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Consumer skills contribute to maintaining and diffusing heritage food products

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Consumer skills contribute to maintaining and diffusing heritage food products

Introduction

- Food heritage plays a central role in our cultural heritage. It can be maintained, enhanced, reconstructed, or disappear. Therefore, not surprisingly, in many countries, food heritage is currently receiving a great deal of attention. In France, the "Inventories of local products and culinary heritage", commissioned by the Ministry of Culture and the Ministry of Agriculture since the 1980s, have already been carried out in nearly all of the 22 French regions (see for instance: *Conseil national des arts culinaires*, 1997). In Brazil, an inventory of intangible cultural heritage is currently underway (IPHAN, 2006). Inventories of traditional products and recipes are of both economic and cultural interest. For instance, South Korea has drawn up an inventory of recipes for 3,500 dishes described in historical texts. The resulting information was posted on a website¹ with the aim of preventing any attempts by multinational firms to patent parts of traditional knowledge for their own profit (Kim, 2009). In all these cases, the main emphasis has been on the food and its production, i.e. products, location, production technologies, recipes, and so on, whereas little attention has been paid to consumers.
- 2 A number of authors have questioned how knowledge and know-how are created and can be diffused, but their main focus has been on food production, not consumption (Moity-Maïzi & Muchnik, 2005). Bérard and Marchenay underlined the link between local food products and local knowledge and know-how (Bérard and Marchenay, 1998 or Bérard and Marchenay, 2006). These authors affirm that "the question of valorization cannot be tackled without taking the consumer into account²" (Bérard and Marchenay, 2004:153), but they actually only indirectly refer to concrete consumption practices. In our opinion, consumers are essential for ensuring the survival of a food product, as they buy a perishable product that will rapidly disappear if nobody wants it. History is full of records of food products that no longer exist or are no longer used. Furthermore, consumers are not only buyers but are also responsible for the product after its purchase, and are thus able to increase or reduce its quality. Consumers are ultimately mainly responsible for the pleasure they experience when eating or drinking. Consumer tastes or preferences for food products are usually considered to be a black box. In this paper, we show that consumers are actively involved and use skills and technologies to obtain the utility or service they expect from the food products they purchase.
- This approach enables us to stress the importance of consumer skills and technologies in the sustainability, and sometimes in the diffusion or *re-appropriation* of a heritage food product. The concept of consumer skills and technologies as heritage could be useful for all those interested in enhancing food heritage as well as for the design and implementation of actions, programs, or policies for the conservation and transmission of consumer skills and technologies. In the following section, we define food consumption skills and technologies. We then briefly review some useful theoretical tools, and close the section with an analysis of the various skills a consumer can use. In the second section, we analyze three cases of conjunction/ disjunction between food products and food consumer skills and technologies: raw ham, rice and chocolate. We conclude that a food product can only be fully appreciated by a consumer if he/she is "equipped" with matching consumption skills and technologies.
- In the third section, we analyze two possible itineraries from producers to consumers: control, diffusion through education.

Food consumption skills and technologies - Theoretical tools

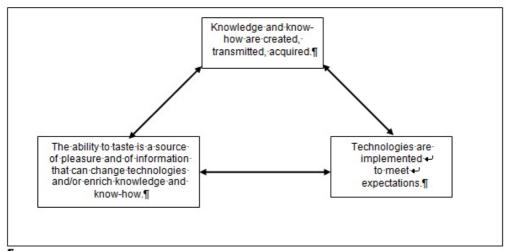
Consumption skills and technologies (CST): a definition

- We propose to call "consumption skills and technologies" (CSTs) the set of knowledge, know-how and techniques used by "non-producer actors" of the supply chain and especially consumers, to obtain the expected utility or service from a food product.
- Between the moment a food product leaves the place where it is manufactured, i.e. still under the direct responsibility of the producer, and the moment when it gives final satisfaction to the person who drinks or eats it, many things can happen. On the one hand, the potential satisfaction (or utility, or pleasure) procured by the product can be spoiled at many stages of the process. On the other hand, a number of steps are crucial for the realization of the potential satisfaction in some sense the quality- of the food product. The post production stage clearly plays a crucial role in food safety; milk and many other animal products have to be stored at low temperatures or the product may become unsafe. Many food products also lose some of their capacity to satisfy the consumer after a specific date (the "sell by" date, or "best by" date) and have to be stored in certain conditions ("store in a dry place"). Ensuring that these conditions are respected is not the producers' responsibility, but that of the many actors (transporters, retailers and finally consumers) who together form the consumption side of the supply chain. All these actors have specific skills and use technologies that are *indispensable* if the quality of the product is not to deteriorate.
- However, the fact that a product does not deteriorate is not sufficient to ensure consumer satisfaction. Perfectly safe and well cooked ants are not necessarily a pleasure for many people, nor are snails or frogs, which are a well-known delicacy for the French. To be a source of hedonistic pleasure, a food product must not only be culturally accepted (which in some cultures ants, snails and frogs are not), but must also be "well" prepared, presented, or combined, and finally must be appreciated by a consumer who has the capacity for sensory appreciation and pleasure. This capacity depends on our nose, nerves, brain, preconceptions and imagination, and on which occasion the food is consumed. People who have lost their sense of smell have to rely on other senses. Some so-called "puritan" people, like those depicted in "Babette's Feast" (a short novel by Karen Blixen, 1958; and a film by Gabriel Axel, 1987), scorn pleasure. We mention such an extreme situation only to emphasize that in everyday life, each of us uses a set of skills and technologies to obtain reasonable (or unreasonable) satisfaction from what we eat and drink.

