



**Quantity, quality,
harmony and
distribution: the guiding
principles for a society
free from hunger in
Josué de Castro**

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The scope of this paper is to analyze the links between the biological and social aspects defined by Josué de Castro in his studies on balanced food intake, transposing dietary principles upon the concept of a society free from hunger. Initially, we see how the author introduced modern dietary principles in his lifetime, while revealing the existence of hunger and undernourishment in regions around Brazil. These studies had a practical purpose, namely to configure a national balanced food intake policy. We then see how he broadened the scope of the debate, exposing the dynamics of states and the political tendencies of a world in disarray in which hunger and food intake were an intrinsic part of the spatial distribution of power. In the post-World War II context, the dietary principles of quantity, quality, harmony and distribution were established as the guiding principles for a society free from hunger on a global scale, which culminated in the creation of the World Association Against Hunger in Paris in 1957.

Keywords: balanced food intake; nutrition; hunger; society.

At moments of extreme crisis, such as the times we are now living in, we have to face the hard facts of life and agree with the great Romain Rolland that the “heroic falsehood is a form of cowardice, and there is but one heroism on earth: to know the world as it is and yet to love it.” It is in this mindset, with the conviction that, for the good of humanity, we must all dedicate our individual efforts to impose order on the tremendous social forces that are currently in conflict, that we present to all men of good will in the world – especially politicians, intellectuals and scientists – this document that we have chosen to call The Black Book.¹

Josué de Castro, *O livro negro da fome* [*The Black Book of Hunger*]

Given the vast breadth and scope of Josué de Castro’s work, it is not a simple task to grasp its core meaning, namely hunger and a balanced food intake. The tendency until the present has to a certain extent been marked by attitudes and approaches to hunger related to the stages of socioeconomic development/underdevelopment, while little attention has been given to the question of the underlying force that establishes the framework of this relationship: What, in his opinion, are balanced food intake and nutrition? What principles underpinned the society free from hunger that he envisaged? One must read his works paying particular attention to this point. As a starting point, the above epigraph is suggestive as it clearly states the essence of the motivation that inspired his entire trajectory as a public intellectual.

This became clear after the release of his first work, *O problema alimentar brasileiro* (Castro, 1934), at a moment of flux, as described by the *Diário Carioca* newspaper: “1934 – Um ano trágico para a humanidade. Guerras, revoluções, terremotos e atentados assinalaram singularmente os últimos doze meses” (1934 – A tragic year for humanity. Wars, revolutions, earthquakes and coups have singularly marked the last twelve months). The article reported how the year had been one of the most dramatic in recent times and since the end of World War I. Among the various events listed, it highlighted the most ominous development: President Hindenburg had died in August and Hitler had become the supreme commander of Germany. All of this happened shortly after the ‘Nazi purge’ in which Hitler ordered the execution of numerous undesirable leaders. Rumors abounded of another war (Um ano trágico..., Dec. 29, 1934).

In relation to Brazil, the same newspaper highlighted the crisis caused by the Old Republic and reported the violent conflicts occurring in the capital of the Republic, drawing attention to the repeated reports of suicides (Suicídios..., Nov. 16, 1934).² In a retrospective review of the year in question, it denounced the antics of the clientelist political culture and its damaging effects, but also highlighted the ‘optimistic prospects’ after the revolution of 1930.³ Due to the new directions taken by Getúlio Vargas’ government, the Brazilian people had good reason to be optimistic and to believe that in short order they would be in an enviable economic position in the world (Perspectivas..., Dec. 16, 1934).

At the same time, *Jornal do Brasil* recorded the impact of the crisis on the Brazilian people’s diet in the report “Frutas baratas e frutas-caras” (Cheap fruit and expensive fruit), which described the cost of living in markets in the capital of the Republic. It reported

that when going shopping, all social classes “from the black cook to the high society lady” patiently scoured the market and constantly haggled over the price of goods (Frutas baratas..., Mar. 31, 1934).

Thus, while international hostilities heralded another world war – albeit at a time of agitation and hope in the internal sphere – the year 1934 ended with challenges old and new that led Castro to seek answers to the question: “Is our food system rational?” (É racional..., Nov. 3, 1934). Hunger was not talked about explicitly, but the question that cried out for a solution was: “Qual o regime alimentar que devemos seguir?” (What food system should we use?) This brief press release revealed chapters of the work *A balanced food intake* to the Brazilian public. It was published in 1934 by the Argentinian doctor and professor Pedro Escudero, who was an important influence on Castro’s early studies (Qual o regime..., Nov. 4, 1934).

An initial relevant observation should be made here: the viewpoint it reveals needs to distance itself from a romantic view of the past and to stress the advantages and limits of Castro’s dietary principles by looking ahead to the future. The same question – ‘Which food intake regime should we follow?’ – still persists in the contemporary public mind, being featured in leader articles in the communication media. An example of this is the cover story in *Época* magazine entitled “A bilionária e confusa indústria da dieta” (The confusing billion-dollar dietary industry) (Mar. 27, 2006). In the midst of theoretical controversies, a multiplicity of balanced food intake formulas is disseminated and a new dietary revolution is announced under the aegis of biotechnology, at a moment when molecular biology is taking great strides forward. At the same time as the production of transgenic food products is emerging, one detects a shift in the basic statutes of the human race, namely identity recorded in the body (Prodi, 1993; Moser, 2004).

The fact is that forms of knowledge change continuously while “new realities emerge, new relationships are forged and new linguistic forms are being produced” (Prodi, 1993, p.127). As pointed out by Carneiro (2003, p.29), “the history of a balanced food intake is the history of the struggle against hunger. The history of hunger is interconnected with the history of abundance”. The overview of the historiographic production of food made by Carneiro shows that both in Brazil and the rest of the world approaches to this question have modified over the course time based on multiple points of view. This is echoed in Campello’s view (Feb. 2, 1936) that the science of nutrition encapsulates the experience of all times, all peoples and all countries. In this context Rezende (2004, p.178) is correct when he states: “It is important to monitor this trajectory and to grasp the transformations in the way of thinking about food, since they reflect changes in societies and reaffirm the idea that food and society undoubtedly overlap”.

This leads to the second relevant observation: it is fruitless discussing Castro’s dietary principles from a purely biological standpoint because the proposed balanced food intake model is not only overlapping in societies, but also encapsulates the concept of a society free from hunger, as will be seen below. Castro did indeed choose physiology as a starting point in his book *O problema alimentar brasileiro* (Castro, 1934), with a preface by Pedro Escudero. However, it is also an acknowledged fact that in his work as a whole, he regarded hunger and a balanced food intake as two sides of the same coin and as objects of interest

to society, removing them from the medical sphere. Since the problem was of paramount interest for nations in order for them to obtain in-depth knowledge of their essence, it was necessary to have recourse to the reference works of various branches of knowledge, leaving aside therapeutic models.

There is a consensus in recent literature that the interest in the social determinant approach to disease lost favor after the emergence of microbiology and epidemiological research, only to resurface in the 1920s and 1930s with the multiple causality perspective. This revitalization is apparent in the work of Castro and instigates the reader to ask what was revolutionary about the concept of a society free from hunger, following the dietary principle of balanced food intake, or if his studies and research were closer to the rationalizing reforms of his time.

