

The biocultural understanding of food in the training of Physical Education teachers and the dialogue among Teaching, Science and Health

A compreensão biocultural do alimento na formação do professor de Educação Física e o diálogo com o Ensino, Ciência e Saúde

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Abstract

In a certain situation reminded me of my Physical Education undergraduate course in which I learned, from a technical and mechanistic view, that food is the essential energetic fuel for the proper functioning of the human machine called the body and that it was enough to balance the energy spent in physical activity and to keep track of the ingested calories. That is what was broadly accepted in the '80s. The biomedical model (health–disease relationship) was predominant then. Thus, it was acceptable to judge and condemn sugar as the villain of human eating habits, to blame fat and thin people for disobeying diets or for being too lazy to exercise and, consequently, for not fitting into fashionable body standards. I hear a nagging voice in my head: According to this way of thinking, is the matter food *versus* physical activity? I am not here to disregard the importance of biological knowledge—far from it—but are decontextualized actions enough to cause changes in habits and behaviors—that is, alterations in educational practices—without understanding the role that culture plays in human eating habits? In other words, does the teacher understand food beyond biological needs? This essay aims to reflect on how distant food as a biocultural phenomenon is from the training of physical education teachers. From the food perspective, it is supported by Contreras and Garcia (2011), Poulain (2013), Carneiro (2003), and Santos (2005). The structure of the text contemplates the path, the traveler, and the journey to the teaching/learning process as well as the scientific production.

Keywords: Food. Education. Research.

Resumo

A partir de uma dada situação, relembrei minha graduação de professora de Educação Física, em que aprendi, a partir de uma visão técnica e mecanicista, que o alimento é o combustível energético imprescindível ao bom funcionamento da máquina humana, chamada de corpo, e que bastava equilibrar, na famosa balança do organismo, o dispêndio de energia gasto pela atividade física e o controle de energia ingerida. Eis o aceitável na década de 1980. Era o predomínio do molde biomédico (relação saúde-doença), e assim era aceitável julgar e condenar o açúcar como vilão da alimentação humana da atualidade, culpar o gordo e o magro por desobedecerem às dietas alimentares ou por serem preguiçosos demais para não se exercitarem e, conseqüentemente, não obedecerem aos padrões de corpo da moda. Ouço a voz perturbadora de meu pensamento: Então, neste pensamento, a questão é o alimento *versus* a atividade física? Longe de mim desconsiderar a importância dos conhecimentos biológicos, mas será que ações descontextualizadas são suficientes para ocasionar transformações dos hábitos e comportamentos, ou seja, alterações de práticas educativas sem a compreensão do papel da cultura na alimentação humana? Em outras palavras, o professor compreende o alimento para além da necessidade? Este ensaio tem o objetivo de refletir o distanciamento do alimento como fenômeno biocultural na formação do professor de Educação Física. Na perspectiva alimentar, apoiou-me em Contreras e Garcia (2011), Poulain (2013), Carneiro (2003) e Santos (2005). A estrutura do texto contempla o caminho, o caminhante e o caminhar do ensino/aprendizagem, bem como a produção científica da área.

Palavras-chave: Alimento. Educação. Pesquisa.

Introduction

In 2015, I delivered a lecture entitled “Some reflections on obesity, sedentary lifestyle, and health problems in school” at a university in the state of Ceará. The audience consisted of students and teachers of Physical Education and educators in related fields.

The round table was composed of experts who debated and expressed the complexity of the topic from a variety of perspectives. Studies were enthusiastically presented based on the most current statistics on the growth of obesity worldwide and especially in Brazil. Starting from this point, the discussion turned to the importance of the role of physical education and nutritional education in schools.

Without considering the merit of the speakers and their respective expertise, for a brief moment I studied the young people in the audience—some, thirsty for knowledge, and others, in search of a better prescription for counting caloric values, taking anthropometric measurements, and calculating the Body Mass Index (BMI) to classify “perfect” bodies, exclude “imperfect” bodies from class, and work on body building.