Theoretical tools

- The concept of "consumption technologies" is common in the "new consumer economy". Becker (1965) and Lancaster (1966) made a distinction between "goods", which are purchased, and their "characteristics", which are consumed (Lancaster, 1991). Lancaster defined "consumption technologies" as the complex process by which households convert the purchased goods into ultimate consumption, and Becker developed this approach further. At the time, the "new consumer economy" placed new emphasis on the production role of the consumer and asserted that consumption is a process. However, this process remained disembodied, and nothing was said about the ability of certain goods to give satisfaction to certain people, nor about the personal or social relationships between people and goods. (For a detailed analysis of new consumer theory, see Jolivet, 2001).
- By contrast, we use anthropological and sociological approaches and concepts to take into account the complexity and the multiple dimensions of this social practice.
- Consumption skills and technologies involve: (i) the creation, transmission and acquisition of knowledge and know-how during historical processes of different length (Lemonnier, 1980). As part of the intangible food heritage, this knowledge and know-how includes the assumptions and expectations of those who eat or drink the food product (Fischler, 1990); (ii) technologies implemented with the know-how required to meet expectations about the product. This technological dimension includes not only operational aspects like slicing and/or

cooking, but also organizational and cultural aspects (Creswell, 1982); (iii) the ability to taste when eating or drinking, which involves not only physiological but also symbolic capacities. Taste is not only a source of pleasure, but also a source of information which can change technologies and/or enrich knowledge and know-how. These three aspects and their relations are outlined in figure 1.



To account for these dimensions, we need theoretical tools used in different disciplines.

Knowledge and know-how

- The acquisition of knowledge and know-how are social activities which are embedded in societies and linked to institutions, rules, values, and beliefs. We examine here the symbolic and identity dimensions.
- "Tell me what you eat, and I'll tell you who you are" Brillat-Savarin wrote two centuries ago (Brillat-Savarin, 1825). There is a similar saying in German: "A man is what he eats" Indeed, eating links a person to a place and/or a community. Food is part of both individual and collective identities. It provides individuals with identifying marks that allow them to find their way around.
- Knowledge and know-how are not only impregnated with identifying marks, but also with symbols and values attached to food products and ways of eating. A well-known French nutritionist even stated: "Above all, we eat symbols⁵" (Trémolières, 1968). This symbolic value is the answer to the question asked by F. Braudel: "Who can say that wine is merely wine in France?⁶ » (Braudel, 1979). Similar observations could be made about rice in China or tortillas in Mexico. We can "sense" these symbols, but they are difficult to grasp. We cannot measure them, but we can analyze them. They are a condensed form of communication. Wine is also a symbol for Christians. The cockerel is only a symbol for the French. These symbols are linked to rules and values. Food behavior, food choices, "cuisine" and table manners are part of this system of rules and values (Levi-Strauss, 1950).
- Symbolization processes take time, but the time required can be relatively brief. In Tokyo, within a few decades, the consumption of wine, especially *Beaujolais nouveau*, has become fashionable, a source of social distinction, and growing imports.
- According to Bourdieu's critical sociology, tastes in food, culture and presentation are indicators of class because trends in their consumption appear to correlate with an individual's fit in society (Bourdieu, 1984). These "cognitive structures... are internalized, 'embodied' social structures" and become a natural entity to the individual (Bourdieu, 1984: 468). Bourdieu also believes that "the strongest and more indelible mark of infant learning" is probably the taste of food (Bourdieu, 1984: 79).
- Other sociologists, like Hennion, criticized Bourdieu's point of view as reductionist: "[according to Bourdieu] tastes are radically unproductive: the objects are simply random signs, the subjects are merely reproducing the hierarchy of social positions. Taste is culture's way of masking domination" (Hennion, 2004). In his pragmatic conception of taste, "tasting does not mean signing one's social identity, labeling oneself as fitting into a particular role,

observing a rite, or passively reading the properties "contained" in the product as best as one can. It is a performance: it acts, engages, transforms and is felt". (id.).

Our aim is not to confront Hennion and Bourdieu. Rather we wish to emphasize that the scale involved plays a major role in the validity of their conclusions. Bourdieu positions himself at the level of the « habitus » of social groups: despite the tastes that are specific to each individual, what we eat, where, how and in what company, form the characteristic traits of cultural or social groups and express their position in society. Hennion positions himself more at the individual level: he refuses the transposition of Bourdieu's point of view at this level. He asserts that taste is constructed by the individual, and proposes an analysis of this construction.