Following this line of reasoning, the “evil of hunger and not of race” thesis, formulated by Castro in his work entitled *Alimentação e raça* (Castro, 1936), is exemplary in its explicit irreverence regarding the canonization of the disciplinary methods then in vogue. This was a mark of his originality as a thinker, since the assimilation of concepts from various fields of knowledge for the study of balanced food intake and hunger contrasted with the increasing fragmentation of knowledge in academic life, leading to the discovery of new knowledge previously considered taboo about obscure aspects of this theme. This was how he chose objects of theoretical and practical reflection ranging from the working and feeding habits of the working classes in Recife to the economic organization of production as well as public policies for the sector.

The most commonly accepted hypothesis is that he sought to find a structural rationale to organize the various factors involved in the production of hunger, conducting an interdisciplinary dialogue structured around the geographic method and removing the obstacles that prevented it from illuminating the “question of the relationship between the biological and the social aspects”. However, as one turns to his later publications it can be seen how the most valuable ideas that can be extracted from his work as a whole are not purely due to the merits of the interdisciplinary approach. Interdisciplinarity is presented as the most important lesson in the dialogue established by the author in the construction of knowledge related to a triad of undisciplined elements – hunger, balanced food intake and society – adopting the instigating ideas of Sevalho and Castiel (1998). Therefore, what marked Castro’s thinking was the capacity to establish globalizing relations: the emphasis progressed from the national in *Geografia da fome* (Castro, 1946b) to the universal in *Geopolítica da fome* (Castro, 1968a, 1968b), which decisively marked the beginning of his international trajectory.

In an effort to bring together all the elements that this project demanded, Castro undertook the geographical mapping of the feeding conditions in Brazil and the rest of the world. This needed to be attuned to the new times and in line with global reality, with all its problems and conflicts. Therefore, it was necessary to go beyond a theoretical configuration of a balanced food intake and hunger, by externalizing ideas and intervening in day-to-day questions in the political and economic world.

From the conclusions inferred, he brought together the elements for a macro-policy of social decolonization and provided the guiding principles for a society free from hunger.

In this way, he proved the value of his work and, by coming to grips with the global reality, he assumed the weight of the evidence stating that hunger was the major discovery of the mid-twentieth century.

However, the great ethical and political challenge lies in interpreting the proposed food intake model as a product of its time, starting with the demands of Brazilian society as being the environment in which it originated. For the purposes of this paper, some of the fundamental traits of the six books that clearly encapsulate the essence of the debate in which hunger and a balanced food intake acquire significance as actual dimensions of social organizations will be singled out. These are *O problema alimentar brasileiro* (1934), *Alimentação e raça* (1936), *A alimentação brasileira à luz da geografia humana* (1937), *Geografia da fome: fome no Brasil* (1946) and *Geopolítica da fome*, volumes 1 and 2 (1968a, 1968b).

In other words, in this analysis we will see firstly how the author introduced the principles of modern dietary practices, defining the concept of rational food intake, while revealing the existence of hunger and undernourishment in the various Brazilian regions. These studies had a practical purpose, namely to configure a national balanced food intake policy. We then see how he broadened the scope of the debate, exposing the dynamics of States and the political tendencies of a world in disarray in which hunger and food intake were an intrinsic part of the spatial distribution of power.

Thus, the scope of this study is to outline the manner in which the author established a close link between biological and social aspects, transposing dietary principles upon the concept of a society free from hunger on a global scale. This culminated in the creation of the World Association Against Hunger (Associação Mundial de Luta Contra a Fome – Ascofam)⁴ in Paris in 1957.

Quantity, quality, harmony and distribution: the dietary principles of rational food intake and the geography of hunger in Brazil

As part of the architecture of the method, physiology was the prerequisite for the construction of the scientific basis of the concept of rational food intake. The first scientific proposition of this concept was found in the evidence that a chemical phenomenon always preceded a vital phenomenon and that the potential energy of food was the first phase in the system of transformations that the energy of the living organism experienced. It was possible to predict the variations in these phenomena, monitor and modify their progression in accordance with individual needs and obtain the maximum vital benefits in light of the study of bioenergetics and in accordance with the variations that climatic conditions imposed on inhabitants of the tropics. The efforts expended by the organism could be calculated on the basis of basal metabolism and work metabolism, also taking into account the digestion metabolism and variations in age, sex, body weight, food intake state and climate (Castro, 1934). This suggests that at the beginning of production there was an overriding concern with establishing, in advance, the norm and the real limits of variation, while the nature and effects of hunger and undernourishment were studied.

For Castro the biological notion of what constituted food varied, not surprisingly, in accordance with the concepts of the time and with the truths of each scientific stage.

He acknowledged that the bioenergetic knowledge of Lavoisier and Laplace gave rise to the Cartesian concept of the living organism as a machine in which food was conceived as a source of energy.⁵ However, he warned that although this definition of food was valid for physiologists at the end of the nineteenth century, it was no longer applicable in his time due to the emergence of the concept of vitamins. This had broadened knowledge about diseases caused by lack of vitamins such as rickets, scurvy, beriberi, xerophthalmia and pellagra, which were age-old diseases before the existence of vitamins was known.

According to Veloso (1940, p.159), the discovery of vitamins in human food intake dates from 1911. While investigating the etiology of beriberi, Polish doctor Casemiro Funk found a certain substance in rice chaff which when given to people suffering from beriberi cured them rapidly. Successive discoveries made it possible to define vitamins as organic connections that needed to be introduced into the organism in very small doses in order to permit cellular conservation and reproduction and at the same time guarantee the normal functioning of organs.

From Funk until the present the history of vitamins can effectively be written with the simple letters of the alphabet. Nowadays the foods richest in vitamins have been suitably catalogued through painstaking dosage and analysis, and there are excellent classifications of vitamins. Most of the chemical formulas are known, as well as the influence that the sun, ultraviolet rays and certain endocrine glands have on vitamins. ... Perhaps in the near future they will find the vitamins of happiness, morals, enthusiasm, the vitamin of hatred and ... who knows what else! The vitamin of love already exists, namely vitamin E!⁶

Besides this, in the new era of nutrition that broadened knowledge of diseases caused by malnutrition, physiological studies also needed to take climate into account as the first variant in the relationship between man and his geographic environment. In a long report published in *Diário Carioca* (Castro, July 19, 1936) he stressed the supremacy of the human species in becoming acclimatized to meteorological variations in the environment, creating technical artifacts such as housing, shelter and clothing. A balanced food intake was the most neglected of these factors, despite the fact that it is through nutrition that climate affects humans the most.⁷

He was consequently the first person to document his conclusions about how climate interacted with the physiology of humans in the tropics, leading to the determination of the basal metabolism of 15 inhabitants in Recife (Pernambuco state). Based on the calculation of the average figure of 33.8 calories obtained in his study, he defined the basal metabolism of Brazilians at a level 10%-30% lower than the inhabitants of cold or temperate climates or warm climates, taking into account the Dubois standard physiological constant of 39.7 calories. This was the first attempt to determine the energy quota for balanced food intake as a function of the intensity of factors that constituted the effective temperature of the various regions of the country.

