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## Hidden Hunger

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Published by Cornell University Press

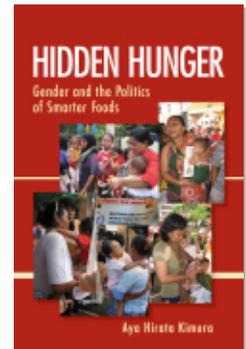
Kimura, Aya Hirata.

Hidden Hunger: Gender and the Politics of Smarter Foods.

1 ed. Cornell University Press, 2013.

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## CHARISMATIC NUTRIENTS

**The focus of nutrition interventions evolved from control of protein deficiency, followed by concern about protein-energy deficiency, to the prevention and treatment of micronutrient deficiencies.**

—Lindsay H. Allen, nutritional scientist, 2003

Micronutrients are not the first instance of the scientization of food security through nutritionism. Definitions of food problems have changed, and this is not necessarily because of changing circumstances in food production and consumption and scientific advancements. This brings us back to the concept of problematization, which shifts the emphasis from “the truth” to “the representation of truth.” How a social problem is defined and presented is historically contingent. The apparatus of problematization produces certain visibilities and invisibilities, creating “schemes of possible, observable, measurable, classifiable objects” (Foucault 1981, 55). By seeing it as historically specific problematization, we can understand any representation of food problems, priorities, and needs as a construct that exists within a particular political context.

Scientization of food insecurity through nutritionism can be viewed as successive eras of different *charismatic nutrients*. These nutrients come to command center stage in international food and nutritional politics when their suboptimal intake defines the nature of the food problem in developing countries. Before micronutrients, there were other charismatic nutrients, and in this chapter, I discuss protein in the 1950s and 1960s and vitamin A in the 1980s.<sup>1</sup> I use the word “charismatic” nutrients after Max Weber’s classic theory of charismatic authority, that is, a leader who exudes authority beyond normal expectations. Weber’s use of the term is helpful, as he astutely noticed that charisma was a social status rather than a personal quality, hence irreducible to a divine endowment (Weber 1978, 241). Following Weber, I argue that the charisma of nutrients cannot be fully captured by their “scientific” values, but rather, depends on sociopolitical networks built around them. In other words, vitamin A’s charismatic status in the 1980s, for instance, cannot be fully explained by its physiological potency, but only by disentangling the social relations that formed around it at a particular historical juncture. Another important insight from Weber is that charisma is not a stable form of authority but, rather, “quicksilver, unstable” (Smith 2007; see

also, Weber 1978, 242, 1141). Different phases of international food politics have problematized different charismatic nutrients, which became the focal points for international and domestic food interventions. Changes in the focus of food policies cannot be considered simply as a result of “progress” in science. Rather, I argue that the ebb and flow of the locus of the “food problem” with different nutrients attests to the transient nature of the “charisma” of nutrients.<sup>2</sup>

My application of the concept of charisma to the global politics of food is also inspired by research on global environmental politics. In environmental movements, “charismatic megafauna,” such as pandas or elephants, play an important symbolic role. Without such an icon for an NGO’s logo or magazine cover, the narrative of the impending “global ecological crisis” and the call for conservation would be less powerful. Like these animals, *charismatic nutrients* help to focus global food policies by embodying the problem, capturing both the public and development experts with a compelling tangibility that stands for complex problems.

This chapter demonstrates how charismatic nutrients have been a product of complex social relations and highlights the crucial roles of sponsors and a sponsoring discipline (nutritional science), with accompanying “facts” and “fixes.” Four dimensions of charismatic nutrients are important. First, for any charismatic nutrient, there are organizations and experts who try to sell its potency, benefits, and morality to other actors and organizations. The charisma of particular nutrients increases in the hands of these capable sponsors in international organizations and scientific communities. Second, charismatic nutrients are accompanied by various nutritional fixes. That their power can be delivered to the poor in a relatively simple form to solve a complex problem enhances their lure. Third, the boundary making and institutional building of nutritional science, and more specifically international nutrition as a discipline, has had a major impact on charismatic nutrients. Set in the broader field of international development, charismatic nutrients make tangible the legitimacy of “nutritional science” as a relevant field of research and action for the global endeavor of improving the world’s food situation. By embodying the essence of food insecurity, charismatic nutrients have become the icon of Third World dystopia and nutritional science as the essential science for solving the problem. Fourth, charismatic nutrients have gendered implications. The charisma of nutrients has been crucially linked with children as their beneficiaries. Such an attitude, in policy and scientific discourses, often casts women as reproductive beings in relation to their (actual and future) children. I will explore the implications of this mother-child dyad viewpoint.

On the surface, charismatic nutrients successfully symbolize the reality of the food problem. As with the use of charismatic fauna in global environmental

politics, however, the use of any charismatic nutrient incompletely captures the politics of the problem it intends to address. It is incomplete because it reduces a complex social, cultural, and historical situation to a problem with a single focus (“Save the whales!” “Give them vitamin A pills!”). While the image of “the problem” as a matter of missing nutrients can be institutionally and culturally appealing because of its simplicity, that very simplicity belies the much messier reality of the global food problem. Fallen outside the aura of charisma are less glamorous actors and multiple layers of problems that pervade the world food system.