Technologies

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Technologies are purposeful acts. In the context of food, the purpose of technologies is to process or prepare the product to match the expectations of the person who will eat or drink it. As we will see, slicing ham or cooking rice calls on different techniques for different purposes depending on the culture or society concerned.

Techniques are the fruit of interactions between human beings, but also of interactions with natural, social and technical environments. Techniques primarily answer the need for efficiency, an operational purpose. For instance, we consider it normal that arrows are balanced at one third of their length; it is normal that a roof has two slopes in snowy areas; and it is normal that dairy farmers try to exploit their surplus milk in the form of milk products. But the precise characteristics of arrows, roofs and milk products vary considerably from one location to another. There is no operational determinism of techniques. Social and cultural values are also embedded in technical facts and objects (Leroi-Gourhan, 1964). Thus, milk preservation techniques differ greatly according to societies. Some opt for the "rotten" way (cheese), others for the "acid" way (fermented milk, yoghurt), and generally, a wide range of solutions are available. Moreover, the fact of making cheese is not only linked to the type of cows and pastures. Normandy produces cheese, while Brittany does not, in spite of similar agroecological conditions in both French regions. Techniques are at once operational and cultural and symbolic. From an anthropological point of view, we consider them as a "total social fact" (Mauss, 1934), as a form of organization that associates human beings, tools and materials for the purpose of creating goods or processes in a given environment (Muchnik and Ferré, 1993).

Technical acts can be observed and described. The concept of an operational sequence is useful, i.e. different stages of production from the acquisition of raw material to the final abandonment of the desired and/or used objects. By reconstructing the operational sequence, we are able to reveal people's choices (Cresswell, 1983), which should be done more frequently to describe consumption practices.

The touchstone of taste

To some extent, food is judged and appreciated according to its efficiency, i.e. its ability to relieve hunger. However, a large part of food efficiency (its ability to keep us in good health) can only be evaluated in the long term. On the other hand, aesthetic judgment is also very important. We enjoy food not only because we are hungry, but also because it is good - at least if we have enough to eat and access to a certain variety of foods.

The process of tasting food has been described by the physiologist Mac Leod (1993). First, our brain uses the message sent from our sensory cells to sketch a sensory image of the food product that is directly linked to the chemical properties of the food. Only at the second stage is the image "read" by the superior centers of the brain. The result of this "reading" finally reaches our consciousness. These images can be compared to ideograms. Each taste corresponds to a shape. These shapes must be memorized so they will be recognized and distinguished in other forms later on. As for Chinese ideograms, a lifetime is not long enough to learn all existing tastes. Only a direct sensory experience enables us to really discover different tastes.

According to Mac Leod, while the sensorial image is defined by chemical and genetic laws, the hedonistic value depends on the biological, symbolic and social meaning of the food concerned. In other words, the food itself does not have an inherently "good" or "bad" taste. If

we like a food, it is because in our memory, its sensory image is associated with a sensation of pleasure. The formation of taste is thus a "biocultural" process and the sensory dimension is also part of a "cultural heritage". The hedonistic value of a food can also change very rapidly depending on the different situations experienced by the eater, which differ from one culture to another.

- Mac Leod, the physiologist, may well agree with Hennion, the sociologist, who said: "taste has nothing to do with the naked face-to-face between object and subject"!
- Hennion actually defined taste as an activity, "a collectively elaborated corporeal competency" with four main characteristics: (i) it is accomplished through a collective; (ii) it closely depends on situations and material devices; (iii) it implies an engagement by the body that tastes; (iv) it depends on "feedback" from the tasted object (Hennion, 2004).

Analytical approach

- An example of a consumer deprived of appropriate CST is the situation of a tourist at a food market in a foreign country who cannot name, choose, buy, eat, or appreciate the products on sale.
- At the other end of the scale is the "amateur" or expert consumer. Such a person is frequently encountered in the world of wine. As a wine consumer, this person is knowledgeable (he/ she knows how the wines are made, where they come from), is aware of good conservation conditions, and owns the necessary tools (decanter, drop stop, special corkscrews for old corks, a private wine cellar) and special tasting glasses, is informed about the latest news concerning wine (remarkable reviews by leading critics or guidebooks, meteorological accidents that occurred in specific "terroirs" in certain years, the best vintage in each "appellation"), knows which wine matches each food, is able to describe the wine he/she is drinking, and often advises people who are less expert about good bargains.
- The wine "amateur" is well known thanks to the media coverage enjoyed by wine (magazines, annual guidebooks, documentary films, trade fairs and conventions, etc.), but expert consumers can also be encountered in less prestigious fields such as cheese, meat, fish, or vegetables. There are also experts in food products of specific areas with particular traditions or heritage. They may run a restaurant, write a blog, a column in a local newspaper, or regional cookbooks.
- An expert consumer may master many different types of skills and/or technologies. Of course, all consumers use some of these skills and technologies. The skills and technologies that are used and mastered vary with the culture. Almost every French consumer is able to use a corkscrew to pull the cork out of a bottle of wine, but many Chinese consumers are not able to do so (and wine exporters use other ways to seal bottles, like screw caps). On the other hand, Chinese consumers are capable of using chopsticks to eat, while not so many French consumers are (so Chinese restaurants provide them with a knife and fork). Table 1 shows examples of French food culture. We have tried to categorize consumer skills, but the same abilities can, *mutatis mutandis*, be found among retailers and restaurant managers or chefs.
- Table 1: Examples of consumers' skills in France