The second element of the milieu that interacted with the organic metabolism of humans was work, which implied the need to calculate an additional energy coefficient relating to the many standard occupations, represented in terms of calories expended per hour on certain activities. With this equation, Castro (1934) also established the average Brazilian biotype, male, aged 40, weighing 60kg, and 1.62m tall, shoemaker, working eight

hours per day and burning up 2769 calories per day. In his book *A alimentação brasileira à luz da geografia humana* (Castro, 1937), he honed his physiological studies on basal metabolism and arrived at a definition of labor involving various classifications, which were as follows: sedentary work (intellectual, tailor); light work (cobbler, bookbinder); moderate work (painter, carpenter) and heavy work (blacksmith, sawmill operator).

It was Quetelet who started the biometric movement in Belgium. In 1843 while studying the variations in the stature of humans, he discovered the existence of a frequency polygon that tended towards a bell curve similar to the Gauss binomial curve. The distribution of the results above and below the mean value ensured that the Gaussian average was a true average. Among the large number of men whose stature varied within the determined limits, those who were closest to average stature were the most numerous. Quetelet called this type of human the 'average man' (Canguilhem, 1990).⁸

On this basis, Castro arrived at 2800 calories as the recommended daily standard balanced food intake for a Brazilian man, adding the proviso that for the food intake to be 'perfect' it was not enough for it to contain the total energy requirements expended by the organism. Since only the absorbed part can be used and thus constitutes the 'digestive coefficient', a balanced food intake had to consist of various types of nutrients in satisfactory quantities and in given mutual proportions, namely proteins, fats, carbohydrates, vitamins, minerals and water. The energy ration of men who carry out average work in the typical local climate should provide the following proportions of these elements: 20% to 30% of total calories in protein-rich materials, which is equivalent to 1g of protein per kilo of the weight of an adult individual, 20% to 30% in fats and the remaining 50% in carbohydrates.

While the Cartesian concept of a living machine provided Castro with elements for establishing human energy expenditure, food was the source of organic input and an element of interaction between man the environment. The knowledge of its chemical composition and its physiological functions allowed it to be classified in terms of energy-rich food, visually attractive food and regulatory food. The energy value was of a quantitative value and was found in food products that were rich in carbohydrates and fats. The visually attractive and regulatory values were qualitative and found in food rich in proteins, vitamins and minerals, respectively.

This led to the four dietary principles that gave shape to the concept of a balanced food intake, which in modern scientific language are: quantity, quality, harmony and distribution. Quantity was defined as the caloric adequacy of the food intake ration to replace the energy losses of the organism; quality as the variability of food products and their nutritious content, which permits substitution and equivalence systems; harmony as the proportion between nutrients and total calorific value; and finally distribution as respect for individual preferences.

An important aspect of this vision was that it was not enough to know the quantity of men who were producing, as one also needed to know the quality of their output. The new Brazilian man emerging from this was attributed with medium biophysical build, robustness, vitality and efficiency through a process of food intake revitalization conducted on a rational and scientific basis. What distinguished these physiological studies of balanced food intake from the earlier physical-chemical phase was precisely the prospect of restoring

quality of life that had previously been denied to humans. From the standpoint of biological revitalization, Gobineau's racial doctrine did not have scientific credentials; indeed, it was misplaced since Brazilians were all ethnically mixed and the definition of a pure racial type was inappropriate for the country. It was through a balanced food intake that the eugenic advancement of men and enhancement of the race could be achieved.⁹

In his book *A alimentação brasileira à luz da geografia humana* (Castro, 1937), Castro further examined the data of the food intake survey carried out with the Recife working class in 1935. It showed that the 500 families studied with a total of 2585 people, only consumed beans, flour, jerked beef, coffee and sugar, though most of them (81%) also ate bread. This being the standard diet of the working class family, it was easy to arrive at the individual dietary regime: "each individual ate 62g of albumin, 310g carbohydrates and 13g of fat, with an energy total of 1646 calories. ... undeniably an insufficient, incomplete and unbalanced diet" (p.135).

When comparing the above with the research conducted in São Paulo by Almeida Junior (September 1935) and Souza, Cintra and Carvalho (1935) among different social classes, Castro (1937) concluded that research in both the north of the country and in São Paulo showed that in both regions the food intake was always inadequate, even in relatively privileged socioeconomic classes. Thus, in the more developed areas the faults lay in partial qualitative deficiencies, the most frequent being albumins with a high biological value and a lack of minerals, namely calcium and iron, a problem that prevailed throughout Brazil – and one of the most insidious.

This situation, which was to be found in all parts of Brazil, proved that under these circumstances no group of people could be strong, regardless of their race. Thus, the book in question had a practical objective: the remedying of food intake defects, which required "the prior zoning of our country, dividing it into five regions, each of which had a standard, characteristic diet" (Castro, 1937, p.148).

The author defined the standard food intake for each of the five Brazilian regions, ensuring that each of them had the proportions of food he considered suitable with total caloric content capable of meeting the normal energy requirements of the body. He estimated that the economic value of the balanced food intake could be attained by establishing a minimum wage and calculating the proportional quotas of family expenses. In fact, the legal mechanisms that defined the minimum wage represented the first step towards the implementation of a government food policy. In January 1936, Law 185 – which created the Minimum Wage Commissions – was enacted (Brazil, 1936). Then on May 1, 1940, Decree Law 2.162 was passed (Brasil, 1940a), setting the minimum wage throughout the whole country. The next step was the creation of the Serviço de Alimentação da Previdência Social (Social Security Food Service – Saps) in 1940, which implemented the program of food assistance for workers and their families through *Restaurantes Populares e Postos de Subsistência* (Subsidized Restaurants and Food Subsistence Outlets), as well as balanced food intake education (Brazil, 1940b). This policy suffered a severe setback during the World War II due to the impact of the war on agricultural production and the increase in food prices, which resulted in the imposition of rationing restrictions throughout Brazilian society, severely worsening the hunger situation in the country.

The initial hopes raised by the government of Getúlio Vargas were soon dashed in practice. In the article entitled “A rendição dos bárbaros” (The surrender of the barbarians) the *Diário Carioca* newspaper announced the surrender of Berlin to the Allies on the battlefield. Nevertheless, in Brazil it seemed as if the war was still raging, as the newspaper reported: “It was to be expected that once the war was over the authorities responsible for dealing with hunger in the country would immediately take measures to get sufficient supplies to the market, ensuring the sale of essential goods, such as sugar and meat.” The newspaper regretted that it had to report that the war still raged, not due to armed conflict, but to the battle against public welfare (A rendição..., May 3, 1945).

The suitability of reinstating direct suffrage for the election of the president of Brazil and other political positions for the democratic restructuring of the country was again voiced, though the turbulent electoral process led to Getúlio Vargas being deposed as was officially announced to the nation on October 30 of the same year (*Getúlio deposto...*, Oct. 30, 1945). This marked the beginning of a campaign in the press to denigrate Saps, with the dismantling of the institutions responsible for the supply of food. This led to the rise of criminal black market practices, which left the population at the mercy of profiteers and resulted in an intense upsurge of popular and student revolt.

