

P31- Indexes, indicators and numbers: processes of quantification in social policy

Measuring Food Risk and Danger at the US Department of Agriculture

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Abstract: The USDA has established a number of technical quantification and accounting systems to address emerging issues of food risk and danger. In response to a series of challenges, both political and technical, this agency has sought to instrumentalize the notions of food security, food safety, and food defense as manageable domains. These three terms are broad discursive categories for institutional action, but the meaning of each is increasingly produced and constrained through the production of metrics, rubrics, models, and other accounting systems, such as the yearly (International) Food Security Assessment, the Measuring Household Food Security initiative, and the Community Food Security Assessment Toolkit. Each of these tools gives specificity and meaning to the relevant domain of food risk, often at the expense of richer and more nuanced, but politically charged frames. That is, while such practices allow the institution to act in the world, they also close off a range of possibilities and conceptualization. These quantitative policy tools can, in this sense, be understood as politically meaningful and normatively located policies.

Keywords (5 to 8): Food risk, food security, food safety, food defense, quantification, accounting

Dominant policy institutions frequently internalize and domesticate radical challenges through the production of technical practices. Technical practices – of counting, categorizing, auditing, modeling, as well as the building of technical architectures for such activities – form the material basis for turning discursive frames into practical action. Such practices are neither facile nor merely strategic, but rather serve as a key mechanism by which these institutions come to know and thus act in the world. Using methods of institutional ethnography, we can look beyond policy statements to figure out what institutions do to make the world legible and thus available for institutional action. As these institutions are challenged, internally and externally, discursively and politically, they work to shift practices to account for these challenges – often producing an outcome that maintains existing work practices, data sources, and conceptual schemes in what appears to the challengers as a form of cooptation.

A study of the United States Department of Agriculture (USDA) exemplifies this broader point. The USDA is the key governmental institution for managing food production, nutritional health, and agricultural marketing in the US. In recent years, it has come under a series of challenges to its legitimacy by food and nutrition movements, food safety scares, and nutritional crises such as food deserts and increases in obesity. Such basic challenges, however, are often best internalized by translating abstract political

claims into causal claims with measureable outcomes. Thus, in each instance, the USDA has moved towards a quantification of the problem domain in its efforts to assess the world, construct and legitimate policy frames, and depoliticize policy action.

The USDA increasingly addresses such issues of food risk and danger under the rubrics of food security, food safety, and food defense. These three terms are broad discursive categories for institutional action, but the meaning of each is increasingly produced and constrained through the production of metrics, rubrics, models, and other accounting systems. In the following sections, I address each of these terms in turn, as they are currently being articulated at the USDA.

Defining and Managing Food Security

In his 2013 speech for the World Food Prize, US Secretary of State John Kerry articulated the current administration's dedication to food security and hunger alleviation (Kerry, 2013). Arguing that 870 million people (or 8% of the world's population) is chronically hungry, and that the growth of the population to 9 billion will require a 60% increase in food production over the next 20 years, he presents this prize to three biotechnologists for their efforts at improving agriculture. The prize committee, led by Norman Borlaug, follows in Borlaug's tradition of solving hunger through a technical, productionist approach to food. Kerry is articulating an image of food security as agricultural production – this has long been the dominant frame for this concept. Not surprisingly, this image of food security is very much in line with the CEO of agricultural giant Cargill's plea for a food secure future (<http://www.cargill.com/news/speeches-presentations/food-for-all/>).