Selecting and buying

Being able to select the right product is a very helpful skill. In some cases, it can involve elaborate knowledge and a specific vocabulary, for instance when asking for a particular cut of meat in a butcher's shop. Other examples:

- To know how to read the labels and understand the meaning of the many different quality signs
- √ To palpate Camembert cheese
- ✓ To judge the freshness of a fish by its eyes
- √ To remember preceding choices and experiences
- To build up a good relation with a seller.

Conserving and curing or aging

Good conservation conditions are needed to ensure the quality of the food product does not deteriorate, and in some cases to improve the product by curing or aging. Examples:

- ✓ Food safety (the right temperature, the cleanliness of the fridge, of the kitchen, of kitchen tools, etc.):
- ✓ Storing chocolate at the right temperature (not too cold, not too hot);
- Storing wine bottles in the right conditions for aging which may take years and require a special air conditioned cabinet, if no appropriate cellar or closet is available;
- Keeping cheese in the right conditions for curing which may take some days if it was not purchased well cured, which may be the case in supermarkets;
- Keeping fruit in the right conditions for ripening or conserving (usually for a few days, but perhaps for some months in the case of certain varieties of pears).

Preparation for consumption

Even when a food product does not require cooking, some kind of preparation is usually necessary before the food is eaten. Examples:

- Cheese is allowed to come back to room temperature;
- Wines are allowed to come to the right temperature (involving specific knowledge, because the drinking temperature differs for each type of wine, and often requires specific equipment such as a thermometer, cooling device, etc.);
- Slicing raw products (fruit, cheese, sausage, etc.) also requires specific knowledge and/or tools.

Cooking

As both a household technique and as a symbolic system, cooking has received a lot of attention from anthropologists.

Table service and table manners

When a food product or a beverage arrives at the table, it has yet to be sliced, or poured, or cut, and finally brought to the mouth. In each culture and each social class, each of these stages is performed in specific conditions that involve specific knowledge, know-how, technologies and sometimes special tools. The host (or hostess) is responsible for some of them, while others involve all the guests.

Examples of the responsibilities of the host/hostess:

- ✓ Carving a roast leg of lamb or a roast chicken
- ✓ Pouring out a glass of red wine without letting a drop fall on the table cloth

Examples of the responsibilities of the guests:

- ✓ Holding the knife in the right hand and the fork in the left hand.
- Chewing with their mouth closed.

Tasting

Tasting is a very complex skill, involving the body, knowledge, memory, culture and social relationships. Some people pay more attention to taste and to the pleasure of taste. Examples:

✓ Being able to detect faults in products, for instance a 'corked' wine.

Contextualization

Being able to speak about what is being eaten or drunk, knowing its origin, history, production conditions, and its producers.

Conjunction and disjunction between a food product and food CST: meaningful examples

After reviewing the range of consumption skills and technologies, we now examine in more details how consumption skills and technologies correspond (or not) to food products. We use the examples of raw ham, rice and chocolate.

Raw ham

- Raw ham is part of Southern Europe food heritage. There are many types in different regions of Italy, Spain and France. We have chosen three well-known products, Italian *prosciutto di Parma* (Parma ham), Spanish *jamón ibérico* (Iberico ham) and French *jambon de Bayonne* (Bayonne ham). Each of these three hams is the protagonist of a wealthy industry, processed using a specific technology, and is protected by a specific quality label (PDO or PGI⁷).
- Does each of these food products match specific consumer skills and technologies?

To answer this question is not easy – or in the case of the French customer who buys "raw ham" in supermarkets, the answer is clearly "No". Indeed, although French supermarkets offer a large range of raw ham, they usually use the same slicing technique and sales standard whatever the type of ham. They sell slices of medium thickness (usually 2-3 mm thick), with rind attached, whether the ham comes from Italy or Spain, or from Bayonne. If the French customer has never been to Italy or Spain, or does not read gourmet magazines, he/she is not surprised. Consumers may wait several hours or even a whole day before eating the slices of ham. They eat a slice of ham with a fork, use a knife to remove the rind and cut the meat into bite-sized pieces, and may accompany it with butter and / or pickled cucumbers.