## The Protein Fiasco

No milk, no meat, and no eggs. Shriveled vegetables and rice porridge. Historically, the lack of protein was understood to be the defining feature of the Third World food problem: “As many as one-third of the children are estimated to suffer from protein malnutrition, and it is feared that if this situation continues, the physical, economic, and social development of the future generation may become completely arrested,” a United Nations advisory committee noted in 1968 (quoted in Carpenter 1994, 162). Scholars thought that not only the insufficient amount of food but insufficient protein explained the ill-health of people in developing countries. Protein emerged as a charismatic nutrient by the 1960s, becoming the focal point of various international programs that were committed to addressing the “protein gap” (Carpenter 1994, 161; Ruxin 1996). For instance, in 1952, the newly established Joint FAO/WHO Expert Committee on Nutrition agreed that “protein malnutrition” was a “problem of fundamental importance throughout the world” (Joint FAO/WHO Expert Committee on Nutrition 1952, 4). In 1955, WHO’s Nutrition Section similarly concluded that “kwashiorkor is without doubt the most important nutritional public health problem of the present time” (quoted in Ruxin 1996, 72). The urgency with which protein deficiency was viewed as a global problem was clear from reports commissioned by the UN, such as *Action to Avert the Impending Protein Crisis* (UN Advisory Committee 1968) and *Strategy Statement on Action to Avert the Protein Crisis in the Developing Countries* (UN Panel of Experts 1971).

But how did protein come to be the marker of the Third World food problem? One important factor was that a disease called kwashiorkor came to embody protein deficiency. Kwashiorkor is a disease that is observed in developing countries plagued with famine and political unrest, and its symptoms include changes in skin, diarrhea, fatigue, hair loss, infection, failure to grow, protruded belly, and edema. With its striking visual signs, including large bellies, edema, and the depigmented skin of infants, kwashiorkor powerfully symbolized the misery

and poverty of the Third World, which further cemented experts' fascination with protein since there was an emerging consensus that the disease was caused by protein deficiency.

Yet the charisma of protein was not built overnight, and historical and cultural heritage helped its ascendance. Protein already had a special status in Western culture, perhaps accounting for the initial demarcation of it as the signifier of what was missing from the non-West's diet (Cannon 2002). Since the nineteenth century, protein had been thought of as the principal nutrient that builds organisms. The power of protein had been popularized since the mid-nineteenth century, thanks in particular to the German chemist Justus von Liebig. He argued that protein was the "master nutrition" of living organisms and the central building block of the body and propagated the idea of the importance of protein among the general public, even selling a concentrated protein from beef as Liebig's Extract (Semba 2001). Nutritionists after him were similarly fascinated by protein, one of their most heated scholarly preoccupations being determining the exact quantity of protein needed to nourish the human body (Cannon 2002).

In addition, protein enjoyed an iconic status in the field of international nutrition. Protein figured critically in the interpretation of the social problems of colonies in the days of empire building, and in the conceptualization of indigenous "inferior food." Many influential nutritional studies of the colonies were explicitly founded on the notion of protein as the primary human nutrient. For instance, a seminal study by two British scientists, John Gilks and John Boyd Orr (the latter became the first director-general of FAO in 1945), on tribal health and diets in Africa compared the diets and health of the Kikuyu and the Maasai and linked divergent health outcomes with their respective dietary patterns. They argued that the "inferior" physique and health of the Kikuyu people was attributable to the lack of protein in their vegetarian diet. Their article in the medical journal the *Lancet* concluded that it was protein that critically determined the divergent health outcomes (Gilks and Orr 1927). Subsequently, the notion that lack of protein characterized the inferior diet of the colonies began to take hold and several nutrition improvement programs that focused on protein were conducted (Worboys 1988; Brantley 1997).

Juxtaposed with colonial racist assumptions, protein even provided a scientized explanation for the West's perceived superiority to the Orient. A widely used medical textbook by J. S. McLester of the University of Alabama (1939), for example, argued that "the prowess and achievements of our early Anglo-Saxon ancestors have been attributed in part to the energy-giving effects of the meat which they consumed in liberal quantities" and "if man would enjoy sustained vigor and would experience his normal expectancy, as well as contribute to the improvement of his race, he must eat a liberal quantity of good protein" (77).<sup>3</sup>

These historical and cultural forces were at play when protein achieved its stardom in international food policies in the post–World War II period.

While these accumulating historical forces help explain the growing social appeal of protein in this period, it is also interesting to ponder why protein did not immediately come to occupy the central place in international development immediately after the war and only in the 1960s. We can consider several reasons. First, the Third World food problem did not emerge as the problematique for the international community until the situation in Europe saw a significant improvement. The “food problem” did not have the obvious spatial connotation that it does today. In fact, the devastation in Europe preoccupied international organizations, and the bulk of international aid was directed toward Europe (Ruxin 1996). At that time, the “world food problem” was considered a European problem.

In considering the relatively slow arrival of protein as representing the food problem, the gendered history of protein in international nutrition has to be considered as well. The history of kwashiorkor echoes the history of nutritional science, in which female academics confronted the hostility of male colleagues (Apple 1996). Kwashiorkor was first reported by Cicely Williams, a female British doctor, in the 1930s (Williams 1935). She was the first to use the term “kwashiorkor” and suggested the protein deficiency as the cause (Carpenter 1994). Although her work was pioneering, other experts ignored it. Her article on it in the *Archives of the Diseases of Childhood* received only one response, a critique by another doctor who charged Williams with misdiagnosing a form of pellagra.<sup>4</sup> It took decades before other scientists began to build directly on Williams’s work. Fifty years after its initial publication, the journal finally noted that her article was the most important article in its history and reprinted it (142).

