

## Structure and change in food habits

By Tahire Koctürk

### Summary

The Nutrition Division of the National Food Administration is engaged in a number of public health programmes, one of which includes working with immigrant groups and new food cultures in Sweden. As the nutritionist responsible for this programme, I am regularly confronted with the need to understand how food habits are constructed. Observing the food selection behaviour of immigrants as they adjust to a new environment is gratifying from this standpoint. Inspired by observations and various literature studies, a model which simplifies the understanding of the structure and change in food habits has now been developed. This model is applicable not only to people from different food cultures, but also to individuals and groups going through periods of nutritional transition.

### Sammanfattning Matvanors struktur och förändring

Livsmedelsverkets näringsenhet bedriver ett antal program i kost och hälsa. Ett av dessa inkluderar att arbeta med invandrare och främmande matkulturer i Sverige. Som den ansvariga nutritionisten för detta program, konfronteras man ofta med behovet av att förstå hur matvanor är konstruerade. Att observera hur invandrarnas matval anpassas till förhållanden i en ny miljö är givande från denna synpunkt. Inspirerad av observationer och olika litteraturstudier, har en modell som förenklar förståelsen av matvanors struktur och förändring utvecklats. Denna modell kan användas även för att kartlägga matvanor hos individer och hos andra grupper som befinner sig i nutritionella övergångsperioder.

### Introduction

It is often assumed that food habits acquired early in life are resistant to change. There is a premise that food habits are maintained long after adjustment is accomplished to most of the other factors in a new environment (1-3). This observation fails to provide an explanation as to why dietary change is implicated as the major factor behind the increase in nutrition-related chronic diseases among, for instance, immigrants and minorities adjusting to a "Western" diet (4,5), or native groups undergoing periods of nutritional transition (6), often resulting in a third dietary pattern different from the earlier food habits or the mainstream patterns in the new environment (7,8).

### The structure of food habits

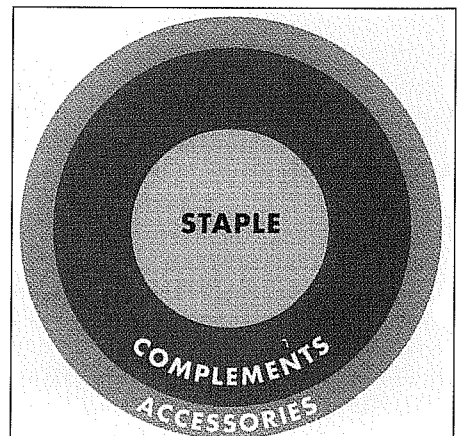
An exploration of the conceptual functions that different food components perform in

the composition of a meal gives clues as to the degree of importance placed on each item as a signifier of the type of food culture with which an individual or a group identifies itself. This is presented in Figure 1, where food items are assembled in three major groups assigning them different degrees of importance according to the role they play in the construction of a dish and/or meals (irrespective of their nutrient value). In this model, staples are assigned a central role, with complementary and accessory foods playing secondary and tertiary roles, respectively.

*The staple<sup>1</sup> food(s):* Nutritionally, a staple is usually a carbohydrate-rich food with a mild/neutral taste having a widespread, inexpensive availability in an environment. It is the principal component of most meals or accompanies most dishes. The variety of staples in most cultures is limited to a few items such as bread, rice or potatoes. The staple is the most important element in a meal because it directly defines the affiliation of the cuisine. It is possible to identify the background of individuals according to their staple foods: Asians are usually rice-eaters and those who frequently eat boiled potatoes are usually of North European ancestry. It is often impossible to compose culture-specific meals if the appropriate staple is not available. Its role is central, probably because of the difficulty to substitute it

with another item without changing the affiliation of a dish<sup>2</sup>. The staple is thus the *sine qua non* element of all food cultures and the backbone of food habits. This is why it is given a central place in Fig. 1. When studying food habits, it is useful to first identify those items that serve as staple foods.

**Figure 1. The structure of food habits. Food items are assembled in a circle as three major groups assigning them different degrees of importance according to the role they play in the construction of a dish and/or meals, irrespective of their nutrient value. Staples play a central role, with complementary and accessory foods playing secondary and tertiary roles, respectively.**  
**STAPLE:** Potatoes, wheat, rice  
**COMPLEMENTS:** meat/fish/eggs, milk/cheese, vegetables, legumes  
**ACCESSORIES:** Fats, spices, nuts, sweets, fruits, drinks.