But the answer is clearly "Yes" if the French customer has already been to Parma or Huelva, and has purchased *prosciutto* or *jamón* in a shop, or ordered it in a restaurant there. A detailed anthropological study would reveal a lot by comparing these three apparently similar products. For this article, we gathered our information from promotional and informative websites devoted respectively to *prosciutto di Parma* and *jamón ibérico*, and from field observations in supermarkets in the Montpellier area (France) over the past few years. This information is summarized in Table 2.

Table 2: Consumption skills and technologies for three types of raw ham

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	Prosciutto di Parma	Jamón ibérico	Jambon de Bayonne
Rind	Removed before slicing	Removed before slicing	Removed after slicing, in the dish
Slicing thickness	Very thin and even	Very thin, but not even	Even thickness of 2-3 mm
Slicing tool or machine	Large slicing machine with high inertia The machine is expensive and culturally valued	Large knife Sharpener Device for holding the ham Slicing skill culturally valued	Slicing machine without special cultural value
Slicing: when	Just before eating	Just before eating	Some hours before eating
Slicing: result	Large very thin slices, easy to tear up into smaller pieces	Small pieces corresponding to one mouthful	Large and medium thick (2-3 mm) slices, that need to be cut with a knife
Temperature when eaten	Room temperature	Room temperature	Cold
Buying unit	Weight	Weight	Slice
Table manners	Eaten with a fork or with the fingers	Eaten with the fingers	Eaten with a knife and fork

We can conclude from these examples that in their parent culture, each of these products actually matches different consumption skills and technologies. Moreover, each component of each consumption skill or technology complex corresponds to the others.

Removing the rind before slicing is especially useful when the slice is very thin, as it takes almost the same amount of time for the customer to remove the rind from a thick slice as from a thin slice. In other words, it is more tedious to remove the rind from very thin slices. In addition, the slices' thinness implies that one does not need a knife, but only a fork or even the fingers. In addition, the slices' thinness requires low slicing speed (in order not to heat the meat), which means either manual cutting with a knife (ibérico option) or a slow motion rotating blade (Parma option). A slow motion blade requires a high inertia slicing machine, which may be manual or electric, but which is always heavy. This accounts for the size and remarkable prestige of slicing machines in Italy. This clearly shows that skills and technologies are actually systems with interlinked components. It explains why it is so difficult to change one component when the others are fixed. For instance, in the case of Parma ham, "amateurs" buying Parma ham in France will increase their chances of getting what they want if they warn the sales clerk they would like a specific weight of ham, and not a number of slices. Otherwise the sales clerk may feel there is a contradiction between the request for "slices cut as thin as possible" and their usual way of slicing, which is to cut slices that are as thick as the customer will accept, in order to maximize the weight, and thus the price of the sale.

- What are the effects of these different CSTs on consumer perception? In the cases of Parma and Ibérico ham, the thinness of the slices brings out the ham quality and aroma, which are linked to the quality of the meat and maturing process. In contrast, Bayonne ham is supposed to be chewed (as shown by the common accompaniment of pickled cucumbers). Parma or Ibérico ham sliced like Bayonne ham cannot reveal their particular qualities.
- We can also observe that consumption technologies correspond to the product and production technology. Each of the three hams cited above *must* be sliced in a particular way. If not, the ham loses some of its quality. But if the consumer has not previously experienced this particular quality, he/she will not be aware of the difference. And if many consumers are not aware of the difference, why should producers continue to make products designed to be cut in a particular way which is not used?

Rice

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- It is well known that different types of rice are cooked in particular ways in their area of origin (table 3). The particular way of preparing each variety of rice is adapted to its technological quality. In other words, it is impossible to make a "good" (i.e. satisfying for a native "amateur") *risotto* with *basmati* rice; or a good *biryani* (Punjab recipe using *basmati* rice) with *carnaroli* rice. But what happens when customers do not have the skills and technologies to match the rice variety they purchased? They prepare the rice in a way that does not match its technological quality, and which does not reveal the specific quality of the particular variety. For instance *carnaroli* rice naturally develops a creamy consistency, and a customer who wants the grains to be separated, as for a *basmati* dish, will judge the rice to be "bad". At the other end of the scale, it is impossible to obtain the creamy texture of *risotto* using *basmati* rice.
 - A third type of rice, Laotian sticky rice, is cooked and eaten in yet another way. Table 3 summarizes the consumption skills and technologies matching the three types of rice and is a further illustration of the fact that a food product reveals its quality only when used, prepared and eaten with the matching consumption skill and technology.