Protein needed more powerful “sponsors” than a female doctor working at the periphery to give it a boost. Protein’s status greatly improved when key nutritional scientists active in international organizations, such as John Conrad Waterlow and Nevin Scrimshaw, advocated a protein-based understanding of food problems (Carpenter 1994; Ruxin 1996). Both Waterlow and Scrimshaw were pioneers in international nutrition, having worked in developing countries and with development agencies since the 1950s. Waterlow worked for the British Colonial Office in Jamaica, and taught human nutrition at the University of the West Indies and later at the London School of Hygiene and Tropical Medicine. Nevin Scrimshaw was the head of the Department of Nutrition and Food Science at Massachusetts Institute of Technology (MIT) and founder of the Institute of Nutrition of Central America and Panama, a part of the Pan American Health Organization. As is clear in comments that Scrimshaw made in the *New York Times*, that “not only do many people have too little food but

what they do have contains little or no proteins” (Nagle 1976), key nutritional scientists joined force to lobby for the importance of protein.

The sociopolitical network supporting protein’s charismatic image further expanded when several UN organizations, including WHO, FAO, and UNICEF, established the Protein Advisory Group in 1955. As its name amply demonstrates, the PAG was primarily concerned with the protein deficiency problem, and was established to advise on the issue and to spur international collaboration on engineering protein-rich food. Scrimshaw became its chairman, and PAG started publishing the *PAG Bulletin* in October 1957 to disseminate information on research and development of protein-rich foods around the world (UN ACC/SCN 1978).

By narrowing down the food problem to protein deficiency, the international development community was able to move swiftly from defining the problem to engineering the solution. Milk was one of the first products that international organizations identified as a solution to the protein deficiency problem. UNICEF already had experience with a dairy industry assistance programs in Europe, and the promotion of milk seemed like an ideal program for the Third World context as well. On the recommendation of the Joint FAO/WHO Expert Committee on Nutrition, emergency food aid started to include skim milk distribution. But experts wanted more than milk. They started to seek the “ideal” protein-rich food that could deliver an optimal amount of protein in the most efficient manner. The committee, for instance, identified six products as the ideal raw materials to be engineered into a super protein food.<sup>5</sup> Various organizations started to pursue the creation of a super protein food.

Nutritional fixes engineered to tackle the “protein gap” had an impressive product lineup. Historian of nutritional science Kenneth Carpenter profiled (1994) various projects by experts seeking to engineer protein-rich food in this period (summarized in table 2.1). For instance, the UN funded a Chilean government manufacturing plant to produce fish flour. UNICEF helped the Nigerian government purchase and distribute a commercial baby food called Arlac that was made of peanuts. UN agencies provided funding for the Indonesian government to develop and sell soy milk. The Institute for Nutrition in Central America and Panama developed a flour mixture from cottonseed and encouraged governments to market it.

Universities and governments from the developed world were also eager to participate in this international mission. MIT, which had one of the leading international nutrition programs in the United States, started a project to develop protein-rich supplements and protein concentrate from fish (Carpenter 1994). The US government experimented with fish flour, seaweed, and petroleum derivatives (Carpenter 1994; Belair 1965) as illustrated in the following excerpt from the *New York Times* (November 25, 1968):

**TABLE 2.1** Examples of protein-rich food projects

RAW MATERIAL	YEAR	AGENCY	PRODUCT	RESULT
fish	1958	Chilean government with UN funding	fish flour	The government decided to drop the program.
fish	1961	US Bureau of Commercial Fisheries	fish meal	The raw material became expensive, and the project was dropped.
peanuts	1963	UNICEF with Nigerian government	weaning food	The marketing did not go well, and UNICEF stopped support.
soy	1957	UN and Indonesian government	soy milk	UN aid was conditional on using and distributing the product for free to the poor, but it was only sold to the well-off. The UN cancelled its support after ten years.
cottonseed	1961	Institute for Nutrition in Central America and Panama (INCAP)	flour mixture weaning food	It was only commercially sold, and the price was unaffordable for the poor.

Source: Carpenter 1994.

Members of the United Nations Economic and Social Council interrupted their proceedings the other day to munch approvingly on chocolate chip cookies provided by the American delegate, Arthur Goldschmidt. The cookies were made from fish flour. Eighty-four Michigan farmers and their wives at a dairymen's meeting last year toasted the cow with big glasses of what they thought was good rich milk. Only two suspected they were really drinking an imitation made from palm oil, corn syrup and seaweed extract. In Bihar, last year's near-famine state in eastern India, peasants are eating chapattis, the traditional unleavened bread, baked in the traditional way on an ungreased griddle. The chapattis taste the same, but they have been prepared from American Food for Freedom flour which has been fortified with amino acids, derived from waste carbohydrates or petroleum, to provide the protein that is lacking in the average Indian diet. (Brown 1968)

Their willingness to try anything to engineer the magical protein-rich food is almost humorous, yet these nutritional fixes commanded serious commitment from diverse international organizations and governments. The possibility of creating super protein products fascinated bureaucrats and scientists in the field of international development with their modernist promise of providing an uncomplicated solution. Such promise further enhanced the charisma of protein as the key signifier of global food insecurity.

## Outcomes of the Protein Fiasco

According to Carpenter (1994), these high-protein nutritional fixes ultimately failed to improve the nutritional status of the Third World poor, however. The fish meal project in the United States failed, for instance, because the stock of the fish species being used as raw material collapsed. The projects of the Institute for Nutrition in Central America and Panama did not reach the target population. Indonesian soy milk was never distributed to the poor as had been promised by the government. By the early 1970s, international organizations such as UNICEF had started to realize the widespread failure of protein solutions (Ruxin 1996).

