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Behind the Protein Battle Lines in the 1970s: Nutritional Turmoil in the Postwar World†

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1. Introduction

In 2023, the Wellcome Collection in London mounted a historical exhibition entitled *Milk*, with its brochure claiming that "dairy production has a long and varied history, but regularly drinking fresh milk is a modern habit."[1] The British state has held up milk as an icon of "good health" in the exhibition and the wider world, emphasizing its nutritional qualities, particularly its protein (Cohen & Otomo, 2017: 19-40; DuPuis, 2002: 110; Valenze, 2011: 235-252). As one of the three macronutrients, protein has

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1) "Exhibition Brochure: Milk" (London, UK: The Wellcome Collection, 2023).

always been a topic of interest, despite the continually shifting focus in the history of modern nutrition (Levenstein, 2003: 47-48). Protein has been the most recognized nutrient, with meat considered a crucial source of the protein required for physiological growth and functioning. This article examines the international debate over nutrients—especially protein—throughout the postwar era, when the international order and human environment underwent significant transformations. This intellectual and scientific dialogue was closely related to the broader context of the food system and its shift from a state-driven project to one that relies on market solutions (Lee, 2022).

Some of the most important nutritional findings appeared in the late nineteenth and early twentieth centuries, including macronutrients and calories as units of measure for analyzing food as an energy source, and vitamins as nutritional elements in human body maintenance. When Justus von Liebig (1803-1873), a German chemist, promoted a new scientific way of analyzing our daily lives in terms of eating, nutrients became a core element of understanding and producing "authoritative knowledge about food."[2] He popularized the three main macronutrients—carbohydrates, fats, and proteins—that came to structure modern nutritional science.[3] Since then, protein has been at the center

2) Many of Liebig's concepts were derived from the work of other scientists. William Prout, who investigated "hydrates of carbon" in 1831, coined the term "carbohydrates," which appeared a little later because of the German preference for compound nouns. "Protein," meanwhile, originates from Jons Jacob Berzelius, a Swedish scientist who formed it from the Greek term *proteios*, meaning "primary importance," emphasizing its relevance to human growth. "Fats" was already a familiar word, but Prout included them as another major category, classifying meals as saccharinous (carbohydrate), oleaginous (fat), or albuminous (protein). Liebig eventually included these categories in his "giant intellectual synthesis" of recent achievements, resulting in a framework identifying the key components of food (Scott-Smith, 2020: 35-36; Vickery, 1950: 387-393).

3) Liebig had precedent: in 1838, Gerrit Mulder claimed to have found a protein radical with

of "obsessions" over macronutrients for its capacity to promote bodily growth (Scrinis, 2013: 110). Even when nutritional scientists shifted their emphasis to calories and vitamins—and belief in protein's crucial value faded accordingly—it resurfaced in the early twentieth century. Nutritional specialists once again praised protein-rich meat and dairy products for their ability to stimulate and accelerate growth in children and help build strong populations (Cannon, 2003). With protein taken as an indicator of development or modernization, the occurrence of malnutrition in a population—especially protein deficiency—could be seen as a failure of the state as a modern institution.[4)]

The obsession with protein as a major nutrient became even more pronounced in the global context. Nutrition experts working in Africa discovered that a disease called *kwashiorkor* was caused by a protein deficiency and could be treated with skim milk (Ruxin, 1996). During the 1950s and 60s, the United Nations (UN) proclaimed a global protein deficiency in developing countries and directed resources toward preventing the protein crisis through postwar development projects. Protein-energy malnutrition was regarded as an energy deficit caused

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the formula $C_{40}H_{62}N_{10}O_{12}$, which combined with sulfur and phosphorus to make albumin, fibrin, and so on. Liebig took this notion a step further, finding that the protein radical was "the only true nutrition," and was the necessary element for both body building and physical activity (Carpenter, 1994: 2-8, 54).