Table 3: Consumption skills and technologies for three types of rice

	Basmati rice	Carnaroli rice	Sticky rice
Cooking method	After washing and steeping in water, brief cooking in boiling water, then draining and final cooking in its own steam.	After frying in oil/butter, progressive addition of a broth, then of butter and cheese.	After washing and steeping in water, steam cooking
Result	Separate, long, medium firm grains.	Grains in a creamy sauce. When "well" cooked, the center the grains must still be firm.	Firm grains that stick together.
Table manners	Rice is served with sauces (curries). A mix of rice and sauce is brought to the mouth with the fingers.	Eaten with a fork	Rice balls are formed with three fingers and brought to mouth.
Region of origin	Pakistan, Northern India.	Northern Italy	Laos

Chocolate and cocoa, (*Theobroma cacao*),

When Cortés conquered Mexico on behalf of the Spanish crown, cocoa-based drinks were drunk, among others, by Aztec nobles during rituals. Making these drinks required a specific know-how developed by Mesoamerican peoples: cocoa beans were fermented, then dried, then milled into a kind of flour on to which water was poured many times to get a paste until a frothy drink was obtained. Annatto (*Bixa orellana*) was sometimes added to make the drink red, as were vanilla, red chili pepper, honey or others condiments to enrich the flavor (González de la Vara, 2003; Leander, 1972; Sahagún, 1982). Such types of cocoa drinks are still found today.

- After the conquest, chocolate and not cocoa trees was brought to Spain. The Spaniards introduced chocolate in Europe as a paste, then as cocoa beans, which were easier to store and transport. They modified the Aztec technology by roasting the beans and adding sugar, while annatto or chili pepper were no longer added. Louis XIV's wife, Queen Marie-Thérèse of Austria (1638-1683), who was born and raised in Madrid, is said to have made drinking hot chocolate (a Spanish habit she could never renounce) fashionable at the court in Versailles (Franklin, cited by Braudel, 1979). At that time, chocolate technology was already different from that used by the Aztecs. Milk chocolate and powder chocolate, 19th century innovations, increased this distance.
- In other words, techniques learned by Europeans in Mexico have been profoundly modified over the centuries. New production and consumption technologies appeared. Although drawn from the same raw material, 15th century Mexican cold spicy sacred cocoa drinks have little in common with Western chocolate drinks in the 21st century (a hot or cold sweetened drink, a delicacy, a common aroma). Production technology and consumption skills and technologies are quite different today. Aside from historians, few people know that chocolate originated in pre-Columbian America.

Some lessons to be drawn

- We can conclude from these three very different examples that the quality of a particular food product can only be appreciated in the framework of a food culture and with the use of a specific and matching system of consumption skills and technologies. In another context and without suitable skills and technologies, the product may not be appreciated, even if in the producers' opinion, i.e. in its culture of origin, it deserves a high rating for quality. If the consumers do not appreciate the specific quality of a product, even when available on the market, they will not buy it or will not be prepared to pay the (high) price.
- The relationships between an authentic food product, "amateur" consumers and consumption skills and technologies are summarized in figure 2.

Authentic product provides reveals and satisfaction to... enhances the quality of. asks for and requires. is able to discriminate is available to Matching Amateur consumption consumer skill & .. is aware of and technology implements.

Figure 2: Relations between an authentic food product, "amateur" consumers and consumption skills and technologies

the casedepicted in figure 2, the relationship between the consumer and the product, mediated by appropriate consumption skills and technologies, has a positive effect on maintaining the specific characters of the food product. It may even increase its specificity, with the definition of subtypes of the food product, as we will see it in the case of Comté cheese.

- But the relationships sketched out in figure 2 represent a borderline case. When the consumer is inexperienced and the consumption skill and technology not appropriate, the specific characters of the food product will not be appreciated. In such situations, the trader, or even the producer, may be tempted to propose a less typical and less expensive product.
- This question arises every time a food product crosses a cultural border. The border may be geographical (when wine is imported to East Asia) or social (when *foie gras* becomes a mass product). When crossing cultural borders, a food product faces the risk of being sullied, and/ or the opportunity for innovation.

Possible processes from producer to consumer

How can a food product adapt to a food culture? How can a food culture adapt to a food product? In this section we examine possible processes of adaptation: controlled diffusion, diffusion with consumer education.

Controlled diffusion

- In order to maintain the quality of the product throughout the distribution and consumption process, producers may apply a "control" strategy. They try to increase what is under their direct control in the long process from production to consumption.
- One well-known example is that of PDO (protected denomination of origin: a quality label linked to origin, promoted and protected by the European Union). Regulation EU 510/2006 stipulates that these protected denominations must be:
- "used to describe an agricultural product or a foodstuff:
- originating in that region, specific place or country,
- 55 the quality or characteristics of which are essentially or exclusively due to a particular geographical environment with its inherent natural and human factors, and
- the production, processing and preparation of which take place within the defined geographical area⁸;" (EU, 2006).
- The last stipulation is a way to ensure that not only the production stage, but also the "processing and preparation stages" take place within the defined geographical area where the product originated, and thus can be accomplished using methods, know-how, skills and technologies that may not be common, or even available, outside the geographical area concerned. Nevertheless, the terms "processing and preparation" are subject to interpretation. Several commercial disputes concerning Parma ham ended in 2003, when European judges ruled that Parma ham must be packed and sliced in the Parma PDO area itself to be marketed under its name of origin.
- The European Court stated that "Any deterioration in the quality or authenticity of ham sliced and packaged outside the region of production, resulting from materialization of the risks associated with slicing and packaging, might harm the reputation of all ham marketed under the PDO 'Prosciutto di Parma'" (id. §80) (Judgment, 2003).
- Pre-packaged grated parmesan cheese must also be grated in the region of origin.
- In which conditions is this strategy valid?
- In the examples we have examined, the producer has some power over the distributor or retailer for legal and regulatory reasons (case of PDO in Europe). A legal framework clearly facilitates this strategy. This power may also lead to a commercial agreement that limits the sale of a product to authorized outlets. In either case, power must be exerted by only one stakeholder, either a large company, or a collective organization made up of smaller stakeholders, like the *Consorzio di prosciutto di Parma*. Finally, it should be noted that control can be effective only if the required technologies are available. In the example of Parma ham, pre-packaged slices in the area of origin requires the use of vacuum- or modified atmosphere packaging.

