CHAPTER FOUR

A CONSTRUCTIVIST VIEW ON THE QUALITY OF FOOD: ARGENTINEAN EXPERIENCES

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Abstract

Quality of regional food needs to be approached from diverse points of view that integrate the complexity of its multiple dimensions. So far, there have been two main contrasting approaches: the objectivist and subjectivist schools. The objectivist school points toward the materialization of quality and its measurement through a series of objectifiable variables. The subjective school, unilaterally at times, focuses on the role of symbolic values associated with the production, elaboration and consumption of food.

The present approach aims to consider quality of food from a dual constructivist perspective. On one hand, it aims to understand quality as a social construction, i.e., “a process that proposes not only the products but also the interactions occurred in the definition and control of said products” (Casabianca and Valseschini 1995). On the other hand, it approaches the process of qualification of the product from a scientific and constructivist view: reality (in this case, the quality of food) cannot be known as what it is. This is due to the fact that when an individual encounters an object, he/she cannot but notice and order the data the product offers into his or her cognitive framework.

Three field experiences, Argentine Pampas beef, Salami of Colonia Caroya and Amblayo cheese are presented.

1. Introduction

Within the present context, the location and dislocation of production processes presents a great challenge from the economic and social view as well as from the cultural view. This challenge is particularly acute in the agro-food sector since the quality of food is directly affected. A wide range of questions arise as a consequence of this evolution, ranging from the health of the consumer to the gustatory evolution of products. The main goal of this work is to discuss the mechanisms of territorialisation or deterritorialisation of the quality of food. This approach focuses on objectifiable variables (physical, biochemical, rheological and other characteristics) and subjective variables (representations, values, tastes...). Both types of variable depend on the perception of subjects, i.e. different types of consumers.

The social change of the 20th Century led to an evolution in the conceptualization of quality of agro-food products. At the beginning, quality, related to the industrialisation of agriculture and the agro-food industry, was associated with the line production of homogeneous and safe goods. With the transformation of modern and post modern societies, the concept of food quality developed to include aspects such as the re-evaluation of traditions, cultures and local know-how, the search for a greater environmental care and consumption of “healthy” foods.

Up to today, views on quality have been divided into two major schools. The first school could be qualified as objectivist. It perceives the materialisation of quality and its measures by means of a series of objectifiable variables, for example, the utilization of biochemical and molecular tools (functional proteomics and genomics) to study the physiological mechanisms for quality improvement of raw materials. The second school, subjectivist, focuses on the role of the symbolic values associated with production, processing and consumption of food. A great deal of social science research is focused on the place of food in social relations and the differentiation amongst individuals.

The choice of a constructivist perspective to analyze the role of territory in the quality of food is based on the fact that this quality is the result of the interactions between different subjective and objectifiable variables. As Lévi-Strauss remarked, “Food must be not only good to eat, but also good to think”. So the quality of agro-food products has to be understood from a point of view that integrates the complexities of its multiple dimensions.

For the development of this analysis, three contrasting Argentinean experiences are evaluated: (i) Beef from the Pampean region, (ii) Salami
from Colonia Caroya, South of the province of Córdoba, and (iii) cheese of Amblayo from Calchaquies valleys in the province of Salta. The first product is acknowledged and consumed national and internationally. The second product belongs to a mainly regional and tourist market. The third product is consumed mainly regionally. Using these three cases we make a contrastive analysis of the role of the objectifiable and subjective variables that interact in the process of the construction of quality.

This chapter will first discuss views and theories of quality. It will then analyse the three cases, taking into account the historical evolution and the role of objectifiable and subjective variables. The comparison of the technical and social trajectories will finally reach conclusions and will discuss the plausibility of a constructivist view on quality.