Yet as much as food security is a deeply institutionalized notion, articulating the policies of the US State Department, the UN Food and Agriculture Organization (FAO), the World Bank, the World Health organization (WHO), and transnational corporations, it has radical roots in the 1974 world food summit, in which food policy entrepreneurs from the FAO and elsewhere attempted to enact a world food regime that started with the lived experiences of the poor, and shifted control over food resources to less developed countries (Staples, 2006;2003). Remnants of this history remain with the concept, and has recently formed the basis for challenges to food security discourse and practice. The challenges to this dominant model of food security have occurred along two routes. First are attempts to shift the term internally, through its capture by alternative experts focused on reconstructing the notion of security itself, and the means by which it might be reached. This has largely taken the form of challenges to productionist approaches to food provision, accompanied by technical challenges to how food security is measured. Away from caloric and toward issues of access and nutritional outcomes. Thus, food security has increasingly served as a domain of technical contestation over how access to safe, nutritious and appropriate foods can be provided for the world's

population. Competing discourses and experts, mobilizing a range of data sources, models, and theories, have challenged dominant practice (Maxwell, 1996; Alcock, 2009).

On the other hand, the competing frame of food sovereignty attempts to re-politicize food, shifting knowledge from technical experts to popular forms of expertise. Stepping outside the frame of how to get more, and more nutritious, food to more people, food sovereignty addresses the centrality of food to international and national regimes of power and ownership (Patel, 2009; Wittman et al., 2010; McMichael and Schneider, 2011). Sovereignty shifts focus from access to control.

That is, “food security” itself is an increasingly contested concept where those who deploy it must respond to multiple and competing articulations, as well as alternative frames such as older languages of hunger and new languages such as food sovereignty. I thus treat food security as a space of contestation in which institutions are challenged to respond to both internal and external challenges. Such responses are partly discursive, but equally located in standardized practices.

There are some excellent critical reviews of food security discourse (Maxwell, Alcock), but such authors have not provided a sustained focus specifically on food security as a set of practices. Doing so allows us to better grapple with the complexity of food security as an institutional practice, and to understand it as emergent and political.

Two major quantitative initiatives have been implemented at the USDA in an attempt to better define and manage food security – the international Food Security Assessment and the domestic US Food Security Scale. Both are projects of the USDA Economic Research Service – the primary analysis and research branch of the agency.

The USDA Food Security Assessment

The Food Security Assessment an ongoing effort to quantify international food security at the national level. It targets particularly food-insecure countries in an effort to determine where and how US government and international agencies should act, with a particular focus on USAID’s food aid programs. This is a long-term planning strategy.

This project was started in the 1980’s in response to the Ethiopian food crisis as a way to assess where food aid was going to be needed, and at this early stage was very much in a productionist mode. The driving question was that of the “nutrition gap”, as measured by available, per-capita calories in order to determine which countries were not producing enough food to physically support their populations. Such a conceptualization responds to an understanding of famines as caused by underproduction of food resources across a country, often as the result of drought or war, but also due to technological backwardness.

A conception of food security based on production was deeply challenged in the 1980s by a host of critics and scholars, most prominently Amartya Sen (1981). Sen’s challenge

suggested that famine is not a matter of food production, or even availability, but rather entitlement – that is, who is able to lay claim to that food, through ownership, purchase, or distribution.

Incorporating this critique into international assessment would ideally involve a detailed analysis of the political economy of a country, and an on-the-ground sensibility for what struggles families experience in their attempts to secure daily food. But with 76 countries in the mix, and a study conducted from USDA offices in Washington, DC, such analysis is not even thinkable. Instead, this fundamental challenge was reframed at the turn of the millennium as the addition of a second pillar to the instrument: the “access pillar” of food security to balance the “availability pillar”. Food access is calculated using World Bank income distribution data, combined with reported food prices, to determine which deciles of the population do not earn enough money to purchase a sufficient number of calories to sustain themselves. Food access is thus recast within the caloric sensibility of the production models, and the neo-liberal market economy is normatively reinforced. So, in addition to Total calories/total population they figure purchasable calories/economic group/group population, leaving the experience of food insecurity to others.

Measuring Household Food Security initiative

Domestic efforts to account for food security take a much more fine-grained approach. Rather than using macro-economic and population data, the ERS established a representative survey of households, implemented through the US Census Bureau.

