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Japanese and American public health approaches to preventing population weight gain: A role for paternalism?

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ABSTRACT

Controlling population weight gain is a major concern for industrialized nations because of associated health risks. Although Japan is experiencing rising prevalence of obesity and overweight, historically they have had and continue to maintain a low prevalence relative to other developed countries. Therefore, Japan provides an interesting case study of strategies to curb population weight gain. In this paper we explore Japanese approaches to obesity and diet through observational and ethnographic interviews conducted between June 2009 and September 2013. Nineteen interviews were conducted at four companies and three schools in Tokyo, as well as at a central Tokyo community health care center and school lunch distribution center. Interviewees included physicians, a Ministry of Health bureaucrat, human resources managers, welfare nurses employed by health insurance organizations, school nurses (also government employees), school nutritionists, and a school counselor. We highlight the role of culture and social norms in encouraging healthful behavior in Japan, focusing on the Ministry of Health, Labor, and Welfare's metabolic syndrome screening program (implemented in 2005) and the Japanese national school lunch program. The Japanese government prescribes optimal body metrics for all Japanese citizens and relies on institutions such as schools and health insurance organizations that are in some instances closely affiliated with the workplace to carry out education. Japan's socio-cultural approach leads us reflect on the cultural and social conditions that make different policy prescriptions more politically feasible and potentially effective. It also provokes us to question whether limited behavioral modifications and "nudging" can lead to broader change in an environment like the United States where there are fewer broadly shared socio-cultural norms regarding acceptable health behavior.

1. Introduction

Controlling population weight gain is a major concern for industrialized nations because of the associated health risks (e.g., certain cancers, cardiovascular diseases, type 2 diabetes, sleep apnea) (World Health Organization, 2015). Since 1980, obesity has increased in most countries (Finucane et al., 2011), and no country has yet reversed its obesity epidemic (Roberto et al., in press). However, Japan is a rare example of a country that has maintained a low obesity prevalence (3.5% of the population versus 35% in the United States). Further, 25.3% of the Japanese population is either overweight or obese, which is substantially lower than the U.S. (69.2%) and the Organization for Economic Cooperation and Development average (52.7%) (OECD, 2013; Ogden et al., 2014). Although Japan's obesity prevalence has historically been much lower than other countries, rising prevalence has led the government to start taking actions to address it (Pike et al., 2011).

Over the past several decades, Americans have spent billions of dollars on diet and exercise programs to change individual behavior, while remaining in an environment that is largely left untouched. Although many existing weight loss programs help participants achieve modest weight loss, most individuals re-gain lost weight within one to two years (Dansinger et al., 2007; Wing and Phelan, 2005). These sobering results have led to a shift in the way public health activists and policy-minded scholars think about framing and addressing obesity.

Research has illuminated the role of environmental drivers of obesity, including food marketing, the availability of inexpensive, nutrient-poor, calorie-dense foods, large portion sizes, declining physical activity, and social network influences, among others

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(Institute of Medicine (2012)). Scholars have argued that the current U.S. food environment undermines people's ability to be personally responsible for their food choices, particularly parents of children with limited economic resources (Brownell et al., 2010). Recognizing that educating and imploring individuals to change behavior is not enough, public health researchers and advocates have proposed solutions that target environmental drivers of obesity (Benson, 2014; Bonell et al., 2011; Brownell et al., 2010; Kassirer and Angell, 1998). Examples include taxing sugary drinks, improving nutrition standards for school foods, removing vending machines in schools, and restricting child-targeted advertising.

Historically speaking, however, there has been substantial debate about the role that government should play in promoting population health when personal habits such as diet, smoking, or exercise, are at issue. Thus the above policy proposals have been met with concerns about government encroachment on freedom in the U.S. (Colgrove et al., 2008). There remains broad agreement that government should protect shared social goods: children must be immunized before starting school (although exemptions can be granted); wearing seatbelts when driving is mandatory; fluoride has been added to the water system; and regulations impose limits on tobacco sales and use (Roberto et al., 2014). Yet regulating the food and restaurant industries has been met with substantial resistance. This is well-illustrated by the response to former New York City mayor Michael Bloomberg's proposal to limit sugary drink container sizes in restaurants to 16 ounces. Even moderate parties protested what they regarded as paternalistic measures that encroach on individual autonomy. The *New York Times* editorial board chastised the mayor, arguing that instead the administration "should be focusing its energies on programs that educate and encourage people to make sound choices" (Neistat, 2012; New York Times, May 31, 2012).

Resistance to government intervention when it comes to food may partly be because eating is viewed as a necessity and causal links between specific foods and negative health consequences are not as evident as those between smoking and lung cancer. In addition, the common framing of food choices as a matter of individual responsibility may partially thwart government actions (Kersh, 2009). Despite consensus across major reports and recommendations that policy solutions would be the most cost effective approach to curbing weight gain, no countries have systematically implemented a comprehensive policy approach to address obesity (Roberto et al., in press).

In recent years, there has been a provocative debate about a third way of bringing about behavioral modification that does not rely solely on either individual responsibility *or* government regulation. Economist Richard Thaler and legal theorist Cass Sunstein (2008) propose an approach they call "libertarian paternalism," in which government and institutions can implement nudges to encourage choices that are in people's long-term self-interest. Rather than ban vending machines in schools, this approach advocates for placing sugary drinks out of immediate sight and putting fruits and vegetables in highly visible and easily accessible places in the cafeteria, so that healthier choices are easier to make. Liberal paternalism recognizes that forces like social influences, temptation, mindless decision-making, or natural tendencies in how people think ("biases") cause us to act against our long-term self-interest (Thaler and Sunstein, 2008, p. 17–39). For example, we may strongly value obtaining gratification in the moment despite future costs, a tendency known as present-biased preferences (Frederick, Loewenstein, and O'Donoghue, 2002). Thus, our enjoyment of the cupcake in the moment outweighs the future health risks its consumption might pose.