4) "Modernization" refers to a long-term global project to establish a proper social configuration for capitalism shaped by bureaucratic practices and technological advancements. The idea of modernization was based on a fundamental difference between traditional and modern societies. Not only did new ideas and technologies affect economic structures, but they also changed social and cultural values. Conversely, "development" refers to the process of enhancing societal capacity. Modernization is one form of development; Daniel Immerwahr explained that there can be development without modernization, but the relationship between the two terms has often been obscured (Immerwahr, 2015: Preface; Latham, 2011: Introduction).

by a lack of all macronutrients, but particularly protein. Protein-energy malnutrition, as the most common type of malnutrition, became the most pressing dietary concern. Government-initiated research projects in Europe and the United States focused on developing high-tech methods for synthesizing protein, including employing biotechnologies to produce single-cell proteins or high-protein powders extracted from fish-protein concentrate (Carpenter, 2003). This led to the creation of single-nutrient supplements derived from highly processed materials, which encouraged the use of meals or supplements to address the limits of low-quality diets rather than providing complete foods to compensate for these deficits. This required a significant amount of capital and work. By the late 1960s, UN agencies had identified a "protein gap," and remarked on the nutritional differences among nations. However, in the early 1970s, nutrition experts realized that *kwashiorkor* patients consumed diets low in many important nutrients, and that protein deficiency was an oversimplified explanation of the causes of *kwashiorkor* and ill health in poor populations (Johnson, 2008). The "world protein gap" and "protein deficiency paradigm" thereby became the "great protein fiasco" (McLaren, 1974), and the emphasis on protein deficiency decreased in international discussions of nutrition (Semba, 2016: 79-88). Whereas previous studies have seen the protein debate as part of a scientific or medical discussion, in this article, the ongoing protein debate represented the transformation of developmental frameworks from a state to a market orientation, interacting with changing ecological ideas about nature, land, population, and society.[5)]

5) Previous studies have identified nutrition as a part of US Cold War strategy (LeBlanc, 2019; Han, 2024). This article examines protein deficiency as a medicalization of hunger, locating it in the 1930s, before the Cold War began. This highlights the continuity of the development discourse, which can be explained by the fact that the state-led development discourse

2. Discovery of Malnutrition

As Indian demographer Sripati Chandrasekhar asserted in 1954, "the world's great areas of endemic hunger are exactly the colonial areas." Hunger and malnutrition were key elements used to redefine the so-called Third World, to reproduce its relations to colonial rule, and to expose the nature of Western domination (Chandrasekhar, 1954: 249). After World War II, the topics of food, nutrition, and agriculture became core parts of the postwar development project for a peaceful world, along with "the legacies of imperial hierarchy with a demand for the radical reconstitution of the international order" (Getachew, 2019: 2-5). The term "underdeveloped" also appeared across the social sciences and engineering when US President Harry Truman presented the "improvement and growth of underdeveloped area[s]"(Escobar, 2011: 3-4)[6] as the core of his diplomatic policy.[7]

The narrative of development was closely tied to the "discovery" of mass poverty in developing countries, which resulted in hunger and malnutrition. Periodic famines throughout the twentieth century rightly drew international attention, but chronic malnutrition was easily overlooked. Most malnutrition deaths resulted from long-term food deficits that went virtually unnoticed because the conditions in which they

began with the New Deal and welfare state discourse of the 1930s, was maintained until the late 1960s, and was then embraced and adopted by US Cold War strategy.

6) Harry S. Truman, Inaugural Address, (speech, Washington DC, January 20, 1949), in *Documents on American Foreign Relations* (Princeton, NJ: Princeton University Press, 1967).

7) When food policy became an essential component of the United States' ambition for a peaceful world, its dominance tacitly supported another form of imperialism. The primary aim of American foreign policy was to be dominating, thereby minimising any provocation or threat to White supremacy and colonialism at home and abroad. American officials laboured in the hopes of containing racial polarisation and forming the broadest multiracial anti-communist coalition feasible (Escobar, 2011: 3-4).

exist were considered "normal."[8] However, malnutrition saps people's strength, further diminishing their productivity. Nutritional deficiencies predispose them to disease and permanent disability. Poverty deprives them of food, and malnutrition ensures the perpetuation of this cycle, further entrenching them in poverty and leading to the medicalization of hunger (Ehrich & Ehrlich, 1970: 2-3; Ruxin, 1996: Introduction).