In response to the National Nutrition Monitoring and Related Research Act of 1990 (NNMRR), the USDA in concert with others in the US government undertook a concerted effort in the early to mid-2000s, to develop a far reaching measure of US food security. The US Food Security Scale, is a set of 18 questions that are asked yearly by the US census bureau, and this data is then developed into a set of reports (Carlson, Andrews, and Bickel, 1999; Bickel, Nord, and Price, 2000; Nord, 2010; Nord, Andrews, and Carlson, 2007). The questions aim to determine household level food security in American populations by exploring the number, consistency, and experience of food insecure periods – times in which there was either insufficient food available to adequately feed everyone, or in which there was deep seated concern that the food might run out before the next paycheck. “Three major aspects of food insecurity and hunger were embedded within the questions: whether the household experienced uncertainty, the perception of insufficiency in quality of diet, and reduced food intake or the feeling of hunger” (Wunderlich & Norwood 2006).

This approach explicitly reflected existing definitions of food security, particularly that developed by the American Institute of Nutrition: “Access by all people at all times to enough food for an active, healthy life. Food security includes at a minimum: (1) the ready availability of nutritionally adequate and safe foods, and (2) an assured ability to

acquire acceptable foods in socially acceptable ways (e.g., without resorting to emergency food supplies, scavenging, stealing, or other coping strategies)” (Wunderlich and Norwood, 2006). This definition, in turn, borrows directly from the UN Food and Agriculture Organization’s definition, which emphasizes availability, access, utilization, and stability of food (Food and Agriculture Organization of the United Nations, 2013).

Food *insecurity*, in these definitions, is always an abstract concept, as it refers to the experience of food insufficiency, rather than some condition of impairment, as such. This contrasts with the straight caloric definitions found in the international Food Security Assessment. As such, the ERS has had to carefully negotiate the relationship between this concept and other subjective terms, particularly hunger. In fact, as a risk discourse, food *insecurity* refers not just to a lack of food and thus the physical experience of hunger, but uncertainty about the availability of food – that is, risk of hunger rather than hunger itself. It exists in the realm of psychology and economics rather than physiology, and as such is imagined as a household-level concept, rather than individual.

The relationship between food security and hunger has not always been clear. In its earliest stages, the USDA approach to measuring food security produced three categories of respondents: Food secure, food insecure without hunger, food insecure with hunger. These categories make intuitive sense when conducting interviews. However, a 2006 report by a US National Research Council (NRC) panel suggested that the word “hunger” be dropped from food security reporting (Wunderlich and Norwood, 2006). Hunger, the panel suggested, is an individual level phenomenon, characterized by a physiological experience – it can be an outcome of but is not the same as household or community level food insecurity. Food security is not a measure of hunger, as such, but rather of vulnerability to hunger. Food insecurity is one possible cause of hunger, but is not hunger itself, which, after all, can be caused by mental and physical illness, or social, cultural, or religious restrictions, as well as by resource constraints. And insecurity can certainly step beyond hunger itself, invoking various forms of malnutrition or difficult economic or cultural tradeoffs. The NRC panel suggested developing a separate hunger index, as a way to more clearly delineate the two terms.

This very reasonable approach nevertheless enacts a politics of food. The relationship between food security and hunger has never been easy or straightforward, and a definitive separation between the two both highlights important distinctions but hides significant relations. We need not be surprised at the push-back that the USDA received upon implementing this change (Williamson, 2006), amid concerns that the agency is depoliticizing hunger itself. Indeed, it is possible to read the rise of “food security” as an attempt to contain the politics of hunger – to make it into a managerial category at a time (the early 1970s) that social movements around the world were focusing on the radical politics of poverty and hunger. Hunger has long been understood as not an

individual, physiological experience alone, but rather the physical manifestation of social and economic forces. Hunger was spilling past its discursive bounds in messy and complex ways that could not be addressed by policy institutions. Food security, while complex and contested, promised analytical clarity, invoking management, state security, and monetization.

