

I. Development and State of Research

The Social Sciences and Research on Food Habits in the Netherlands

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Introduction

Certain links between the social sciences and research on food habits in the Netherlands date back to the end of the Second World War, when a number of descriptive studies on food habits were undertaken [6, 7, 8, 9, 21, 35]. However, in 1969 the Department of Human Nutrition of the Agricultural University in Wageningen established a partnership [12] between the social sciences and the natural sciences which gave research on food habits a new dimension [22]. The social sciences were now challenged to answer the question why people eat what they eat. This question on motives extended research on food habits beyond the mechanistic approach of the natural sciences which investigate the biological effects of food on man [24, 32].

This partnership between the social sciences and the natural sciences has consequences for the basic model of the science of nutrition as well as for the research models of the natural sciences. On the other hand, the social sciences have had to widen their set of basic assumptions [28]. The first part of this paper is concerned with these consequences; the second part describes models of social phenomena ("household" and "culture of eating" respectively), which were developed to aid sociological research on food habits.

I. Sciences and social sciences within the science of nutrition

1.1. A revised basic model of the science of nutrition

As long as the natural sciences dominated Dutch research on the man-food relationship and dietetics dominated the social sciences' approach to research on food habits, the science of nutrition was restricted to the well-known model of hygienics (fig. 1) [37].

Figure 1: Model of hygienics

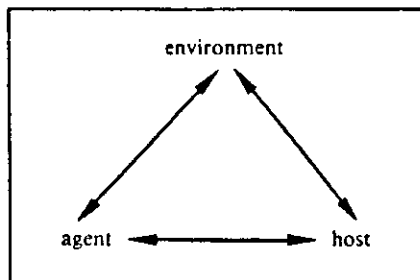
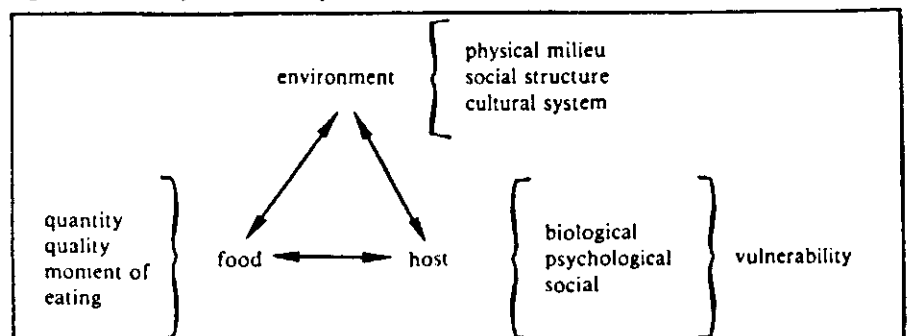


Figure 2: Model of the science of nutrition



However, when the social sciences became partners with the natural sciences in the field of nutrition, the shortcomings of this model became apparent. The concept "environment" did not explicitly refer to the three environments in which man lives: the physical milieu, the social structure of human relationships, and the cultural system of values, norms, goals and expectations. The concept "host" did not explicitly take into account the fact that man is socially, biologically and psychologically vulnerable. And in the paradigm of the sciences of nutrition the concept "food" had to replace the less appropriate concept "agent". And this made it possible to attach the concepts "quality", "quantity" and "moment of eating" to it. Thus a revised model of the science of nutrition was devised (fig. 2) [37].

This new model clearly reflects the partnership of the natural and social sciences in the field of human nutrition.

1.2. Questions for the natural sciences

For social scientists, the partnership with the natural sciences raises a few basic questions about the paradigms of the natural sciences. First, there is the question of the borderline between nature and culture¹⁾. For instance, is sensory perception a natural phenomenon or does culture also play a part? Where does genetic predisposition end for a certain type of behaviour and when does behaviour become a response to the pressure from a social structure and a cultural system?

Secondly, there is the question of the way in which natural scientists deal with inter- and intra-individual variability. This question is beyond the scope of this paper, but one critical observation should be made, which concerns the method of matching two or more samples of biological criteria in order to draw conclusions from comparisons between these samples. Ever since social data have been collected for research on food habits, there has been a tendency to process the data in the same way. As such, these data suggest, among others, a causal relationship between income level of the father and the mother's educational attainment on the one hand, and the nutritional status of their children on the other. However, BALLWEG [2] discovered that the rank-order of a child within the household is an intervening variable: more children with rank-order 4 to 9 showed symptoms of malnutrition than children with a lower or higher rank. Thus it may well be that income and education are less crucial in the development of malnutrition than the results of field studies conducted by the natural scientists suggest.

