Figure 4), which had replaced “Milk, Yogurt & Cheese Group” in the 1992 FGP (Figure 3).

The MyPlate retains the same color scheme as its immediate predecessor to color code each food group. There is also a distinctive lack of visual cues that exemplify what constitutes a food group. Instead, relative proportion sizes convey mealtime composition, as opposed to overall daily food and intake. Furthermore, no reference is made to healthy activity behaviors, though this is perhaps because the MyPlate coincides with the First Lady’s “Let’s Move” anti-childhood-obesity campaign.²⁶

The FBDG upon which the illustration is based was published and endorsed by the USDA and HHS. However, neither acronym nor their respective logos appear on the icon. Instead, consumers are directed to the website ChooseMyPlate.gov, where the USDA logo and full name are prominently displayed on the website header. Visitors are presented with an interactive experience that personalizes dietary recommendations based on age, sex, and activity level. Explanations of the MyPlate and the component food groups provide quantitative and qualitative data that are not otherwise conveyed in the FBDG illustration.

While its simplicity can be commended, nutritionists have criticized the model as an opportunity lost to actually influence changes toward healthier diets (Willett and Ludwig 2011; see Chiuve and Willett 2007 regarding the MyPyramid). Additional criticism has been placed on American food guides as bending to the influence of outside interests, including but not limited to various sectors of the food industry (Nestle 2013; Willett and Ludwig 2011). Though it has never been declared, skepticism over industrial influence on American FBDGs has grown since at least the early 1990s when Marion Nestle first chronicled the

²⁶ The Let’s Move campaign is co-sponsored by the White House, HHS, USDA, the Department of Education, and the Department of the Interior.

development of the 1992 Food Guide Pyramid (see Nestle 2013). In her account, it was clear meat and dairy producers had a hand in stalling the release of the original pyramid and ultimately influenced its final design: this pivotal moment brought about concerns of the political nature of FBDGs and its effect on the objective science that was supposed to ground dietary guidance in the United States. It remains evident more than two decades later that the USDA faces a conflict of interest between promoting agricultural products and advising the public about making health food choices (Nestle 1993, 2013:54).

Interestingly, the “protein” category of today’s MyPlate replaces its predecessor’s “meat & beans” label. This focus pulls attention away from the United States’ previous emphasis on carbohydrates as derived from grains, which had formerly served as the foundation of the American diet; macronutrients coming from dairy and vegetables garner further attention in this model (Layman 2014:128). Lumping foods into a “protein” category (as opposed to a “meat”) can be seen as a move to include vegetarians and other non-meat eaters, but it could also be construed as an attempt to distance the guidelines from negative connotations of the meat industry, without getting rid of it altogether.

More visually vocal, the dairy industry is also government-endorsed and institutionalized in FBDGs of the United States (Wiley 2010). Dairy consumption persists as a key dietary recommendation though consumption has decreased over time (Stewart *et al.* 2013). This is despite calls for its repeal from the icon and guidelines altogether given the lack of evidence for its necessity (e.g., Willett and Ludwig 2011:1564). Though the MyPlate is designed to be individualized, the “Dairy” segment does not appear to consider those who are lactose intolerant. The same may be said, too, of those with gluten allergies or who practice a vegetarian or vegan lifestyle. The perceived lack of choice is interesting given the directive to go to the ChooseMyPlate.gov website.

Harvard University’s School of Public Health has developed a Healthy Eating Plate (Figure 21) to respond to the disconnect between scientific research and what is presented on the MyPyramid. Of interest here is the pictorial replacement of the glass of milk with a glass of water, both of which share the blue color-coding. The recommendation to limit milk/dairy consumption is also provided in text. Otherwise, dairy recommendations are ignored altogether. Color codes for the other food groups are consistent with the MyPlate, except for “Whole Grains” and “Healthy Protein.” This is perhaps to emphasize differences in Harvard’s approach to dietary guidance versus the United States government. The Healthy Eating Plate also more clearly articulates recent advice to consume larger quantities of vegetables. Finally, a figure in red encourages physical activity.

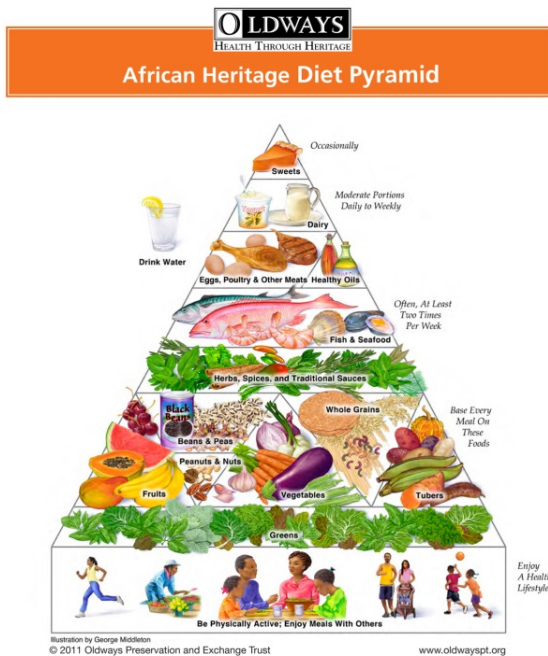


Figure 22. The African Heritage Diet Pyramid (OPET 2011)

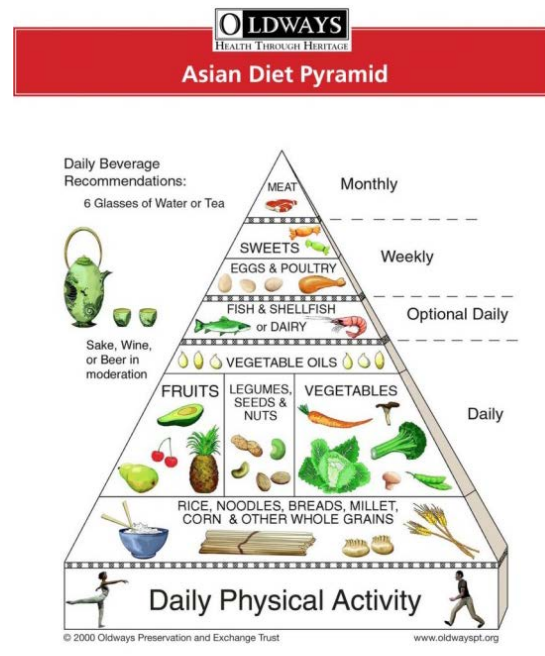


Figure 23. The Asian Diet Pyramid (OPET 2000)



Figure 24. *La Pirámide de La Dieta Latinoamericana* (Latin American Diet Pyramid [OPET 2009a])



Figure 25. The Mediterranean Diet Pyramid (OPET 2009b)

The pyramids produced by the Oldways Preservation and Exchange Trust (OPET [Figures 22-25]) highlight a clear lack of ethnic diversity and alternative dietary patterns that are not present in either the national illustrated guide or its website. This is especially exemplified by OPET’s representation of culturally-specific and regionally available foods such as yams, sake, flan, and olives. It is clear when viewing these images side-by-side (Collier and Collier 1986:181) that some foods and eating behaviors are “shared” across ethnic communities. This is evidenced by similar photos exemplifying specific food groups, as well as perceived similarities in terms of pyramid composition and hierarchical organization of food groups. Individuals in each image are also more phenotypically representative of the populations that might refer to these heritage pyramids. Linguistic diversity is also portrayed through the use of both English and Spanish text in the case of the Latin American pyramid. It is difficult to include the United States’ array of population

diversity in a single image. The MyPlate's simplified, generic approach could be viewed as inclusive by not including any such meaningful symbols as those chosen by OPET. Doing so could be otherwise viewed as exclusionary to those who do not understand their reference.

In this chapter, I have microanalyzed seven national, government-sponsored FBDG pictorial representations. I paid particular attention to such attributes as the format used to organize food groups, the selection and placement of these groups, the types of food used to exemplify these groups, and the meaning specific images as symbols convey in terms of dietary guidance. I limited comparisons to those shared between or among FBDGs of the same country. In this process, I have recognized trends shared between different groups of pictorial representations. These findings are my focus in the following chapter, which I ground in anthropological theory.

Chapter 6: Discussion

Each country has developed its own ways of deciding and presenting what it means to eat and live healthy. Differences in pictorial representations among countries reveal a range of variation that translates to varying conceptions of national identity, whereas in-country variation suggests negotiations of power. In the first part of this discussion, I highlight trends among the FBDG representations I reviewed. I then turn to my interpretation of the symbols used to construct FBDG images, I now draw upon “esoteric knowledge about [dietary recommendations], deriving insights from [governments, scientists, and food journalists, as well as theorists], looking at the whole symbolic system in structural terms, and drawing on western metatheories of symbolism, to construct more deep and global interpretations” (Keesing and Haug 2012:412). I approach an understanding the political economy of FBDG images, whereby the specific selection, presence, and/or lack of symbols illustrates the negotiations and maintenance of power (or politics) among those who influence their very creation (i.e., food industries, consumers, etc.).

Variation among and between Pictorial Representations of FBDGs

Recent research on FBDG formats has suggested that overall shape does not necessarily lead to more effective or efficient means of conveying dietary guidance (Hess *et al.* 2012). It is apparent upon review of the seven images I microanalyzed, though, that certain messages have a higher degree of salience. Ultimately, shape does matter to an extent.