To classify people. Phrenology did this.¹ So did biotypology.² Biometrics is another example of this.³ It is so easy to measure, label, categorize—in short, to frame bodies in accordance with the standards accepted in a given period of history and a particular social context and, consequently, to overlook the prejudice that this can set in motion. An example is the posters that Chabloz drew, following doctors’ instructions,⁴ portraying the biotypes of Northeasterners so they could be categorized to recruit “rubber soldiers” to work in the Amazon.⁵ The posters displayed an illustration of the anatomy of a “normal” man, termed *Normalinear*, to which the body types of Northeasterners were compared.

This practice is a legacy of medicine influenced by positivist ideas that emerged during the mid-nineteenth century in Europe aiming to calculate the food rations appropriate to a person’s weight and height. It is important to remember that these measurements are specific to certain social, economic, and even cultural circumstances. Today, BMI is considered an acceptable norm, but is this model still appropriate? Here’s what Poulain thinks:

An approach in the field of scientific sociology reveals controversy at the heart of the scientific body that founded medical obesity. One of these can be defined as the existence of contradictory arguments published in equally reputable journals. The use of the Body Mass Index (BMI) and the categories of corpulence that attempt to explain the link between body condition and risk factors, so practical in epidemiological research, is a crude measure for various non-Caucasian (non-white) populations. Variation in the thresholds between what is considered overweight and normal weight is also open to debate; some researchers argue that designating individuals as problematic even when they display no risk factor causes results that are contrary to what is hoped for.⁶

If it is debatable, why doesn’t it change? Poulain answers:

On this point, the critical tradition within the social sciences shows that the logic of special interests does not stop at science’s doorstep and that it is convenient to consider the relations between science and its surroundings. Lobbyists do not include only industrialists and politicians; there are also lobbyists at the heart of the scientific field. So, the question that emerges is not whether or not there are interests at stake but rather how the common interest is to be balanced against special interests.⁶

The sociologist's jibes get at the issue of the different interests that permeate knowledge and power, teaching and learning. I remembered my undergraduate program in physical education, in which I had learned, from a technical and mechanistic perspective, that food is the essential fuel for the proper functioning of the human machine called the body and that it was merely a matter of balancing the expenditure of energy consumed by physical activity with the number of calories ingested in the well-known equilibrium of the organism. That is what was accepted in the 1980s.

I return to my position as lecturer. I understand from the strength of the biomedical model (the relation between health and illness) how easy it is to judge and condemn sugar as the villain of current human eating habits, to blame the person who is underweight or overweight for disobeying his or her dietary recommendations or being too lazy to exercise and, therefore, not meeting the body standards that are in fashion. I hear a troubling voice in my mind ask, "Well, then, according to this logic, isn't the problem food *vs.* physical activity?" If that was the case, the solution would already be settled by so many scientific studies and interventionist policies. However, Poulain replies:

The rhetoric of the fight against obesity must be examined. It is based on a double argument. At first, the failure of obesity treatment and prevention serves as justification for displacing efforts from the level of healing to the level of prevention. "It is precisely because we don't know how to make obese people lose weight that we have to intervene earlier, before they become obese." Look. Everyone could potentially become obese, so we should intervene before the problem occurs. What's most surprising is that this reasoning again uses failure as a way to justify mobilization. In this case, failure is seen as the result of a lack of resources. "If we haven't succeeded, it's because we have only made half-hearted efforts. So, it is necessary to put together a 'package' and intervene with greater force, making obesity a national cause. The severity of the situation justifies it."⁶

In the opinion above, I emphasize that the social agent is especially the physical education teacher who carries out educational and preventive campaigns to combat obesity and lack of physical exercise in the national public school system. However, it is not about lack of information. Under these circumstances, the question arises: How did we go from the "geopolitics of hunger"⁷ to the fight against obesity?

Far be it from me to disregard the importance of biological knowledge. But are the campaigns cited above sufficient to bring about changes in habits and behaviors—that is, changes in educational practices—without an understanding of the role of culture in human eating habits? In other words, for the teacher to understand food as more than a biological necessity?