It is perhaps telling that the USDA has not followed through on the parallel delineation of hunger suggested by the NRC panel report, and thus policy is shifted, through this slight modification, to food security as increasingly a risk category rather than a measure of harm. It is thus important to see food security as increasingly fitting into a system of risk management – often social and physiological risk management – rather than a more morally oriented system of social justice, articulated as the right to be free from hunger. As a risk discourse, food insecurity refers not just to a lack of food, but uncertainty about the availability of food – that is, risk of hunger rather than hunger itself.

Perhaps more significant than struggles over hunger is what is not visible in these measurement practices. The food security measures contained in the US Food Security Scale revolve around economic access to caloric and nutritious intake (undernourishment and malnourishment). This reflects the USDA's traditional focus on production and macro-nutrition. Within these discussions there is no focus on or attempt to measure the sources of this insufficiency other than its correlation with a range of socio-economic factors, including poverty and education. This stands in contrast with the politicized movement for food sovereignty. Food sovereignty takes as its starting point not food sufficiency, but rather control over food production and markets – that is, it sees secure food as that which is integrated into the political and social lives of citizens rather than simply ingested by consumers (Patel, 2009). This is a political movement for food justice. This conception was present in some of the very earliest discussions of food security, but that we can see getting weeded out increasingly through the call for a more measurable, a more scientific, and more useable food security concept (Shaw, 2007).

It would be wrong to interpret my argument as simply “politics by other means” – that is, technical practice as a strategy for political struggle. It certainly is that, at times, but more centrally, technical practice is a means of politics in which technical arguments themselves provide the justification for the choices and, in this way, shape the political possibilities. Food security has long been understood as a technical category, and ongoing efforts to clarify the concept, to measure it, to standardize it, for the sake of making it useful and accurate, drive many of the specific technical choices that sit behind what this term is coming to mean. This point provides some insight into how technical arguments are capturing at least one corner of food action and working against some of the more visible actions of contemporary food movements.

In this discussion, we can see the USDA attempting to develop quantitative measures of food security as a way to gain clarity on, and thus control over, the economics of nutritional insufficiency. Food security is a very particular way of conceptualizing this issue, but one that provides instrumental justification for action (Ezrahi, 1990), standardized accounting tools, economic frameworks, and most importantly, a way for the agency to address growing concerns over poverty, food deserts, and nutritional gaps in the population.

Maintaining a National Food Safety Regime: From Process and Product Surveillance to Risk Accounting

Food safety scares have long driven national food regulation. Indeed, the earliest American food regulations can be traced to concerns about adulteration and contamination as urban centers grew and increasingly relied on distant (and therefore, potentially untrustworthy) producers for food (Levenstein, 1988). It is not surprising, therefore, that an ongoing series of contamination stories in contemporary culture continues to push food regulatory agencies to rethink and rework their food safety systems.

The 1990's and 2000's saw a spate of high profile food contamination cases. Most prominent was the 1993 Jack-in-the-Box hamburger contamination case, in which E.coli contamination sickened 623 people and killed 4 children. This event led, for the first time, to the USDA's Food Safety and Inspection Service (FSIS) declaring a bacterial contaminant as a harmful adulterant, and thus establishing a zero tolerance rule and making it reportable to regulators (Andrews, 2013). In the following years a number of bacterial contamination cases, involving E. coli, listeria, and others, made the headlines as products as disparate as juice, spinach, lettuce, sprouts, peanuts, cheese, cookie dough, and, of course, beef, were found to be contaminated. These outbreaks, handled by the USDA, FDA, and US Centers for Disease Control, set the context for the FSIS work into the present.

The primary role of FSIS, as the central food safety agency of the USDA, is to oversee the agricultural food production network to ensure proper handling and production processes oriented toward the reduction of food borne illnesses, food contamination, and other production problems. FSIS oversees meat, dairy, and eggs, as well as restaurants, whereas the FDA oversees food safety for the rest of the food chain.