Upright, traditional pyramid or triangular shapes are used to arrange food hierarchically and advocates the dietary concept of moderation (Oberritter *et al.* 2013:24). This is especially the case for the alternative models I reviewed. Pyramids are typically read top down, beginning with a recommendation of restriction, i.e., to limit the consumption of certain oils, salt, and sugar. At the wider base, recommendations suggest increased consumption of that particular food group. The hierarchy in this model places the most important foods toward the bottom. In contrast, the inverted pyramid, spinning top images of Japan and Venezuela reverse this approach. The widest band is read first, which I interpret as a recommendation of encouraging consumption. At the tip of these formats are two food groups which do not necessarily signal as restrictions, but more so as necessities for a well-balanced diet. Movement cannot occur without their inclusion. This corroborates both guides' emphasis on physical activity. Here, the hierarchy places important foods first.

Circle-based shapes tend to more accurately convey the dietary concept of proportionality, considering ideal contributions of specific food groups to one's total diet (Oberritter *et al.* 2013:24). Principal recommendations tend to reveal themselves in one of two ways. The more common signal is the area of space taken up by the largest segment or slice of the image. The Australian Guide to Healthy Eating, for example, shows that grains and starches should be consumed in slightly larger amounts than vegetables. This contrasts with Nutrition Australia's recommendation to consume large amounts of vegetables and a greatly reduced amount of grains and starches. The MyPlate more accurately displays recommendations to consume more vegetables, but its position catty corner to the "Grains" group tends to skew them as more equal than they actually are. The discrepancy is much more obvious when this is compared to Harvard's Healthy Eating Plate, which emphasizes vegetable consumption by placing it side-by-side with the "Whole Grains" group and

elongating the amount of space it takes up on the plate. The South African guide also conveys both moderation and proportion through its use of differently-sized circles and side-by-side placement to one another. It further articulates a hierarchy of foods, placing water consumption at the top. This suggests water is a primary recommendation. The second signal of an important recommendation within the circle format is the direction toward its center. The First Nations, Inuit, and Métis guide, for example, places traditional outdoor activities as central to dietary guidance. Beyond the images I microanalyzed, the German Nutrition Circle places liquids in the center of its FBDG image.

Variety, the third dietary concept (Fly and Gallahue 2002:193), is expressed in all of the FBDGs images I reviewed. This is exemplified through the combined use of multiple shapes, images, and/or colors. Variations in terms of both foods and formats have led to differing conceptions of what comprises healthy dietary practice.

A Symbolic Anthropologist Take

In this thesis, FBDG images are ritual symbols that can be analyzed within the context of healthy behaviors such as dieting and exercising. Healthy eating and daily physical activity share many attributes with ritual. Food-based dietary guidelines, and the images and text used to represent them, are the “gestures, words, and objects” of Turner’s ritual (Turner 1973:1100) and are all symbols that aim to motivate citizens of a given country toward group behavior in a shared state of consciousness (i.e., eating and living healthy).

All FBDG pictorial representations are dominant, composite images composed of instrumental, constituent or component images that can stand for something else. Turner’s distinction between dominant and instrumental symbols is an important one, for it informs how I have microanalyzed FBDG images. Pictorial representations of FBDGs are dominant

symbols because they maintain relatively high degrees of “constancy and consistency throughout the total symbolic system” (Turner 1967:31). Composite FBDG illustrations still represent models of healthy dietary practice, regardless of how such component parts as colors, images, and shapes are arranged or presented. These instrumental symbols (i.e., the component parts) require study of the entire system in order to be understood. I have paid specific attention to the positional relationship of each FBDG image’s component parts (instrumental symbols), as they combine to create composite, dominant symbols.

An example of a chicken illustrates the distinction between dominant and instrumental symbols. A picture of a chicken represents a chicken. When considered among depictions of a cow, turkey leg, or fish, they may be taken together to represent “meat.” Consumers translate these symbols in the context of dietary guidance as material goods that provide protein. The inclusion of these symbols and the category of protein indicate the recommendation that eating these items or eating from this food group is important to good health. These symbols’ relationship to other foods changes meaning depending on where they are positioned. Situating proteins below another group in a traditional pyramid structure conveys greater consumption due to its hierarchical arrangement. When proteins are represented by a smaller slice of a circle, they are not as central as other groups to an individual’s food intake. How composite images are placed and component FBDG representations are illustrated creates relationships which translate to different recommendations for what to consume in order to eat a healthy diet. It is important to recognize, too, these symbols are prone to misunderstanding and misuse due to the multiple ecologies and contexts which inform individuals’ understandings of these symbols and recommendations.

My Turnerian model parallels Sherry Ortner's discussion of symbols (1973), in which she defines symbols as either summarizing or elaborating. Pictorial representations of dietary guidance fulfill both categories, as these dominant symbols summarize research and dietary recommendations and ultimately stand for the system of healthy eating. These symbols further elaborate orientations to and strategies for healthy eating and politics and become "root metaphors" (Ortner 1973:1344) and define how to be successful (i.e., follow the prescriptions) within the culture (Ortner's "key scenario" [1973:1342]).

It is important to recognize that FBDG images are not simply collections of visual objects representing abstract or cerebral ideas (Turner 1973:1102). Rather, they are symbols of the kind of authority bestowed upon rituals and meanings that are concerned with "crucial values of the community" (Turner 1968:2). FBDG pictorial representations are responses to such non-communicable diseases as the worldwide obesity epidemic and must therefore be adhered to lest citizens want to maintain global patterns of ill health (Jeppesen *et al.* 2011:10; Montagnese *et al.* 2015:913; Philippi 2005:79-80; see Turner 1973:1103 regarding symbols as occupying physical and theoretical space).

To view healthy eating as a cultural system is to explore the interconnected relationship among the symbol (the FBDG illustration), society, and the individual (Pals 2006:273). My concern focuses on how symbols "shape the ways social actors see, feel, and think about the world, or in other words, how symbols operate as vehicles of 'culture'" (Ortner 1984:129-131; see also Deflem 1991). This means our discussion recognizes FBDG illustrations as reflective of nations' sensibilities toward good health, as well as symbols which construct culture by way of what and how individuals eat. Pictorial representations of FBDGs are the systems of symbols I analyze, their meaning of which emerges as symbols operate in public space (Geertz 1973b:12). FBDG images are comprised of constituent

symbols that together represent a distinct “mood,” i.e., of what it means to be healthy. Concurrently, the reality of increasing levels of NCD susceptibility motivates behavioral, corrective change toward healthy eating and daily exercise. Individuals in that case are told how they should behave in order to be healthy citizens.²⁷ When following the recommendations becomes normalized for the individual, it becomes reality once again (Rennie 2009:341).

The separate images of FBDG representations create a series of relationships to be interpreted and ultimately negotiated by the individual: one makes the choice to eat or not eat what is presented. This decision may be grounded in multiple realities—political, economic, etc.—but it is one also mediated by the rules which constitute cultural norms. Any given country’s FBDG reflects the ideal, constructed dietary pattern presented as a natural given. The consumer’s decision to follow the recommendations conveys a sense of belonging. To be sure, FBDG illustrations as symbols are “involved in the development of class or group identity, in the context of political/economic struggles of one sort of another” (Ortner 1984:142), which in this case includes business, profit, and national identity: what does it mean to be—or to eat—[insert national origin here]? Norms are determined by and in relation to the state and various stakeholders. The specific selection of FBDG images signifies varying degrees of relations to the state and the power to decide what is a core component of the group.

The Political Economy of FBDG Pictorial Representations

The political economy of FBDG pictorial representations emphasizes the construction of the images themselves (both composite and component) and considers each

²⁷ Another way to view this is to consider the difference between considering FBDGs as synonymous to being healthy (model of) and adhering to FBDGs in order to be healthy (model for).

as outcomes of a struggle for and negotiation of power. FBDG imagery thus embodies emic and etic sensibilities (Mintz 1985). In my thesis, the etic meanings of pictorial representations are analogous to their positional meaning (Turner 1973:1103).

Individuals ultimately have the agency to adhere to the FBDGs, or parts of it, but the decision to make healthy choices according to national guidelines is restricted by the food groups and recommendations presented on the pictorial representation, as well as the very people making these recommendations. While more recent FBDG development has included greater consumer input, the final illustrations are typically out of consumers' control and are instead in the hands of the government. FBDG development is grounded in scientific research and aims to address national health concerns such as obesity and other non-communicative diseases (Montagnese *et al.* 2015). However, this is not necessarily the case in practice.

In their earliest days, the food programs of Sweden and the United States paid attention to eating cost-effectively, while also conveying how to make “healthier” choices. My analysis of today’s Australian, French, and American government-endorsed and non-government-endorsed FBDG images indicates discrepancies among the different representations. It seems that alternative, non-government-endorsed models tend to more closely align with science-based, nutritional data. This interpretation is furthered by the historic trend of national FBDGs being influenced by multiple actors and influences, as in the case of South Africa (Vorster *et al.* 2013:810) and Canada (Hyslop 2014). Additionally, Victoria O’Key and Siobhan Hugh-Jones (2010) argue that healthy dietary guidance is wrought with issues of mistrust, due to such issues as the sheer number of message and contradictions between messages.

FBDGs continue to symbolically and materially reproduce the production of culturally-dependent commodities. For example, there is a greater tendency to preference and prominently display rice on FBDG image if a given country's cultural heritage includes rice consumption. By including rice on the pictorial representation, the need is created to continue the production and consumption of rice. Whether these are grains, meats, dairy, or sugars, the development of pictorial representations is rife with political and economic negotiations to make content as many parties as possible. Carey Noland and M. Isabel Meirelles affirm: "The strongest lobbies come from cattle ranchers, egg producers, sugar producers, and the dairy industry. The result [...] has left the U.S. with a food pyramid that is the basis of a nutritional education system so politically influenced it is ineffective" (Nestle 2003). It is also important to consider the appropriateness for those with lactose intolerance to follow the guidelines (Davis *et al.* 2001:884; Wiley 2010:35). While FBDGs suggest dairy alternatives for those who cannot consume lactase, I interpret the photo of "Dairy" in the current MyPlate to be best understood as milk. Perhaps there is truth that industrial motivation for contributing to FBDG development is to maximize profit (Layman 2014:126).