Thoughts race through my mind. As they slip past, I look back at the simplicity of the lessons learned in my college days and recall, in general terms, the history that I learned in my ongoing study of the process by which gymnastics—as it was termed—would later become the discipline of

physical education defended by hygienists during the transition from the monarchy to the republic.

The march of time reveals the historical vicissitudes between which the arguments oscillated, at one moment advocating improving the race, at another the national defense, as well as the need for the corporal education of the Brazilian through what then was *physical education*, then struggling to be accepted in Brazilian society.

My thesis is that, from this perspective, it is impossible for a teacher to teach physical exercises capable of changing habits and behaviors without understanding that food is a historical category⁸ tied to the social, economic, political, and symbolic dynamics in which “**satisfaction does not follow just the short** path that goes from plate to mouth but is embodied in habits, customs, rituals, etiquettes [...]. What you eat is as important as when you eat, where you eat, and with whom you eat.”⁹

Seen this way, food lies at the border between the fields of biology and cultural studies, showing that the relationship between nature and culture is multidimensional, making the intersection of multiple disciplines the focus in gastronomy, history, nutrition, biology, anthropology, sociology, physical education and other fields.

Meanwhile, other questions arose and aroused my curiosity to the point that I sat down to write this essay but without claiming to exhaust the topic, much less to provide answers to such ancient and complex questions, for example the professional preparation of physical education teachers.

My warning is that, after having spent years teaching at the college level, I still note the predominance of the biologicistic, authoritarian, and socio-culturally decontextualized discourse. Many teachers and researchers consider this criterion to be absolute truth, limiting professional preparation and shaping the production of knowledge in this field. Since so many truths have been questioned, from the solidity of Marshall Berman¹⁰ to the fluidity of Zygmunt Bauman,¹¹ why not pose the question: What if the current and hegemonic scientific model is wrong?

I am not being alarmist. In their 2013 study of the perceptions of physical education teachers in schools in Fortaleza, Ceará state, Ferreira et al.¹² found, regarding the concept of health taught in that discipline, that “many of the teachers involved have a limited understanding of its meaning, focusing on biologicistic issues.”¹²

This essay aims to reflect on how distant food as a bio-cultural phenomenon is from the professional preparation of physical education teachers. From the perspective of food, I relied on Carneiro,⁹ Contreras and Garcia,¹³ Poulain,⁶ and Santos.⁸ Readers should note that this is not about mounting a one-sided defense but about discussing the need to add a cultural dimension to biological studies.

On this shaky and uncertain terrain, the path I chose is a meditation that goes hand in hand with the traveler, which could be myself and/or the field of physical education, in the construction of arguments and the transformation of one or another, accompanying knowledge.

A path and the traveler

In their early history, humans, in their struggle to survive, satisfied their biological needs by ingesting food, and this search refined their manual, cognitive, linguistic, and social knowledge. Here lies the distinction between feeding and eating: “feeding is a nutritional act while eating is a social act as it entails attitudes tied to uses, customs, protocols, behaviors, and circumstances.”⁸

Starting from there, it is possible to understand that social changes recast the relationship with food, views of the body, and concepts of health in time and space; therefore, “it is not only about satisfying a physiological need, which is identical in all humans, but also about the diversity of cultures and everything that goes into shaping a people’s identity.”¹⁴

Seen thus from the historical-cultural perspective, one understands why some food-related practices, behaviors, and images that were well-regarded in the past are currently seen as reprehensible. It is because “food is not only food”⁸ but, rather, is associated with social distinctions, identity, the imaginary, social representation, conviviality, tastes, choices, myths, **access, conditions of production, marketing and consumption, habits, lifestyles, food security and insecurity, nutritional needs, food-related disorders and diseases—in short, it is found everywhere from macro- to micro-contexts.**

To study the history of eating is to search for the meaning of certain cultural practices. Here are some examples. At one time, body fat represented abundance. History is full of examples, some of which appear in works of art, from the frescoes of Pompeii and Rome to the paintings of Monet. Another archetype is the figure of King Momo, who, in Brazilian carnivals of the 1930s, represented the jolly fat man, weighing, on average, 130 kilos. But for health reasons, this weight had to be reduced; these days, King Momo still sports his good humor and samba steps but with an image of fitness.¹⁵