A third question concerns the relationship between data collected at an individual level, the conclusions drawn from these data at a group level and recommendations made for the society based on these conclusions. For example, now and again recommendations are made for campaigns against eating sweets for the society at large, on the basis of a study on the prevalence and incidence of tooth decay among a representative sample of, e.g., 2-6

year old children, and on the frequency with which this sample of children ate sweets and on the average amount of sweets eaten. As no consideration is given to the social and cultural causes for eating sweets, it is difficult to envisage how such a campaign can be successful.

A fourth question refers to the validity of the terms used in food consumption surveys. What are the rules and techniques used to verify beforehand that the terms used by the nutritionist have the same meaning for the layman? Has, for instance, the term "in-between meal" the same meaning for both investigator and his respondents?

The fifth question pertains to applied nutrition: which criteria should be used when recommended intakes of energy and nutrients are translated into actual foods to be eaten? For example, Western nutritionists tend to regard milk a good source of valuable nutrients, as a cheap food. But milk is a liquid as is coffee, tea, beer and wine and thus from this point of view a housewife may prefer to buy only a limited amount of milk because it is cheaper to brew a large amount of tea. She could, of course, prepare a solid food from milk, but that may also be more expensive than preparing a dish from other ingredients.

1.3. Food habits a subject of sociology

Sociology is often negatively defined as a science which takes no interest in the biological needs man shares with the animal world. However, in fact, sociology is concerned with basic human needs which distinguish man from animal and which give rise to structured interpersonal relationships. Consequently, ETZIONI [20] and others, have emphasized that man's need for food is not of sociological interest, which nicely explains why as yet no articles on food habits have been published in sociological journals in the Netherlands.

As opposed to sociology, cultural anthropology has always had a lively interest in phenomena related to man's need for food. One of the main reasons for this is that conclusions can be drawn about the social relationship in a particular society from data on food production, pro-

cessing and consumption. This makes it legitimate to go in the opposite direction and use sociological theories and knowledge about social relationships to explain food habits. In fact this procedure demands no more of sociology than the realisation, that it is typically human to attach meanings to sensory perceptions, which have no direct relationship to what the senses really perceive. In other words, sociologists have but to recognize that man has incorporated in his food habits all kinds of signs and even systems of those signs. However, to discover these signs and sign systems, sociologists need to take into consideration the biological characteristics of man as established by the natural sciences.

For example, it has been shown that man appraises different aspects of his food simultaneously and successively with more than one sense organ. Before he starts to eat, he sees the colour, shape and volume of his food, and at the same time smells it. When he starts eating, he perceives the consistency, temperature and taste of his food. Thereafter, he observes how his body reacts to the intake of food (e.g. he feels full, "feels" his stomach, his intestines bother him, he becomes intoxicated etc.). The society in which he lives teaches him to attach specific meanings to those experiences, meanings which have no direct relationship with what his body feels.

Sociologists must also take into consideration that in the first years of life, and quite often in his last years, man depends on one or more fellow human beings for his food. In the intervening years he may have to provide food for other people. On this basic fact rests the social phenomenon "household", which universally provides food for its members in the form of meals. It is furthermore necessary to realize that man's bodily resilience and strength and the sensitivity of his sense organs change with age. Thus it has to be expected that man's food habits and the habits in his household will change with time.

¹⁾ Culture, as defined by CLAESON [10], is knowledge acquired in a social context.

2. Research on food habits in the Netherlands

Research on food habits began with descriptive studies concerned with what people ate. However, these surveys suggested that the type of household, the type of meal and the type of habitat had some influence on the food habits of the individual. Since sociological models for the social phenomena "household" and "meal" were lacking, these had to be formulated.

2.1. Food habits and the household

In the period shortly after the Second World War LEWIN's pronouncement was readily accepted that "the housewife is the gate-keeper of the food habits of her family as she controls the food supply; changes in food habits therefore depend on changes in the psychology of the shopper-housewife" [29, p. 333]. A study of literature [13] revealed that LEWIN had not fully appreciated that even at the household level, control of the food supply does not always coincide with control of the preparation of food in the kitchen, with control of the composition of the meal or even with control of the distribution of the different elements of a meal. This study indicated that there are three types of gatekeepers of the food habits of the household and that each type of gatekeeper could be subdivided into two subtypes, one conscious or manifest and the other unconscious or latent.

Continued study of sociological and anthropological literature [17] led to the construction of a model of the household based on the assumption that within the household, behaviour is directed by a set of five values¹⁾ and that the viability of the household rests on three pillars. The five values which direct behaviour within the household are set out as follows:

- The household must function as a recognizable and addressable unit both from within and from outside.