Inequality exists within and outside of pictorial representations of FBDGs. These images constructed of normative behaviors marginalize those who are unable to adhere to them for dietary, financial, political, and/or social reasons. Through the constant reproduction of FBDG illustrations which favor business, relatively little to no attention is given to these marginalized populations; as a result, disparities rise in terms of health and well-being. FBDGs thus reproduce profit and power relations between nation and citizen, placing consumers in a position of symbolic violence, where they are subjected to the nation. This raises concerns about the construction of national identity and who influences the

production of goods and resources. Returning to the example of milk in the United States, what could it mean for consumers who must make the choice to forego milk due to their lactose intolerance? This is an exaggerated example, but one that nevertheless puts into question one's very American-ness.

Moreover, the FBDGs speak to larger systemic issues of economics and institutionalized inequality, raising concerns of whether individuals can even afford—financially, politically, etc.—to adhere to the guidelines geared toward the norm. A poignant vignette presented by John James, Julia Brown, and Margaret Douglas highlights how one inner city mother had to continue resorting to prostitution in order to feed her children the healthy diet that was heavily promoted to her. Indeed, the promotion of a healthy diet “inevitably involves extra expense” (James *et al.* 1991:58).

Another reality expressed through FBDG images is the convenience of certain goods over others. Prepackaged foods in frozen, canned, and boxed form appear in the Australian, Canadian, French, and South African representations. The Nunavut Food Guide further highlights the point by outright dividing natural, healthy foods from store-bought ones. The question of what constitutes inherently food is not the principal subject matter of my thesis, but it does illuminate the considerations of what counts as food and how food should be counted. “Healthy” food choices are among the many that consumers must face every day. Coupled with other forms of power (namely, tactical or organizational power [Wolf 1990:586]), exploring the political economy of FBDG illustrations means beginning to unveil the conditions by which individuals maintain or change their eating habits in accordance with the dietary recommendations illustrated by the food guides (Mintz 1995:11).

Government-sponsored FBDG images symbolize national identity and state hegemony. Individuals become healthy and productive citizens of the state by virtue of

adhering to national guidelines. Endorsements are indicated by the inclusion of department or ministry logos, as in the case of France, or through icons like Canada's caribou or Japan's spinning top. Colors are also indicators of government sponsorship and national identity. It does not seem at all coincidental that each food group of Venezuela's trompo is color-coded to suggest a diversification of one's diet. I contend these color choices are important to consider beyond symbolizing dietary diversity (Colmenares n.d.), as they all appear on the Venezuelan flag and/or the National Coat of Arms. The Venezuelan color palette can be viewed as a stamp of government involvement and endorsement. At the very least, these cues make dietary guidance relevant and culturally appealing to consumers, an attribute that is important for successful FBDG implementation (Neuhauser *et al.* 2007).

In building a national identity, the norms of the dominant group tend to ignore such populations as lower income individuals, those with various dietary restrictions for religious or health reasons, and ethnic groups. This brings to mind the dualistic conflict of nationalism and citizenship. While governments in Canada and Venezuela have produced FBDG images for their indigenous populations, it is worth considering what this means for conceptions of otherness. Where is the line drawn between being "indigenous" and being "Venezuelan"? Or what does it mean to be an indigenous individual living in contemporary Venezuela? How "Canadian" are individuals who also identify as First Nations, Inuit, Métis, Nunavut, or from/of the Northwest Territories? While territorially-engaged graphics certainly make dietary guidance more culturally relevant and meaningful, it does draw a clear line between "us" (national) and "them" (indigenous), our needs and theirs. Indigenous consumers are situated in a space of otherness similar to what Comaroff and Comaroff regard as the national-ethnic dualism discussed earlier, i.e., the distinction between being a citizen versus a subject of the state. Recognizing FBDG images'—and by extension

governments’—neoliberal ability to grant individuals autonomy to making their own food choices, while concurrently not claiming responsibility for the aftermath of not adhering to the presented recommendations. It is this negotiation, in the context of citizenship and decision-making, which undergirds my analysis of consuming and constructing material and symbolic culture, to wit, pictorial representations of food-based dietary guidelines.

This discussion considers the role of the neoliberal state (Comaroff and Comaroff 2000), which tends to put the onus of good health and citizenship on the individual and not the government itself. The burden, however, is upon FBDG developers to establish visually sound recommendations; if individuals fully adhere to the guidelines and still fall ill, the blame is not (at least entirely) on them but on the government for producing the FBDG. Meanwhile, systemic inequalities pose serious challenges to the potential of full acceptance and adherence. The situation then becomes even more problematic when considering the degree to which individuals can take on the identity of national citizen if they cannot follow (or choose not to) follow the guidelines, or are instead relegated to the title of ethnic subject not of the norm. This brings us now to consider whether consumers are dominated citizens caught in a web of symbolic violence constructed by the dominant (i.e., those responsible for FBDG images).

Such distinctions return us to consider FBDGs and their representations as forms of cultural capital, whereby power is given to those who have the capacity to develop and construct culture. Furthermore, individuals who are able to follow national recommendations accrue cultural capital and are symbolically recognized as much more of a citizen abiding by these rules than those who do not and/or unable to follow them. In so doing, the state maintains its hegemonic construction of cultural and physical health and well-being. Consuming from the NFG’s “country foods” ulu clearly aligns with tradition and

ethnic heritage, but selecting foods from the “store-bought foods” ulu means eating more of what everyone else eats. This could inherently mean that preferencing the latter ulu means becoming more physiologically Canadian. The dichotomy is further presented by OPET’s heritage pyramids: does choosing from the heritage pyramid strengthen one’s ethnic or racial identity in relation to one’s national identity?

In considering the place of food industry sectors and outside influences in developing FBDGs and accompanying images, one question in particular is worth considering: are there too many cooks in the kitchen (see Davis *et al.* 2001:884)? It is well documented from sources throughout the world that various stakeholders influence FBDG designs and their accompanying pictorial representations (e.g., Oberritter *et al.* 2013:24). As others have suggested, this results from conflicts of interest (e.g., between different governmental departments which work together or promoters and industrial influences [Keller and Lang 2007:872] and institutional commitments to promote commodities [Willett and Ludwig 2011:1564]). The food industry has a heavy hand in reproducing cultures of consumption which favor them.

The proliferation of political influence and power negotiation in today’s FBDGs are evident in the examples of Australia, France, South Africa, the United States, and New Zealand where the food industry and other stakeholders have a good level of awareness and/or usage (Keller and Lang 2007:870). In recognizing various co-sponsors and special interest groups, cooperation and coordination of resources and input are necessary. Governments should rely on objective scientific data when designing and implementing their FBDGs and accompanying pictorial representations, but are prone to outside influences.

A Juxtaposition: The Lack of an FBDG Image in Brazil

I end my analysis of visual FBDGs with the case of Brazil (see Barton 2014). At the time of Painter *et al.*'s review (2002), Brazil had no food-based dietary guidelines or pictorial representation to be evaluated. Its first recommendations were published in 2006 and revised in 2014. Today, Brazil's government-sponsored *Guia Alimentar para a População Brasileira* (2014) has no single image to illustrate its FBDG. It instead distills its recommendations into ten "sensible, unambiguous food-based guidelines" (Nestle 2014), much like the nine steps of France's reference table. The 46-page guide includes photos of freshly prepared meals corresponding with traditional recipes. Among Brazil's recommendations are the preparation of meals and consumption of fresh, traditional foods; moderation of oil, fat, sugar, and salt intake; limited consumption of ready-to-consume products; eating regular meals and with company when possible; and most importantly being critical of the commercial advertisement of food products.

The Brazilian case offers a unique juxtaposition to the pictorial representations of other FBDGs. In Brazil, composed meals become symbols of regional and national identity, where nutrients disappear from the forefront of food choice (akin to the Japanese spinning food top guide) and decision-making and industrial preferences are practically non-existent. The use of many photos of meals clearly emphasizes and celebrates geographic and culinary diversity. Nevertheless, it is incongruent with an analysis of stand-alone images meant to summarize and elaborate dietary recommendations. The lack of an FBDG illustration also means a paradoxical lack of a symbol for and of hegemonic Brazilian identity and "healthy" behavior. But perhaps this is a good thing.

Chapter 7: Limitations and Future Research

My review of pictorial representations of food-based dietary guidelines is limited by the relatively number of FBDG images I was able to analyze. As many countries around the world have developed FBDGs, there are many more images I could have explored. Regularly updating available data will further refine our understanding of FBDG symbology and the role of FBDG images in illustrating good “health.” My sample was also comprised of images and countries previously reviewed in other studies. A random sample of available FBDGs and their representations should elucidate statistically significant conclusions.

There are many possible directions for further research. First, it is important to better understand how individuals interact with and respond to FBDGs, i.e., to derive the exegetical and operational meanings of their component and composite symbols. Ethnographic interviews with consumers would certainly aid in collecting pertinent data to derive meaning and understand symbolic analyses of power, control, and the cultural assumptions that organize food. It would also be helpful to engage with individuals and ask them to demonstrate their conception of dietary guidance, by drawing their own pictorial representations of the messages and/or daily food intake behaviors they experience in their lives. By comparing these images, and drawing upon the consensus of Collier and Collier (1986) and other visual anthropologists, common trends should emerge from that corpus of data. I would expect to find trends in terms of structural shapes perhaps influenced by other FBDGs with which individuals have already been exposed, the kinds of foods individuals

within a given demographic typically consume, and popular ways of grouping food.