2. Quality and qualification: views and theories

Views on quality and qualification of foods have progressively incorporated the human being and his or her perceptions. From a strictly mechanical view, views have evolved towards including interactions between objects and persons. Consumer perceptions have been added to the measurable particularities of the products. In this perspective, Casabianca and Valeschini (1995, 12) proposed the concept of “bipolar representation of quality”. They identified a pole of objectifiable characteristics and another “pole of subjective variables marked by the consumer”. From a constructivist view, not only is the existence of both quality poles acknowledged, but also its character of being constructed by humans. In other words, if there is an objectifiable dimension or “pole”, it is not free of human subjectivity. The other fact that is acknowledged is that both quality and qualification of food constitute situated constructions.

2.1 “Objectifiable” schools

The objectifiable variables are the characteristics of food that belong to sciences like physics, chemistry and biology, and to disciplines like genetics and microbiology. All these are supported by mathematics, with the purpose of establishing the orders of importance and the frequency or probability of occurrence of the events. Examples are the concentration of casein in milk, the tension of water in the salami or the colour of the rib eye, the microbiological populations related to food safety, the rheological (texture) characteristics of a dough, and the set of sensory characteristics. So, from an objectifiable point of view, the sensory characteristics of food are formalised by measurements using tools (See Cizalla Warner-Bratzler
for measuring cut resistance of meats, and the “electronic nose” for the
detection of food aromas), and by panels of trained tasters. Conclusions
are based on statistical elaborations of “objectified” information.

Recently, there has been notable progress in the objectivation of new
variables, such as the detection of allergenic substances, or the presence
of chemical components with positive or noxious (contaminant) impact on
human health.  

The “objectifiable” views are supported by logics of “standardisation”:
the standardisation of the “living beings” (Casabianca and Letablier 1995),
of the relationships among actors (Thévenot 1995), and techniques (Dassa
and Marillard 1995). “Best practice” is set out in manuals that lay down,
for example, materials for use in tools, equipment for use by workers, food
safety practices, optimum method of a slaughter for meat tenderness
(organoleptic quality), animal diet and how it impacts on the profile of the
fatty acids of meat and its potential impact on human health, the quality of
the animal protein (nutritional quality) and health and safety precautions
for manufacture.

From an objectifiable point of view, based on a “positivist view of
science”, “quality can be defined as the “degree to which a set of inherent
characteristics fulfils the requirements” (Figuié and Bricas 2002). This
definition belongs to concepts of quality that underlie ISO standards
(International Organization for Standardization). The ISO standards were
created with the purpose of inspiring confidence in users, based on the
homogeneous and predictable characteristics of the products or services
certified. This goal is achieved by the standardisation of the processes
and/or the products. Many contributions since the 1960 have used this
concept. Here, quality is defined in terms of “fulfilment of requirements”.
The proposed goal is to reach a level of “zero error” in the management of
quality of products.

Again in the objectifiable view, the concept of quality is related to
“superiority or excellence”. Schools that propose the implementation of
management for total quality are based on “the use of different means in
order to achieve a desired level of quality” (Juran and Gryna 1994). The
stages necessary to achieve this goal are: a) the setting of goals, b)
planning of the organisation and the means, c) motivation of personnel, d)
start-up, e) evaluation of results, f) analysis of deviations, and g) corrective
actions.

Thus, the definition of quality corresponds, on one hand, to a vision of
standardisation of the processes and products, in which enterprises’
competitiveness is based on the assurance of market niches and on the
lowering of production costs. On the other hand, innovation in quality
derives from better new product designs than improve on competitors’ or that reduce production costs. This type of innovation is supported by the skills of qualified professionals, often in networks searching for solutions to society-level problems.

The objectifiable conceptions of quality, based on the positivist views, intend to formalise and standardise the processes and knowledge involved. However, even in this view, subjective variables are not entirely absent. An important constraint in the characterisation of “objectifiable” variables of products is the implicit subjectivity in the stages of decision of sampling techniques and the measurement techniques employed. There is also human error, which occurs in any observation technique. So the term “objectifiable” instead of “objective” is purposely used in this chapter to highlight the influence of the objectivation process.

2.2. “Subjectivating” schools and “modern times”

Subjectivating views acknowledge the importance of the symbolic dimension of food for the consumer. Foods are acknowledged by their function as an identity reference; they contribute to the individualisation of persons, to distinguish them from peers, and at the same time to define their belonging to a given social group.