Diffusion with consumer education

- For a better match between a food product and a food culture, another approach is to try to transfer or develop consumer skills and technologies.
- A large-scale strategy of transferring wine culture to Japan was implemented by France through Sopexa¹⁰, who trained Japanese *sommeliers* and sponsored an annual "The Best

Japanese Sommelier Contest for French Wines and Spirits"¹¹. It was won in 1983 by Shinya Tasaki, who in 1995 became the first Japanese to win the International Sommelier Association's World Best Sommelier Competition (Ito, 2004). As a result, a high percentage of wine drunk in Japan comes from France.

Producers of Comté cheese also opted for developing the skills of "amateurs". This resulted in some inventive ideas in cheese tasting. Any "amateur" is supposed to be able to name at least some characteristics of the product. This is particularly difficult for food and drink, as tasting and smelling are the main senses involved (tasting and smelling are not intellectual senses, it is thus difficult to express them in words). Actually, only the wine industry disposes of a detailed and more or less globally accepted vocabulary and set of descriptors. The Comté Commission wanted to bridge this gap, and developed a "wheel of flavors" based on the work of a local jury who was specially trained in Comté tasting. The 83 "descriptors" corresponding to the most frequently encountered aromas and flavors are grouped in six classes. In a mature Comté, tasters generally find two to three dominant families and specifically mention five to ten descriptors. The Comté Commission commissioned a team of trained volunteers to taste and characterize cheeses from different « fruitières¹³ ». For instance, cheese produced by one fruitière was recently described as "recalling notes of melted butter, white chocolate and cream; nuts and honey; grilled onion; black chocolate and plums." The final outcome of this process was a poster describing the environmental and botanical characteristics of the milk-collection area, as well as the tastes and flavors of cheese that each fruitière can present its customers (Trubek & Bowen, 2008). It is a way of communicating about the connection between locality and taste. It is also a way of training amateurs and retailers how to speak about Comté cheese. By contrast, concerning Vermont maple syrup, Trubek and Bowen (2008) noted that although "many of the almost 2,000 sugar makers in the State could identify variations in the taste of maple syrup due to production methods, the location of maple trees and seasonal changes (as could consumers in objective taste tests), traditionally producers have not communicated such variations in flavor to consumers".

The strategies used for raw ham, wine or Comté cheese aim to pass on to new customers the consumption skills and technologies of "amateurs" or of skilled or traditional customers. They are a way of extending the diffusion of a heritage food product without altering its authenticity.

An international non-governmental organization, Slow Food, has created "taste laboratories" where "amateurs" or "would-be amateurs" can taste products and simultaneously listen to comments by the producers of the food products concerned as well as those by taste professionals (*sommeliers*, journalists, cooks). Such events are clearly related to a "cultural diffusion" strategy. It is a way for producers to have their products tasted and discovered in good conditions, outside their usual distribution channels (food products are supplied free of charge by the producers). And it is a way for "amateurs" to discover new or top-quality products in good conditions along with all information they need to appreciate them. During the food fairs that Slow Food organizes in different countries, 20 to 100 taste laboratories may be held over a period of three or four days¹⁴.

How can a diffusion strategy based on consumer education be validated?

One favorable factor is the existence of a stakeholder representing the value chain, like in the cases we examined the *Comité interprofessionnel du gruyère de Comté* or Sopexa for French wines. However, it is important to be aware of one major distinction: Sopexa represented France, i.e. the biggest wine producer in the world as well as the most prestigious, whereas Comté cheese only represents 2.5% of French cheese production. Consumer education is a possible strategy that can be used by stakeholders of varying degrees of economic importance. Another favorable factor is when the food product has a cultural value in both the producers' and consumers' milieu. Consumers who spend time learning the necessary skills must at least be interested in the product. The symbolic values of different food products change, sometimes very rapidly.

Another favorable factor is the price of the product. The more expensive it is, the easier it is for the producer (or producers' representative) to pay for consumer education.