It was against this backdrop that Castro consolidated his concept of hunger with the publication of the book *Geografia da fome: a fome no Brasil* (Castro, 1946b). For a geographic region to be considered an area fraught with hunger, the food intake deficiencies needed to affect the majority of the population who composed its demographic area, namely: the Amazon Region, the Zona da Mata, the Sertão, the Center and the South. In this book, translated into over twenty languages, the author went further than all previous sporadic research and provided a detailed description of the different landscapes. Reiterating the fundamental dietary principles, he emphasized that to understand the principal food intake defects in the Amazon region it was necessary to analyze them using the latest nutrition concepts.

By applying scientific parameters, the dietary regime of the impoverished classes in Belém was only 1800 to 2000 calories per day, whereas universal literature recommended 3000 for groups carrying out activities of average intensity. Nevertheless, Castro (1946b) emphasized that the situation was not that drastic, since the basal metabolism of men in the Amazon region was around 20% of total calories required in accordance with the universal standard. Due to the formative impact of the climate, not only the so-called basal metabolism fell, but also what was expended on labor. With the 2000 calories that each individual ingested daily, it was possible to cover basic needs and to do some work. Rhythm and production slowed, as organic defense mechanisms came into play to ensure that the local population would not die of hunger.

The qualitative defects were more serious, since they involved inadequate food intake with deficiencies in a wide range of nutritive elements, namely proteins, salts, minerals and vitamins. The protein deficit resulted from the almost total lack of sources of animal protein from meat, milk, cheese and eggs. This deficiency revealed itself in stunted growth and in a lower than normal stature of parts of the population of the Amazon region. Partly because of malnutrition (specific aspects of hunger in numerous basic staples), there

were high indices of infant mortality. In Manaus this coefficient was as high as 239 per 1000, as opposed to 46 per 1000 in the United States, 38 per 1000 in Norway and 32 per 1000 in New Zealand.

It was within the organization of the productive economic system that the eating habits that characterized the different regional cuisines were established, along with their typical foods and corresponding deficiencies. Unlike in the Amazon region, food deficiencies in the sugar-producing Northeast region could not be explained on the basis of natural reasons, since both soil and regional climatic conditions were well suited to the straightforward and profitable cultivation of an endless range of food products.

According to Castro, few indigenous culinary processes became established in the regional food lexicon, other than the preparation of local delicacies including *pamonha*, *canjica de milho*, *beiju*, manioc flour and *paçoca*. Another favorable influence – with a greater impact and positive effect on the eating habits of the region – was without a doubt that of blacks, namely slaves brought over from Africa. Their regions of origin had, thanks to the cultivation of various plants, a very healthy food intake regime. Being people with a tradition of subsistence agriculture, blacks reacted to single crop cultivation in a more productive way than Indians did. Disobeying the orders of their masters and on the sly, they planted manioc, sweet potato, beans and corn on cleared patches of land. From this standpoint, hunger is defined as being the result of the oppression of large estate landowners rather than due to imbalances inherent in culinary traditions.

In the northeastern culinary lexicon, coconuts were used in an infinite variety of culinary preparations: beans with coconut, fish with coconut, coconut rice, *vatapá*, *canjica*, *pamonha*, *mingunzá*, coconut desserts, *cocada* and other dishes and well-known savories. Coconuts, with 25% fat content, guaranteed the daily amount of this nutrient in the diet, while cashew provided vitamin C. This was the reason for the superiority of food intake in the coastal zone over the backlands, or sugarcane-producing area. Despite this, prohibitions (taboos) prevailed which resulted in a low level of consumption of fruit and vegetables, which were considered 'lizard food'.

While the specific clinical manifestations of malnutrition in the Northeast may not have been seemingly too alarming, the same could not be said of the indirect consequences: the low labor output and the high indices of infant mortality, which among every thousand births saw 457 infant deaths in Aracaju, 443 in Maceió and 352 in Natal. Another statistic linked to this balanced food intake situation was death due to tuberculosis, which in the northeastern capitals was three to six times higher than in the rest of the country. Salvador (Bahia state), Fortaleza (Ceará state) and Recife (Pernambuco state), located in the Zona da Mata, had indices of 345, 302 and 359 cases per 100,000 inhabitants in 1939, respectively. The high overall mortality and the fact that more than 50% of deaths occurred before the age of thirty were further evidence of the chaotic situation of the demographic evolution of this region (Castro, 1946b).

The Sertão featured a new and entirely different form of hunger. It was not a permanent form of hunger caused by the habits of daily life, as it occurred periodically in epidemic episodes, with acute waves of hunger during droughts cyclically intermixed with periods of relative abundance under normal conditions. These involved epidemics of global hunger

– both in quantitative and qualitative terms – which struck with incredible violence attaining extreme limits of malnutrition and acute starvation, and affected everyone indiscriminately, rich and poor, successful farmers and plantation workers, men, women and children.

It is interesting to note that in this explanatory model a dualistic tendency emerges in which we detect the existence of two Brazils. The social (and food intake) evolution of the two is centered on two productive centers, namely the modern and the archaic.¹⁰ Unlike the areas described above, the center and south were considered by Castro to be areas with discreet and less generalized food intake deficiencies. They were not areas fraught with hunger in the strict sense of the word, but areas of malnutrition, imbalance and partial deficiencies, restricted to certain groups or social classes. With respect to this concept, the secret is to grasp the trajectory of Castro's thought in as broad a manner as possible, remembering that in the context of the War the region ceased to exist as such. There were laws the scale of which transcended the dimensions of the place. In the context of the global economy, food intake and hunger were phenomena marked by diverse elements that characterized and defined regions, as will be shown below.

Hunger, food intake and power in the world map of *Geopolítica da fome*

Geopolítica da fome, first published in 1951, broadened the debate about hunger in Brazil to encompass the international field. As it happens, when the book was published the author already occupied a position as member of the Permanent Consultative Committee on Nutrition for the Food and Agriculture Organization (FAO) of the United Nations since 1947. He went on to become its president in 1951.

From this position, he was able to see firsthand that the world was experiencing a revolutionary historical phase in which hunger and food intake were an intrinsic part of the spatial distribution of power. One of the significant traits of the eighth edition of the book is that, in the resulting dislocation, geopolitics was defined not as “an art of political action in the struggle between states,” but “as a method of interpreting the dynamics of political phenomena in their spatial reality” (Castro, 1968a, p.27). This allowed him to correlate the biological crisis with the political crisis. To illustrate the importance of geopolitics in those times, in a report entitled “A propósito do comando único” (Regarding a centralized command) published in *Jornal do Brasil*, Mário Travassos (Mar. 7, 1946) commented:

As every day passes the geographical factor becomes more important in government decisions, no matter what plan is involved. In the political area, this importance has resulted in the creation of Geo-Politics, the most recent development in modern geographical science. While political geography deals with statistics, geo-politics deals with the dynamics of states themselves and political swings characterized by geographical characteristics. Of these, space and position constitute the main structural tenets of geo-politics.