Additionally, contrasts should also materialize in terms of the culturally-specific choices individuals might make in designing their image and defining healthy eating for themselves. Photo essays composed via ethnographic interviews with informants should further reveal their decision-making power (or lack thereof), in terms of what symbols they chose to use.

It would also be important to follow up on this work, as an ongoing study, as FBDG pictorial representations change over time to reflect sociopolitical climates, demographic shifts, and scientific advances, all of which showcase dietary diversity and human variation (de Garine 2010; De Irala-Estévez *et al.* 2000; Dibsdall *et al.* 2003; Frazão 1999:46). In the United States, the 2015 guidelines are informed by a wealth of data, including the DGAC's 2015 Scientific Report (USDA and HHS 2015). Among the report's findings are suboptimal American dietary patterns, and relatively few improvements in consumers' food choices, though the guidelines recognize the variety of factors which helps shape eating behaviors, including but not limited to individual and biological factors; household, social, and cultural factors; community and environmental factors; systems and sectors which influence food availability and diet, as well as physical activity behavior. Research in any and all of these fields would certainly aid in the development of future FBDGs.

Finally, this research has practical applications for fieldwork in other areas. As FBDGs can influence what individuals consume, it would be of interest to consider the "healthy" choices people must make between biology and culture. What is the place of fried food if an individual or community has high cholesterol? If society places value on drinking milk, but an individual is lactose intolerant, what should be made of that symbol? The intersection of biology and culture also brings to light questions of food fusion and culinary heritage. How could foods be made healthier while retaining their cultural meaning? Is this

even possible? Food technology and nutritional science may pave the way for some of the concerns, but they return us to the question of what counts as food. And with industries having a stake in the success of advancements in food science, what does that mean in terms of what will be presented in future FBDG representations? As climate change forges on, what role can FBDGs and accompanying images as archival tools? What colloquial language or foods are forever “preserved” in published FBDGs? How different will our conceptions of health be in the future?

Chapter 8: Conclusion

The study of food has made the journey from that of a biological, nutritive necessity to a cultural, symbolic one (Fischler 1988:275). Ethnographers once cataloged food as another cultural component alongside kinship structures and spiritual practices. Today, food is also read as a consumed symbol of biological nourishment, embodying and signifying what it means to be what one eats (Fischler 1988:276).

I conducted a theoretically-grounded, qualitative analysis of pictorial representations of food-based dietary guidelines to define symbols and meaning. I surveyed contemporary national FBDG images and selected seven illustrations from that group to demonstrate the symbolic meaning and political economy of those representations. Composite structures, such as the trompo, staircase, and plate carry specific meanings to those who understand their cultural reference. It becomes clear when comparing the FBDGs worldwide that each component image, its placement relative to one another, and the overall shape within which these pieces interact convey inherently different dietary recommendations and approaches to responding to various health concerns. In the most ideal of circumstances, they do so in such a way as to influence those who view, understand, and act upon them.

If a picture is worth a thousand words, what is being conveyed through FBDG images, and whose voice is speaking? Questions like these motivate the analysis of pictorial representations of food-based dietary guidelines. The exploration of FBDG images reveals that as a collective, these key summarizing and elaborating symbols (Ortner 1973) reflect human variation, but fail to reach consumers who might use them. They are symbols of

cultural hegemony and norms as defined by the state.

I understand FBDG images as constitutive of cultural systems. Each symbol is an image that suggests more than just dietary recommendations; it correlates to economic, political, and sociocultural realities that can come at odds with current scientific data or even cause conflict between these realities. Each symbol is understood differently according to its context and the needs and experiences of its viewer. FBDG images are complex and open to myriad interpretations that can lead to misunderstanding and misuse. Consumers as citizens are expected to follow guidance in coordination with national policy, regardless of whether their economic, political and/or sociocultural contexts allow them to do so.

Consumers have the agency to make choices, drawing from experiences and what they want to believe and follow rather than simply following what is suggested (Asp 1999). Power, as it is claim here, is transferred from those who decide what is culturally appropriate and nutritionally sound to those who adapt, buy into, or reject such schema. FBDGs indicate, systemic inequalities and resource access influences the ability to follow dietary recommendations (Dibsdall *et al.* 2003; Riches 1997). These must therefore be concurrently addressed and mitigated if any sustainable resolutions are to be found.

FBDGs are recognized as the basis for food-related policies and behavioral recommendations at the national level. Food guide efficacy revolves around cultural representation and conveyance of information. Respecting and bridging cultural identities and good nutrition are critical messages that must be directed toward consumer education (James 2004; Tripp-Reimer *et al.* 2001; Villalobos *et al.* 2009). Accompanying pictorial representations reflect the understanding of national averages and beliefs about health and well-being. While it is not to be expected a single image can (nor is meant to) represent entire populations, the symbolic representations of FBDGs reify a standard not necessarily

applicable to all individuals. Ultimately, pictorial representations of food-based dietary guidelines are viewed as not only reflecting cultural, institutionalized, and normative standards, but more so as responsible for creating them.

Situated within national FBDGs, food is a medium for exploring conceptions of nationhood and citizenship, socioeconomic and political conditions, and reproductions of negotiated power relations. Additionally, and while there are common perceptions of what “health” is, what constitutes healthy eating varies within and across cultures, the norms of which are expressed in pictorial representations of food-based dietary guidelines. Indeed, each country’s scientifically-grounded dietary guidelines suggest how to eat “healthy,” given available ingredients, resources, and politics. Such realities demonstrate the value of a culturally relative approach to both the invention and interpretation of FBDG illustrations as symbols.

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Appendix A: Accompanying Tables of FBDG Pictorial Representation Data

	USDA/HHS Food Guide Pyramid (6)	Canada's Food Guide to Healthy Eating (15)	Australian Food Guide to Healthy Eating (16)	The Balance of Good Health of UK (17)	Chinese Food Guide - Pagoda (13)	Korean Food Guide Pagoda (3)	German Nutrition Circle
Grain	6-11 servings a serving: 1 slice of bread 1 ounce of cereal ½ cup of cooked rice or pasta	5-12 servings a serving: 1 slice of bread 30g cereal ½ cup of cooked rice or pasta	3-11 samples a sample; 2 slices of bread 1 1/3 cup of cereal 1 cup of cooked rice or pasta	More than 5 portions a portion; 30g bread 30g cereal 60g rice(not specific if cooked or dry)	300-500g (based on raw weight)	4-5 servings a serving: 3 slices (100g) of bread 90g cereal 210g cooked rice	250-350 g of bread/ day or 200-250g of cooked rice/ day or 250g-300g of potatoes/ day
Vegetable	3-5 servings a serving: 1 cup of raw leafy vegetable ½ cup of other vegetables (cooked or raw) ¾ cup of vegetable juice		2-9 samples a sample; 1 cup of salad vegetables ½ cup(75g) of cooked vegetable		400-500g (based on raw weight)		200g (cooked) & 100g (raw) & 75g of salad / day 100g (raw) legumes / month
Fruit	2-4 servings a serving: a medium apple, banana, or orange ½ cup of cooked or canned fruit ¾ cup of fruit juice		1-5 samples a sample; 1 medium apple, banana, or orange ½ cup of fruit juice		100-200g		250-300g/ day Minimum two portions fresh fruits
Vegetable & Fruit		5-10 servings a serving: 1 medium vegetable or fruit ½ cup of fresh or canned vegetable or fruit ½ cup of juice		More than 5 portions a portion; 100-150g fruit		6-7 servings a serving: 70g raw vegetable 100g fruit ½ cup of juice	
Milk	2-3 servings a serving: 1 cup of milk 1-1/2 ounces of cheese	2-4 servings; a serving: 1 cup of milk 2 slices(50g) of cheese	2-5 samples a sample; 1 cup(250ml) of milk 2 slices (40g) of cheese	2-3 portions a portions; 190 ml milk 30g cheese	100ml milk & Bean 50g	1 serving a serving: 1 cup of milk 2 slices (40g) of cheese	¼ liter of low fat milk or 90g of low fat cheese/ day
Meat	2-3 servings a serving: 2-3 ounces of cooked meat, poultry, or fish ½ cup of cooked dry beans 1 egg	2-3 servings a serving: 50-100g meat (not specific if raw or cooked) 1-2 eggs	¼- 2 samples a sample; 65-100g cooked meat ½ cup of cooked dry beans 2 small eggs	2-3 portions a portion; 60- 85g meat (not specific if raw or cooked)	50-100g raw meat &50g fish & 25-50g eggs	4-5 servings a serving: 60g of raw meat 1(50g) egg	150-300g of fish/ week or 300-600g of meat/ week or 3 eggs/ week
Fat & Sugar	Limited	N/A*	N/A*	0-3 portions a portion; 30g cake	25g fats and oils	Limited	Less than 40g /day
Fluid	N/A*	N/A*	N/A*	N/A*	N/A*	N/A*	More than 1 ½ liter/ day

* N/A- Not Available

Table 2. Painter *et al.*'s data (2002)