Further dampening enthusiasm for the protein fixes was the realization by nutritional scientists that protein deficiency rarely occurred independently of caloric deficiency (Levinson and McLachlan 1999). The definition of kwashiorkor as a protein-deficiency disease became suspect, although its etiology as a protein-deficiency disease was the original reason for scientists' heightened interest in protein. A growing number of studies found that kwashiorkor could be treated without high-protein food.<sup>6</sup>

Now the protein-gap model was in doubt. Some experts increasingly believed that the focus on protein had led to the gross neglect of the problems of inadequate calories and insufficient quantity of food. Worrying that nutritional science's misplaced priorities caused a neglect of the more prevalent condition of marasmus, which is a form of protein-energy malnutrition, some scientists, including Donald McLaren at the American University of Beirut (1966), began to criticize the protein-gap model. Calling contemporary scientists' enthusiasm "the great protein fiasco," McLaren lamented that "millions of dollars and years of effort that have gone into developing these [high protein] foods would have been better spent on efforts to preserve the practice of breast feeding...being abandoned everywhere" (McLaren 1966, quoted in Carpenter 1994, 184). Even J. C. Waterlow, who had been a staunch supporter of the protein-gap model, had to admit that the idea of the protein gap, although it had fuelled a tremendous amount of international effort to seek protein-rich food, was no longer valid (Waterlow and Payne 1975; Carpenter 1994, 228).<sup>7</sup>

This kind of reassessment suddenly made the scientific standard for the human protein "need" uncertain and problematic. While experts had agreed that the protein requirement for a one year old child of breast milk was 2.0 g/kg of body weight per day, they had to resume the debate, eventually reducing it to 1.1 to 1.2 g/kg per day (Carpenter 1994, 184). This revision of the previously accepted scientific standard raised profound questions regarding the claims for the role of protein deficiency. The need for protein-rich food was now in great doubt, as it seemed that the availability of protein in the diet of most countries' populations was sufficient to meet requirements (Cannon 2002).

Charismatic nutrients were difficult to let go of, however. Experts did not immediately relinquish their old framework. They were in a difficult situation. They did not want to reject the importance of protein altogether, as they had invested so much in it, but at the same time they had to acknowledge that something else was going on.<sup>8</sup> Yet Ruxin (1996) noted that the UN was still focused on protein in their actual programs for a while, and it was only in 1971 that the Joint FAO/WHO Expert Committee on Nutrition finally admitted that there had been “a tendency to overemphasize the importance of either protein or calorie deficiency alone, whereas in fact the two almost always occur together” (quoted in Ruxin 1996, 252).

The “protein fiasco” is instructive not only because it points to the degree to which a charismatic nutrient received financial and other resources to fill a supposed deficiency. While one might assume that global food insecurity came to be defined as protein deficiency in the 1950s simply as a result of scientific advances, the charisma of protein also involved social, cultural, and political factors. Employing historically powerful imageries of protein in human nutrition and colonial misery, it built an impressive network of nutrition experts and international organizations. The striking visual image of children with kwashiorkor was another powerful symbol of the need for protein. The imagery of starving children added a moral persuasion to protein.

The story of protein also points to the gendered implication of charismatic nutrients. The icon of starving children in developing countries was inevitably accompanied by the scrutiny of mothering practices. Concern for the welfare of children in the developing world often resulted in blaming mothers as ignorant, but it rarely translated into commitment to mothers’ welfare and improvement in their overall living conditions. While the attention to children’s protein status brought mothers into the expert discussion, experts tended to see the primary importance of mothers as a pathway to their children’s bodies. I will come back to this point later in the chapter.<sup>9</sup>

## **Vitamin A: The Magic Bullet**

Protein was not the only particular nutrient that became a focal point in the discourses surrounding the Third World food problem. In fact, the general interest in micronutrients in the 1990s was presaged by a strong interest in vitamin A deficiency in the 1980s. Before the term “micronutrient” became widely accepted as a label for a host of nutrients, vitamin A had single-handedly become a development buzzword. “There are very few wonder drugs in the world, but vitamin A may be one of them,” the *Washington Post* noted on November 7, 1994 (Brown 1994). International organizations promoted vitamin A deficiency as the most

important disease to be tackled. For instance, UNICEF and WHO started to recommend free distribution of vitamin A supplements in developing countries. In 1989, the US Congress decided to earmark \$8 million for vitamin A supplements (Edmunds 1989). A number of governments of developing countries started to provide vitamin A capsules to children. Indonesia, for instance, accelerated its vitamin A supplement program (Shaw and Green 1996). In 1992, the UN's Administrative Committee on Coordination, Sub-Committee on Nutrition (ACC/SCN) recommended vitamin A capsules as a possible tool to reduce child mortality (Underwood 1998).

How did this new charismatic nutrient come to the fore? One catalytic event often credited with ushering in the vitamin A epoch was the publication in the *Lancet* of research done on vitamin A's impact on child mortality by Alfred Sommer at Johns Hopkins University. Sommer conducted a survey of children in Aceh, Indonesia, in conjunction with a nongovernmental organization (NGO), Helen Keller International, and the Ministry of Health of the Government of Indonesia. This research—later known as the “Aceh study”—demonstrated that giving preschoolers vitamin A supplements at six month intervals reduced their mortality by 34 percent (Sommer et al. 1986). That vitamin A deficiency caused eye disease had long been known, but this study demonstrated its effect on mortality. The study had a large sample of 29,939 children from 450 villages and was randomized, which added to its scientific credibility. The Aceh study became widely influential.