Marcel Mauss (1935) characterised nourishment as a “complete social fact”, a fact that reflects the changes undergone by the complete social set. Claude Lévi-Strauss (1962) revealed the significance of nourishment in the belonging to a culture and a territory. This manifests through representations and rules of behaviour structured around food, regulating what can and cannot be eaten and culinary practices, and dictating rules for eating, the place of the food and the nourishment in the organisation of the social life. More recently, authors like Claude Fischler (1996) highlighted the specificity of foods as regards other consumption goods, since it is the only good that is “in-taken” (introduced into the body), which gives it a specific role in the construction of the identity of individuals and societies.

The profound changes in the modern societies have accentuated the importance of the subjective perception of the quality of food. This tendency, strongly accentuated from the 1960 onwards, has led actors of the different agri-food systems to consider the new symbolic components in the production/processing processes of their products as well as in their place in the markets. On one hand, growing urbanisation and social transformation are accompanied by a new conception of food. The modern urban consumer imposes “imperious demands as regards the purity and
constant quality of products. He wants white bread and dairy products whose flavour is always the same... and is thus orientated towards standard production” (M. Sorre 1943-1952, quoted by Delfosse 2006, 4).

On the other hand, the internationalisation of markets requires that “products for export are not to agree to the local or national taste, but should be neutral, corresponding to the tastes of consumers of any country, like for example Danish butter” (ibid., 4).6

The nature and the complexity of these processes and the consequent transformation in the symbolic quality of food are particularly clear in beef, for example. These transformations have been researched by authors such as Poulain, who writes that during the first decades of the post-war period, once access to the food was secure, the consumption of meat was seen as access to wellbeing. “Meat, the par excellence food, is loaded with a strong social symbolism: eating it on a daily basis is to access wellbeing, is to get revenge” (1997, 106). At that stage of modern history, boeuf7 and veal were perceived as noble meats. The consumption of “veau de lait” (suckling veal) was associated with the aristocracy.

Later, along with growing “industrialisation” and “artificialisation”, in the 1970, consumer associations demanding an end to “hormones in meat” grew up. The 1990s saw food scares such as dioxin in chicken meat and “mad cow disease” (Bovine Spongiform Encephalopathy). There was an increase in relatively negative social representation of industrially produced food, seen as potentially noxious to health. New discourses and symbolic values emerged.

Two of these new discourses, often associated, opposed the image of industrial food. There was the start of a search for “natural”8 food from “ecological” and “organic” environment-friendly farming. At the same time, vegetarian, naturist and other diets became more widespread. In opposition to the tendency to a loss of identity of food, there was a search for foods anchored in the “territory”, i.e., in local traditions, or the craft preparations, based on supposed family traditions. This process can be seen in the slogan “Grandma’s recipe”:9 Terms like “typical”, “regional”, “local”, “homemade”, “natural”, “craft”, “of origin” and others constitute expression of new and diverse ways of qualifying products.

Other aspects of the “artificialisation” of agriculture are related to its impact on lifestyle and landscape in rural areas and the loss of local know-how. These phenomena are also incorporated as subjective components of the quality of food (Hirczak 2007).

The changes in the symbolic value of food and nourishment were also reflected in models of beauty. Until the first half of the 20th Century, the opulence of flesh, as in the paintings of Renoir, prevailed as an indicator
of high social level. Then, comes the Modigliani model with thin and stylized figures. Obesity and fatness have now become an indicator of health problems and low social level. Poulain writes “A rationalist diet, medicalised, is vulgarised and announces the divorce between what is good and what is healthy, between gastronomy and dietetics” (Poulain 1997, 106).

These words also reveal the growing importance of another dimension of quality; the ‘medical’ function of food. Today, food is consumed not only to prevent disease, for example, foods containing certain vitamins, minerals, antioxidants, etc., to prevent cancer, where there is overlap between nutritional and therapeutic quality. It is also consumed to cure illness (for example, garlic to lower blood pressure), as a stimulant (coffee, mate, or tea), as a relaxant (linden tea) or an erotic enhancer; ginger (zingiber officinale) or muña muña (Satureja parvifolia) in Argentina and Bolivia.