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Favorable factors for different strategies

- We have observed that for the "control" strategy to be valid, producers need to be well organized, and that a legal framework is a favorable factor. In addition, technologies required for this type of control must be available.
- The strategy of diffusion through education also requires a stakeholder who represents the entire value chain. Other favorable factors are the cultural or symbolic value of the product, and its high price.
- It is beyond the scope of this paper to discuss other processes, particularly those involving innovation, hybridization, and rupture, but these also have an important role to play. It should also be stressed that these itineraries or strategies are not exclusive. The same industry can use a mix of two or more strategies depending on the markets it supplies.

Conclusion

- The purpose of this paper was to evaluate the importance of consumer practices with regard to heritage food products.
- We defined consumer skills and technologies and showed that they are actively interlinked with food products. We agreed with Hennion that quality attributes desired by the consumer are not "contained" in the product, but are "the reflexive result of a practice". The consumer calls on a set of skills, know-how, knowledge, standards, techniques, tools, and machines (i.e. consumer skills and technologies) to build perceived quality, which of course depends on the characteristics of the food product concerned, but is not merely a simple and univocal image of it. Food satisfaction, or the pleasure experienced by consumers when eating or drinking, is the result of a meeting between the products characteristics and the consumer's ability to appreciate it. Therefore matching food products and food consumers' skills and technologies may not be easy.
- We have seen that three apparently very similar food products, raw ham from Italy, Spain and France, match three different sets of consumer skills and technologies. Other examples (rice and chocolate) confirm the link between a food product and a food culture. We conclude that even the "best" product (in the eyes of the producer) may not be appreciated by a consumer who may not have access to matching consumer skills and technologies. Thus the success and sometimes the survival of a food product in a culture which is not its culture of origin, depends on this match. We have shown that this match can be achieved through different itineraries: control, education or innovation and we have identified factors that favor each of these itineraries.
- Our findings are based on examples of products that are well known in European culture.
- We believe these findings may be useful to all those interested in enhancing food heritage, and may help design and implement actions, programs or policies for the conservation and transmission of consumer skills and technologies.
- Finally, we wish to stress the importance of concrete customer practices. Customers do not only buy, but also eat the food. Through their eating and drinking practices, they contribute to maintaining and or to changing food heritage. This is a rich source of possible future investigations.

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Notes

- 1 www.tradifood.net
- 2 « La question de la valorisation ne peut être abordée sans prendre en compte le consommateur. »
- 3 « Dis-moi ce que tu manges, je te dirai qui tu es »
- 4 « Man ist, was man isst »
- 5 « On mange avant tout des symboles »
- 6 « Qui peut dire qu'en France le vin n'est que du vin ? »
- 7 Protected denomination of origin (PDO) and Protected geographical indication (PGI) according to EC regulation 5/10/2006
- 8 underlined by the authors
- 9 underlined by the authors
- 10 Sopexa was formerly a French public company in charge of promoting French food culture and exports abroad.
- 11 Concours du Meilleur Sommelier Japonais en vins et spiritueux de France
- 12 http://www.comte-gourmand.com/pages.php?idMenu=34&special=question&idArt=72&langue=2
- 13 Local cheese dairies where milk is made into Comté. There are 170 « fruitières » distributed throughout the Jura Massif.
- 14 See www.slowfood.com

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Abstract / Résumé

Our food heritage is not only limited to food products and production techniques, it also includes the consumption skills and technologies (CST) used to obtain what the consumer requires from a food product. In a specific food culture, a given food product is linked to specific CSTs. In this paper, we examine this aspect of food heritage through the examples of raw ham in Italy, France and Spain, rice varieties and chocolate. We then discuss two types of conjunction / disjunction between food products and food CSTs: controlled diffusion and diffusion through education. We conclude that the sustainability of localized, "origin" or "terroir" products depends on the existence of skilled consumers. The transmission and diffusion of these skills and technologies are thus factors in the permanence and diffusion of the product itself.

Keywords: consumers, food heritage, local products, origin products, consumption technologies, skills, raw ham, PDO

Les compétences des consommateurs contribuent au maintien et à la diffusion d'aliments patrimoniaux

Le patrimoine alimentaire n'est pas constitué exclusivement de produits et de techniques de production, mais aussi de compétences et techniques de consommation (CTC) utilisées par les consommateurs pour obtenir d'un produit alimentaire l'utilité ou le service qu'ils en attendent. Dans une culture alimentaire donnée, un produit alimentaire spécifique est lié à des CTC spécifiques. Cette dimension du patrimoine alimentaire est examinée à travers les exemples du jambon cru en Italie, en Espagne et en France, de différents riz, et du chocolat. Nous discutons ensuite deux types de cohérences / incohérences entre produits et CTC : contrôle par la source, diffusion par l'éducation. Nous concluons que la durabilité de produits locaux, d'origine ou de terroir dépend de l'existence de consommateurs compétents. La transmission et la diffusion des compétences et techniques de consommation sont donc des facteurs de la pérennité et de la diffusion du produit lui-même.

Mots clés: produits locaux, produit de terroir, consommateurs, patrimoine alimentaire, produit d'origine, technologies de consommation, compétences, jambon cru, DOP