From this standpoint, Castro pointed out that the two world wars and the Russian and Chinese revolutions were only apparent manifestations or symptoms of the revolution that was in progress. In his concept of revolution, the word was used to express a process

of historical change in which a world with certain social convictions was replaced by another in which the old social values no longer had any meaning. In this change, human problems gained a certain degree of priority, including the concern with problems of biological protection and redefinition. This was already evident in the 1943 Hot Springs Conference on Food and Agriculture, the first staged by the United Nations, in which specialists from 44 nations met with the aim of planning joint measures to combat hunger in their countries.

The post-war food situation was critical around the world. The report “Fome e desemprego para milhões de homens” (Hunger and unemployment for millions of humans) published in *Diário Carioca* on New Years’ Day 1946, reported that at that moment Europe was facing a terrible crisis with millions of people homeless and unemployed. The article stated that countless other millions were struggling to stave off disease and hunger, which could only be overcome through a considerable increase in the supply of food, fuel and medicine during the coming months (Fome e desemprego..., Jan. 1, 1946).

In March of the same year, President Truman revealed the benevolent face of imperialism by announcing that he had ordered the complete and immediate mobilization of all of the United States’ resources in order to win the war on hunger around the world. If it proved necessary for Americans to resume food rationing in order to keep ten or fifteen million people free from hunger worldwide, this would be done (Mobilização de recursos..., Mar. 13, 1946).

In this worldwide pro-reconstruction scenario, Castro (1968a) affirmed his faith in scientific rationality as being able to impose discipline and order on social systems in crisis. He emphasized that: “One of the great obstacles to planning adequate solutions to the food problem for the people is precisely the lack of knowledge we have of the problem as a whole as a complex that is simultaneously biological, economic and social” (p.55).

Contrary to Malthusian theory, which resurfaced in those difficult times, Castro argued that the problem of world hunger did not originate in production limited by the coercion of natural forces, but was above all a problem of distribution. Hunger and war did not obey any natural law, as they were purely human creations. He outlined in the book *Geopolítica da fome* how the phenomenon of hunger was manifested both in intensity and extent in different collective groupings. He took the same concept of hunger that had been defined internally in Brazil and reaffirmed it at the global level, as the objective was to analyze collective hunger, the type that affected large human groupings endemically or epidemically. He also referred not only to total hunger, in general limited to areas of extreme poverty, but also to the most flagrant and serious event in terms of numeric consequences, the so-called hidden hunger. Due to the lack of certain nutritive principles indispensable to life, entire groups of the population died slowly from hunger, despite eating every day: “Hidden hunger now constitutes the typical form of manmade hunger” (Castro, 1968a, p.82).

Despite admitting that this drama was intrinsic to the relations of power in the structure of global states, in his study he intended to place man above parties and political prejudices. Scientific truth was the only party in which the problem of hunger gained human form. This suggested that hunger could not be suppressed by any ideology per se but only by a

collective effort (free of political affiliation) to construct a world free from hunger, since in the vision of Castro hunger was what sparked off revolutions and wars. It was necessary to analyze the potential means in order to overcome hunger caused by geographic determining factors and transform them into what he called 'socially possible factors'.

In this way, besides problems of production, Castro studied the problems of the rational distribution and use of food, "dealing with the geographical possibilities that humans took advantage of, but also those that were neglected, or wasted" (Castro, 1960, p.4). Both the productive forces to be deployed and the social relationships that had to be established for an equitable redistribution of the means of subsistence between the members of different human groups were analyzed by Castro. "Only in this way is there a chance that we can live in a world free from the dark and infamous demographic stains of hunger. Only in this way will the 'Geography of hunger' cease to exist," he declared (p.75).

He reaffirmed that racial superiority or inferiority had nothing to do with race, and that it was an exclusive product of the molding action of food. It was chronic and endemic hunger on a universal scale that was the most characteristic trait of the misery prevailing in the world. In this aspect, Castro's spatial distribution began with Latin America where the drama was most striking, involving the highest number of individuals – around ninety million people, corresponding to two thirds of the people who lived there. On the causal level the most evident distortion in this area was the backwardness of agriculture in relation to industrial progress, a backwardness centered to a large extent on the archaic nature of agrarian structures, which was a factor preventing the progress of industrial expansion. Thus, hunger was nothing more than a typical manifestation of underdevelopment (Castro, 1968a).

In South America there were two sectors of hunger: sector A, with extremely deficient food intake, where quantitative hunger was associated with specific qualitative insufficiencies; and sector B, with less serious food intake conditions, where there was only specific hunger in certain nutritive staples, with the food intake regime being quantitatively sufficient. The first area covered Venezuela, Columbia, Peru, Bolivia, Ecuador, Chile, the northeast and extreme south of Argentina, the western half of Paraguay and the northern half of Brazil. The second covered the lands of the midwest and south of Brazil, Paraguay to the east of the Paraguay River, Uruguay and the northeastern region of Argentina (Castro, 1968a).

By way of example, some passages from *Geopolítica da fome* (Castro, 1968a) referring to food intake models in certain regions, in which the author infers a causal logic on the manifestations of hunger in the world, are worthy of special mention: "With populations that have elements of intense and widespread malnutrition – real areas of hunger – we find in English-speaking America two well demarcated areas that therefore deserve special attention: the British West Indies and the deep south of the United States of America – the old agrarian South" (p.182).

The lack of food and the deplorable conditions of nutrition in the West Indies were a direct consequence of the flawed system of colonial exploitation that the English imposed on these lands. Local/regional variants notwithstanding, the food intake imbalances were historically centered on the consumption of starchy substances, in the form of cereals,

tubers and roots. Protein-rich food, such as meat, milk and eggs, virtually did not feature in people's diets, nor did fresh vegetables: "In Jamaica the basic foods are yams, sweet potato, manioc and bread fruit, while in Trinidad, white rice, dried peas and coconut derivatives are the main food products consumed. In Barbados, where the food conditions are the most dramatic, the diet normally consists of rice, sweet potato, yam, onion, tea and sugar" (Castro, 1968a, p.183).

This was the most typical example of a how a human group motivated by the interests of quick profit was capable of plundering natural wealth and transforming rich regions into areas of misery and hunger. However, it was the agrarian south of the United States that caused Castro the greatest consternation. He considered it 'shocking' to see the entire geographic region of this breadbasket of the world included as one of the areas of hunger, encompassing an area that was larger than that of many countries. In this respect, it is valid to ask if there was therefore an underlying symbolic/ideological order in the systems of production capable of superimposing itself on organic lives.

It comes as no surprise that Asia was also included in the global panorama of hunger. The author studied three different regions: the Far East covering China and Japan, Southeast Asia and India. On this continent he studied China first, and subsequently India and Japan. Lastly, he analyzed hunger in Africa, and Eastern and Western Europe, including France, Spain, and Germany (Castro, 1968b).

Since space does not permit us to list all the regions here, the emphasis given by Castro to the Chinese agricultural model deserves special mention, as it closely reflects a central question in *Geopolítica da fome*. This was the productive transformation from vegetable calories to animal calories at the historical moment at which the modern scientific basis of a new balanced food intake model emerged simultaneously with ongoing industrial development. He recommended the consumption of a mixed diet in which food of animal origin acquired value and expression in preference over food intake based exclusively on vegetables. "What would happen to the Chinese if they had the chance to switch from vegetable calories to animal calories?" – was the question Castro asked (1968b, p.219).