Country	Graphic format	N°. of food groups* (graphic models) or food messages	Supportive information	Fluid, salt, specific micro-nutrients	Lifestyle
Albania	Pyramid	6 groups	Quantitative information for each group	Advice on lower salt intake.	Advice on varied diet, healthy BMI and alcohol intake
Austria	Pyramid	6 groups	Qualitative and/or quantitative information for each group; not part of the model	Drinks are 6th group at the base of the pyramid.	Additional tips on weight and alcohol
Belgium	Pyramid	8 groups	Quantitative information for each group; part of the model Booklet provides further information on healthy eating.	Drinks are 8th group at the base of the pyramid.	Physical activity in base of pyramid, below drinks
Bosnia and Herzegovina	None		Qualitative and quantitative information for the food groups.	Advice on lower salt intake.	Advice on varied diet, weight (BMI), physical activity and alcohol
Bulgaria	Pyramid (and leaflet)	6 groups (+ fluids and physical activity)	Qualitative and quantitative information for each groups Additional leaflets	Advice on salt and fluids.	Advice on varied diet, weight (BMI), physical activity and alcohol
Croatia	Pyramid	4 groups	Qualitative and quantitative information for each group	Advice on salt.	Advice on varied diet, weight (BMI), physical activity, alcohol
Czech Republic	Pyramid	6 groups	Qualitative and quantitative information for each groups	Advice on salt.	Advice on varied diet, weight (BMI), physical activity and alcohol
Denmark	Compass	8 diet tips	Further documentation gives additional information on healthy eating	Advice on water.	Advice on varied diet, weight and physical activity
Estonia	Pyramid	5 groups	Separate qualitative and quantitative information		Advice on varied diet, weight and alcohol
Finland	Circle, pyramid and plate	6 groups in circle and pyramid. 3 sections in plate (meal only)	Background document		

(continued)

Table 3. EUFIC data (2009)

Table 3, continued

France	Tabulated list	7 groups	Qualitative and/or quantitative information for each group in table	Drinks are 7th group. Salt is 8th point in the table	Advice on physical activity
Germany	Three dimensional pyramid	4 groups	Qualitative information for each group; not part of the model	Drinks constitute one group	
Greece	Pyramid	12 groups	Some qualitative and quantitative information given as part of graphic	Advice on water and salt intake	Advice on alcohol (wine in moderation) and physical activity Advice on regular meals
Hungary	House	5 groups	Qualitative and quantitative information given in text separate from graphic	Salt, water mentioned in supportive text	Advice on alcohol, body weight, exercise, food safety, labelling, regular meals and snacks mentioned in supportive text
Ireland	Pyramid (for children)	5 groups	Adult version provides qualitative and quantitative information for each group Number of portions	Fluid and folic acid mentioned in supporting text Advice on salt intake mentioned in additional tips	Advice on weight, exercise and alcohol
Italy	None	8 guidelines	Qualitative and quantitative information given for each guideline	One guideline for fluid and one for salt	Advice on weight and physical activity
Latvia	Food Guide Pyramid	4 groups (+ water at the bottom of the pyramid)	Qualitative and quantitative information for each group; not part of the model Percentages on the side of pyramid provides information on how large a part of your daily intake this food group should constitute	Advice on salt and fluids	Advice on varied diet, weight (BMI), balance food with physical activity and alcohol
Lithuania	Food pyramid			Advice on salt	Advice on varied diet, weight, physical activity (not quantified), and alcohol
Netherlands	Wheel	5 groups	In separate text and on additional web pages	Mentioned in supporting information	Mentioned in supportive information

(continued)

Table 3, continued

Poland	Pyramid	5 groups	10 principles of healthy nutrition in some formats	Water represented outside the pyramid in some formats Salt included in the 10 principles	Advice on weight and alcohol mentioned in the 10 principles
Portugal	Circle	7 groups		Water at centre of circle	
Romania	Food Pyramid	6 food groups (+ fluid and physical activity at the bottom of the pyramid)	Qualitative and quantitative information; part of the model	Water represented in the pyramid	Advice on varied diet and alcohol
Serbia	No FBDG	No FBDG	No FBDG	No FBDG	No FBDG
Slovakia	Visual to be discussed in the coming months (first half 2009)	No information at this moment, since graphic model is not yet decided upon.	12 main nutrition and lifestyle messages	Advice on salt and fluids	Advice on varied diet and alcohol
Slovenia	Food Guide Pyramid	7 groups (+ physical activity)	Qualitative and quantitative information for each group	Advice on salt	Advice on varied diet, weight (BMI), physical activity and alcohol
Spain	Pyramid	7 groups	Quantitative and some qualitative information for each group; additional part of the model	Fluid additional part of graphic	Advice on alcohol (wine) and physical activity in additional part of graphic
Sweden	Circle and plate	7 groups in circle and 3 on plate (meal only)	Information in separate text and on additional web pages	Fluid and salt mentioned in supportive text	Advice on alcohol and physical activity in supportive text
Switzerland	Pyramid	6 groups	Qualitative and qualitative information for each group; part of separate text	Fluid 6th group at the base of the pyramid	Advice on physical activity is additional part of graphic
Turkey	Circle	4 groups	Information in comprehensive booklet on healthy eating	Mentioned in booklet	Advice on physical activity and weight included in booklet
UK	Circle (plate)	5 groups	Semi-quantitative information for each group; part of separate text Qualitative and quantitative information available in additional web pages	Salt mentioned in supportive information Fluid and salt in a separate 8 tips-list	Advice on physical activity, body weight and breakfast in a separate 8 tips-list

(continued)

Table 3, continued

Former Yugoslav Republic of Macedonia	No FBDG	No FBDG	No FBDG	No FBDG	No FBDG
WHO, CINDI	Pyramid	4 groups	Green, orange and red background colour helps to indicate relative importance of each group in the model	Salt included in separate 12 steps to healthy eating	Advice on weight, physical activity and alcohol included in the 12 steps
* Food groups include: milk and milk products; meat, fish, eggs and alternatives; fruits and vegetables; cereals, fats and sugary foods					

Country/ Region (Year)	PR FBDG Shape	Number of Food Groups	Food Groups Labeled?	Food Groupings	Type(s) of Data Presented on PR of FBDG	Additional Notes
Australia (2013)	Circle	7 (5 within circle, 2 “groups” outside circle)	Yes	<i>Within circle:</i> Grain (cereal) foods; vegetables and legumes/beans; fruit; milk, yoghurt, cheese and/or alternatives; lean meats and poultry, fish, eggs, tofu, nuts and seeds and legumes/beans <i>Outside of circle:</i> Oils and higher fat/sugary foods appear as distinct groups	<i>Qualitative:</i> food groups (and otherwise indistinguishable foods) identified with labels; two groups labeled with quantity and frequency suggestions; textual recommendation emphasizes variety; circle divided in differently-sized slices suggests each group’s proportion of total diet	Glass of water with running faucet complements recommendation to drink plenty of water
Australia (2015) ¹	3-D pyramid, sub- divided into 4 levels and overlaid on triangle	8 (6 on pyramid, 1 within triangle, 1 boxed and outside of pyramid icon)	Yes	<i>Pyramid, level 1 (Apex):</i> Healthy fats <i>Pyramid, level 2:</i> Milk, yoghurt, cheese & alternatives; lean meat, poultry, fish, eggs, nuts, seeds, legumes <i>Pyramid, level 3: Grains</i> <i>Pyramid, level 4 (Base):</i> Vegetables & legumes; fruit <i>Within triangle (below pyramid):</i> Herbs & spices <i>Boxed:</i> Salt & added sugar	<i>Qualitative:</i> food groups (and some generic packaging) identified with labels; pyramid divided into differently- sized slices suggests each group’s proportion of total diet	Salt & added sugar identified as a separate group and appear beside a bold, red “X” and counsel to limit consumption Glass of water appears with a bold, green checkmark and recommendation to “choose water” Suggestions for food variety and daily activity underline pyramid
Canada (2011)	Rainbow	4	No* [Health Canada 2011]	Vegetables and fruit (green); grain products (yellow); milk and alternatives (blue); meat and alternatives (red)	<i>Qualitative:</i> foods to be consumed in greater proportions/quantities appear on the far right, longer side of the rainbow; food groups seem to be generally color-coded to reflect the color of the foods within a given group, as indicated in column 5	The rainbow appearing on the most recent version of <i>Eating Well with Canada’s Food Guide</i> is superimposed over a field of wheat and flowing river.
Canada: First Nations, Inuit, and Métis (2007)	Circle	4	No* [Health Canada 2007]	Vegetables and fruit (green); grain products (yellow); milk and alternatives (blue); meat and alternatives (red)	<i>Qualitative:</i> FBDG image is sub-divided into four equal groups; some groups, however, contain fewer unique examples than others	Photos in inner circle depict food- related, outdoor activities; color- coding matches Canadian food rainbow

(continued)

Table 4. Data from analyzed FBDG pictorial representations

Table 4, continued

Canada: NWT (2005)	Circle	4	Yes	Meat, fish, birds and eggs (red, 2-3 servings); fruit and vegetables (green, 5-10 servings); bannock, bread and cereal (yellow, 5-12 servings); milk and milk substitutes (blue, 2-4 servings)	<p><i>Qualitative:</i> FBDG image is sub-divided into four equal groups, with fairly equal numbers of examples in each group; rationales for consuming each group are also included (for strong muscles, for good eyes and skin and less infection, for energy, for strong bones and teeth)</p> <p><i>Quantitative:</i> The image is presented on one side of a two-sided food guide, which provides serving size amounts</p>	Color coding is consistent with both the <i>Eating Well with Canada's Food Guide</i> and <i>Eating Well with Canada's Food Guide: First Nations, Inuit, and Métis</i>
Canada: Nunavut [store-bought foods] (2011)	Ulu (woman's knife)	4	Yes	Meat and alternatives (red); milk and alternatives (blue); grain products (yellow); vegetables and fruit (green)	<p><i>Qualitative:</i> Each food group takes up a different proportion of the ulu, which in turn relates to a different contribution of the total diet; rationales for consuming each respective group are also included (for strong muscles, for strong bones and teeth, for energy, for good eyes and skin and less illness)</p>	Color coding and rationales align with the NWT Food Guide; a faucet with water droplets next to a glass emphasizes recommendation to "Make water your main drink"; below the ulu are Nunavut individuals engaged in outdoor (grocery shopping, walking) and convivial activities (cooking, eating)