The discovery of malnutrition in the development discourse transformed hunger into a medical concern that could be cured by progress. The "discovery" of kwashiorkor on the Gold Coast in Africa can be seen as a watershed point in the medicalization of hunger.[9] Cicely Williams (1893-1992) authored the initial report in the *Lancet*, noting the "edema in the limbs and stomach, thickening of skin, and a reddish tinge to the hair" that were prevalent in children who ate a low-protein diet (Semba, 2016: 80; Stanton, 2011: 149-151; Williams, 1935: 1151-1152). Babies were especially susceptible when they had been displaced from breastfeeding by a younger sibling because they were fed a starchy pap made from maize flour instead of milk. Williams provided the first clinical observation and definition of malnutrition, calling it "a nutritional disease of childhood associated with a maize diet" (Williams, 1933). Two years later, she gave the condition a more distinctive name derived from a local language and a native understanding: kwashiorkor, the "disease of the deposed child" (Williams, 1935). After her article, kwashiorkor became medicalized, encapsulating a complex collection of reasons for nutritional deficiency

8) FAO, "Population, Food Supply and Agricultural Development," in *The Population Debate: Dimensions and Perspectives, Papers of the World Population Conference, Bucharest, 1974, Vols. I and II* (New York: United Nation, 1975), p. 486.

9) It is often said that "discoveries" in Africa were little more than European findings that Africans had long known about. All discoveries could be common experiences for peoples in Africa, Asia, and South America (Scott-Smith, 2020: 111).

as a visible manifestation of hunger and underdevelopment. Despite some criticism, the term "kwashiorkor" became widely accepted because Williams gathered sufficient information and effectively defended her ideas against a range of critics (Stanton, 2011: 149-151; Trowell, 1949: 417-418). Over the next decades, kwashiorkor gained medical legitimacy and eventually became a major agenda point in international affairs. This had a tremendous impact on how the illness was handled, particularly as it grew increasingly important in malnutrition alleviation (Scott-Smith, 2020: 109-111). Further, protein was at the center of ongoing nutritional issues in developing countries.

Williams's discovery of *kwashiorkor* was groundbreaking in a number of ways, including prioritizing biological over social factors, focusing on nutrients rather than rural poverty, and investigating anatomy rather than political and economic conditions (Scott-Smith, 2020: 103-104). After World War II, this led the international community to recognize nutrition as a direct problem that needed to be addressed, and the World Health Organization (WHO) and the Food and Agricultural Organization (FAO) launched their missions as the UN's affiliate organizations. John Boyd Orr, a renowned British nutritionist, became the first secretary-general of the FAO with the mission of "the ending of hunger and the raising of the standard of living of the people in the underdeveloped countries" (Boyd Orr, 1966: 163). The FAO's Nutrition Division recruited a new generation of nutritional experts to help people in developing countries reach a higher technical and economic level. It was the primary object of the FAO "to raise levels of nutrition throughout the world, to ensure not only that all peoples are freed from the danger of starvation and famine

but that they obtain the kind of diet essential for health."[10] The WHO also launched a series of nutritional programs with similar agendas, focusing on health aspects of food and nutrition in developing countries (World Health Organization, 1969). Scientists studied malnutrition, commonly emphasizing protein deficiency as the "most serious and widespread nutritional disorder known to nutritional and medical science," and they investigated high technology to solve the global protein shortage. The nutrition expert became "the ultimate hunger problem-solver" (Ruxin, 1996: 86).

During the 1950s, "malnutrition [emerged] as the major unsolved health problem throughout the underdeveloped area of the world," when "bacterial infection, malaria and other tropical diseases," which had been widespread in previous decades and centuries, came under control.[11] Considerable technological efforts were made to address the global protein deficit in accordance with the developmental ideas of UN-associated agencies. The FAO concentrated on three major areas: milk conservation, household economics, and high-protein meals. The WHO collaborated with the FAO to develop technical guidance on milk pasteurization, and UNICEF conducted research on locally accessible protective diets for children.[12] The three organizations' nutritional partnership, at least during these years, began with the development of a soybean milk facility in

10) Joint FAO/WHO Expert Committee on Nutrition, "Report on the First Session," Geneva, 24-28 October 1949, p. 4.