On the surface, the charisma of vitamin A might be ascribed to the novelty of Sommer's research. Yet scholars have found that the Aceh study was not the first to point out the link between vitamin A and mortality. In the 1920s, Edward Mellanby and Harry Green at the University of Sheffield in England had found that vitamin A deficiency led to increased infections in animals. They theorized that vitamin A plays a significant role in enhancing the body's resistance to infection (Mellanby and Green 1929). This theory of vitamin A as an “anti-infective” vitamin led to many studies on vitamin A as a means to reduce morbidity and mortality. More than thirty studies were conducted to determine whether vitamin A could reduce the morbidity and mortality of measles, puerperal sepsis, and other infectious diseases. Historian of nutritional science Richard Semba notes that “the public seized upon the use of vitamin A as anti-infective therapy [in the 1920s], but the value of vitamin A in reducing morbidity and mortality from infections was not more widely recognized until 50 years later” (1999, 783). So why did vitamin A become a new charismatic nutrient when it did? To answer this, we need to understand the historical context and the sociopolitical network around vitamin A. “Nutritional isolationism” is important in understanding the historical context (see Levinson 1999). In the 1970s, the field of international nutrition saw a push

for what was called multisectoral nutrition planning. Articulated most clearly by Alan Berg of USAID in *The Nutrition Factor* (1973), MNP proponents pointed out that development projects had neglected nutrition while prioritizing other sectors such as agriculture and education. They argued that nutritional science should be taken more seriously in the international development sector. They also argued that the past failure of international nutritional efforts was due to the lack of cooperation from other sectors (Escobar 1995; Levinson 1999); they posited that the same mistakes would be made without a “multisectoral” approach. However, by the mid-1980s, MNP came to be seen as a failure. One discussion of MNP in the journal *Food Policy* declared the death of the approach with the provocative title *MNP: A Post-Mortem* (Field 1987). This led the nutritional sector to resolve that if other sectors did not want to collaborate with them, then they should carry out projects on their own. In this context of “nutritional isolationism,” the preferred framing of the problem was in strictly nutritional terms, and vitamin A supplied a space for nutritional experts to operate in.

Additionally, just as with protein, powerful sponsors played a critical role. One important reason for vitamin A's success in the 1980s involves vested interests within organizations, including experts who considered themselves members of the “vitamin A gang.” Originally called the International Vitamin A Board, the International Vitamin A Consultative Group (IVACG) provided an ideal space for networking, lobbying, and seeking international support. Founded in 1975 by USAID and international experts, IVACG was the major international arena for discussion of vitamin A-related issues.<sup>10</sup> Although its founding meeting in Jakarta and subsequent meetings were filled with scientific disagreements and conflicts (Underwood 2004), these disagreeing experts were nonetheless bound by their commitment to this nutrient. Indeed, the Jakarta meeting signaled the emergence of a community of experts—both scientific and policy oriented—focused on promoting the up-and-coming charismatic nutrient.

Vitamin A had a very effective spokesperson on its behalf: Alfred Sommer. Sommer, the principal researcher of the Aceh study, was central to the vitamin A gang. I spoke with Sommer in September 2004. He emphasized the scientific underpinning of vitamin A's ascendancy, but it was clear that his political and social skills were also crucial. Dressed in a dark business suit and with a practiced pitch about vitamin A's effectiveness, Sommer seemed more like a high-ranking diplomat than a researcher. Indeed, his skill in building a scientific network in support of vitamin A in academia and with politicians, international organizations, and media was crucial. He recalled his various efforts to build a vitamin A network and emphasized his expertise in dealing with controversies. In his view, being controversial was not necessarily a bad thing, as it offered opportunities to expand the vitamin A network. The Aceh study was a controversial piece of

research, and it caused much debate within academia. Many scientists thought that the result was random or that there had been a flaw in the study's design. Those who supported the Aceh study led by Sommer convened several meetings including the National Academy of Sciences–sponsored Subcommittee on Vitamin A Deficiency Prevention and Control in 1986 (see National Academy of Sciences 1987). These meetings were effective stages for Sommer to recruit other scientists and policymakers in support of the charisma of vitamin A. Through these processes, the vitamin A pill as a magic bullet came to attain the status of scientific consensus.<sup>11</sup>

Another crucial element in the spread of vitamin A's charisma was the *political* appeal of Sommer's research, which emphasized the connection between vitamin A and *children's survival* rather than adult wellness. It is useful to note that until his study, vitamin A deficiency had been primarily considered an ophthalmological health issue, due to the deficiency's clinical manifestation in xerophthalmia or dry eye syndrome.<sup>12</sup> In contrast, vitamin A promoters in the 1980s linked it to "child survival." As Sommer told the *New York Times*, "When the main concern was night blindness, health ministers said, understandably, 'I feel terrible about that, but I can't put my resources into it when half our children are dying before the age of 5'...but now, ending the deficiency is starting to be viewed as a mainstream activity, not a peripheral one" (Eckholm 1985). Furthermore, because it explicitly benefitted children, who had a designated custodian in UNICEF with a mandate for the "survival, protection, and development of children" (United Nations 1992a, 140) vitamin A could add that powerful international institution to its stable of supporters. Indeed, UNICEF's head, James Grant, became especially known for his advocacy for vitamin A (Underwood 2004). He became famous for carrying vitamin A supplements in his pockets to use to tell stories about how these small pills could save children's lives. Sommer and Grant collaborated well together to cement political support for vitamin A, eventually securing US government funding for vitamin A pill distribution in developing nations under the category of "child survival."<sup>13</sup>

Charisma works magic, and vitamin A did not have a shortage of associations that suggested its magical power. Sommer and UNICEF's Grant emphasized the amazing potency of the small golden pill. Deploying uncharacteristically strong words for an established scientist, Sommer described vitamin A's impact as "absolutely unreal," and suggested that the improvement in child mortality was "in the order of 50 to 70 percent" (Rovner 1986). His zealous claims often irritated other experts. One researcher commented: "I wish he had not made such a high claim.... I don't think it's borne out in his study. A 10% claim would be more realistic. If his claims don't bear up in other studies, he could become the Linus Pauling of vitamin A" (Chris Kjolhede, quoted in Edmunds 1989, 14). Yet the

seeming magic was part of the powerful image of vitamin A that circulated among experts and policymakers.