(continued)

Table 4, continued

China (2007)	Pagoda	7 (divided among 5 tiers)	Yes** [Ge 2011]	<p><i>Level 1 (Top tier):</i> Fats and oils (25g-30g); salt (6g)</p> <p><i>Level 2:</i> Milk and milk products (300g); bean and bean products (30g-50g)</p> <p><i>Level 3:</i> Meat and poultry (50g-100g), fish and shrimp (50g), eggs (25-50g)</p> <p><i>Level 4:</i> Vegetables (400g-500g); fruits (100-200g)</p> <p><i>Level 5 (Base):</i> Cereals (300g-500g)</p>	<p><i>Qualitative:</i> placement and area of each level signifies position and proportion of each group in the daily diet (442)</p> <p><i>Quantitative:</i> amounts in grams of each food group (or type of food within a given group) appear beside each labeled group (443)</p>	<p>Runner to the left of the pyramid along a track places emphasis on physical activity; droplet holding a glass of water emphasizes recommendation to consume at least 1200mL of water per day</p>
Europe (2000) ²	Pyramid	5 (divided among 3 color-coded layers)	No* [WHO Regional Office for Europe 2000]	<p><i>Base, lower half of green layer:</i> Bread, grains, pasta, rice and potatoes; <i>upper half of green layer:</i> fruit and vegetables</p> <p><i>Middle, orange layer, right:</i> Meat and meat alternatives; <i>left:</i> low-fat milk and dairy products</p> <p><i>Top, "red zone" layer:</i> Energy-dense foods with few macronutrients (e.g., oils, sweets, sodas)</p>	<p><i>Qualitative:</i> more than half of one's daily energy intake should come from the green section of the pyramid, which takes up more than half the total area of the pyramid; fewer items from the other two groups should be consumed, as indicated by their position in smaller-area segments; food groups are color-coded, using traffic light color scheme—green for proceed, orange for caution, red for stop and consider before consuming (5)</p>	<p>The pyramid is presented against a background with the phrase "Enjoy a healthy diet!" written in English, French, German, and Greek; four silhouettes are also present to signify physical activity; few items extend beyond the edges of the pyramid, though stalks of wheat most clearly spill over</p>
France (2011)	Staircase	7 (4 on stairs + 3 under microscope)	Yes** [Julia et al. 2014]	<p><i>On stairs:</i> Meat, fish, and eggs (1 or 2 times per day); milk and dairy products (3 times per day); cereals and potatoes ([<i>fécule</i>nts]), at each meal, according to appetite); fruit and vegetables</p> <p><i>Under magnifying glass:</i> Sugary snacks; fats; salt</p>	<p><i>Qualitative:</i> food groups on staircase suggest regular consumption, whereas consumption of food groups under magnifying glass should be limited; individuals in the middle of the staircase separate the four groups between intermediate and encouraged consumption (1700)</p> <p><i>Quantitative:</i> daily consumption amounts appear with food group</p>	<p>Individuals stepping up the next staircase signify physical activity; <i>eau à volonté</i> ("unlimited water") accompanies a faucet with running water at the very top of the staircase to emphasize water consumption</p>

(continued)

Table 4, continued

France (2015) ³	Pyramid	10	No*/** [Souccar and Houlbert 2015/La Nutrition.fr 2015]	<p><i>Base:</i> Beverages (1.5-2 L/day)</p> <p><i>Tier 1:</i> Fruit and vegetables (7-13 portions/day)</p> <p><i>Tier 2:</i> <i>Féculents</i> [except potatoes], cereals, pastas, rice, leavened breads, etc. (0-9 portions/day)</p> <p><i>Tier 3:</i> Fats and oils (3-6 portions/day)</p> <p><i>Tier 4:</i> Milk and milk products (0-2 portions/day)</p> <p><i>Tier 5:</i> Fish and seafood (0-3 portions/week)</p> <p><i>Tier 6:</i> Eggs (0-5 eggs/week)</p> <p><i>Tier 7:</i> Meat and poultry (0-4 portions/week)</p> <p><i>Tip of the pyramid:</i> Occasional foods [classic baguette, white rice, potatoes, sweets, sodas, etc.] (0-3 portions/week)</p> <p><i>Off the pyramid:</i> Recommended foods (see column 7)</p>	<p><i>Qualitative:</i> food groups are arranged in tiers and are presented from the base upwards; items to be consumed in larger quantities are located toward the base</p> <p><i>Quantitative:</i> portion/frequency amounts appear on the right hand side of the pyramid next to each group/stage</p>	<p>The authors have integrated the food habits of vegetarians and vegans into their model: items from tiers 4-7 (foods of animal origin) are not obligatory, though this is not explicitly depicted on the pyramid model itself (refer to Lanutrition.fr 2015.)</p> <p>N.B. “Recommended foods” of column 5 include: aromatics and/or spices at each meal; <2 squares of dark chocolate per day, ideally 80%+ cacao content; daily multivitamin; vitamin D supplement for those living above the 42nd parallel)</p>
Germany (2005)	Circle	7 (6 in outer circle + 1 in inner circle)	No** [Ober-ritter <i>et al.</i> 2013]	<p><i>Outer circle:</i> Cereals, cereal products, potatoes (30%); vegetables, salad (26%); fruit (17%); milk, milk products (18%); meat, sausages, fish, eggs (7%); fats, oils (2%)</p> <p><i>Inner circle:</i> Drinks (water)</p>	<p><i>Qualitative:</i> outer circle representing total food consumption is subdivided into six different groups which signify percentage share of total daily food intake (weight); drink consumption considered a seventh category in inner circle</p> <p><i>Quantitative:</i> though not presented directly on FBDG representation, each identified group correlates to specific percentages (26); as these values are not discussed in my thesis, I have included them here for reference</p>	<p>Water in center signifies physiological importance of its consumption, with “total weight almost as great as that of the other foods” (25-6)</p>

(continued)

Table 4, continued

Germany (2005)	4-Sided, 3-D Pyramid (circle appears on bottom of pyramid)	4 (1 group per pyramid face)	No** [Ober-ritter <i>et al.</i> 2013]	Plant foods; animal foods; oils and fats; drinks	<i>Qualitative:</i> on each pyramid face, pictures of foods within a given group are hierarchically arranged alongside a “stoplight” scale (red at top to green at bottom), presenting them as “less nutritionally desirable” and “nutritionally desirable”; foods that should be consumed on a smaller, daily basis appear toward the redder and narrower top, while greater daily consumption appears toward the greener and wider base (27)	German Food Nutrition Circle (described above) appears on the bottom of the pyramid
Ireland (2012)	Pyramid	6	No*	Bread, cereals, potatoes, pasta and rice (choose any 6+); fruit and vegetables (choose any 5+); milk, yogurt and cheese (choose any 3); meat, poultry, fish, eggs, beans and nuts (choose any 2); reduced fat spreads and oils (choose any 2); foods and drinks high in fat, sugar and salt (maximum 1)	<i>Qualitative:</i> each food group is divided into separate bands which, together, form the pyramid, with greater consumption at the base and fewer consumption at the top; the top two tiers are further separated to represent recommendations which are further explained in the FBDG: “Top shelf foods are high in fat, sugar and salt, are not essential for health and taken in excess can be harmful,” whereas “fats and oils are essential, but only in small amounts.” The remaining groups are “essential for good health.” (3) <i>Quantitative:</i> though not directly included on the FBDG representation, serving sizes are provided in the accompanying FBDG; as these values are not discussed in my thesis, I have included them here for reference.	The FBDG representation, which appears on the first page of the accompanying guide, emphasizes the Irish Food Pyramid for use by adults and children over 5 years of age.

(continued)

Table 4, continued

Japan (2005)	Spinning Top	5	Yes	Grain dishes ([rice, bread, noodles, and pasta], 5-7 servings); vegetable dishes (5-6 servings); fish and meat dishes ([meat, fish, egg, and soy-bean dishes], 3-5 servings); milk ([milk and milk products], 2 servings); fruits (2 servings)	<p><i>Qualitative:</i> food groups that should be consumed daily in larger quantities appear on upper, wider portion of the top, whereas smaller daily quantity consumption appear on lower, narrower portion of the top; examples of composed dishes appear to the far right of the graphic</p> <p><i>Quantitative:</i> daily serving sizes appear to the left of the respective food group; equivalent serving sizes are also presented among the examples of composed dishes</p>	Silhouette of an individual running along track on top of spinning top emphasizes physical activity, as do the arrows pointing in the direction of the spinning top; water or teas as signified by glass suggests importance of regular water consumption; separate note on moderate consumption of snacks, beverages, and confections, is also included
Mediterranean (2010)	Pyramid	16	Yes [Bach-Faig <i>et al.</i> 2011)	<p><i>Top of pyramid to base:</i> Sweets (≤ 2 s/wk); potatoes (≤ 3s/wk); red meat (<2 s/wk); processed meat (≤ 1 s/wk); white meat (2s/wk); fish/seafood (≥ 2 s); eggs (2-4 s/wk); legumes (≥ 2s/wk);</p> <p>Dairy (2s/day); olives/nuts/seeds (1-2 s/day); herbs/spices/garlic/onions (every day);</p> <p>Fruits (1-2 every meal); vegetables (≥ 2 s every meal); olive oil (every meal); bread/pasta/rice/couscous/other cereals (1-2 s every meal)</p> <p><i>Base:</i> Water and herbal infusions</p>	<p><i>Qualitative:</i> silhouetted images exemplify each food group; foods are hierarchically arranged and divided by frequency of consumption beginning with least frequent at the top of the pyramid</p> <p><i>Quantitative:</i> each food group is accompanied by an every meal, daily, or weekly serving amount (2276)</p>	At the very base of the pyramid beneath “water and herbal infusions” are silhouettes of individuals engaged in physical activity; recommendations to also have adequate rest, practice conviviality, and participate in culinary activities accompany the silhouettes; a separate recommendation for consuming wine in moderation and respecting social beliefs appears on the upper right of the FBDG graphic