Beyond Carnival celebrations, being fat was considered desirable at other times in the past and is still considered so in some countries; for example, in the African country of Mauritania, the beautiful women are fat. Thus, starting in childhood, girls are subjected to practices designed to fatten them, usually drinking milk with couscous and being forced to eat using the *lebioh*, an instrument that squeezes the child’s feet if she refuses to eat. To this end, they even resort to the ingestion of corticosteroids in adulthood.¹⁶

Independently of social and economic circumstances, fat women are more sought after as brides by men of the Saharan desert. This reminds me of the parallel that DaMatta draws between food and women,¹⁷ and I observe that the part of the female body considered the “national favorite” among Brazilians (including the poet Drummond, who expresses admiration for “bounteous buttocks” in his work *Natural Love*¹⁸) does not differ much from the men of that region.

There is no shortage of prototypes. I can even add to them, drawing on the history of bodily, eating, and educational practices, such as the example of the famous contests to choose the most robust children in Brazil from the 1930s to the 1950s. In line with eugenic principles, a chubby child was considered a healthy child, so awards were given to the babies, mothers, and families who met the criteria of “well-born” babies, as demonstrated by the image below:



Image 1. Family of the award-winning child in the Eugenics contest.¹⁹

If there were some practices for gaining weight, they co-existed with practices and behaviors for weight loss as well as the value and meaning of transforming a fat body into a lean one, which went from the “medieval glutton” to the “revolution of the thin.”²⁰

Without running the risk of generalizing or being reductionist, I recall the case of Isabel Amalia Eugenia (1837–1898), Empress consort of Austria, Queen of Hungary, Croatia, and Bohemia, popularized in cinema by filmmaker Ernst Marischka’s *Sissi* trilogy (1950), who was portrayed as suffering mentally and physically from anorexia²¹ even before this illness was recognized, as it is today, as an eating disorder, together with bulimia and muscle dysmorphia. In this sense, it is necessary to understand how the act of eating is intertwined with emotion, feeling, and even memory.

The variation can also be illustrated from another perspective: weight loss methods have cohabited the same eating space, body and society, including corsets, weight-loss tea, restrictive diets, surgeries, and so many other devices in the male and female imaginary, as in the case of the first worldwide beauty pageants, represented by the “Misses” of participating countries, whose anthropometric measures would shock the ideal body proportions of the “lean” times so appreciated today. This phenomenon is understandable, since “the patterns of permanence and change in eating habits and practices reflect the social dynamic itself.”⁸

In this sense, changes in eating habits, values, and meanings of the body, health, and nutrition have to be understood in terms of the social process, because even the ancient Greeks’ concept of diet (*diata*), referring to the food eaten on a daily basis, is a far cry from its modern usage, which refers only to food restriction.²² Therein lies our paradox:

[T]here are people who die from lack of food or suffer from deficiencies of protein, calories, vitamins while others suffer from the opposite problem and submit themselves to exhausting and expensive diets and even surgical operations to limit the cosmetic and physiological damage caused by overeating and obesity.¹⁴

Thus, the limited biologicistic view cannot comprehend that even food production and consumption are tied to social behaviors and practices, which are not immutable, and this understanding reverberates in education, science and health.

In this long and silent social process, it is worth highlighting the role of sugar, which has not always been considered a villain. History proves this through the map of the sugar trading route, which brought the five continents into closer economic contact and extended their flavors. Regarding its origins, Flandrin and Montanari recount sugar’s triumph: “[A] luxury good of Muslim origin, it would still have been consumed rarely at that time; the first recorded purchase was by the Count of Barcelona in Manresa in the year 1181.”¹⁴