11) World Federation for Mental Health and Josiah Macy, Jr., "An International Conference on the Psychological, Social and Cultural Barriers to Improved Nutrition," *Margaret Mead Papers and the South Pacific Ethnographic Archives*, Library of Congress, Box F74, Subject File, Conference on Malnutrition and Food Habit, 1960.

12) Kay, Herbert Davenport, *Milk Pasteurization: Planning, Plant Operation and Control* (Rome and Geneva, FAO and WHO, 1953); *Report of the Council of FAO, Seventeenth Session, 15-24 June 1953*, Rome FAO, 1953.

Indonesia and fish-flour production in numerous nations. Furthermore, the FAO provided much of its technical help to poor countries through its technical assistance program, which administered fellowships and consultancies.[13] Over the next few years, the work of these technical experts produced a cadre of professionals who had learned from wartime nutritional experiences, experiments on diets, and laboratory research, under the assumption that hunger could be solved by analyzing nutrients and measuring malnourishment (Ritchie, 1950: 143-144; Ruxin, 2000: 50).[14] Doctors and medical experts now recognized hunger as a nutritional disease, using ideas and language from nutritional science that the medical community had previously dismissed (Ruxin, 1996: 74).

The nutritional programs that emerged in the 1950s had three central features. First and foremost, they praised science, confirming that scientists could create a better and more reasonable diet. Second, they controlled nature by substituting natural processes with industrial production, thus avoiding the unpredictability and irrationality of agriculture. Third, they focused on expert planning, breaking down diets into exact nutritional formulas and increasing control over every aspect of their manufacture. These programs did more than simply reduce food to its constituent nutrients; they also included a commitment to industrial production and technological transfer to developing countries. This was very much in the spirit of the UN's first "development decade" based on postwar developmental ideas and high modernism, which eventually turned out to be a failure (Scott-Smith, 2020: 121-136; Normand & Zaidi, 2008: 295-298; Stokke, 2009: 131-156).

13) *Report of the Council of FAO, Seventeenth Session, 15-24 June 1953*, Rome FAO, 1953.
14) Joint/FAO/WHO Expert Committee on Nutrition, "Report on the First Session," Geneva, 24-28 October 1949, p. 15.

3. Protein Gap and Fiasco

Protein malnutrition attracted extensive public health attention, but clinical interpretations of the disease and its socioeconomic significance persisted. Several conferences and workshops on protein deficiency were held to address the problem. In October 1949, representatives of two organizations met to devise their plans for nutritional work on the Joint FAO/WHO Expert Committee on Nutrition (McLaren, 1966: 485-488; O'Brien, 2000: 164-174). The first meeting in Geneva during October 1949 was the first interorganizational endeavor to consider and address malnutrition and hunger in the developing world. The committee's first report addressed the major nutritional issues of the day, including goiter, pellagra, and kwashiorkor, along with nutritional status assessment.[15] The Joint FAO/WHO Expert Committee on Nutrition held its third session in the Gambia in 1952, focusing on malnutrition in mothers, babies, and children, coining the term "protein malnutrition."[16] During the following years, the WHO and FAO convened twice more to address protein requirements: the conferences were titled Protein Malnutrition (Jamaica, 1953) and Protein Requirements and Their Fulfilment in Practice (Princeton, NJ, 1955). In the first conference in Jamaica, the clinical and pathological features of kwashiorkor and marasmus were the main topics (Waterlow ed., 1955). The Princeton conference on protein deficiency hosted 29 nutritionists, physicians, and scientists.[17] The conferences' key conclusions were that

15) "Joint FAO/WHO Expert Committee on Nutrition: Report on the First Session," Geneva, 24-28 October 1949.

16) "Joint FAO/WHO Expert Committee on Nutrition: Third Report," Fajara, Gambia, 28 November to 3 December 1952.

17) World Federation for Mental Health and the Josiah Macy, Jr., MMP, LOC, Box F74, Subject File, Conference on Malnutrition and Food Habit, 1960.

humans' protein needs were determined by both the quality and quantity of protein (Semba, 2016). The UN Protein Advisory Group (PAG) was established in response to the Princeton conference's suggestions for the development of an independent organization to focus on nutritional matters of protein. Its role was to provide advice to the WHO, FAO, and UNICEF regarding protein-rich food programs (Semba, 2016: 81).