Because of the important social changes, social sciences have become more important in the characterisation of food quality. All symbolic elements associated with an area, culture or time can now be included among the variables that determine the subjective quality of food. They include transformed know-how, the physical and human context of processing, tools, ingredients, festivities, historical tales, etc. These symbolic elements are present not only in the imagination of the consumer but also for the set of actors interacting in agri-food systems.

Along with these new ways of qualification of food, tools and facilities in which these processes are carried out acquire symbolic value. For example, in the elaboration of Amblayo cheese the belt-like girth (cinchón) in which the cheese is pressed is considered as the traditional mold. In Colonia Caroya, the traditional environment for curing the salami is the basement.

2.3 Constructivist view: quality as an integrative variable, the qualification processes

One element appears central in all schools and views; quality implies an inevitable process of evaluation i.e., quality of a product is the result of a process, defined in terms of qualification. In every process of qualification, the human component given its interactive character plays a central role:

as with product identity, quality is not intrinsic. Quality is defined as “in relation to”. It is the act of qualification that reveals the quality of the
product by means of the interactions between the product and the criteria used for judging it. It depends on the criteria on which it is based, how it is chosen, who judges it… (Muchnik et al. 2005)

For researchers and agents of intervention, being framed in a constructivist view implies participating “actively in the construction of reality, giving it a sense” (Gundolf 2006, 101). From this point of view, product qualification exceeds mere product description in a list of characteristics or requirements to be fulfilled. Product quality is thus the result of a process of interactions between the product and the human beings that participate in its qualification.

This reflection is based on two interpretations complementary to the constructivist term. (i) On one hand, considering quality as a social construction, i.e., “a process that places not only the products but also the interactions around the definition and control of those products” (Casabianca and Valleschini 1995). These interactions regard the set of actors: extractors/producers, transformers, production workers, distributors and consumers. (ii) On the other hand, the process of qualification is seen from a constructivist scientific (as opposed to the cognitivist) point of view. This postulates that reality (food quality) cannot be known as what it is. This is because each individual approaching an object through his or her cognitive framework perceives and orders the data of the object for themselves.

Under the premise that there is no quality without qualificator, quality is considered as the result of a human construction. From a constructivist point of view (Manheim 1936, Schutz 1967, Berger and Luckmann 1967), social objects do not exist as a given element “but are built, negotiated, reformed, adapted and organised by human beings in their effort to give sense to what is produced in the world”. For the constructivism there is no exact description of how things are, because reality (in this case, quality) does not exist without the subject.

From this constructivist perspective, the process of construction of quality is considered as part of a learning process, both individual and collective, in which the representation of objects is built from the knowledge of the actors and the symbolic values they attribute to the qualified object. So, the diverse actors develop their actions in the context of a located cognition. F. Laville postulates the hypothesis that the rationality of every act derives “from the interaction of an agent with his environment (located action) and the interactions between members of a group (distributed cognition)” (Laville 2000, 1328). This theoretical contribution helps to interpret the particularities of the construction
processes of quality and the qualification of products, characterised by the presence of multiple uncertainties.

Faced with these uncertainties, it is explicit that “in a given situation, all the faculties distinguished by the cognitive psychology (perception, language, action, reason, memory) act differently” (ibid., 1311). That is, the qualification of a product may vary in time, according to the context in which it develops, and the perception of the actor in that situation. So at every qualification, actors do not perceive object properties, but “the possibilities the objects offer them” (ibid., 1312). There are thus cognitive limitations to be considered, as regards the actors involved in the process of qualification of food, and in the context in which this process takes place. Interactions make possible the estimation of quality of a product, implying both the object and the qualifier, the qualifier’s perception supported by a specific criteria.