Although there had been studies for a couple decades calling for changes to the process of inspection, it was not until the 1993 jack-in-the-Box outbreak that a new system was developed (Hulebak and Schlosser, 2002). Hazard Analysis and Critical Control Points (HACCP) emphasized "setting public-health-oriented targets or standards" (microbial limits or performance standards) at every step of the food production system, moving away from an exclusive reliance on physical inspection of carcasses and procedures, and sparking both accountability and innovation.

Rather than a straight surveillance system, HACCP uses command and control, attempting to characterize all major risks, establish procedures for addressing those risks, and recordkeeping for mitigation auditing. This new system thus fits into the risk control and audit culture of contemporary regulation. It does not completely replace slaughter-line inspectors, but it recalibrates them as sometimes necessary, sometimes replaceable components within the risk management system.

The traditional food inspection system was, of course, highly imperfect. It focused primarily on visible, tactile, and olfactory evidence of animal disease and contamination, but was not able to prevent invisible biological or chemical contaminants. The new system takes a broader approach to food safety, introducing a flexible, risk-based approach that assesses, prioritizes, and quantifies all potential risks, and builds a control system specific to them.

A command and control system, however, also shifts existing regimes of trust, and thus forms of social relations and critique. Prior distrust of the regulatory system was built around fears of cooptation and closeness of businesses and inspectors – being in the factory all day, the inspectors risked building cozy relationships in which small discretions would pass. The fear is corruption. But in this system, there was always someone there, and the really blatant stuff would be caught before it enters the market – as long as it was visible. The new system places trust in assessments and accounting, turning much day-to-day oversight over to plants themselves, in the form of work practices, testing, and record keeping. With a focus on the invisible, subtle and hidden risks rather than blatant dangers take center stage. However, accounting, while theoretically proactive, only catches transgressions after the fact. This system relies, therefore, on institutional trust – in a belief that company and public interests can be made to align through systems of accountability rather than direct oversight. Thus, one fear is self-policing and conflicts of interest. And, seemingly contradictory, but related, the new system promises to deepen the accountant's perspective on food production, moving us further away from food as a human activity to automated and machinic production. The fear, here, is dehumanization.

We can see these two concerns joined in a recent controversy over US poultry processing, in which poultry evisceration lines are being sped up and inspections reduced (Kindy, 2013;2014; Biron, 2014). Increased line speeds and decreased federal inspections would be offset by increasing worker inspection responsibility and chlorine baths. Most importantly, FSIS inspectors had traditionally sorted carcasses as acceptable and unacceptable, but that task would be returned to production workers, and the inspectors would only be looking at carcasses that are likely to pass inspection – increasing inspector efficiency, and making their task more directly related to public health. Critics are dubious of such a system, seeing it as a clear give-away to the poultry industry in allowing them more flexibility, greater speed, and more control over production systems, while risking worker health and safety and reducing inspections.

FSIS, however, is increasingly outcomes oriented, using “science”-based, evidentiary standards for food safety assessments. “There would be no pre-approval of an establishment’s procedures. However, establishments would need to ensure that their procedures for preventing contamination are effective. To verify that an establishment’s procedures are effective, FSIS would consider: (1) The microbiological data that the establishment would be required to collect pre-chill and post-chill to demonstrate process control; (2) presence of visible fecal contamination; and (3) FSIS sampling results for Salmonella and Campylobacter” (US Department of Agriculture, 2012). FSIS would largely leave up to the processing plants the decision of how often and how to test – they simply need to convince FSIS with data that they have good “process controls”. This is a results rather than process oriented regulatory approach.

We see in this story a shift in the meat safety regime, from in-line inspection, as a technology of danger and institutional distrust, in which regulators pre-emptively intervene in the production line, to a technology of risk and institutional trust, in which accountability rather than pre-emption dominates. Accounting, here, provides a technology of trust to displace the face-to-face relations of the prior system (Porter, 1995; see also Rose, 1991).