Libertarian paternalism has offered a compelling alternative to traditional forms of paternalism such as regulating marketing or use of harmful products, or more explicit forms of moralizing. Evidence from behavioral economics suggests that instead of these measures, government and institutional policies can modify the context in which people make decisions to encourage them to make healthier choices that are in their long-term self-interest (Thaler and Sunstein, 2008, p.110–113). These policies typically take the form of cost-effective, piecemeal solutions (Burgess, 2012, p. 4). One example is structuring employee 401 k retirement savings plans so that individuals must opt out rather than opt in" to retirement plans. This creates a default where individuals are automatically enrolled, rather than a default that requires them to take action to enroll (Thaler and Benartzi, 2004).

In contrast, Japan's approach to maintaining a healthy diet among its population does not rely solely on any of the three approaches: government regulation, individual responsibility, or libertarian paternalism. Japan's efforts to encourage healthy choices make a fruitful comparison to the U.S. because they rely on individual decision-making rather than government regulation of unhealthful goods through strategies such as taxation or limits on advertising. However, a key difference is that Japanese citizens are making individual choices in an environment in which mainstream institutions invest heavily in socializing individuals to think differently about health and welfare. The success Japan has had to date in staving off population weight gain may be partially explained by powerful discourses of cultural homogeneity, standardization of recommended health and body metrics, pervasive and reinforcing social norms (how one behaves in response to social beliefs and situational factors) and public health education. The Japanese approach seeks to shape mentalities and preferences and promotes standardized metrics as shared goals. Individual choice in Japan is shaped to a far greater degree than what can be accomplished with piecemeal, nudge-type interventions, but it is not being shaped through the traditional regulatory strategies being proposed in the U.S. (e.g., taxation, limits on marketing, warning labels).

In this paper, we explore Japanese approaches to reducing obesity and improving diet through ethnographic interviews and observations with the objective of shedding light on the broader dilemma of how the United States and other countries should address obesity and whether paternalistic approaches are needed. To understand Japan's public health initiatives concerning rising population weight, we focus on two spheres. The first is the Ministry of Health, Labor and Welfare's (MHLW) metabolic syndrome screening program, which requires all citizens between the ages of 40 and 74 to be screened for metabolic syndrome, a battery of conditions indicating heightened risk for chronic illness (see below). Since a large portion of the Japanese population received health insurance through place of employment, this intervention is often coordinated through the workplace. The second sphere is the school lunch program in operation in all Japanese elementary schools and most middle schools. Japanese schools play a large role in educating citizens to be mindful of health and diet. Socialization begins early, and schools link food to culture, manners, and national identity. We use these two examples to illustrate the powerful role social norms appear to play in promoting healthy behaviors in Japan. Although we lack data on the effectiveness of the two programs and cannot provide definitive explanations for why Japan has had more success curbing obesity, we believe that Japan's positive health outcomes and relatively low prevalence of obesity and overweight make it a worthy case study. The Japan case also sheds light on the cultural and social conditions that make different policy prescriptions more politically feasible and potentially effective in specific environments.

Furthermore, the data in this paper provide insight into the impasse that U.S. policy-makers face in an environment in which

regulation of consumer behavior and industry is met with adversity, and yet the broader socio-cultural environment does not support controlling or limiting intake of unhealthy foods. This is also an environment in which social values are heterogeneous, and in which the promotion of health and specific social values is not seen as the domain of institutions such as schools and businesses. While nudging has been welcomed by some as a solution to this impasse, our data lead us to question how hopeful we can be that limited, local interventions will produce systematic change, given the effort invested in shaping individual behavior and preferences by Japanese institutions including schools, health care organizations, and more recently large-scale companies. Nudging avoids the moralizing and education of Japan's socio-cultural approach, and instead seeks to modify the individual's environment so that even non-optimal preferences can lead to more positive outcomes. However, some have criticized this solution for its "disengagement from the possibility of moral or educational improvement" (Burgess, 2012, p. 12). In a recent review of Sunstein's work, economist Jeremy Waldron writes:

> Nudging doesn't teach me not to use inappropriate heuristics or to abandon irrational intuitions or outdated rules of thumb. It does not try to educate my choosing …. Instead it … manipulates my sense of the situation so that some heuristic—for example, a lazy feeling that I don't need to think about saving for retirement … will still, thanks to a nudge, yield the answer that rational reflection would yield. Instead of teaching me to think actively about retirement, it takes advantage of my inertia (2014, p. 7).

Here Waldron questions the extent to which libertarian paternalism can lead to broader social change. In other words, to what extent can specific instances of psychological or behavioral engineering fill in for more totalizing systems of cultural values or social norms?

It is not our intention to suggest that the socio-cultural approach taken in Japan should be applied in the U.S. On the contrary, we argue that such an endeavor would be misguided. We are also not seeking to arrive at conclusions concerning best practices, or claim that the Japanese approach is superior. However, a close consideration of the Japanese approach sheds light on the predicament facing U.S. policy-makers, and suggests that social norms and sanctions carry powerful effects, and that to achieve behavior change in contexts where such norms are thin may require stronger regulatory approaches.