Another component to be considered in the process of quality construction and qualification is what Laville calls distributed cognition, i.e., the cognitive resources of the environment (physical, social, linguistic, cultural and technological), and the social distribution of the cognition. For this, the type of distribution of the knowledge orientated towards the qualification of supplies and the “final product” has to be considered during the different stages of processing.

This knowledge oriented towards the construction of quality is coordinated among the actors involved in the different stages of an agri-food system by means of phenomenon called translation. This is the development of a language specific to the qualification of the product... that contributes to create equivalences between the consumers’ expectations and the elements involved in the definition of quality in the previous stages of the agri-alimentary system (Champredonde 2001, 196).

This translation “is framed in the process of specialisation (tasks division), in processes of recollection/extraction/production, transport, transformation/preparation, distribution and consumption of food”. “This translation adopts the specific terms of each technical stage” (ibid., 196). So, for example, the dimensions used to describe the quality of a steak are not the same as those used to describe the quality of a half carcass or a head of cattle.

The particular quality of a territorial product is therefore result of multiple interactions between man and matter in a given natural context (Muchnik 2005). These interactions occur a) in the coordination of knowledge distributed among the actors that compose an agri-food system
(translation), b) in the interaction between these practices and the material components, and c) in the interaction of knowledge and supplies with the local environment (human and environmental). In the case of territorial food, consumer knowledge is the guiding aspect acting through consumer approval or disapproval of the qualities offered by the rest of the actors.

3. Qualities throughout territorial transformations

The three experiences are analysed considering: (i) the historical process of rise in production activity, (ii) the construction of quality, and (iii) the evolution pathways.

3.1 Pampas beef

Rise in production activity

The history of meat is the history of the Pampa itself. Until the 15th Century, the people that inhabited the Pampas flatlands based their diet on the meat of native species. With the arrival of the Europeans, these species were partially displaced by introduced species, which competed for the exploitation of the fodder resources, and which modified the native cultures.

By the middle of the 19th Century, the European Industrial Revolution had a strong impact on the region, generating an immigration current that had a determining influence on the culture and economy of the territory. This process propelled the development of sheep and the bovine cattle and the moving of the frontier. In 1879, the Conquest of the “Desert” put an end to the millenary presence of native cultures in this region. In this new stage, the gauchos became the farm workers taking care of cattle on the big ranches. The culture of the gaucho blended into the different immigrant cultures expelled by European industrial development dreaming of a better life in South America.

Construction of quality

A re-examination of history shows that Argentine Pampas meat international markets centers round the factors that contributed to its particular quality. Orientated first to the United Kingdom, the meats produced at the beginning of the 20th Century were characterised by the predominance of Scottish breeds (locally known as British) such as Shorthorn, Hereford and Aberdeen Angus. The biotypes selected in this region were characterised until the middle of the 1970s by the predominance of a small cattle with a big capacity for fattening. This
encouraged adaptation to the pasture systems and the production of tender marbled meats under such conditions.

Adjoining this “objectifiable process”, knowledge related to the diverse activities in the agri-food system and a specific food culture developed. At the early stages, knowledge factors concerned selecting biotypes adequate for size of cuts and fat depth at young age (associated with tenderness and juiciness of meat), the castration of male calves at the age of 8 months (for tenderness), the procurement of pasture resources adequate for growth and fat depth at young ages (for tenderness) and the visual estimation of the fat depth adequate for slaughtering.

In retailing live cattle, the consignataries developed knowledge referring to the estimation of live cattle quality. This implies estimating the degree of fattening, the weight of the half carcass and the hanging requirements. In the cutting stage, slaughtering house employees and butchers acquire the knowledge that allows them to obtain typical Pampas cuts, for good presentation. This has to do with the capacity of local consumers to select good meat. For example, when buying a typical Pampas cut known as *asado* (short and spare ribs), the buyer observes the width of the rib. A very wide rib is associated with an older animal and therefore a lack of tenderness. The colour of the meat is another aspect associated with tenderness. In the Pampas region, the consumer associates a pinkish to light red colour with an early age of slaughter. Another aspect evaluated in the buying is the degree (excess or shortage) of fattening.