(continued)

Table 4, continued

Mexico (2005)	Circle/ Plate	5 (grouped into 3 equal segments)	Yes	<i>Green (much)</i> : Vegetables and fruits <i>Yellow (sufficient)</i> : Cereals <i>Red (little)</i> : Legumes and foods of animal origin	<i>Qualitative</i> : the circle (often presented with accompanying utensils) is divided into three equal segments, color- coded to suggest relative frequencies of consumption, as indicated in column 5	The instruction “Combina” signifies the importance of mixing ingredients to promote variety
Philippines (2014)	Plate	5	No** [Gavilan 2014; see also Gurion 2015]	“ <i>Glow</i> ”: Fruits and vegetables (as distinct sub- groups “ <i>Go</i> ”: Rice & alternatives “ <i>Grow</i> ”: Fish & alternatives <i>Off the plate</i> : Water & beverages	<i>Qualitative</i> : the three food groups appear on the outer rim of the plate; each food (sub-)groups is then represented by an easily accessible type of food within the given group (banana and <i>malunggay</i> , bowl of rice, and fish, respectfully); the varying proportions of each segment of the plate signifies different proportions of daily consumption; further, each group refers to a specific rationale (benefit) for its inclusion (i.e., healthy skin, daily energy, and body development)	The plate—meant for Filipinos 19+ years old—sits next to a glass of water, both atop a bamboo placemat; the <i>Pinggang Pinoy</i> (Healthy Food Plate for Filipino Adults) serves as a complement to Daily Nutritional Guide Pyramid; other pyramids developed for demographically- specific groups; for the purposes of this thesis, only the plate was reviewed as a comparison to the U.S.A.’s MyPlate.
Portugal (2003)	Wheel	7	No* [FCN AUP 2003]	Fats and oils (1-3 portions/day); dairy products (2-3 portions/day); meat, fish, and eggs (1.5-4.5 portions/day); legumes (1- 2 portions/day); cereals and cereal-based foods, tubers (4-11 portions/day); vegetables (3-5 portions/day); fruit (3-5 portions/day)	<i>Qualitative</i> : food groups are divided into slices that illustrate relative food consumption in relation to total daily food intake; food group names are not included on the FBDG representation, but are available in the guide (2-3) <i>Quantitative</i> : suggested portion sizes appear beside each food group	At the center of the wheel is a photo of water being poured into a glass, which emphasizes regular water consumption
South Africa (2012)	Circles	7	No* [Vorster <i>et al.</i> 2013]	Starchy foods; vegetables and fruits; dry beans, peas, lentils and soya; chicken, fish, meat and eggs; milk, <i>maas</i> and yoghurt; fat and oil; water	<i>Qualitative</i> : size of circle relative to the others suggests portion size in relation to total diet (S7)	Placement of water on top corroborates recommendation to “drink lots of clean, safe water” (S77)

(continued)

Table 4, continued

South Korea (2010)	Bicycle	7	Yes	<p><i>Front wheel:</i> Water</p> <p><i>Back wheel:</i> Grains (3-4 servings/day); meat, fish, eggs & beans (2.5-5 servings/day); vegetables (5-7 servings/day); fruits (1-3 servings/day); milk (1 serving per day); oils and sugars (3-5 servings per day)</p>	<p><i>Qualitative:</i> area of segmented circle illustrates proportion of food group contribution to total diet; photos of examples within a given food group depict serving sizes as whole items, except in the case of “oils and sugars,” whereby a serving is by the spoonful</p> <p><i>Quantitative:</i> though not presented directly on the FBDG representation, each identified group correlates to specific daily servings, based on age and sex, whereby each serving size has its own specified amount (51); as these values are not discussed in my thesis, I have included them here for reference (see Lee <i>et al.</i> 2013)</p>	<p>This food guide, developed by the Korean Nutrition Society, is otherwise known as the “food balance wheels”; placed within the context of a bicycle, the image emphasizes daily physical activity. Koreans may also use the Korea Health Industry Development Institute’s “roly-poly guide for women,” which is also supported by the Ministry of Health and Welfare, or the Ministry of Agriculture’s “green water mill” (FAO n.d.c.). For the purposes of this thesis, only the bicycle was reviewed.</p>
Sweden (2015)	List/Graph	10 (divided into 3 groups)	Yes [FAO n.d.d.; NFA 2015]	<p><i>More (green):</i> vegetables, fruit and berries; fish and shellfish; nuts and seeds</p> <p><i>Switch to (amber):</i> wholegrain; healthy fats; low-fat dairy products</p> <p><i>Less (red):</i> red and processed meat; salt; sugar; alcohol</p>	<p><i>Qualitative:</i> food groups are divided into three distinct categories, color-coded using green-amber-red traffic light colors; an image of broccoli sits beside the “more” category, oil next to “switch to” and red heart candies next to “less”</p>	<p>This graph appears on the last page of its accompanying FBDG with the title “One-minute advice”; exercise is listed as a separate recommendation alongside the “more” food groups</p>
United Kingdom (2007)	Plate	5	Yes	<p>Bread, rice, potatoes, pasta (and other starchy foods); milk and dairy foods; food and drinks high in fat and/or sugar; meat, fish, eggs, beans (and other non-dairy sources of protein); fruit and vegetables</p>	<p><i>Qualitative:</i> area of segmented circle illustrates proportion of food group contribution to total diet</p>	<p>Addition of fork and knife on either side of the circle signifies it as a plate, and helps to further consider the icon as a representative meal</p>

(continued)

Table 4, continued

United States of America (1992)	Pyramid	6	Yes	<p><i>Top of pyramid:</i> Fats, oils, & sweets (use sparingly)</p> <p><i>Level 2, left:</i> Milk, yogurt, & cheese group (2-3 servings); <i>right:</i> meat, poultry, fish, dry beans, eggs, & nuts group (2-3 servings)</p> <p><i>Level 3, left:</i> Vegetable group (3-5 servings); <i>right:</i> fruit group (2-4 servings)</p> <p><i>Base of pyramid:</i> Bread, cereal, rice, & pasta group (6-11 servings)</p>	<p><i>Qualitative:</i> inverse-hierarchical arrangement places foods consumed in smaller, less frequent quantities toward top of pyramid, whereas larger, more frequently-consumed goods are found toward the bottom; naturally occurring and added fats, as well as added sugars, are sprinkled throughout the pyramid</p> <p><i>Quantitative:</i> daily serving sizes appear below each food group</p>	
United States of America (2005)	Pyramid	6	No** [Britten <i>et al.</i> 2006]	<p>Grains (orange); vegetables (green); fruits (red); oils (yellow); milk (blue); meat & beans (purple)</p>	<p><i>Qualitative:</i> differently-sized slices of pyramid correlate to relative daily consumption of color-coded food groups; slices' different colors signal variety; as noted in column 7, food groups are not necessarily labeled on the MyPyramid (when they are, they do not include oils [yellow])</p>	<p>Silhouetted image climbing staircase emphasizes physical activity.</p> <p><i>N.B.</i> The version analyzed here did not include labels or examples of food group items. Such omissions may be found on revisions of the MyPyramid.</p>
United States of America (2011)	Plate	5	Yes	<p><i>On the plate:</i> Grains (orange); protein (purple); vegetables (green); fruits (red)</p> <p><i>On the glass:</i> Dairy (blue)</p>	<p><i>Qualitative:</i> the differently-sized segments of the plate correlate to different proportions of each food groups' contribution to total diet; the color coding for each group corresponds to the same code used in the development of the MyPyramid</p>	<p>What used to be labeled as "Milk" in the MyPyramid is now "Dairy" in the MyPlate (though milk still appears to be referenced in the context of the upper right circle being seen as a glass); with the addition of the fork to the left of the plate, the icon considers the meal as important</p>

(continued)