2. Methodology

To understand Japan's public health initiatives concerning rising population weight at worksites and schools, Borovoy visited the sites of four Tokyo companies: a large, international electronics-maker with extensive health and welfare policies; a large trading company also with extensive welfare provisions; a smaller and younger electronics parts maker outside of Tokyo; and a non-business organization specializing in higher education. Interviews were conducted with 4 public health nurses, 4 human resources managers, 2 physicians, and a representative from an employee health insurance organization. Additional interviews were conducted at a community health care center ("hokenjo") in central Tokyo an entry point for citizens seeking guidance on public-health related issues and with a MHLW bureaucrat involved in designing the screening program. Interview questions focused on determining Ministry of Health regulations, screening procedures, the goals of the policy and when possible effects and costs, the broader environment in place to support the program, and the procedure of mandated interventions. All interviews took place between June 2009 and September 2013 and were conducted in Japanese.

Site visits and interviews concerning the Japanese school lunch program were conducted at two elementary schools, one middle school in Tokyo, and a school lunch distribution center outside of Tokyo that prepares and delivers school lunches for 19 local schools. In addition Borovoy visited what is known as a health school ("kenkō gakuen") where children with issues of weight and other health and adjustment issues board. Interviews were conducted with 1 school counselor; 2 school nurses, and 3 nutritionists. The Japanese school nurse ("yōgo no sensei") works with families concerning children's health and behavior and has a more expansive role than the American school nurse. A middle-school nutritionist also provided us with a detailed history of the provisions of that district's Japan's school lunch program dating back to 1945.

Interviews were conducted to obtain factual information about programs and policies, rather than specific individual experiences. Princeton University's Institutional Review Board determined that these policy-related data do not constitute human subjects research as defined by DHHS regulations and thus did not require formal institutional approval. In cases where we cite the viewpoints of individuals undergoing screening for metabolic syndrome, we do so to illustrate government and company policy rather than to reach general conclusions about employee experience.

3. Social norms and public health in Japan

Although many of the environmental forces contributing to obesity have to do with shared conditions of industrial modernity, the way in which nations talk about obesity—and the menu of options available to them to address it—are shaped by cultural values and social institutions. Despite a strong presence of the state in Japan through industrial policy in the postwar period, there has been a relatively weak mandate for government regulation of industries that negatively influence public health. For example, it was not until 2008 that rear passengers in automobiles were required to wear seatbelts (and these are required only on expressways), and even violations of child safety laws in automobiles are treated relatively leniently. Despite the fact that many Japanese citizens ride bicycles as part of their daily commute, helmets are only required for children under 13 and again the law is loosely enforced. A combination of strong industries, lucrative tax revenue for the government, and a postwar commitment to democratic freedoms have created an environment in which individual behaviors that increase health risks are not subject to intervention via government policies.

Some moral philosophers have argued that American liberal democracy is defined by the neutral stance of the state with respect to private values and behaviors: one that "does not presuppose the superiority of one way of life over others." Fairness is defined in terms of mutual rights, but does not depend on a shared definition of the social good or collective welfare (Sandel, 1996, p. 10). This commitment to neutrality allows individuals to make their own choices, and hopes to protect them from the stigma associated with differentness or disadvantage. At the same time, it leaves them vulnerable to powerful forms of market manipulation that encourage individuals to make unhealthful choices. In contrast, the Japanese government has not fully embraced the separation of government from ideological or religious beliefs. A hallmark of modern Japanese governance has been a faith in the process of social persuasion, as evidenced by the daily life improvement campaigns ("seikatsu kaizen undō") enacted in the middle part of the twentieth century, which promoted methods of home budgeting, better nutrition and hygiene, and avoidance of wasteful

spending on alcohol and tobacco (Garon, 1997, p. 11).

By some definitions, Japan could be considered a communitarian model of democracy. Legalism is accompanied by informal mechanisms of social control that rely heavily on social norms. For example, certain kinds of disputes rely more heavily on mediation in Japan, an interpersonal process of dispute resolution that may invoke social values (Upham, 1989). The state specifies desirable social norms regarding how one should act and enforces them through constituent institutions such as schools, stigmatizing those who do not abide by stated goals. At the same time, the enforcement of social norms mediates individual choices and consumerism and introduces a measure of protection from market-produced desires, ideals, and impulses.

Japanese institutions including the Ministry of Health, Labor and Welfare, local governments, and private companies such as Japan Rail, have sanctioned the heavy-handed use of social norms and cultural values to promote specific behaviors. The history of tobacco regulation in Japan provides a vivid illustration. Japanese courts have not been sympathetic to anti-smokers, and the notion of passive smoking has gained little traction. Judicial decisions have defined smoking as a matter of individual preference that must be accommodated within "tolerable limits" in the words of one Tokyo District Court decision (Feldman, 2001, p. 691–692). In response to growing anti-smoking sentiment, Japan Tobacco has promoted a discourse of etiquette, urging smokers to take into account others' feelings (by carrying their own ashtrays and refraining from throwing butts on the ground). This has set up a battle between public health activists advocating for smoking restrictions as a matter of legal rights and the tobacco industry's focus on manners (Feldman, 2001, p. 699). However, Feldman has argued that the stigma of voluntary quarantines, a growing sense that Japan is behind other industrialized nations, as well as the popularity of the first smoke-free coffee shop chain, Starbucks in Japan, have all played a role in curbing tobacco consumption by influencing social opinion (2001, 702). Although smoking is still legal in most public places in Japan, imposed restrictions in train stations, restaurants, offices, and coffee shops have grown more common. Japan is still categorized as a high tobacco use country (32.4% of males over 15 smoke; 9% of females) (World Health Organization, 2013). But despite legal permissiveness, Japan has witnessed a significant decline in prevalence of daily smoking between 1980 and 2012 (Ng et al., 2014), some of which is likely explained by informal social norms. (Japan's first smoke free public place ordinance was passed in 2009 in Kanagawa Prefecture. Since then three wards in Tokyo have also passed laws. However, such areas remain outliers.)