Emerging at the right moment, when the nutritional science community was searching for an exclusively nutritional contribution in international development, and blessed with powerful institutional and individual sponsors, vitamin A became charismatic in the 1980s. Its charisma was further strengthened as it developed links to life-or-death matters, to the most vulnerable group of society, children, and to the imagery of “absolutely unreal” potency for saving their lives. Vitamin A was tasked with the grand mission of saving children in the Third World, and the experts were prepared to provide a quick, easy, and cheap nutritional fix. Through the development of impressive institutional and personal sponsors that authorized and reified the message that vitamin A was a “magic bullet,” the vitamin’s scientific value was effectively translated into political and social values.

## **Women: In the Shadow of Children**

As the historian of food Warren Belasco observes, the “starving children” of the developing world have been an icon of the world food problem (Belasco 2006). Any construction of a problem and its solution comes with an identification of “victims” of the problem and “beneficiaries” of the solution. The charismatic powers of both protein and vitamin A were critically linked to their victims/beneficiaries—children. This is most visible in the story of vitamin A, but protein was also often understood to be a children’s problem, as kwashiorkor usually affected young children. Pictures of babies with pot bellies potently symbolized the centrality of protein to the health of children and the food problem.

What is often neglected in studies of food insecurity is how such attention to children also brings with it an incessant scrutiny of mothers. Such hypervisibility of mothers dawned on me when I observed a small neighborhood festival in Jakarta. It was a festival to promote health in a slum area. In their khaki uniforms, the officials from the health department marched into the canopy set up in a field in the neighborhood. Several men and women from the neighborhood lined up on the corner of the street to politely greet the officials. The officials were then seated in the first several rows of chairs in front of the makeshift stage where children sang songs for them. Then health workers ushered mothers into a line so they could put their children in the big sack of a hanging scale to weigh them. The mothers were in front of everyone where it would be revealed whether their child had “sufficient” growth. Perhaps because I had learned how some mothers in the district were marked in charts by health workers as “mothers with malnourished

children,” the weighing seemed like a mothering contest, with mothers judged on their feeding skills. To avoid child malnutrition, health workers emphasized, mothers had to be “aware” (*sadar*) of nutritional science. Mothers were seen as the key to the nutrition problem.

A growing body of work in feminist studies explores the relationship between medicine, health policies, and women. These studies have shown that there is a real possibility of *decreased* empowerment for women when their visibility is heightened in scientific and medical discourses focusing on their reproductive role. The increasingly pervasive mantra of child protection and, more recently, fetal protection has prompted medical experts to consider women solely in relation to children. In medical and policy discourses, the assumption of the mother-child dyad is frequently presented as a scientific necessity, yet feminist scholars have found that it is frequently accompanied by growing surveillance on maternal conduct and intrusion into women’s bodies. The most striking cases involve the imposition of medical treatments (Ratcliff 2002) and criminal proceedings against pregnant women for causing fetal harm with alcohol (Gavaghan 2009) and drugs (Paltrow 1999). Treatments and punishments are imposed on women in the name of the child (Chase and Rogers 2001). Another example is the 2005 recommendation of the US Surgeon General that *all* women of child-bearing age abstain from alcohol as “potential mothers” (Gavaghan 2009).

Far from being a proportionate relation, the mother-child dyad frequently results in a mother’s subordinate position in relation to her child/fetus that I call an *asymmetrical mother-child dyad*. This situation can become part of the story of charismatic nutrients when the mother’s health is seen primarily as a means to her children’s health. For instance, during the protein era, the role of women became more salient when experts shifted their focus from protein deficiency in school-aged children to that in preschool children. This meant that breast-feeding started to figure centrally in scientific debates, and breast-feeding practices came under increasing scrutiny by experts. Yet ironically, it did not mean that experts were concerned about the well-being of women. To a large degree, it was the breast milk that mothers produced that fascinated experts. For instance, experts were worried that women’s growing employment outside the home might lead to their reluctance to breast-feed properly. An influential nutritionist who was active in promoting breast-feeding, D. B. Jelliffe, expressed his concern that “dedomestication of women” would decrease breast-feeding and increase formula feeding in developing nations (Ruxin 1996, 233). The celebration of women’s breast milk was not a celebration of women’s empowerment since women’s reproductive role was prioritized over other roles. Women’s complex decisions about choice and duration of breast-feeding was ignored.