The Food and Nutrition Board established the Committee on Protein Malnutrition, a subsection of the PAG, to oversee a global research program on high-protein meals, particularly for growing children.[18] The UN initiated international conferences and organizations that covered a variety of topics, including biochemical and technical perspectives on increasing the animal-protein supply in developing countries and on improving the quality of animal-protein alternatives, such as seed protein concentrates, lysine and methionine production, soybean flours, sunflower seeds, and maize (Semba, 2016: 81). Significant financial investments were made to bridge the protein gap (LeBlanc, 2019: 142-159; Webb, 2017).

Throughout the 1960s, international organizations treated the "protein gap" or "crisis" as a worldwide catastrophe in the context of a series of hunger and starvation events in the developing world. In addition, the UN announced its "International Action to Avert the Impending Protein Crisis," which outlined seven related policy goals (United Nations, 1968). Specific recommendations included adding necessary amino acids to ordinary plant proteins to ensure that all essential amino acids were available in food, as well as focusing on essential amino acid content and

18) National Research Council, "Progress in Meeting Protein Needs of Infants and Preschool Children," Publication 843 (Washington, D.C: National Academy of Science-National Research Council, 1961).

diet supplements. The report proposed that the PAG for WHO, FAO, and UNICEF be expanded to distribute new information and provide advice on project evaluation and feasibility studies. In 1970, the FAO released its own advisory titled "Lives in Peril: Protein and the Child" (FAO, 1970). The report emphasized the efficacy of protein-diet mixes to treat protein deficiency in children. According to surveys, severe protein-calorie malnutrition affected between 2 and 10 percent of children aged one to nine years in underdeveloped nations, whereas in certain places, up to 50 percent of children aged one to five years suffered from less severe protein-calorie malnutrition (Semba, 2016). In 1971, the UN produced the "Strategy Statement on Action to Avert the Protein Crisis in Developing Countries," a study by a group of protein experts that identified protein deficiency as "a major cause of baby and young child death, limited physical growth, low labor production, premature aging, and shorter life duration in the developing countries" (United Nations, 1971). During its early years, the PAG focused on generating protein-rich foods utilizing soya, fish protein concentrate, peanut, sesame, sunflower and leaf meals, algal protein, and synthetic amino acids, but these products experienced major failures due to difficulties of cost, manufacturing, and acceptance (Ruxin, 2000: 151-166; Semba, 2016: 81-83). International organisations' efforts to address the protein deficit reflected developmental principles based on improved agricultural output, scientific and technological advances, and professional nutritional planning.

However, there was an abrupt change in the early 1970s. In July 1974, Donald S. McLaren, a nutritionist who dominated the nutritional debate throughout the latter half of the twentieth century, wrote a critique of the actions aimed at reducing protein deficiencies, "The Great Protein

Fiasco," published in The Lancet under the subheading "Dogma Disputed" (McLaren, 1974: 93-94), consisting mainly of criticisms of PAG activities. McLaren stated that there was no worldwide "protein gap" and that the protein shortage was not the primary cause of child malnutrition in developing countries. McLaren deplored how much money was being wasted on research and development projects, scientific meetings, publications, and food-industry and public involvement in protein malnutrition research (McLaren, 1974: 93-94; Webb, 2017). In the meantime, the officials of the FAO, WHO, and UNICEF were disappointed that the PAG had not achieved significant practical results (Ruxin, 2000: 151-166).

McLaren's criticism was valid. Nutritional problems mainly concerned the total availability of dietary energy, rather than the protein content of the diet (FAO, 1973; FAO, 1975: 486). If energy intake falls below requirements, protein utilization suffers because protein must be used as an energy source. According to the FAO's food balance sheets, the current global dietary energy supply is predicted to be 5 percent higher than it was in 1970. In 1970, industrialized regions exceeded requirements by more than 20 percent, whereas developing countries, despite significant gains in the 1960s, had an aggregate deficiency of approximately 3 percent of dietary energy requirements. In the same year, Latin America had a dietary energy surplus of around 5 percent, whereas Africa, the Far East, and the Near East had deficits ranging from 6 to 8 percent. Average protein intake in developing regions was only about 60 percent of that in developed regions, and most of this lower intake was diverted from its intended use to fulfill energy deficiencies by the malnourished human body (Economic Research Service, 1961; FAO, 2001).