Originally a luxury good, sugar became essential to preserves, confectionaries, sweets, medication, wine, spices, banquets, and recipe books of delicacies. By the sixteenth century, Brazil entered the sugar trade. If this substance is considered harmful to health today, it is because all foods are invented and reinvented. Still on the topic of sugar, one cannot forget Freyre’s contribution in *Sugar: a sociology of the sweet with recipes for cakes and sweets of Northeastern Brazil*,²³ nor Figueiredo Filho’s *Brown Sugar Mills of Cariri: A Documentary of Rural Life*.²⁴

On that path, I emphasize how brown sugar is intertwined with school lunches in eating customs, from the work of sociologist Nicanor Miranda²⁵ to Professor Bezerra’s book,²⁶ as well as outside school in the science of nutrition and diet for athletes, including the benefits of brown sugar as a dietary supplement.²⁷

It's not enough to have a path and be a traveler; one must also think about the process, the journey, as the Spanish poet Antonio Machado says:²⁸ "Traveler, there is no path. The path is made by walking, and your walking makes the path." Thus, one must consider the journey of the physical education teacher towards eating as a biocultural element.

What, after all, does the biocultural approach to eating contribute to the professional preparation of physical education teachers? Based on Poulain, I argue that it is not sufficient to limit oneself to physical activity or diet control; it is necessary to understand the cultural dynamic that shapes representations of the body and corpulence, because, according to the sociologist:

this refers not only to lifestyles (physical activity and nutrition); it can also be seen as the systems of representation regarding the body and corpulence. The values associated with a type of corpulence considered attractive and desirable or, on the contrary, sloppy or repulsive evolve and change based on the social imagination. This is how behaviors are determined that seek to approximate an ideal (more or less restrictive diets and regimens) and very unusual ways of behaving, whether or not they yield results.⁶

Following the sociologist's words and the arguments presented throughout this text, perhaps it is time that we teachers and researchers in physical education (and let us not forget those who work in education, science and health) stop and consider the force of habit that gives rise to the dualization of the body, health, and eating between the biological or biomedical sciences and the humanities and learn to sum up what each can contribute to teaching and learning as well as to scientific research in this field.

However, the complexity of the teacher's professional preparation and practice are also entangled with practices that have come to be seen as natural through tradition; so, to work with the body from a biocultural approach, we must be careful not to repeat the "errors" of the past through physical education that is hygienist, eugenic, or overly technical in its emphasis.

There is no recipe to follow in this context, only clues to reflect on the role of the physical education teacher with the incorporation of bioculture, since, "when knowledge is relevant, it does not mutilate its object."²⁹

A fragmented, divided, or isolated view of knowledge hinders understanding of how knowledge is interdisciplinary, as Morin teaches.²⁹ The French philosopher believes that "we should not abolish disciplines but should integrate them, reunite them with each other."²⁹ His words closely reflect reality: the World Health Organization, for example, emphasizes that the meaning of health goes beyond the health-illness polarity to incorporate the social and economic aspects of well-being in peoples' lives, and this understanding should guide the work of physical education teachers as well as others.³⁰

This path is not about modifying programs but about promoting a change in thinking to focus on the multidisciplinary perspective in various fields of knowledge. For example, this occurs in the teams of professionals from different fields in the Family Health Program, in the work of Multiprofessional Teams for Nutritional Therapy, in multi-professional teams to care for the health of indigenous people—in short, an interaction that brings together, or at least tries to reconcile, professional training with educational institutions.

I stress that we should not forget that the pedagogical approach used, from elementary school to the university, is a political choice, and the social function of education, and particularly physical education, is to form a citizen fully capable of reflecting on and acting in his or her social context rather than merely a consumer attuned to the current body fashion and the diets of television personalities.

Final considerations

The professional preparation of physical education teachers has historically prioritized the biomedical fields in its curriculum and has thus distanced itself from the cultural aspects of understanding the body, health, and eating. These ideas are found throughout this essay.

In this regard, I consider that prioritizing some disciplines to the detriment of others limits understanding of the field of education, activity, and scientific research.

I emphasize that interdisciplinary work is possible, and this essay cites several examples that can guide changes in teaching and learning and in the professional preparation curriculum for physical education teachers.

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