Similarly, when experts worried about children's malnutrition it was rarely translated into advocacy for mothers. Often times, mothers' nutrition per se mattered little. As the Joint FAO/WHO Expert Committee on Nutrition flatly stated, "Malnutrition in mothers has been considered rather as a factor contributing to malnutrition in children *than as a particular problem in itself*" (quoted in Ruxin 1996, 90; my emphasis). This tendency to ignore women's health was perhaps exacerbated by findings that a mother's health status did not have a significant impact on the protein composition of the breast milk she produced (Belavady and Gopalan 1959; Ruxin 1996, 123).<sup>14</sup> As Beall (1997) notes about a more general trend in international health policy, policies are pursued "at the expense of women who are required to spend time, energy, and resources... often at expense to themselves" (79) and without much heed for nonmothers, such as elderly women.<sup>15</sup>

It is also important to note that the asymmetrical mother-child dyad highlights not only the mother's indispensable role for the child, but her inadequacy as a mother. The call to save children from malnutrition that accompanies charismatic nutrients often has resulted in implicit condemnation of women as ignorant, indifferent, and negligent in providing what is needed. Prominent nutritionist and breast-feeding advocate Donald McLaren passed judgment that "the main reason for the illness and deaths of children is not this scarcity. It is ignorance of infant care and infant feeding" (quoted in Ruxin 1996, 159). As the naturalized caretakers of the victim/beneficiary, mothers have been central to many experts' understandings of the essence of food insecurity.

The visibility accorded to women by the construction of the dyad clearly resonates with the history of food reform as discussed in the previous chapter, in which women have been caught in a commendation-condemnation bind. While food reformers have celebrated women's potential for improving food and nutrition, the applause often has been accompanied by the notion that women's inappropriate mothering, feeding, and nurturing were the root cause of the problem. And history also demonstrates that condemnation is especially reserved for women of lower socioeconomic status. Food reform movements in developed countries have had a tendency to single out for criticism mothers in immigrant, poor, and ethnic minority communities, rather than well-educated white mothers with economic means (see, e.g., Litt 2000). Women in developing countries also figure as "undesirable" mothers, although experts have had to simultaneously acknowledge their indispensable role in children's welfare.<sup>16</sup>

The profound irony of charismatic nutrients is that they tend to lead to casting the responsibility for malnutrition on mothers, but such realization does not inspire experts to collaborate with women to tackle the problem. Experts might have realized that when included in the conversation, women probably would undermine their "expert" recommendations: What if they were to say, "Please

give us decent work and housing before spending so much money on these cookies made from fish”? Indeed, the health-promoting festival mentioned earlier is symbolic of the relationship between mothers and experts. Officials were there to “give guidance” to mothers because, in their view, mothers might otherwise fail to breast-feed or cook nutritious meals, thus jeopardizing the future of the nation. They were not there to listen to mothers in order to collaborate on improving children’s health. Instead of seeing women as the agents of policy, experts tend to prescribe nutritional fixes. By offering protein-rich engineered food, vitamin A pills, and micronutrient-fortified food, experts have dodged the question of why the women they condemn were unable to eat well during pregnancy, breast-feed their babies, or cook nutritious meals. Women, overshadowed by the attractive fixes, have been condemned as the agents of malnutrition but not trusted to be the agents of improvement. Various magical fixes are delegated to solve food insecurity, not women.

## Selling Nutrition and Nutritional Fixes

We have seen how micronutrients in the 1990s were not the only instance of nutritionally driven interventions into the problem of food insecurity in developing countries. Indeed, discussions of protein requirements and vitamin A bring on a feeling of déjà vu that is hard to ignore. Despite apparent differences, the lack of protein or the lack of vitamin A share characteristics with a micronutrient-based diagnosis of the food problem. Privileging a particular substance as defining the problem (charismatic nutrients) and providing solutions that are highly simplified (nutritional fixes) has been a constant theme in the history of global food interventions.

Given the ephemeral nature of the reign of each charismatic nutrient and nutritional fix, it is hard not to ask why they keep emerging. What do charismatic nutrients do? Of course, they are supposed to fill the nutritional gaps and address inadequacy in Third World food. But what kind of social work do they do? To answer this question, one needs to understand that at the most fundamental level a charismatic nutrient’s critical function is to define the food problem as a problem for the discipline of nutritional science to handle. Although the change of diagnoses can be confusing, the discourse of charismatic nutrients, such as those of protein and vitamin A, implicitly asserts a *nutritional* framing of the world food situation. The institutional identity of the so-called Third World food problem is quite ambiguous, more so than those addressed by immunization (health) and illiteracy (education) campaigns, for example. In contrast, the Third World food problem is not automatically strictly a “nutritional problem” or for

that matter an “agricultural problem,” as food can be seen as belonging to overlapping jurisdictions, including agriculture, population, and nutrition. It is in this context that charismatic nutrients help nutritional experts to mark the food problem as one that merits their expertise.

Charismatic nutrients’ boundary-making function has been helpful for those in the field of international nutrition who have experienced their own insecurity as to their position in the scientific and development community. Importantly, the field’s marginalization is related to the gendered history of nutritional science. A field traditionally dominated by women, nutritional science as an academic discipline has struggled with lack of respect, legitimacy, and resources throughout its history (Apple 1997; Stage 1997; Levine 2008). Historian of nutritional science Rima Apple (1995) points out that nutritional science was long linked to the ideology of “scientific motherhood.” This ideology prescribed that women need scientific knowledge to be successful mothers. It fuelled women’s interest in nutritional science as well as society’s desire to create an academic field to provide women with good homemaking skills, including the ability to prepare nutritious food. Considered one of very few “appropriate” academic fields for women, nutritional science came to be recognized as a “women’s discipline.”<sup>17</sup> However, its designation as belonging in the women’s realm severely crippled it as a discipline. It suffered from lack of funding and was forced to concentrate on practical concerns and subjects readily available for study, rather than pursuing more prestigious “basic science” (Apple 1997). Many home economics departments operated as part of extension services and were expected to provide practical courses to girls so they could succeed in homemaking and child rearing. Marked as a “women’s field,” nutritional science “lacked the esteem accorded other departments that were composed of men and were considered more ‘academic’” (30). As feminist scholar Sarah Stage summarizes, “Home economics . . . could never define itself outside of gender stereotypes” (1997, 12).