Food balance sheets came into focus in 1974, implying that with widespread poor harvests and grain shortages and high prices in global markets, per capita food supplies and output dropped in developing countries in 1972 (Lee, 2022: 1369-1370). The differences among countries were higher than those among regional averages. Furthermore, 62 developing nations still experienced total dietary energy deficits in 1970. In 25 of these nations, 12 of which were in Africa, the deficit exceeded 10 percent. Similarly, national averages obscured significant inequalities across socioeconomic classes within countries. Within impoverished families, small children, pregnant women, and nursing mothers bore the burden of inadequate food supplies because working adults preferred to take the lion's share for themselves to maintain a minimum level of activity. Furthermore, young children were frequently unable to digest enough of the largely bulky and starchy staple foods to ensure appropriate nutrition. Aside from the protein-energy malnutrition problem, there were additional specific dietary deficits that affected a substantial number of people. Although beriberi, pellagra, and scurvy were no longer major public health concerns, significant issues such as vitamin A deficiency, nutritional anemia, and endemic goiter persisted (FAO, 1975: 486). Therefore, the excessive concentration of scientific and economic investment in protein only was illogical.

4. Over the Long-Running Debate

Seeing the international grain market in utter confusion in the late 1970s, Thomas W. Wilson Jr., a former US government official working in international affairs, addressed the complexities of global food policy

amid growing disparities in food between and within countries. In his address, "World Food and Nutrition," he remarked that the "harvest is [but] one step in a continuum of actions" in food affairs, referring to the entire process from farming activities to food production and distribution to areas with specific needs.[19] Increasing food production to feed growing populations in developing countries had long been a priority since the beginning of civilization. However, when people experienced turbulent times in the 1970s, it became clear that food production based on advanced technology and scientific procedures was insufficient to raise overall nutritional levels in the developing countries.

The protein debate was linked to a shift in development discourse in international society, from which a new ecological challenge emerged: the discrepancy between population and food. The food concern in Wilson's statement was that that population growth in the developing world, along with increased demand for meat as favored protein source in the industrialised world, had resulted in exceptionally high consumption of grain, a major food source in developing countries. Although grain prices had risen steeply because of regional droughts and unusually active grain trading in the early 1970s, the production and consumption of additional grain to produce meat, eggs, and milk exacerbated grain scarcity. Population growth in developing countries and income growth in affluent countries had a simultaneous impact on the worldwide grain demand (Johnson, 1999: 5915-5920). Frances Moore Lappe, the 26-year-old cofounder of the Institute for Food and Development Policy in California, questioned the American diet's reliance on protein, which,

19) Thomas W. Wilson Jr., "World Food and Nutrition: Some Policy Puzzles for the U.S." The Aspen Institute for Humanistic Studies, 1978, Box 41, *Presidential Commission on World Hunger* (hereafter PCWH), Jimmy Carter Presidential Library (hereafter JCPL).

because cattle were the most inefficient converters of grain to meat, was viewed as undermining the people's way of life (Lappe, 1971: Preface).[20] Furthermore, the commercial invasion of South and Central American rainforests now linked cattle ranching to the one-and-one-half-acre-per-second destruction of the world's remaining rainforests. People in the 1970s fed over half of the world's grain to animals, but only a fraction was transformed into meat, while millions of people went hungry. This trend has only become more intense. Lappe also noted that food-production growth rates slowed for basic grains and tubers consumed by the poor and hungry more than they did for fruits, vegetables, oil seeds, and meat grains consumed mostly by the planet's already well-fed few (Lappe, 1971). The rise in grain prices, which came from a variety of sources, created a serious contradiction. This contradiction was behind the protein debate, which called for cooperative action by the entire world community.