Securitizing Food: the Emergence of Food Defense

After the attacks of 9/11 the possibility of purposeful attacks on the national food supply started to take hold in a variety of US federal agencies. The USFDA and USDA (particularly through FSIS) quickly became the lead agencies in this effort, supplemented by federal law enforcement agencies such as the FBI and the joint terrorism taskforce. Paralleling the emerging national language of homeland security and the long-standing policy focus on food safety, a militarized language of “food security” quickly took hold. The discursive resources afforded by food security overcame the inherent problem that food security was already a well-worn term in food policy circles, dating back to the 1970s, with a very different meanings. The term, food security, jibed with dominant security discourse, easily invoking the food and terrorism link and providing a discursive conduit into securitizing food (Buzan, Wæver, and Wilde, 1998). Food security in this sense refers to sabotage, diseases, and disasters. In distinction between food safety as a general matter, this term refers to food safety emergencies as an exceptional matter, thus positioning “security” as a state of exception (Agamben, 2005). As late as 2013, both meanings of food security were still sitting side-by-side within the USDA. But as the discourse of food security gave way to the needs of institutional practice, so too the confusion afforded by food security gave way, first to food biosecurity, and then increasingly to food defense.

“Food Defense”, according to FSIS, “is the protection of food products from intentional adulteration by biological, chemical, physical, or radiological agents. It addresses additional concerns including physical, personnel and operational security.”

(<http://www.fsis.usda.gov/wps/portal/food-defense-defense-and-emergency-response>). FDA articulates Food Defense, as efforts to “reduce the risk of tampering or other malicious, criminal, or terrorist actions on the food and cosmetic supply.” (<http://www.fda.gov/Food/FoodDefense/default.htm>). Food defense maintains some of the common-sensibility of food security, particularly the military tone and tie in with war and terror, while clarifying its focus.

But such goals are not yet policies. What was food defense to become? How could we hope to protect ourselves from a widely distributed, international food system? Three approaches have come to dominate: 1. broad surveillance (using primarily pre-existing surveillance and reporting mechanisms) to quickly identify deliberate contamination and foodborne outbreaks; 2. the characterization and monitoring of choke points and target points (particularly borders and industrial processing facilities) using scenario building and network analysis; and 3. the development of defense plans in food processing and delivery facilities, with a particular focus on schools. None of these is fundamentally an accounting practice – the emphasis here is scenario building and mitigation through advance planning. We see, then, movement towards technical practices, but a striking lack of standardization and accounting mechanism. This is partly due to the newness of food defense approaches. Where we see some attempts at accounting, it is towards very basic questions: does every establishment have a food defense plan? This is asked irrespective of the quality or components of the plan itself.

This case, then stands in sharp contrast to food security and food safety practices. Food defense is still a largely administrative, institutional category – a discourse in search of a practice – remaining loosely defined and largely commonsensical. It has not yet become a technical term. It represents an institutional response to the broad challenge of securitization, but not to any specific public or institutional challenges. Food defense, as a compelling term, has promise, but it is not until institutional norms, activities, and especially standardized accounting practices are developed that we can assess whether it is a language and concept that are here to stay.

Conclusion:

The USDA is engaged in ongoing efforts to give specificity and meaning to a variety of food risks and dangers, under the rubrics of food security, food safety, and food defense. In doing so, it is developing standardized and quantified practices, often at the expense of richer and more nuanced, but politically charged frames. That is, while such practices allow the institution to act in the world, they also close off a range of possibilities and conceptualization. These quantitative policy tools can, in this sense, be understood as politically meaningful and normatively located.

The development of such technical policy practices is a negotiated response to challenges to their ongoing policies. Each challenge, coming from outside or inside government, social movements and industry, or very often precipitating events, must be

internalized with the agency's practices. Dominant and alternative policy discourses must be turned into standards, routines, measures, and systems of accounting in order to be actionable.

Most significantly in these cases, however, is the way that each of these movements has driven over the past few decades from systems of danger to systems of risk, and from in-time verification to diffused accounting.

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