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**Complementary<sup>3</sup> foods:** For a meal to be complete, the staple must be complemented with other foods. Complements to the staple may be one or several items from four food groups: meat/fish/eggs, milk/cheese, vegetables and legumes. These are given different degrees of priority in different cultures. In North European tradition, the staple (potatoes, crisp bread etc.) is usually complemented, in the first place, with items from the meat/fish/eggs and milk/cheese groups. In Hindu-vegetarian tradition, the staples (rice or bread) are predominantly complemented with the vegetable and legume groups.

Combined with the staple, complements constitute the basic foods, but their role is secondary compared to that of the staple. While a staple usually may not be substituted, complementary foods can sometimes be exchanged without threatening an entire food tradition<sup>4</sup>. The second step in the study of food habits is to identify items that are most often used as complements to the staple and the order in which they are given precedence in the food combination pattern.

**The accessory<sup>5</sup> foods:** Food groups – including items such as fats, herbs and spices, sweets, nuts, fruits and drinks – are accessories to basic foods (the staple and complements) because their culinary role is mainly to enhance the palatability and presentability of meals: The types of fat and spices that are used add taste to basic foods; the drinks, sweets, nuts, fruits decorate a meal. The role of these foods in meals can be metaphorically compared with the function of accessories that add a final touch, give a certain flair to the appearance of an attire. Their role is subordinate to the staple and its complements.

In a strict sense, accessory foods are not necessary for the survival of a food tradition. Even though a tradition suffers in the absence of its accessory foods, it does not disappear; it is possible to exchange or substitute these foods with greater freedom<sup>6</sup>. The third step in the study of new food habits is to identify items that are most often used as accessories to the staple and complementary foods.

### Food habit tables

Identification of the elements of a cuisine using the method suggested above makes it possible to structure the food habits of groups and individuals for simple presentation and comparison. In Table 1, the most common food combination patterns in two countries are schematized and presented in summary. A comparison of the staple(s), complements and accessory foods shows the points of agreement and divergence between the two traditions<sup>7</sup>.

**Table 1. Food combination schemes in the Swedish and Turkish traditions in summary.**

	Swedish tradition	Turkish tradition
<i>Staple foods</i>	Boiled potatoes, crisp and soft breads, pasta, rice	Soft breads, bulgur, pastries, pasta, rice
<i>Complementary foods</i>		
Meat/fish/eggs	Pork and products, seafood, beef, chicken, etc.	Mutton, lamb, chicken, <i>organ meats</i> . <i>Restricted pork and seafood</i> .
Milk and products	Fresh and sour cow's milk, aged cheeses	Cow and sheep milks. Yoghurt and fresh cheeses.
Vegetables	(Mostly) root vegs, cabbage, salads, mushrooms.	Great variety.
Legumes	Kidney beans, peas. Restricted consumption.	Great variety.
<i>Accessory foods</i>		
Fat sources	Margarine, butter, cream (oils)	Margarine, butter, olive oil, other oils.
Herbs and spices	Parsley, dill, pepper, thyme, cinnamon, etc.	Parsley, dill, pepper, mint, cinnamon, etc.
Sweets and desserts	Great variety. Frequent consumption.	Candy, "halvas", "baklavas", puddings, etc.
Nuts and seeds	Hazelnuts, almonds. Restricted consumption.	Great variety. Liberal consumption.
Fruits	European and tropical varieties. Berries.	European varieties. Liberal consumption as desserts, snacks.
Drinks	Milk, water, beer, juices, soft drinks, coffee.	Yoghurt, water, soft drinks, coffee, tea.

### Food habit changes – two case examples

Many people may be unaware of the changes they have been introducing to their diets at the beginning of periods of nutritional transition. Given the relationship between food and identity, immigrants are particularly adamant in purporting they maintain their home country habits. Superficial observations of food combination patterns and menus may seem to confirm that basic similarities, indeed, persist. A closer scrutiny of the ingredients and their utilization, however, implicates important substitutions which influence the nutrient composition of the meals.

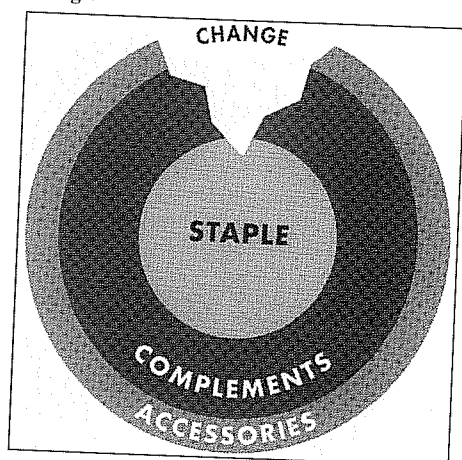
**Example 1. Turkish immigrants in Sweden:** In an earlier article, the food selection behaviour of second generation Turkish immigrants in Sweden was described as: "Young families do not share the parent generation's eagerness to save from the food expenses, to buy cheap and in bulk, to transport food all the way from Turkey, and to preserve food at home. Neither do they worry if there is no salad on the table at every meal. They are no longer satisfied with fruit and nuts as snacks. Now they prefer ice-cream and cakes. The meals Turks now eat contain numerous Swedish variants, but they are still called Turkish names: *musakka*, *yahni*, *börek*, *kebab*. The ingredients are different. There are fewer fresh vegetables and more meat. Tomatoes