According to Castro, whereas illustrious travelers were treated in the East to a variety of 'delicacies', research carried out in rural parts of China revealed millions of people who only had a single staple for their meals throughout their entire lives, namely rice. He wrote: "This involved a diet that was exclusively of vegetable origin and therefore excessively limited and extremely monotonous Despite dedicating themselves almost exclusively to the planting of high energy foodstuffs such as rice, wheat and millet the Chinese do not attain an average ration of 2250 calories daily" (Castro, 1968b, p.218-219).

These insufficient and incomplete diets resulted in chronic hunger – in its many forms – among populations, as the result of an economic logic that dictated a system of production, which in addition to being insufficient, was concentrated on a limited number of vegetable food products. The Chinese suffered above all from quantitative hunger – a lack of energy in their diets for basic needs and work, with the labor output of the Chinese being the slowest and lowest in the world. Protein deprivation was apparent in various aspects. The first sign was the low stature of most Chinese individuals, progressively increasing in height from South to North as the proportion of protein in their diet increased.

The first significant finding of *Geopolítica da fome* was that – setting differences aside – hunger here and on the rest of the planet derived from a global rearrangement of the productive agricultural system that had created large landholdings and resulted in the consolidation of single crop cultivation with a colonizing bent. Although the political and productive structures of states had different formats, they had similar food intake deficiencies, namely low consumption of meat, milk, eggs, fruit, vegetables and greens, which perpetuated the vicious cycle of misery.

In comparative terms, although the author was surprised to find hunger in the agrarian south of the United States, he stressed the advances in the American food model and that of other countries, such as New Zealand and Australia. The existence of improved food intake conditions in these countries led to the second significant finding, namely that there was a clear population downturn in these countries, as the number of births and deaths was level. Therefore, the explanation for Chinese overpopulation lay in the low level of complete proteins of animal origin in their habitual diet, which made the affected groups more fertile. This perspective supplied the biological basis to support his theory – the theory of specific hunger as a cause of overpopulation – “of human products manufactured in excess and of inferior quality” (Castro, 1968a, p.3).

By way of conclusion, from the six works consulted it was possible to visualize in broad terms how hunger was prevalent in Brazil and in the world. It also highlighted the precarious nature of feeding habits, characterized by deficiencies in the consumption of meat, milk, eggs, fruit and greens. This phenomenon was attributed to large landholdings and the practice of single crop cultivation, which standardized consumer habits at levels below the biological requirements of human groups in situations of social vulnerability. In this way, it was possible to conclude that establishing the dietary principles – quantity, quality, harmony and distribution – gave meaning to the concept of a rational food intake, in order to ensure biological revitalization in the context of the symbolic order prevailing in social systems in crisis that did not balk at losing human lives through hunger.

Quantity, quality, harmony and distribution: the guiding principles for a society free from hunger¹¹

In this section, I highlight how Castro transposed dietary principles into the guiding principles for a society free from hunger, showing the world the precise scope of his undertaking. The science of nutrition was opening up new horizons in the civilizing process and it was by harnessing it that he intended to give his “personal input to control the tremendous social forces in a state of flux” (Castro, 1960, p.13), thereby giving universal status to the close ties between the biological body and the social body.

From the outset, he stressed that a society free from hunger could only be achieved through the creation of a more humane economy. He considered that it was “necessary above all to seek to eliminate from contemporary political thought the erroneous concept of economics as a game in which there should always be some who lose everything such that others win everything” (Castro, 1968b, p.385). Castro’s idea was to make economics an instrument for the balanced distribution of goods in the world, so that no one could

define it again as “the science of human misery”, as Karl Marx had referred to it in the past.

However, one should not conclude from this that Marx’s teachings were instrumental in the definition of the guiding principles for a society free from hunger. Nor do these principles appear to be similar to the rationalist reforms of a welfare-based nature of the time. In the author’s words, the idea was to work towards more humane macro-politics capable of ‘harnessing’ social forces from a ‘collective emancipation’ standpoint. Indeed, this goal became the pivotal reason behind all of his theoretical and practical work, and we may well ask: What type of emancipation was he talking about?; The universal fulfillment of the physical needs of the hungry?; The general emancipation of the human race?; To what extent were the guiding dietary principles for a society free from hunger seen as driving forces for a more humane world economy capable of making the leap towards emancipation?

Such complex and broad questions are outside the scope of this article. However, taking the main thrust of *Geopolítica da fome* it is clear that the first dietary principle transposed on to the concept of a society free from hunger was that of ‘quantity’. The first objective to achieve was an increase in world food production by expanding cultivated areas and making full use of them, with the consequent increase in *per capita* and per unit productivity per area, drawing on new technical resources from agricultural science. This explained the need for a broad political vision on the part of those who saw agriculture as a public health service. If agriculture were to be viewed in such terms, the only important consideration in relation to food production would be the convenience of collective health, with economic considerations being relegated to second place. The very fact of a well-balanced food intake would significantly reduce world needs for antibiotics or other substances to safeguard health.

Nonetheless, the idea of an increase in food productivity involved some controversial aspects. Chemical science introduced the use of chemical fertilizers in agriculture, which implied transposing the second dietary principle in the concept of a society free from hunger, namely the nutritive ‘quality’ of production. While the availability of chemical fertilizers may not have been a cause for concern – since the United States had already guaranteed food production during the World War II with an annual average of 12 million tons of the product – the same could not be said for the efficiency of its use in the maintenance of soil integrity. There was also some concern about the nutritive quality of the resulting production as well as the health of the populations fed with such products (Castro, 1968b).

Castro examined two diverging points of view, namely that of Dr. E.L. Bishop, who saw the use of artificial fertilizers as the most economic way of promoting the constant restoration of soil and the progressive improvement in the conditions of human nutrition, and that of the deceased English scientist Sir Albert Howard, who saw the measure as an attack on civilization and on the health of soils, plants and people. With his long experience in agriculture in India, this scientist advocated that salvation lay in a return to more natural agricultural processes and most especially in the use of natural fertilizers obtained from different sources of organic matter (Castro, 1968b).

Faced with these contrasting positions, Castro (1968b) chose a conciliatory solution drawing on a combination of both types of agricultural technique. The use of growth hormones and insecticides could assure an increase in the productivity of food without detriment to quality. Moreover, it was not just through the increase of soil productivity that new ways could be found to supply food containing nutritive quality and variety. In water – seas, rivers and lakes – there was an extraordinarily rich source of food. Furthermore, technology already made it possible to breed fish, mollusks and crustaceans in artificial tanks or ponds, with very high yields. “The use of growth hormones, artificial insemination and the inclusion of fertilizers in fish farms to increase the nutritive value of their products are methods that can be put into practice to multiply the output of food from water significantly,” according to Castro (p.401).