There are other spheres in Japan in which the socio-cultural approach to controlling behavior is evident. Ubiquitous posters and announcements on public transportation exhort passengers to turn their phones on what is called "manner mode" (vibrate) and warn that cell phone radiofrequency can interfere with pacemakers and harm pregnant women. The focus on manners and not burdening others is explicit. Despite packed trains and long commute times, cell phone chatter is rare on Japanese public transportation.

In the food realm, the Japanese government has not pursued strong regulatory steps proposed by public health advocates such as removing vending machines from schools, mandating calorie labeling on restaurant menus, taxing unhealthy products, or requiring uniform front-of-package nutrition labeling systems (Kersh and Morone, 2002, p. 151). Instead, it has relied heavily on the invocation of a broader cultural/historical tradition. Despite limited regulations, portion sizes remain smaller in Japan and the food industry has not followed the American trend of selling bigger sizes at discounted rates. Japanese consumers continue to prefer smaller portion sizes, since they equate this with quality and taste. It is only very recently that one sees products advertised as "buy more for less" sometimes found in convenience stores. In the next sections of the paper, we examine the ways in which social norms promoting healthy behavior are put forward by institutions that control daily life, including companies and schools, and families.

4. Corporate welfare and health as a public good in Japan

The link between public health and social values in Japan has its origins in the Meiji era in the context of the management of epidemics and infectious diseases in late 19th century (Campbell and Ikegami, 1998, p. 24; Ikeda et al., 2011; Ikegami et al., 2011). During the decades of modernization during the Meiji Era (1868–1912), the government sought to catch up with Western technology, while attempting to control and unite the population. Health became an aspect of citizenship and social integration in Japan, rather than a private matter. Meiji bureaucrats and medical reformers, under Western influence (particularly Germany's), embraced the notion of "kōshū eisei" (public health) as an index of moral refinement and civilizational advancement. As Japan advanced towards modernity, individual health was closely linked to social health, including cohesion, cleanliness, and refinement (Jannetta, 1987; Johnston, 1995; Manzenreiter, 2012; Narita, 1995; Rogaski, 2004).

In his history of the notion of health ("kenkō") in the late Meiji and Taishō eras, Kitazawa (2000) notes that before Japan's drive towards industrialization and modernization in the late Meiji era, health simply meant having no physical problems. Gradually, in the course of Japan's process of empire-building and national unification, it came to connote what was talked about as spiritual development ("seishin shūyō"), moral improvement ("dōtoku no kōjō"), and making a social contribution ("shakai kōken") (Kitazawa, 2000, p.216, p. 221). Such efforts were closely linked to Japan's military build-up and empire-building of the late nineteenth-century. These programs crystallized with the nationalization of physical education programs (often staffed by members of the military) and the promotion of nationally-broadcast radio programs for morning calisthenics, still broadcast today.

In the wake of the poverty and destruction caused by World War II, Japanese corporations came to be munificent providers of social welfare and a range of social benefits, including subsidies for marriage, housing, and children's education, recreational facilities, pensions, health care, and funds for after-hours socializing. Corporate welfare became central to the provision of basic social goods in Japan, even while it deepened workers' dependence on firms by compensating them based on loyalty and seniority. Companies are now being asked to shoulder the burden of emerging public health issues related to a rapidly aging society. In response to rising obesity, the Japanese Ministry of Health, Labor, and Welfare imposed a screening program for metabolic syndrome (*metabor-ikku shindorōmu*, abbreviated as *metabo* in Japan) in 2008 for all citizens between the ages of 40 and 74.

Metabolic syndrome is defined by a battery of conditions that includes elevated blood sugar, blood pressure, cholesterol, and excess body fat around the waist. It is linked to heightened risk of diabetes, cardiovascular disease, and stroke (Kagawa, 2000). Metabolic syndrome is diagnosed when waist (circumference around belly button) is equal to or exceeds 33.5 inches for men and 35.5 inches for women. (These numbers vary slightly from U.S. criteria.) In addition two of the following three conditions must be present:

1) Triglycerides (TG) $\geq$ 150 mg/dl and/or HDL cholesterol <40 mg/dl
2) Systolic blood pressure $\geq$ 130 mmHg and/or diastolic blood pressure $\geq$ 85 mmHg

3) Blood sugar (fasting) ≥ 110 mg/dl

The screening program is part of a battery of public health initiatives broadly known as "21st Century Healthy Japan" *(Kenkō Nihon 21)*, an ambitious agenda modeled after the "Healthy People" national health promotion and disease prevention agenda published in the U.S. every ten years. The stated goal is to produce a society in which every citizen can achieve a "healthy and psychologically fulfilling lifestyle for the Japanese people" (*kokumin ga sugoyaka de kokoro yūtaka ni seikatsu dekiru)* (Japanese Ministry of Health (2009), p. 66). While the logistics of the program entail adding an additional screening to an already-existing battery of tests, the public relations dimension of the program has been extensive. *Metabo* has become a widely-used term in the mass media, featured on the ubiquitous television shows featuring health issues. Concretely, those who screen positively for metabolic syndrome at yearly tests, or for warning signs (defined by specific metrics), must undergo counseling, termed either "dōkizuke shien" (motivational support for those with warning signs) or "sekkyokuteki shien" (enthusiastic support) for those with metabolic syndrome. Counseling requires 1.5 h of education with a public health nurse, including "reflecting on" patient biometrics, discussing risk factors, reviewing current life habits, and setting strategies for improvement and workable goals (Ministry of Health, Labor, and Welfare [MHLW], 2007). Counseling is followed up with emails after two weeks, one month, and 6 weeks, another meeting at 2 months, and then monthly email exchanges to approve individual monitoring sheets for four more months. The published pamphlets for patients and the counseling guidelines reject dogma or extreme behavior modification solutions that cannot be sustained. Rather they focus on small modifications in daily life that can be achieved through better knowledge and continued social support.