The FAO held the World Food Conference in Rome in November 1974. In the background was a continuing famine in Bangladesh, which had killed an estimated 1.5 million people. Notably, the PAG was not contacted for the conference, and protein was glaringly absent from the proceedings (Ruxin, 2000: 151-166). At this conference Henry Kissinger famously declared, "Within a decade, no man, woman, or child will go to bed hungry."[21] The World Food Council was created in Rome in 1974 on

20) The cattle herds increasing worldwide were not only regarded as poor plant-to-meat converters but were also documented contributors to climate change. They are responsible for releasing massive amounts of methane into the atmosphere, which contributes to global warming.

21) Statement of Henry Kissinger, Secretary of State of the United States of America, *The World Food Congress*, 5 November 1974. https://www.fao.org/news/audio-video/detail-audio/en/c/10812/?no_cache=1&uid=10812. Accessed 28 June 2024.

the advice of the World Food Conference, which recommended that an effective world-food-security system to prevent the risk of famines should be a priority. The result was the establishment of the World Food Council to coordinate the activity of relevant UN agencies in nutrition and food production, security, trade, and aid (Shaw, 2010: 663-694). Rather than being interested in protein production and supply, Robert McNamara's World Bank played a role in the construction and management of grain storage systems in developing countries, which could serve as bulwarks against hunger and famine. A grain storage system did not mean a physical warehouse or storehouse to keep wheat and rice safe. The plan was not only for more effective management of food sectors within developing countries but also for a more comprehensive food system to ensure nutritional food supplies through the market, not through technological grand plans or governmental management.[22)]

After the World Food Conference, to increase capacity to prepare and implement food production and distribution projects, it was important to launch a greatly expanded international effort to improve indigenous institutional capabilities. This was a big change from exporting grain. Additional external investment was needed to help small farmers augment their food output, as well as to enhance regional food production and distribution agencies' ability to operate within developing countries. In 1974, some of the bilateral agencies that had previously worked on global food projects experienced great difficulties in supporting food-related programs. Their inefficiencies, such as poor food distribution networks, justified special efforts to formulate a food plan addressing sector-wide

22) Office Memorandum from Montague Yudelman to Clifford Lewis, 2 April 1979; "Food Security and the International Grains Agreement," RG 220, Box 9, PCWH, JCPL.

requirement. Increased production was not enough to achieve food-security on its own. More important, part of the plan was "to influence food demand patterns and to improve storage and distribution systems."[23] National and international institutions were not designed, mandated, or staffed to cope with the world's food problem in an integrated fashion because governmental organizations with interests in some aspect of the world hunger problem could not reach an overall solution. In particular, the World Food Conference emphasized state failures in terms of pouring capital and labor into high-tech protein research (Lee, 2022: 1369-1370).

Malnutrition was not a new problem in the early 1970s; however, the lack of progress in the campaign against global hunger and malnutrition inspired the international agencies both under and outside UN auspices to promote the urgency of a new set of concerns and opportunities that prioritized the nutritional needs of international food affairs (Ruxin, 2000). Sol Linowitz, an American lawyer and diplomat for the Jimmy Carter administration, stated in 1978 that "hunger has stalked man's path since biblical time[s]," implying that it had been a long-standing issue in human history.[24] As a matter of fact, hunger and starvation were always defined and redefined in terms of scientific, political, and sometimes cultural and social meanings. What was regarded as new in the 1970s was that perhaps for the first time in human history, it seemed possible to permanently reverse the tide of world hunger. Thanks to advances in agricultural science and technology, people knew how to generate enough food to feed the whole world's population. According to Linowitz, however, "one billion people—one quarter of the earth's population—are today suffering

23) "Food Security and the International Grains Agreement."