have been replaced by tomato sauce, olive oil by butter, ayran by fruit syrup (*saft*). The generous seasoning with fresh herbs is now omitted. All these changes affect the nutrient composition of the diet towards resembling that of the Swedes, even though few Turkish immigrants would find it easy to believe that they now are eating like Swedes (9)."

A typical traditional Turkish dinner menu usually consists of a staple, a vegetable/meat casserole, yoghurt, salad, bread and fruit. In Sweden, such a menu is modified by replacing the vegetables with meat and the yoghurt drink and fruits with fruit syrup and ice cream, respectively. The meal still has a "Turkish appearance," but if analyzed at a nutrient level, it will probably be found that the diet includes less fiber and vitamin C, more protein, iron, saturated fat and sucrose.

**Example 2. Vietnamese immigrants in UK:** The staple food in the traditional Vietnamese diet is rice, which, combined with quick-fried meats or fish and vegetables and seasoned with some specific sauces, constitutes the main dish. Dishes are accompanied with clear soups or tea as drinks. The most common fruits are of tropical origin; the consumption of sweets and desserts is restricted and pork lard and soya bean oil are the most frequently used sources of fat (10). When Vietnamese immigrants settle in a western industrialized society, the first dietary changes occur in the increased consumption of "Western"

Figure 2. Change in food habits. Adaptation to new food habits proceeds from the outer shell toward the core — a diet begins to change with the incorporation of new types of accessory foods to different complements and finally to the incorporation of new staple foods. The closer the change proceeds toward the center, the slower the change.



drinks such as coffee, carbonated drinks and beer to the disadvantage of the traditional clear soups and tea. The consumption of European fruit varieties (pears, apples etc.) also increases, as does their intake of cakes, muffins, potato chips and other snack foods with sweet/savoury characteristics typical of Western societies. Consumption of the culture-specific fat — pork lard — decreases in favor of butter. Despite these changes, the staple rice and the traditional combinations of quick fried meats or fish and vegetables are maintained (11).

### Dynamics of changes

When the nature of the foods that are substituted or maintained in the above two examples is studied, we find that the foods that change most easily are items grouped under "accessory foods," while those that seem to be maintained for the longest period of time are the "staples." The "complements" seem to change with ease and with time period between the two extremes.

Change in food habits seems to begin with accessory foods. This may be because of the peripheral role they play in meals as "taste-givers" and because they usually can be substituted without threatening a whole culinary tradition. As such, accessory foods seem to constitute the weakest point through which a culinary tradition can be infiltrated with new items (sweets, fats, spices, fruits, drinks<sup>8</sup>).

Figure 2 illustrates how change is introduced. Food habit changes proceed from the outer shell toward the core — a diet begins to change with the incorporation of new types of accessory foods to different complements and finally to the incorporation of new staple foods. The closer

the change proceeds toward the center, the greater the resistance and the slower the change. Attachment to traditional staple foods is strongest. Italians who emigrated to the USA at the turn of the century still regularly consume old country staples such as pasta and bread (12). A Chinese family eating potatoes, steak and sauce for dinner can be assumed as totally assimilated to a North European food culture. Given the central role a staple food plays in any cuisine, it is perhaps not surprising that it is the food item that changes last, if at all. Only when people begin routinely eating the staples of another culture, is it possible to assume that they have totally changed their food habits.

### Changes in mealtimes

When working and leisure time activity patterns change during a nutritional transition, mealtimes invariably have to be adjusted to the new style of life. Once again, attachment and the sense of security derived from different mealtimes seem to determine the selection of foods at each eating occasion. The food content of those

mealtimes that carry the most culture-loaded value change last, while those which are more culturally neutral change first.

The first change in mealtimes among immigrants is that the incidence of nibbling between meals ("snacking") increases (13). The next change occurs at the mealtime that is considered least culture-loaded: breakfast (14,15). This is followed by lunch, which is the occasion when one most often comes into contact with the new society and its culinary norms. The evening meal is reserved for strengthening the sense of belonging and security — traditional foods are preferred. This reasoning can be extended to other occasions. On a daily basis, the everyday situation changes first while the holidays are reserved for familiar foods. On a life-cycle basis, holidays are those occasions when people, try to eat their "own" foods for as long as possible (7).