The Ministry of Health trains public health nurses or "hokenshi" to carry out guidelines through the National Association of Public Health Insurance Organization. Public health nurses are civil servants in Japan. Each intervention is measured on a points-based system; when all the required interventions (phone calls and meetings) have been completed, the public health nurse can register the counseling program as complete.

The education materials for the program produced by clinics, community health centers, and health insurance organizations features terms such as "seikatsu kaizen" (life improvement), "shidō" (guidance), "shien" (support), "yobō" (prevention), and "kanri" (management). Pamphlets display smiling health care workers in white coats facing employees with excess weight, downcast-looking employees, smiling and waving, vowing, "We will support you!" Educational materials are attention-grabbing and heavy in cartoon-style graphics, including menus, check-lists, exercise regimens, diagrams of correct posture, calorie calculators, and case studies (e.g. Meiji Yasuda, 2009; Kanagawa Prefecture, 2010).

In Japan, the targeting of metabolic syndrome shifts focus on obesity to a broader issue of "lifestyle." Metabolic syndrome (along with diabetes, stroke, liver disease, and cardiovascular disease) is described as a "disease of the lifestyle." The Japanese term, "seikatsu shūkanbyō," has gained popularity in everyday discourse. Thickened waist is one symptom of metabolic syndrome, but obesity itself is not the target of care. Rather, the focus is preventative. A key architect of the metabolic syndrome screening program explained, "My belief is that medicine only helps with the pathological dimensions of high blood pressure or high cholesterol; but 'basic health' relies on good living and public health" (Borovoy, interview with Tetsuo Tsuji, November 29, 2011). Essentially, the metabolic syndrome screening program is an investment on the state's part to curb long-term health costs by teaching individuals to modify daily beliefs and behavior.

Although the waist measurement has generated commentary in the mass media, in practice, the screening is folded into the yearly battery of health screenings. While Americans might bridle at the thought of having one's waist measured yearly, public health nurses at the institutions Borovoy visited suggested that Japanese employees were usually matter-of-fact and earnest ("sunao") about undergoing the screening. As HR representatives and a nurse told us at a small electronics company outside of Tokyo, this is simply the most recent face of social welfare ("fukurikōsei"), which they argued had made a comeback since the neo-liberal reforms of the early 2000s. This company offered housing for all young employees and their families and had built nearby grounds for recreation including tennis courts and a baseball diamond (which they lent to the local schools during working hours). Mental health care and preventative health care concerning metabolic syndrome was seen as part of this broader program.

"Shimomura Electronics (pseudonym)," a large multi-national electronics company headquartered in Tokyo, ushers its employees through a screening process that is standardized and centralized. Companies provide health care to employees through independent insurance organizations or "kenkō hoken kumiai." Companies like Shimomura that have greater than 700 employees have their own health insurance union; Shimomura also has a health clinic on the grounds, and their own trained public health nurse. (The organization is funded through a payroll tax that the employer also contributes to in varying amounts.)

Because the clinic is on-site, the public health nurse is widely-known throughout the company, and screenings take place at regular intervals, degree of compliance at Shimomura among those who are required to undergo the yearly exam (ages 40–74) has improved since the screening began in 2008 and was 72% in 2011. (The 2011 number nationwide was 45%, which includes citizens outside large organizations who purchase national health insurance through the local government and are less subject to social pressures to be screened.) (Shimomura Inc., 2013). There are no mechanisms in place to punish individual employees who avoid the screening, and compliance is a major issue in the program's effectiveness. However, the provision of health care through an organization closely-tied and physically integrated with the company seems to have the effect of producing higher levels of compliance. A substantial portion of the company's annual healthcare budget goes to the yearly screenings and counseling. The insurance organization associated with Shimomura Electronics reported spending approximately 2.5 million dollars per year on the counseling interventions alone. Other expenses include in-house medical facilities, sports facilities, yearly physicals and other screenings, and preventative services.

Here is what one Shimomura manager said when asked about his reaction to the metabolic syndrome screening program:

> I think the relationship between the individual and the company is different in Japan. For example, I came to Shimomura in 1982. It's common to have a long relationship with one's company in Japan and for the company to think about our health and our future is not regarded as unusual. So we don't experience a great deal of resistance ("teikōkan") to these kinds of interventions. We'd be more likely to think that the company is doing what's right by looking after our health as they should. ("Chantō jibun no kenkō made o mite iru' to omoimasu.") It doesn't feel like a kind of surveillance to us. In other words, we wouldn't worry whether the results would affect our promotion, or something like that.