In his view, a technological revolution was in progress with a considerable emancipatory impact capable of meeting the quantitative and qualitative needs for food, once proper use was made of all the potential resources available in nature. The evidence pointed to a ‘geography of abundance’ in the future, as although the first industrial revolution was based on the application of mechanization to manual industries, this second revolution would be characterized by the extensive application of scientific methods to industries of all types to resolve production problems.

However, it is now an incontestable fact that socioenvironmental damage and the harm to human health resulting from agri-industrial modernization can attain levels that are inversely proportional to the announced benefits of the ‘geography of abundance’. Proposed as the only possible model of production, the dilemma is reduced to a conciliatory discussion between the nutritive content of production and productivity targets. This conceals the real dimension of harm to collective health, to food security and to the environment, especially in developing countries and in emerging economies, which consume around 25% of the world production of agrotoxins (Peres, Moreira, 2003).¹² It is worth remembering that the current major appeals by health institutions and the media to opt for healthy eating show scant concern for the risks of poisonous contamination of food, while also failing to pass on to the public any information about the problem.

Therefore, although for Castro productivity was the key aspect, it needed to be examined in terms of human economics, since misguided economic development would detract from its social purpose. It was at this point of *Geopolítica da fome* that he proposed that the two dietary principles he saw as the guiding principles for a society free from hunger could not be dissociated. Conceived as the driving forces behind a more humane economy, the principle of ‘balanced food intake harmony’ was by definition linked with ‘social harmony,’ which had to be achieved through the balance of social forces. The principle of ‘food distribution’ involved the ability of society to distribute food equitably, meeting the physical needs of starving peoples and increasing the acquisitive power of marginal populations in order to achieve mass consumption, thereby balancing the food scales properly. In this manner, the proposed emancipation aimed to provide not only the ‘goods of basic necessity’ but also the ‘goods of dignity’ that the starving individuals hankered after.

This logic governed the sociopolitical thought of the author with a view to ensuring not only food for everyone but also world peace. According to him, “If this has not yet

occurred it is because instead of matching mass population nothing has been done to encourage corresponding mass consumption, which would give the necessary balance to a humane economy" (Castro, 1968b, p.384). In the section "Emancipação colonial e reciprocidade de interesse econômico" (Colonial emancipation and the reciprocity of economic interests) in the book in question, it is clear that the principle of social harmony could be put into effect through the convergence of three interdependent forces, namely the development of cooperation between countries, replacing conflicts of interest with reciprocity and the integration of colonial countries in the world economy. This was the way to replace the current order in societies in crisis, creating new social relations moved by cooperation, reciprocity and integration. "The development under scrutiny here is full and harmonious integration, in other words it is at the same time economic, technical, social, and human, permitting the enhancement of resources and possibilities" (Castro, 1960, p.99).

His objective vision of the facts indeed seemed to distance him from the symbolic and ideological sphere that generated the commerce of hunger. He clarified that the emancipatory humane economy that he envisaged could not be implemented under the rules of eastern communism or in accordance with the logic of greed and profit of western capitalism. To him, the differences between these systems did not constitute insurmountable walls, since there was a common denominator between both of them, namely the interest in humankind and the 're-humanization' of culture.

In the two large economic structures that struggle for universal supremacy ... it appears evident to us that at the present moment there are not two worlds locked in an irreconcilable battle, but only two different poles of a single world. There are two social poles with differences and peculiarities that do not create, however, unbridgeable distances greater than those existing between material conditions at the two physical poles of the earth (Castro, 1968a, p.53).

It is premature to deduce anything regarding this idea without analyzing the author's concurrence with the vision of Romain Rolland at that post-1945 moment, when European states had been divided into two blocs. At best, it is important to note that on the map of the geography of abundance, Latin America, Africa and the Far East constituted potential markets that were waiting to become part of the global economy. The assumption was that once the inhabitants of these areas were properly fed they could produce sufficient amounts to attain a level of life consistent with the technical possibilities of the modern world. In Castro's words: "The ideal approach would be to seek an understanding in this field of the essential needs that would allow adequate usage of the world's reserves, thereby consolidating the economies of all nations and helping to raise the standard of living for humanity as a whole" (Castro, 1968b, p.414).

In this sense, everything also depended on how the colonial powers would deal with the new world reality. Once transformed into large consumer markets these powers could "cooperate substantially in the structuring of a more balanced economy, absorbing the excess of given products from highly developed areas" (Castro, 1968b, p.415). From this standpoint, the problem of economic planning in underdeveloped countries was basically one of allocating scarce resources among competing objectives and programming their use in an efficient manner.

Thus, the prerequisite for achieving social harmony and peace was the replacement of a colonial economy with a cooperative economy in which conflicts of interest gave way to reciprocity. It must be borne in mind that Castro (1968b) claimed to believe in the future of humanity, in the benefits of the social revolution in progress at the time and in the constructive force of human cooperation. The dramatic question of biological survival would no longer prevail in a society free from hunger and the highest social stage would then be reached. This is indeed a revealing aspect of the author's convictions and gives rise to some interesting questions. With respect to the manner in which he expressed these ideas in his day it is definitely worth noting his belief that the admission of the colonial powers into the global economy, transforming them into large consumer markets, did not necessarily imply that social equilibrium would be achieved. To paraphrase the words of Rodrigues (1999), in the same way that predators so destructive that they would totally eliminate the prey on which they fed could not exist, colonial societies could not abandon global intersocial relations without poisoning themselves on the toxins of which they were supposedly the beneficiaries.

In fact, for Castro the creation of a society free from hunger raised a crucial question: establishing if a more humane economy could effectively be attained within the time limit of those who suffered from hunger, since suitable distribution and social harmony were well beyond the limits of existing technical and scientific resources. These possibilities depended on a big 'if' and this implied challenging the utopia of the men of science. There was a long fight to be waged against what he called 'human apathy':

Let us imagine that scientists come to discover all of this. How can farmers and plantation owners around the world, many of whom are ignorant, be educated in time? And how can the industrialists of the world, many of whom are selfish in addition to often being ignorant, be pushed in this direction? This is the crux of the problem ... Within these political contingencies, the problem of conquering hunger is beyond the limits of the capacity of the men of science and specialists (Castro, 1968b, p.407).

However, to appease these 'antisocial viruses' he recommended an antidote – knowledge – out of which freedom and wisdom would emerge. Castro saw education as the liberating factor that would make the economy more humane and triumph over the specter of hunger, freeing human groups from the stigma of fear that oppressed them. "We are therefore optimistic and in the social unrest and turmoil of our day we see signs of new times ahead, when the arduous victory over hunger will finally be achieved, which will be a major victory for the social stability of human groups" (Castro, 1968a, p.68).

It is important to glean from the above quotation that as an expert and ideologist, the author concentrated all his hopes of putting into practice the guiding principles for a society free from hunger on the doctrinaire platform of the creation of Ascofam in 1957. He singled out the material and pedagogical means and resources that would enable the implementation of two essential actions consubstantiated in a wide range of projects. Primarily, there was the dissemination of knowledge about balanced food intake and nutrition for training agents and multipliers to promote this cause worldwide. Simultaneously, national and local projects would be established to provide the impetus for food production and distribution policies in order to put the economic and social order of the post-war world on a new footing.