Thus, the answer to the question "Do food habits change easily?" is both "yes" and "no." Yes, they change easily at the accessory food level; and no, they do not change easily — at the staple food level.

### Notes

- 1 Staple: a principal raw material or commodity grown or produced in a region; a basic dietary item such as flour, rice or corn; a basis or principal element or feature (American Heritage Dictionary 1992).
- 2 In order to be defined as such, spaghetti bolognese must always be made using spaghetti-type pasta as the staple. If, for example, rice is substituted for spaghetti the dish can no longer be called spaghetti bolognese, but now becomes risotto.
- 3 Something that completes, makes up a whole, or brings to perfection (American Heritage Dictionary, 1992).
- 4 The meat sauce for spaghetti bolognese can be made with either beef or pork. A change of name is not necessary as long as the spaghetti is complemented with red meat and not, for example, with fish.
- 5 An accessory: a subordinate or supplementary item, an adjunct; something non essential but desirable that contributes to an effect or result (American Heritage Dictionary, 1992).
- 6 Ideally, the taste of spaghetti bolognese should be enhanced with olive oil and oregano (and other ingredients). The impossibility of substituting the staple and the limitations to substituting the meat in this dish were mentioned. It is however possible to substitute margarine for olive oil and thyme for oregano and still call the dish spaghetti bolognese.
- 7 This type of table is easily constructed — a number of interviews and a study of ethnic cookbooks is usually sufficient for identifying common foods and determining their place in the model suggested in Figure 1. The tables are of great value for nutritionists and others who come into contact with people of different backgrounds and would like to have a quick insight to their food habits.
- 8 We remember that spices were among the very first foods accepted in Europe from Asia. The meeting of Europeans with these "accessory foods" had a very strong impact not only on food habits, but also on the technological and political expansion of Europe. We also recall that the first foods that penetrated the Eastern countries following the detente of the 1970s were the "cokes" (Coca Cola and Pepsi Cola), foods which often are referred to as symbols of "capitalism", here classified among accessory foods.

### References

1. Freedman R.L. Nutrition problems and adaptation of migrants in a new culture environment. *International migration* 1973;1:15-31.
2. Spiro M. *Amer. Anthropologist* 1955; 57:1240-52.
3. Mead M. *Malnutrition and food habits*. (Eds. Burgess A. and Dean R.F.A.) Macmillan 1962.
4. Wright-St Clair R.E. *Diet of the Maoris of New Zealand*. In: *Food, Ecology and Culture* (Ed. J.R.K. Robson) 1980:35-44.
5. Thomas J.E. *Changing lifestyles: The effects on a balanced diet*. In: *A Balanced Diet?* (ed. J.Dobbing) Springer Verlag 1988.
6. Popkins B.M. *The Nutrition Transition in Low-Income Countries: An Emerging Crisis*. *Nutr. Rev.* 1994; 52(9):285-96.
7. Kocitürk-Runefors T. A model for adaptation to a new food pattern. The case of immigrants. In: *Palatable worlds*, (eds. Fürst EL, Prättälä R, Ekström M, Holm L and Kjaernes U.) Solum Förlag, Oslo 1991.
8. Wallendorf M. and Reilly M.D. *Ethnic migration, assimilation and consumption*. *J Consumer Res.* 1983;10: 292-302.
9. Kocitürk-Runefors, T. *Changes in food habits and nutritional status of immigrants from Turkey in Sweden*. In: *Nutritional adaptation to new lifestyles* (eds. Somogyi J.C. and Koskinen E.H.) Karger 1990.
10. Barer-Stein T. *You eat what you are. A study of ethnic food traditions*. McClelland and Stewart. 1981:533-41.
11. Carlson E., Kipps M. and Thomson J. *An evaluation of the traditional Vietnamese diet in the UK*. *Human Nutrition: Applied Nutrition* 1982;36A:107-115.
12. Goode J, Theophano J. and Curtis K. *Group-shared food patterns as a unit of analysis*. In: *Nutrition and behaviour* (ed. S.A. Miller) Franklin Institute Press 1981.
13. Mejare, I.S., and Mjones, S. *Dental caries among Turkish immigrant primary school children*. *Acta Paediatr Scand* 1989;78:110-14.
14. Crane, N.T. and N.R. Green. *Food habits and food preferences of Vietnamese refugees in North Florida*. *J Amer Diet Assoc* 1980;58:277-80.
15. Grivetti, L.E. and M.D. Paquette. *Nontraditional ethnic food choices among first generation Chinese in California*. *J Nutr Educ* 1978;10:109-12. □