The Ministry has not widely shared data concerning the effects

of the first five years of the screening program (2008–2012). Thus we cannot draw conclusions about its effectiveness. At the very least, the screening program seems to have had effects on public consciousness, as "metabo" has become part of everyday language in Japan. Borovoy was given access to two company's data concerning the effects of the program. The limited data we were given access to suggest that the counseling program produces modest short-term effects. For example, among those who underwent the counseling program (in addition to the screening), 47% lost weight. That 47% experienced an average decrease in blood sugar of 1.9% over the course of one year (2010–2011). Those who did not undergo counseling experienced an increase of 0.9%. Such changes are difficult to translate into long-term health outcomes. The Ministry's goals for all insurance holders (all citizens) for 2013–2017 is to achieve 70% compliance for the yearly exam, and 45% compliance for the required counseling with the hope of achieving long-term cost savings.

One employee in his sixties at Shimomura shared his experience of recovering from an acute kidney inflammation after being rushed to the hospital in an ambulance. He noted,

> After I was hospitalized for ten days, Ueda-san [the public health nurse] took charge. She told me to eat better and talked to me about how to better care of myself. She also gave my wife and secretary directions on how to care for me, and told them not to feed me all the things I asked for.

The corporate welfare system historically aspired to support families with a single wage (typically the male's) and thus subsidized large numbers of middle class Japanese women to remain at home, caring for their husbands and children full time. The role of the professional housewife or "sengyō shufu" was central during the decades of Japan's rapid economic growth in the 1960s and 1970s, and many middle-class Japanese women continue to leave the labor force during child-rearing years and return part-time. Beginning in the late nineteenth-century, women have been encouraged as housewives to serve the broader public interests of health and social welfare, and to curb excessive alcohol consumption, even when such consumption is sanctioned by social or workplace environments (Borovoy, 2005; Garon, 1997).

Slowly with the support of his wife, secretary, and Ms. Ueda the nurse, the employee recovered. Central to his recovery was the personal database made available by Shimomura. Employees at the Shimomura undergo health screenings twice a year. Shimomura provides a personal data monitoring service that compiles ten years of data, including blood sugar, cholesterol, weight, body mass index (BMI), blood pressure, and other metrics with appropriate ranges noted for each metric and "alarms" marked in red. The data can be accessed through the company's website. The purpose of the screenings and website is the cultivation of broader health consciousness. As this employee noted:

> If I had to go to the doctor each time to check my basic metrics, I'd feel too busy. But I've heightened my own health consciousness by collecting my own data, including checking my blood pressure every day and entering it into the database. I also play 9 holes of golf on the weekends, which is 10,000 steps and 15,000 if you don't use a cart, which I measure using the pedometer app on my i-phone.

In summary, the metabolic syndrome screening program seems to be part of a much larger picture at Shimomura. In some sense the program presents a conflict of interest on the part of Japanese enterprise. Some of the major public health risks in Japan, including overweight, diabetes, and suicide, are associated with the demands of company life: late meals, excessive consumption of alcohol, long commuting times, under-regulated overtime, and lack of recreation (Borovoy, 2005; Kitanaka, 2011). At the same time, the imposition of health screening on Japanese employee insurance plans calls upon companies to attempt to reverse some of these effects in an environment that exerts a powerful influence on its constituents.

5. Preventative care and mass screening

Since the early 20th century, the Japanese health care system has focused on the expansion of services, limiting costs through a heavy-handed regime of preventative care, health maintenance, and an aggressive universal screening. Screening, regular checkups, and the management of key health risks such as blood pressure have produced "health consciousness" in Japanese citizens, and have likely been factors in contributing to Japan's positive health outcomes (Campbell and Ikegami, 1998; Ikeda et al., 2011, p. 22; Murray, 2011, p. 6–7; Tamiya et al., 2011). The elderly in particular visit the doctor three times as frequently as Americans of commensurate age, often for brief visits (three minutes or less). Prescriptions include nonmedical treatments, such as diet and exercise (R. Campbell, 1996). Campbell and Ikegami write:

> "… [A]ll the screening and frequent doctor visits perhaps lead indirectly to a positive attitude about health and even the individual's ability to help maintain it. People seem to be more oriented to taking care of themselves in Japan, and that consciousness may help to keep health costs down (1998, p. 14).

In Japan the habit of record-keeping is established in early adulthood, for example with the mother-child handbook that pregnant women are given to record the complete data concerning their pregnancy and newborn child. Self-monitoring via blood pressure machines, blood sugar monitors, pedometers, and so forth appears to be more pervasive in Japan; many families own a blood pressure cuff, for example, and pedometers are ubiquitous. Japanese technology has been at the forefront of producing bio-sensors and personal monitoring.

Education is made effective in Japan by the standardization of goals and metrics. For example, the MHLW literature encourages people to chew their food 30 times before swallowing and to walk 10,000 steps a day, a metric that has now become internationally accepted. In some pamphlets, exercise is broken down into measurable units known as (METs), a unit that measures energy expended in a given activity per hour as a multiple of basal metabolic rate (amount of energy expended sitting still). The measure is universal, but one sees it more commonly in Japan. Historian Wolfram Manzenreiter sees the screening program as part of a modern Japanese as part of a tradition of "measuring" and anthropometry in Japan that began in the late nineteenth century (2012, p. 62–63).

In addition to education offered in workplace and health care contexts, community health centers disseminate information provided by the MHLW to the general public. The centers have historically played a large role in public health and provide family services such as vaccines and monthly cavity checks. They offer support groups (for depression, asthma, mothers of twins) and cooking and basic health classes for the community. The centers have been active in educating community members about lifestyle diseases. A poster at a Tokyo community health care center in 2010 promoted MHLW exhortations to chew one's food carefully, claiming, "chewing prevents tooth decay, prevents us from getting fat, improves pronunciation, and makes things taste good!"