- It should watch over the physical welfare of all its members.
- It should watch over the spiritual welfare of all its members.
- It should regulate the participation of each member of the household in other social institutions.
- It should regulate the behaviour of each member of the household so that the above can be realized.

It is assumed that the viability of the household rests on three pillars; its economic web, its social structure and its cultural system. The economic web (table 1) can be seen as a fabric with a warp of means and a weft of activities. The means refer to the capital goods which a household possesses and to the available human energy, time, money, knowledge and skills of the individual members of the household. These activities include not only the daily tasks of cooking, cleaning, tidying up and shopping out also other activities such as the making of clothes, preserving foods, and the occupational tasks of the individual members of a household.

Table 1: The warp and weft of the economic web of households.

resources	Activities		
	daily activities	production for stock or for sale	occupational activities
capital assets			
time			
energy			
money			
knowledge			
skills			

The social structure is defined as the network of relationships between the members of a household and it is assumed that this network depends on the division of rights and duties, knowledge and skills, organisational and executive tasks between the members of a household as this division regulates the interaction between household members. The cultural system is defined as a connected system of values, of norms, of goals and of expectations [11]. The viability of the cultural system of a

household depends on the measure of disagreement and the duration of disagreement which the members of a household find acceptable.

As the energy, social needs and cultural norms of the members of a household change as a consequence of aging, changes occur in the economic web, the social structure and the cultural system of a household. Thus it is implicit in this model that households change with time. Another implication of the model is that differences in food habits of individuals can be attributed to differences between their households arising from differences in economic web, social structure and/or cultural system.

When this model was first applied [17] to data from a systematic study of arguments used by housewives for the selection and preparation of foods it was found that food selection and preparation were intricately interwoven in the social institution "household". It was also found that housewives were fully aware of this fact and acted accordingly. Their knowledge proved to be so extensive that it has been labelled "food knowledge", a term which has been defined as a coherent body of facts, concepts, expectations and suppositions about the possibilities and desirabilities to preserve human life and promote health, to develop personality traits, to further mental well being, to structure interpersonal relationships and to maintain the household. Thus, from this study it can be tentatively concluded that the model as developed may be useful in analytical research on food habits.

2.2. Food habits and the culture of eating

Since 1945 a number of historical studies on Dutch food habits have been undertaken. Some of their authors tend to equate raw material of plant origin with only one specific food, for example, wheat grain tends to be listed only as bread grain [31]. However, in fact, wheat grain could have been ground to produce grits and different kinds of flour. So the housewife might have had a whole range of semi-manufactured products at her disposal with which she

¹⁾ A value in sociological jargon is an abstract starting point for behaviour [11, p. 468].

Table 2: The frequency of the use of food in the weekly menu of the Burgerweeshuis of Amsterdam 1820; condensed from Burema [9, pp. 271/272]

frequency per week	midday meal	frequency per week	evening meal
1 ^{a)}	pulses, beef suet, beef; rye bread	4-5	barley with buttermilk and rye bread with butter
2 ^{b)}	barley with a sauce made from milk or buttermilk with butter or barley with beef suet; buttermilk with lumps ^{c)}	2	barley with milk and wheat bread
2	2 vegetables ^{d)} with beef suet or butter or bacon	0-1	buckwheat meal with buttermilk and rye bread with butter
2	vegetable soup with barley, bone jelly; rye bread		

- a) When vegetables were expensive this menu was more often served, but then without beef.
 b) When available cheaply millet or rice were used instead of barley with milk and butter.
 c) It is not clear of those lumps were breadlumps or dumplings or something else.
 d) Potatoes were always served. In winter the second vegetable was one of the following: sauerkraut, cabbage (red or white), potted sliced beans, carrots. In summer: turnips, carrots, broad beans, french beans.