24) Sol Linowitz, "We Can Conquer Hunger," January 18, 1978, *Presidential Commission on World Hunger*, Jimmy Carter Library, Box 3.

from one form of malnutrition or another."[25] He added that "it is especially prevalent in the poorest countries, particularly among the very poorest and most powerless groups."[26] When Maurice J. Williams presented the problems of world hunger and overpopulation at the Library of Congress on behalf of the UN World Food Council in 1979, he mentioned that hunger first appeared early in human history because of recurring famines induced by political upheaval and natural disasters. The large-scale devastating famines of previous times no longer occurred or were at least alleviated because of "worldwide communication and transport systems, which permitted the mobilization of food from surplus areas to meet the emergency needs of populations afflicted by drought and other disasters."[27] Williams indicated that hunger and malnutrition could not be solved "by focusing on agricultural production alone."[28] Linowitz and Williams were members of the Carter administration's Presidential Commission of World Hunger, which was established in 1978 and proposed that the answer to solving world hunger and malnutrition lay in distribution and consumption in the market, rather than in research and technological planning sponsored by the state. Their findings marked the culmination of a long-running debate over protein.

25) Sol Linowitz, "We Can Conquer Hunger," 18 January 1979, RG 220, Box 3, Presidential Commission on World Hunger, Jimmy Carter Presidential Library.
26) Ibid.
27) Maurice J. Williams, "The Nature of the World Food and Population Problem: Statement for the First Session of the Congressional Roundtable, Library of Congress, Washington DC, January 23, 1979," United Nations World Food Council, RG 220, Box 4, PCWH, JCPL.
28) "Draft Discussion Paper on World Food Problem," RG 220, Box 9, Presidential Commission on World Hunger, Jimmy Carter Presidential Library.

5. Conclusion

During an interview in 2011, McLaren summarized: "In my opinion, the belief in the 'protein gap' is one of the greatest errors committed in the name of nutrition science in the past half-century" (McLaren, 2011). Reflecting on his 1974 *Lancet* article, McLaren stated that "the protein-rich food mixtures and all the other trappings of the fiasco have long disappeared as evidence that that particular fallacy is long dead and gone" (McLaren, 2011). The science of nutrition provided an empirical accounting of dietary health that was initially motivated by societal purpose and often tinged with political and moral aims. Domestic scientists, the earliest contemporary reformers, drew on both the empirical and ethical components of nutrition, fitting its factual basis to the purposes of moral elevation and societal progress (Biltekoff, 2013: 14). Fortunately, widespread starvation and famine caused by natural causes and political conflicts declined in the twentieth century; nonetheless, the major hunger problem remained in terms of the less dramatic problem of malnutrition.[29]

During the pivotal 1970s, people were more regimented in their everyday lives, including in what they ate, what they wore, where they lived, and where they went. Nutrition, as combined with many other elements—agriculture, development, natural resources, population, and environment—was the most salient criterion for separating peoples, even internationally. At the heart of the 1970s ecological crisis, which featured a different agricultural development, a disparity between population growth and food supply, and new environmental ideas, a shift in thinking about nutrition emerged. During the decade, efforts to address protein

29) Daniel E. Shaughnessy to Paul G. Rusby, 15 August 1979, RG 220, Box 3, PCWH, JCPL.

malnutrition were abruptly abandoned, prompting heated discussion and recriminations. Eventually, the simple but fundamental solution to malnutrition would be to increase food availability. After the World Food Conference, an international effort was needed to improve indigenous capabilities for food production and distribution projects. This involved investing in small farmers and enhancing regional agencies' operations in developing countries, which began another phase of development.

Key words : Protein, Malnutrition, Global Hunger, UN, Development

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Abstract

Behind the Protein Battle Lines in the 1970s: Nutritional Turmoil in the Postwar World†

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This study examines the development of international debates about the perception of nutrients, particularly protein, with a focus on the "Protein Debate" of the late 20th century. The nutritional obsession with protein has been ongoing since the early 19th century, when scientific nutrition was established, and has been at the center of debates surrounding food, agriculture, healthcare, and the environment, changing in shape and form over time. In addition to being a nutrient necessary for optimal physical and mental performance, protein has been a marker of poverty and discrimination at the international level and explains differences in individual living standards. Kwashiorkor, also known as protein calorie disorder, medicalized the problem of poverty in the Third World or underdeveloped countries. By the 1970s, the nutritional discussion of protein had undergone a radical transformation, with implications for the entire development discourse, including poverty and human rights. This

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study of the historical discourse on protein deficiency goes beyond the scientific focus on nutritional status, food, and dietary health to identify the social, economic, and cultural implications of nutrition.

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