Eronildes da Silva Lima



Josué de Castro with professors and researchers at the Nutrition Institute laboratory, Universidade do Brasil, 1947.



Josué de Castro sworn in as chair of the FAO Advisory Council, 1952.



Signing human rights letter against hunger, Rome, 1952. (Photos from family archive)

Final considerations

From the above, it is possible to identify two standpoints from the outset, the first of which is commemorative, based on a gesture of reverence to one of the most influential founders of the field of nutrition. The second, no less reverent, but moved by the undisguised intention to accelerate the 'engine' of history, adds further questions to the knowledge generated. This is especially true in relation to the sociopolitical impact of the undertaking for social transformation aimed at the universal fulfillment of 'basic physical requirements' and the 'dignity' of the starving on the planet.

This reflection could lead in other directions that are not pertinent within these brief considerations and require further study. Nevertheless, as a person who experienced hunger in the flesh and the violence of poverty within his country, it is necessary to instigate a debate and amongst the many other possible issues single out two of them for future study. Firstly, to what extent can the dietary principles traced out in accordance with the logical reason of action on biological bodies fail to grant space for discussion of the non-biological dimensions of balanced food intake when dealing with the intense crisis experienced by starving peoples? Furthermore, since the author spoke to political leaders, businessmen, intellectuals and scientists about the implementation of a society free from hunger, this gave rise to the second question. This was to what extent can the conquest of collective emancipation through proposed integration from the top downwards do without pedagogical strategies and actions for the political emancipation of those peoples, in such a way as to transcend his culturally trained eye?

It is not sufficient to want to integrate in order to emancipate. The social relationships that govern productive economic systems find resonance in culture, considered here to be an amalgam of the multiple determinations of social life. This presupposes not only the existence of a commerce of hunger, but also of a historically dynamic ideological-symbolic order that gives support to the limits of toleration of misery. Underlying the capitalist mode of production is a capitalist form of thinking about food and the body since, as noted by Madeley (2003, p.28), there is an "idea of treating food in the same way as any other product – as trash cans or tins for food, for example". Bioethical and cultural realities represented the necessary unit of the strictly physiological sphere, the physical world, cognitive capital and the conventional forms of the social relations of production. It is within these boundaries that the body is located and where the great battle for a full life is waged.

Since Castro conceived of education as being the liberating factor that would control the social conflicts of the time, the collective emancipation thereby proposed neglected the precept that the starving peoples were not blank slates. It was also necessary for the pedagogical act to include elements of intense vitality and dynamism present in the construction of meaning and strategy existing within the psyche of these peoples. This would be done such that they could be superseded by more elaborate and profound collective expressions that allowed them to situate themselves in the world in which they lived, unleashing energy for transformation. What does liberating education consist of, when all is said and done?

The theme is still relevant. History repeats itself and new generations that are even poorer and more starving are produced, at a level of over 20% in the developing world. The difficult task in the next 25 years will be to guarantee that they, and the millions of others – who in accordance with current projections will be disenfranchised – will be properly fed (Conway, 2003).

Since active citizenship is an indispensable requirement in order to begin the emancipation process, and since the collective emancipation of the starving will never be achieved from outside – nor from above – as it must come from within, one must agree, in line with Negt and Kluge (1999, p.313) that a double learning process is needed. It must be a process that goes beyond the knowledge of balanced food intake principles, involving “assimilation of their own history and solid formation of the capacity for discernment of everything that is alien”.

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NOTES

¹ A free translation is provided here of the quoted titles and others that appear in different languages.

² The report presented data from the comparative table of the Diretoria Geral de Comunicações e Estatística da Polícia Civil do Distrito Federal for 1933, which showed that 139 of the 318 suicide attempts were fatal, 101 of which were men and 38 women, who ending their lives in various ways.

³ On the 1930 revolution, see Fausto, 1983.

⁴ Ascofam was created with the support and cooperation of a group of international personalities: Father Joseph Lebre, Abbé Pierre, Albert Schweitzer, Raymond Schevein, Loui Maire, Kuo-Mo-Jo, Paul Martin, Lord Boyd Orr, Tibor Mende, René Dumont and Max Habitch. On their doctrinaire platform and the projects presented and implemented, see Castro, 1960.

⁵ The reflection initially started with chemistry, which was first and foremost a French science. Its true founder, Lavoisier (1743-1794), published the seminal *Elementary treatise on chemistry* in the same year as the French Revolution. However, it was in the nineteenth century that chemistry took a revolutionary leap forwards: Lavoisier discovered that breathing was a form of combustion, establishing a relationship between the production of heat and the use of oxygen in the organism (Hobsbawm, 1981). The proposition that living beings were subject to the general laws of nature and that their manifestations were physical and chemical expressions was incorporated in Lavoisier's principles of bioenergetics. This led to the physical and chemical period of human nutrition. As an adept of physiology, Laplace was a collaborator of Lavoisier in the latter's research on breathing and animal heat and developed his determinist vision as a consequence of the reduction of quality to quantity which is applied in the essential identity of normal and pathological states (Canguilhem, 1990).

⁶ In relation to this, see also Peregrino Junior, 1936.

⁷ The thesis of acclimatization defended by Castro is listed in detail in Castro, 1946a. To better understand how the notion of climate and acclimatization theories have influenced the study of medical geography since the nineteenth century, see also Caponi, Jan.- Mar. 2007.

⁸ Canguilhem (1990) stresses Maurice Halbwach's 1912 criticism of Quetelêt's determinism. This determinism consisted of admitting that physical facts depended on the environment and that the physiological facts inherent in growth processes were interlinked in an independent manner from each other in the constancy of this process. Nevertheless, in the human species stature was biologically and socially inseparable. Thus, the statistical frequency translated not only vital normative aspects but also social normative aspects.

⁹ According to Ortiz (1986), Gobineau's racial doctrine (*Essais sur les inégalités des races humaines*, 1853-1855) was accepted in Brazil, where Gobineau visited as a friend of Emperor Pedro II. After Aryanism, Brazilians endorsed the theory of Latin degeneration (translated into criticisms of the Portuguese as the most backward Europeans) resulting from indolence and immorality.

¹⁰ In relation to these dualist theses about the existence of two Brazils, see Sodré, 1963 and Fausto, 1983.

¹¹ The following citation from Bobbio (1997, p.72-73) is suggestive for analyzing the sociopolitical dimension of Castro's work and his social inclusion as a public intellectual: "I believe it is sufficient to say that by ideologues I mean those who provide guiding principles, and by experts those who supply knowledge/means. All political action, like any other social action ... has a need, on the one hand, for general ideas about the objectives to pursue ... which I have called above 'principles' and which can also be called 'values', 'ideas' or even 'concepts of the world'; and on the other hand, technical knowledge that is absolutely indispensable to resolve problems for the solution of which the intuition of pure politics is not enough, but specific knowledge is also needed which can only be provided by people who are competent in the various separate fields of knowledge".

¹² In relation to the socioenvironmental damage caused by agri-industry and the contamination of food, see also Altwater, 1995; Bull, Hathaway, 1986; Madeley, 2003; and Conway, 2003.

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