Japanese citizens are being asked to shoulder responsibility for

public health dilemmas, but within a social structure that encourages individual record-keeping, health consciousness, and behavioral change.

6. School lunch environments in the U.S. and Japan

In comparing food environments in U.S. and Japanese schools, the most striking difference is that children attending school in America are frequently presented with opportunities to eat outside of planned mealtimes. Schools have fundraising events where unhealthy foods are sold, birthday and holiday parties throughout the school year typically involve unhealthy snacks, and food is sometimes used as a reward for academic performance. Many schools have contracts with beverage companies that generate money, while providing branding opportunities to a captive audience. In addition, open-campus policies can promote consumption of lunch at fast-food restaurants located near schools. School children also have access to "competitive foods" (termed because they compete with foods sold as part of the National School Lunch program) via vending machines, school stores, and sold a la carte during lunch. Research has found that such access to competitive foods in schools is associated with reductions in vegetable, fruit, and milk intake during school lunches (Cullen and Zakeri, 2004; Kubik et al., 2003). Concerns about the school food environment and the vulnerability of children to its influences, made it the focus of initial policy efforts in the U.S. to address obesity. Schools that participate in the National Lunch Program or other federal child nutrition programs are required to develop wellness policies that articulate planned initiatives to improve nutrition and physical activity in schools. Many states and cities have passed legislation to improve the school food environment, and improvements have been made in national nutrition standards for school meals and snacks (Boehmer et al., 2008). Some states have also implemented reporting of body mass index on report cards to inform parents about their child's risk for obesity (Nihiser et al., 2007).

However, the Japanese state maintains tighter control over nutritional recommendations through nationally-standardized curricula, nationally-standardized guidelines on optimal nutritional intake by age for Japanese citizens published by the Ministry of Education (Monbukagakushō, 2014), and the network of nutritionists and nurses in schools. Districts provide meals according to these prescriptions through sixth grade and the majority of school districts provide meals through middle school (ending in 9th grade). Lunch is not optional and there are no options outside of the set daily menu. (Children are not allowed to bring lunch or snacks to school, except on special travel or athletic field days in which they require a portable lunch.) A visit to a school lunch center in Western Tokyo that makes lunches for 19 schools in the area revealed a highly efficient system allowing thirty workers to make three separate lunches, each containing 3–4 dishes made from scratch. Before serving, a sample is created by weighing each portion. After preparations are complete, the nutritionist is dispatched from the center to the local schools to observe the children's consumption of the lunch onsite. When children leave something on their plates, they are usually questioned. Some teachers are strict about finishing each portion, as eating appropriate portions and learning to like all foods are considered part of a child's education.

The "gakkō kyūshoku" or Japanese school lunch program is an ambitious institution, founded at the height of Japan's nation-building efforts. Attempting to build a "rich nation and strong army" that could compete with expanding European empires, the government realized the school lunch program in 1872 in conjunction with making elementary school compulsory for all citizens. From the start, school lunches were conceptualized not only as meals but as pedagogical vehicles through which students could be educated about health, hygiene, manners, and national customs. In 1975 the Tokyo city government began to hire nutritionists as school employees, and in 1977 the MHLW began to standardize optimal nutritional intake for each nutrient and total calories.

Lunchtime in a Japanese elementary school contrasts sharply with the lunch experience in a typical American elementary school. While in the U.S. lunchtime is regarded as private time to socialize with friends and to eat foods that one chooses or brings from home, students in Japan eat in their classrooms, together with their teachers. Lunch is a pedagogical experience. In some schools announcements are played over the loudspeakers during mealtimes, telling students about the nutrients featured in the day's lunch and how they are beneficial to the body. Children also help serve the meals so that they may feel closer to the process of food preparation.

School lunches entail a broader regime of socialization that involves manners, hygiene, aesthetics, ecology, and identification with one's community. Lessons include the way to hold chopsticks, chewing with one's mouth closed, eating small bites of each dish and moving in a circular motion around the tray, rather than focusing on one dish. (Traditional Japanese meals have several small dishes rather than one large one.) One nutritionist told us that a child who breaks a plate must apologize for rushing or being rough. Another school district serves meals on local ceramic ware to allow schools to link food with culture, region, and neighborhood. Others serve four out of five rice-based meals per week (rather than bread), or have "made in Japan" day twice a month (Suginami Board of Education 2012). In response to the Basic Nutrition Law (Shokuiku kihon hō) passed in 2006, nutritionists now play a more active role in primary and secondary education.

Emphasis is also placed on the lifestyle choices that surround eating at home, including food preparation. One school nurse told us that to deal with an unhealthy or overweight child it is necessary to meet with the whole family for a "heart to heart chat" ("kokoroyoku hanasu"). Dealing with unhealthy children is understood to entail reforming life habits more broadly. Emphasis is on early bedtimes, portion control, Japanese diet, and bowel regularity. A regular schedule ("kisoku tadashii seikatsu") is thought to be the best, and this entails the cooperation of the entire family and is particularly difficult when both parents work and children stay out late at cram school (Borovoy, interview with Hoshino Middle School nurse, June 23, 2009). In the early years of schooling, bowel habits (regarded as a sign of regularity) are part of the curriculum. Children are also weighed every month (or every two months) and their weight is recorded and often publicly read out. (This practice began with concerns that children were not getting enough nutrition but is now used to detect overweight children.) Nutritionists and nurses regard Japanese food as more healthful, and because it is time-consuming to prepare, families must alter their daily routines to try to fit it in (Melby and Takeda, 2014).