The gendered nature of nutritional science has been no less stark in developing countries. Nutritional fieldworkers trained by colonial governments and international organizations also have been predominantly women (Ruxin 1996, 72; Calabro, Bright, and Bahl 2001). Although nutritional science in the West has gradually enhanced its cultural status by its link to chemistry and biology, nutritional science in developing countries rarely has been considered a prestigious scientific career (Ruxin 1996, esp. the excerpts from the interview with Scrimshaw at 67).

In addition, nutritional science has had trouble asserting itself in the exclusive circle of international development. Nutritional science was dwarfed by other disciplines in international organizations. For instance, at the end of the 1950s,

international organizations had a very small number of nutritional experts: eighteen for FAO, one for UNICEF, and three (plus some more consultants) for WHO (Ruxin 1996, 111). Even in the 1980s, a Ford Foundation official, Lincoln Chen (1986, 71), offered a rather bleak assessment of the nutritional field in relation to international development:

Nutrition does not command the excitement of research frontiers in the “new biology,” nor does it compete in global significance with international economic relations. In many academic centers, nutritional interests have declined, owing in part to funding cutbacks.... The nutrition community can no longer agree even on the magnitude of the global problem. Estimates of the world’s malnourished range from 350 to 1,200 million. Controversy surrounds the food intake necessary to satisfy minimal requirements...there is also debate over the use of physical growth as a measure of malnutrition. With the knowledge base fundamentally so unstable, the nutrition community appears to be rudderless and to have little to offer in furthering understanding or problem-solving.

This quotation captures the perceived lack of legitimacy of the discipline of nutritional science in the realm of international development. In such a milieu, nutritional experts were compelled to create a tangible link between nutrition and development, and so the *nutritional* diagnosis of the food situation in the global South was valuable for asserting the relevance of the discipline to international development. To borrow Chen’s words, charismatic nutrients helped the nutritional community to “compete in global significance.”

For a feminized discipline struggling to gain respect within academia and in the field of international development, charismatic nutrients were strongly beneficial to its claims for legitimacy. As scholars of science and technology studies have pointed out, identification of an artifact specific to an academic discipline greatly enhances its stature and stability (Star and Griesemer 1999; Fujimura 1992).<sup>18</sup> For nutritional science, “nutrients” became the artifacts that drew the boundaries of the discipline and asserted its unique contribution and authority within the bounded space. Therefore, although the successive emergence (and disappearance) of charismatic nutrients that we have seen in this chapter might at a glance seem to indicate a disciplinary fracture, it actually worked to reinforce the discipline’s claim of the nutritional character of the food problem. Different nutritional scientists might have been committed to different nutrients, methodologies, and solutions, but the nutritional community as a whole shared a stake in insisting on a nutritional representation of the Third World food problem.

Situated in the broader politics of academic disciplines and international development, the institutional and cultural appeal of nutritional fixes becomes clearer. To sell nutrition, nutritional fixes such as super protein cookies and vitamin A pills were critical. The palpability of the solution symbolized in these fixes was important when the nutritional community had to market food-and-nutrition related projects to governments and international organizations. Food policy experts had always competed with those advocating other development projects that might be more obviously rewarding to the recipient governments. For instance, FAO's nutritionist, Jean Ritchie, complained that "in the minds of the Public Health Departments and Governments in general the UNICEF's supplies of D.D.T, dried milk etc. are associated with WHO, who get credit for bearing gifts with them. Until we have something to offer in the way of laboratory equipment or other such supplies associated with TC [technical assistance] personnel, the competition will be tough" (quoted in Ruxin 1996, 101). It was this need to sell nutrition in tough competition with other sectors that nutritional fixes effectively assisted. Recall, for instance, the case of vitamin A that was promoted as a "dirt cheap" golden bullet (Brown 1994). Like Sommer, who always emphasized that vitamin A supplements were the "cheapest, most practical means of increasing childhood survival" (quoted in *Newsweek* in 1985, cited in Edmunds 2000, 20), the nutritional community needed a cheap, practical magic bullet to sell nutrition to developing countries and development organizations, and these attributes were at the core of the attractiveness of charismatic nutritional fixes.

Charismatic nutrients conjure up scientific facts, ethical judgments, and the promise of solutions. Their emotive power is undeniable: they tell stories about babies with swollen bellies who do not have eggs or milk, about golden pills that save children and cost only a few cents, and about developing countries' "lost generations"—lost due to the invisible nature of micronutrient deficiencies. Their validity is solidified through scientifically determined nutritional "needs" that concretize the notion of "gaps" in nutrients. Charisma, however, often has been fragile, particularly when the therapeutic efficacy of technical fixes—which were expected to offer magic cures—failed. Yet the next charismatic nutrient is always waiting, as having such icons is crucial for the legitimacy, prestige, and vitality of the nutritional community, which has been particularly handicapped in its competition with other disciplines in international development partly due to its historical feminization. But what is left in the dark when charismatic nutrients fills the limelight? While charismatic nutrients and their attendant fixes produce useful justifications for nutritional experts to claim, protect, and advance their sector and career, they also lead to a critical absence of attention to non-nutritional issues. By defining the problem as a "gap" in certain charismatic nutrients, other

important gaps—say, gaps in men and women’s social power, land ownership, income, education, and unionization—are ignored. They silence other possible ways of articulating problems by closing the frame of understanding tightly around an increasingly small space. Stealing the stage with their charisma, select nutrients become the only face of the Third World food problem.