could have prepared a variety of dishes and with these dishes have composed a number of different meals. Flour could for instance have been made into pasta, bread, dumplings or used to thicken other dishes. Groats could have been used to make porridge or sausages [27, 36]. If groats, grits and flour have a place in a society's culinary art, then it follows that they have their places in that society's art of serving food. And the same is true of other foods, as the data of BUREMA [9] on the weekly menus in the Burgerweeshuis, an orphanage in Amsterdam, among others, demonstrate (table 2). In view of the present day Dutch menu, these data (which date from 1820) suggest that potatoes were used as a substitute for pulses and barley, and not for pulses and tubers as suggested by another author [38]. The menu of 1820 also suggests that the peaty soil and brackish water around Amsterdam was favourable for dairy farming and cattle breeding and not for

pig breeding. This thesis is supported by MÉMARDINOUEF [23], who is of the opinion that before potatoes became a popular crop, pigs could only be bred in areas with a reasonable cover of oak trees. This may well explain why beef suet, butter and beef, appeared on the weekly menus of the orphanage and why bacon occurred only occasionally and pork not at all. It is further interesting to note that barley with buttermilk was systematically combined with rye bread and butter, while barley with milk was combined with wheat bread. It is moreover worthy of note that there was a clear distinction between food served for the midday meal and the evening meal. These observations suggest that analyses of menus may reveal interesting facts about the development of food habits and be useful in prognostic studies on food consumption.

DE BEKKER [5] was the first to publish a study on the daily amounts of a specific food, in this case bread people consumed and on the times of day they ate it. Since then, there have been comparative studies of literature from which hypotheses have been formulated about the relationship between the foods used in specific meals and the symbolic meaning of those meals [14], about the effect of (ethno)dietetics³⁾ on food habits [15], and about the effect of tradition in food preparation and

menu planning on the choice of raw material [16]. The concept of a "mealtime-pattern" was then developed [16, 34] and a theoretical "mealtime-pattern" was formulated for the Netherlands as set out in table 3.

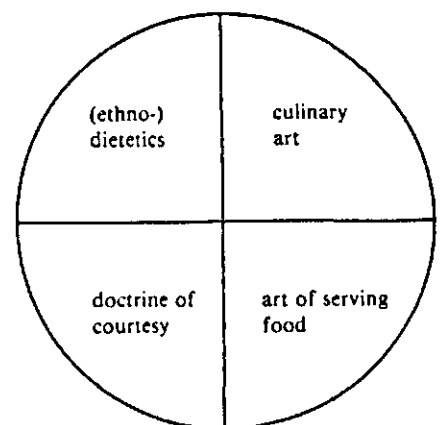
Thereafter, the social phenomena "the culture of eating" has been devised [18]. It can be seen as a four dimensional phenomenon (fig. 3). The three dimensions of which nutritionists are more or less aware, are (ethno)dietetics, a culinary art and an art of serving food.

The fourth is the doctrine of courtesy. According to Norbert ELIAS [19] this doctrine teaches Europeans to express respect for their companions and for themselves through their table manners. Today this very idea of respect is supposed to guide the European housewife when she prepares food in her kitchen and when she sets the table for a meal. Thus housewives, when preparing meals take into account the sensibilities of those who will sit

Table 3: Theoretical mealtime-pattern for the Netherlands

time	compulsory	optional
on rising	a drink	—
breakfast	food	drink
10-11 am	drink	food
12 am-2 pm	food	drink
3-4 pm	drink	food
6-7 pm	food	drink
8-11 pm	drink	food
before going to bed	—	drink, fruit or snack

Figure 3: The culture of eating



³⁾ Ethnodietetics is a more or less coherent body of knowledge about man's need for food and nutrition which rests on conceptions about the way the human body functions, about the digestive and other processes triggered off by the consumption of specific foods and liquids, and about a taxonomy of plants and animals and the products thereof, conceptions which are not necessarily based on the paradigm of the modern sciences of nutrition [1].

down at the table to eat her food, whether these sensibilities have biological, psychological or social origins. Some qualitative data suggest [18] that this doctrine of respect affects the type and amount of food people eat in successive courses of a single meal.

Miscellaneous observations suggest that Dutch people have great problems with self-service meals when the dessert must be selected before the main course of their meal [18].

Thus it seems worthwhile to incorporate all four dimensions in the model of the culture of eating.

It should be mentioned that this model implies that differences in food habits are caused by differences in ethnodietetics and/or in culinary art and/or in the art of serving food and/or in the doctrine of courtesy, and that spontaneous changes in food habits occur as a result of changes within one or more dimensions of the culture of eating.

The described sociological models for the social phenomena "household" and "culture of eating" open up avenues for the formulation of testable hypotheses on the causes of different food habits, on the maintenance and change of food habits, and on change in direction of alteration in food habits.

Conclusion

The emphasis of this paper has been on theoretical issues which arise when the natural sciences and the social sciences work together in the field of human nutrition.

The development of research on food habits in the Netherlands has been traced from descriptive studies to comparative studies of literature and to qualitative and quantitative field studies. These studies have already shed some light on how man relates himself to his food. But there is more to come. For what has been learned is only the top of an enormous iceberg on which many a nutrition education program and many a food policy has foundered.

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