Table 4, continued

United States of America: Harvard (2011) ⁴	Plate	6	Yes	<p><i>On the plate:</i> Whole grains (brown); healthy protein (orange); fruits (red); vegetables (green)</p> <p><i>Off the plate, left:</i> Healthy oils (yellow); <i>right:</i> water [beverages] (blue)</p>	<p><i>Qualitative:</i> differently-sized segments of plate correlate to different proportions of each groups' contribution to total diet</p> <p><i>N.B.</i> Color coding for each group more or less matches U.S.A.'s MyPyramid and MyPlate, with exception of grain and protein</p>	<p>“Water” category (which uses MyPlate’s blue dairy color code) includes water, tea, or coffee with little to no sugar; deemphasizing importance of dairy, FB DG recommends to “limit milk/dairy”</p>
United States of America: African American Heritage Diet (2011) ⁵	Pyramid	13 (divided among 7 levels)	Yes	<p><i>On pyramid, top:</i> Sweets (occasionally)</p> <p><i>Level 2:</i> Dairy (moderate portions, daily to weekly)</p> <p><i>Level 3, left:</i> Eggs, poultry & other meats; <i>right:</i> healthy oils</p> <p><i>Level 4:</i> Fish & seafood (often, at least 2x/wk)</p> <p><i>Level 5:</i> Herbs, spices, and traditional sauces</p> <p><i>Level 6:</i> Fruits; beans & peas; peanuts & nuts; vegetables; whole grains; tubers (base every meal on these foods)</p> <p><i>Level 7, bottom:</i> Greens</p>	<p><i>Qualitative:</i> foods placed in different segments of the pyramid correlate to frequency consumption of foods within a given level, with less consumption toward the top of the pyramid and greater consumption toward the bottom; consumption amounts of specific groups within level are further illustrated by relative area in relation to total diet</p>	<p>At pyramid base are depictions of Africans/African-Americans engaged in physical activities (exercise, gardening, walking, playing sports), as well as a family eating together; separate recommendation to “Drink Drink Water” is paired with a glass of water on upper left of pyramid</p>
United States of America: Asian Diet (2000) ⁶	Pyramid	11 (divided among 7 levels and 4 frequency groups)	Yes	<p><i>On pyramid, top (monthly recommendation):</i> Meat</p> <p><i>Levels 2 & 3 (weekly recommendation):</i> Sweets; eggs & poultry</p> <p><i>Level 4 (optional daily):</i> “Fish & shellfish” or “dairy”</p> <p><i>Level 5 (daily):</i> Vegetable oils</p> <p><i>Level 6 (daily):</i> Fruits; legumes, seeds & nuts; vegetables</p> <p><i>Level 7 (daily):</i> Rice, noodles, breads, millet, corn & other whole grains</p> <p><i>Off pyramid, upper left (daily):</i> Beverages (6 glasses of water or tea; sake, wine, or beer in moderation); cf. other Oldways pyramids</p>	<p><i>Qualitative:</i> foods placed in different segments of the pyramid correlate to frequency consumption of foods within a given level, with less consumption toward the top of the pyramid and greater consumption toward the bottom; consumption amounts of specific groups within level are further illustrated by relative area in relation to total diet</p>	<p>At the base of the pyramid are representations of Asians/Asian-Americans engaged in physical activities (dancing, walking).</p>

(continued)

Table 4, continued

<p>United States of America: Latin American Diet (2009)⁷</p>	<p>Pyramid 4</p>	<p>Yes</p>	<p><i>On the pyramid, top:</i> Meats and sweets (less often)</p> <p><i>Level 2:</i> Poultry, eggs, cheese, and yogurt (moderate portions, daily to weekly)</p> <p><i>Level 3:</i> Fish and seafood (often, at least two times per week)</p> <p><i>Level 4, bottom:</i> Fruits, vegetables, grains (mostly whole), beans, nuts, legumes and seeds, herbs, and spices (base every meal on these foods)</p>	<p><i>Qualitative:</i> foods placed in different segments of the pyramid correlate to frequency consumption of a given level of foods, with less consumption toward the top of the pyramid and greater consumption toward the bottom; proportion of contribution of a given level to total diet is suggested by area in relation to overall pyramid</p>	<p>Food groups and recommendations are written in Spanish and appear on left-hand side of the graphic, with English on right-hand-side; at base of the pyramid are representations of Latino/as engaged in physical activities (exercise, dancing, walking, playing sports), as well as a family eating a meal together; a separate recommendation to <i>Beba agua</i> (“Drink Water”) accompanies a glass of water on the upper left of the pyramid</p>
<p>United States of America: Mediterranean Diet (2009)⁸</p>	<p>Pyramid 5</p>	<p>Yes</p>	<p><i>On the pyramid, top:</i> Meats and sweets (less often)</p> <p><i>Level 2:</i> Poultry, eggs, cheese, and yogurt (moderate portions, daily to weekly)</p> <p><i>Level 3:</i> Fish and seafood (often, at least two times per week)</p> <p><i>Level 4, bottom:</i> Fruits, vegetables, grains (mostly whole), olive oil, beans, nuts, legumes and seeds, herbs, and spices (base every meal on these foods)</p> <p><i>Off the pyramid, upper left:</i> Wine (in moderation)</p>	<p><i>Qualitative:</i> foods placed in different segments of the pyramid correlate to frequency consumption of a given level of foods, with less consumption toward the top of the pyramid and greater consumption toward the bottom; proportion of contribution of a given level to total diet is suggested by area in relation to overall pyramid</p>	<p>At the base of the pyramid are representations of individuals of different ages, ethnicities, sexes, etc., engaged in physical activities (exercise, dancing, walking, playing sports), as well as a family eating a meal together; recommendation to “Drink Water” accompanies a glass of water, situated below the recommendation for moderate consumption of wine</p>

(continued)

Table 4, continued

United States of America: Vegetarian/Vegan Diet (2013) ⁹	Pyramid	6	Yes	<p><i>On the pyramid, top, distinctly separated from the rest of the pyramid:</i> Options for vegetarians (eggs and/or dairy, including yogurt, cheese, cottage cheese)</p> <p><i>As separate categories, one group per level, with the recommendation to eat from all food groups every day:</i> Herbs, spices, plant oils; nuts, peanuts, seeds, peanut/nut butters; beans, peas, lentils, soy; whole grains including rice, barley, millet, oats, quinoa, bread, cereal, pasta; fruits and vegetables</p>	<p><i>Qualitative:</i> foods placed in different segments of the pyramid correlate to relative amounts of consumption of a given food group in relation to total diet, with fruits and vegetables making up the majority of food intake</p>	<p>At the base of the pyramid are representations of individuals of different ages, ethnicities, sexes, etc., engaged in physical activities (exercise, gardening, cooking, playing sports), as well as a family eating a meal together; a separate recommendation to “Drink Water” accompanies a glass of water on the upper left of the pyramid</p>
Venezuela (2011)	Trompo (spinning top)	6	No** [INN 2011]	<p><i>On trompo, top-bottom:</i> Cereals, grains, tubers, and plantains (yellow band); vegetables and fruits (green band); dairy, meat, and eggs (blue band); sugar, honey, <i>papelón</i> (gray segment); fats and vegetable oils (orange segment)</p>	<p><i>Qualitative:</i> food groups are hierarchically arranged with greatest consumption in upper-most band and least consumption in the bottom two segments; proportionality of food group consumption relative to total diet is depicted by different band widths</p>	<p>Stream of water representing the trompo cord indicates necessity of water consumption, while individuals moving on the water indicate importance of daily activity</p>
Venezuela: Indigenous (~2011)	Trompo (spinning top)	6	No** [INN 2011]	<p><i>On trompo, top-bottom:</i> Cereals, tubers, grains, and plantains (yellow band); fruits and vegetables (green band); meat, poultry, fish, shellfish, mussels, insects, and eggs (blue band); sugars (gray segment); fats and vegetable oils (orange segment)</p>	<p><i>Qualitative:</i> each food group is hierarchically arranged with greatest consumption in upper-most band and least consumption in the bottom two segments; proportionality of food group consumption relative to total diet is depicted by different band widths</p>	<p>Stream of water representing the trompo cord indicates necessity of water consumption, while individuals engaged in food-/outdoor-related activities (spear fishing, canoeing) indicate importance of traditional, daily activities</p>

(continued)

Table 4, continued

Notes:

1. Year indicated in column 1 signifies the most recent available version, which was in turn analyzed. This does not necessarily refer to an image source.
2. Listed food groupings (column 4)—and, where applicable, English translations—appear directly on the FBDG representation (column 5) or were instead obtained from an accompanying FBDG (*) or article (**).
3. Page numbers indicated in parentheses refer to source listed in column 4.
4. Images are government-created/-sponsored, unless otherwise noted.

¹ Healthy Living Pyramid by Nutrition Australia

² Countrywide Integrated Noncommunicable Disease Intervention (CINDI) Dietary Guide produced by the World Health Organization (WHO)

³ *Pyramide Alimentaire* (Food Pyramid) produced by Souccar and Houlbert

⁴ Healthy Eating Plate produced by Harvard T.H. Chan School of Public Health and the Harvard Medical School

⁵ African Heritage Diet Pyramid produced by Oldways Preservation and Exchange Trust

⁶ Asian Diet Pyramid produced by Oldways Preservation and Exchange Trust

⁷ Latin American Diet Pyramid/*La Pirámide de La Dieta Latinoamericana* produced by Oldways Preservation and Exchange Trust

⁸ Mediterranean Diet Pyramid produced by Oldways Preservation and Exchange Trust

⁹ Vegetarian/Vegan Diet Pyramid produced by Oldways Preservation and Exchange Trust

Appendix B: List of Acronyms Used in This Thesis

CNPP	Center for Nutrition Policy and Promotion
DGA	<i>Dietary Guidelines for Americans</i>
DGAC	Dietary Guidelines Advisory Committee
EFSA	European Food Safety Authority
EUFIC	The European Food Information Council
FAO	Food and Agricultural Organization
FBDG(s)	Food-Based Dietary Guideline(s)
FCNAUP	Faculty of Food Sciences and Nutrition at the University of Porto
GNC	German Nutrition Circle
HHS	United States Department of Health and Human Services
HSS	Department of Health and Social Services*
INN	Instituto Nacional de Nutrición [translated as: National Institute of Nutrition]
INPES	L'Institut National de Prévention et d'Éducation (the National Institute for Prevention and Health Education)
MDF	Mediterranean Diet Foundation
NCD	Noncommunicable Diseases
NFA	National Food Agency [Livsmedelsverket]
NFG	Nunavut Food Guide
NGO(s)	Non-Governmental Organization(s)
NWT	Northwest Territories
OPET	Oldways Preservation and Exchange Trust**
PNNS	Le Programme National Nutrition Santé (The French National Nutrition and Health Program)
USDA	United States Department of Agriculture
WHO	World Health Organization

*Documents from the Government of Nunavut were published by the Department of Health and Social Services. Today, the department is known as the Nunavut Department of Health.

**The Oldways Heritage Pyramids were published by the Oldways Preservation and Exchange Trust, as indicated in the respective copyright lines of Figures 22-25. Today, the organization is more commonly known as the Oldways Preservation Trust.