Medical anthropologists have noted that wide array of behavioral issues, from depression to developmental delays to protest behavior, have been treated by physicians and psychiatrists by emphasizing the importance of social integration, manners, and daily life habits (Borovoy, 2008; Lock, 1986; Ohnuki-Tierney, 1984). The history of obesity treatment in Japan further reveals the way in which diet and health are understood as elements of cultural norms and social interaction. In the Meiji and Taishō eras, when obesity was a more uncommon problem, obese children, along with children with asthma, or other "weak" children were sometimes sent by their families to board in "kenkō gakuen" (health schools), where they lived communally with other children. Such schools still exist and are used in contemporary times for troubled children

with social adjustment issues of all kinds, including children who are overweight. Borovoy's field visit to one such school in Atami, two hours outside of Tokyo, revealed an emphasis on structured schedules, tidiness and organization of belongings, hygiene (signs in the bathing area remind students to wash their feet and buttocks before soaking in the communal bath; similarly after lunch, staff and students alike must brush their teeth), adequate sleep, and cultivating consideration for others. TV time is limited to 30 min per day, snacks are light, and children are prescribed time to play and also time for diary-writing. All food is home-made. While tracking children's weight and BMI, the school does not radically cut calories beyond what is recommended for normal children or prescribe specialized diets for overweight children. Interestingly, all children in the school, no matter what the cause for their attendance, are treated with the same regimen.

7. Conclusion

Japan is a rare example of a country that has maintained a low obesity prevalence. However, recently rising prevalence has led the government to start taking actions to address this problem. In this article we discuss Japan's methods of controlling weight gain that fall outside the heavy-handed legal measures that American public health scholars and activists have increasingly recommended. Although Japan does not impose strong regulatory measures to control the food industry, citizens are making decisions in an environment in which mainstream institutions invest heavily in socializing individuals to think carefully about health and welfare. In Japan, institutions such as schools and workplaces help promote health awareness and health behaviors through screening, promotion of individual record keeping, and patient education; these are also supported by a strong domestic sphere in which women remain housekeepers.

The success Japan has had to date in staving off population weight gain may be partially explained by powerful discourses of cultural homogeneity, standardization of recommended health and body metrics, and pervasive and reinforcing social norms. In contrast, in the United States, social values are heterogeneous and promotion of health and specific social values is not seen as the domain of institutions such as schools and businesses. This leads us to question whether relying on individual responsibility in making food choices and/or nudge-type interventions will be enough to produce necessary, systemic change in the United States.

Linking health and behavior to social values in Japan is easier because of greater homogeneity of national values. The Japanese have likely been able to shape their food environment in part because they agree on ideals of appropriate intake. For example, the idea that tasty food comes in small quantities is deeply rooted in Japan and is linked to nationalistic feelings of pride in the refined quality of Japanese cuisine. Furthermore, the metabolic syndrome screening program that we have discussed rests on nationally standardized biometric ideals and universal prescriptions for a healthy lifestyle (such as chew your food 30 times and walk 10,000 steps) that are socially reinforced.

Although the Japanese reliance on social norms avoids certain forms of paternalistic regulation, there are a number of limitations and concerns associated with it. One important one is that it can engender shame and stigma. Individuals who have a more difficult time controlling their weight may be stigmatized in Japan where doctors appear to be skeptical about the relevance of genetics relative to everyday behavioral decisions. Although the subject needs more study, in Borovoy's interviews, there was skepticism among physicians, public health nurses, and nutritionists, concerning genetic explanations of obesity. Some argued that genes could only affect weight on the margins, or that Japanese people did not have such genes. This is concerning because stigma against those who are obese and overweight has been found to have adverse consequences including social isolation, self-abjection, and unhealthy corporeal practices (Greenhalgh, 2012, p. 483; Puhl and Heur, 2010). Throsby points out that genetic explanations have the potential to relieve individuals from moral blame (though they may also pathologize obesity) (2007, p. 1564–1566). The Japanese attitude towards health and weight could also create incentives for companies to avoid hiring unhealthy workers.

It is important to note, too, that the burden placed in Japan on non-profit health insurance, community health care, local governments, mass screening, and other local measures to promote health awareness is in part a response to the failure of the government to check the power of harm-producing industries of tobacco, alcohol, and, increasingly, food. Thus, while the Japanese state's ability to appeal to shared values and lifestyle is in some ways compelling from the American vantage, this should be viewed in part as compensation for the government's limited ability to impose regulations, rather than as a preference among public health advocates for socio-cultural measures. Some have sharply questioned the government's inconsistencies in promoting certain forms of care, such as metabolic syndrome screening, while failing to intervene adequately with respect to other public health threats, such as tobacco, or more recently, what some have regarded as partial and belated attempts to cope with the health threats resulting from the nuclear meltdown at the Fukushima Daiichi nuclear power plant (Feldman, 2013; Japan Times, 2014).

In conclusion, Japan's approach is not necessarily “better,” and it is doubtful that it could be applied in the United States. However, a close consideration of the Japanese approach sheds light on the predicament facing United States policy-makers. The ideal of “nudging” consumers to make better choices without having to restrict behavior is appealing to a broad political spectrum. However, in an environment where many of the environmental defaults promote overconsumption of nutrient-poor foods, and where social influences do not reinforce a broad consensus concerning appropriate habits or historically-rooted values, the Japanese case suggests that more paternalistic government policies may need to accompany softer measures of persuasion if we are serious about curbing obesity in the U.S.

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