Other types of knowledge are set in motion when preparing the barbecue. Cooking times need to suit different tastes. Some parts have to be juicy (but not semi raw) and others have to be “a little dry” (well done). The meat is cooked by rotating it only once to complete its cooking on both sides. The cut called *asado* is first cooked on the side of the bone and then on the side of the meat.

*Evolution pathways: from the gaucho to the mixer*  
The case of Pampas meats represents the evolution of a product known for high quality on the international market. In the objective components of the quality, tenderness, juice and flavour are its highlights. But the most important component of quality, on the international market is the association with the mythical Pampa, an immense flatland covered in pastureland and travelled by the no less mythical *gaquo* on horse. On the internal market, mainly composed of Pampas consumers, bovine meats are associated with the extensive pasture systems as a natural and healthy product. But modernity has partially negatively modified the symbolic
quality of meat; consumption is now linked to high of cholesterol and uric acid levels.

If at a subjective quality level some changes can be observed, the most important transformations have been recorded at an objectifiable quality level. Diverse territorial changes contributed to the transformation of the objectifiable quality of Pampas meats. On one hand, the progressive process of agriculturisation has contributed to a movement of bovine farming to less productive areas of the Pampas. There have also been transformations imposed by modernity and hyper-modernity (Champredonde and Abaladejo 2008, 9).

Bovine farming has seen an increasing use of nutritional supplements in fodder, mainly silage of corn, sorghum and barley. Pellets of sunflower skins and soy flour are also used. The direct impact of this process is the increase in the probability of obtaining tender meats with a more marbling. The multiplication of intensive production systems has led to cattle more homogenous as regards conformation and particularly depth of fattening.

This results in a better presentation of the meat to the eye of the local consumer; it presents light red colouring, small size of the cuts, and in the asado, short ribs. This tendency can become a real threat to the meats of pasture systems, as the consumers get used to extremely tender meats, and reject meats that are less tender. As a negative aspect, this type of meat is more prone to develop alterations of scent and taste (liver taste, pork taste, etc.) and is also prone to a higher instability in oxidative processes (stale taste), specially in processes of maturing superior to 28 days. Other research carried out by INTA (Instituto Nacional de Tecnología Agropecuaria) shows a negative impact on the nutritional quality of meats. The increase of saturated fatty acids of meats originating from intensive systems enhances the risk of cholesterol increase in the consumers. The difficulty with this “non quality” is that it is hardly detected by the consumer during consumption.

In this case the most important changes are occurring in the objectifiable level of meat quality. In Europe events have taken a different turn. But in spite of the great changes in objectifiable quality, the image of Pampas meats as a natural product and the anchoring in the habits of the local consumers mean that the process is currently having low impact on its symbolic quality.

3.2 Salami of Caroya

*Rise in production activity*
In 1878, approximately 60 families arrived from Friuli (Northwest Italy), and inhabited the Jesuit farming estate of Caroya. In the early years, they worked mainly on the systematisation of the plots destined to each family, and developed a crop irrigation system.

Today, the colony has 16,000 hectares divided into holdings ranging between 2 and 24 hectares. The local conditions allowed the cultivation of crops such as vines, fruit trees as well as vegetables such as sweet potatoes, garlic and potatoes in an extensive system. Over time, an urban fabric grew up in the middle of the colony, characterised by the main avenue and its parallel rows of centuries-old plane trees.

**Construction of quality**

As they were well known to the Friulian immigrants, sausages have been made since the beginning. Over time, a salami of which the recipe varies slightly from family to family was generalised among the Caroyan families. It is made of bovine and pork meat, bacon, sweet white wine, ground pepper, salt, potassium nitrate and garlic soaked in wine.

Since the foundation of the colony, the salami has been made at home by farming families. Farms breed pork fed on alfalfa and corn, and slaughter a cow for the occasion. The slaughter (*carneada*) is a family and social event. The making and salting of the sausages is carried out in the winter months, and generally takes place in private garages. The sausages are destined for local consumption and in some cases for sale in nearby areas. The volume of salami produced annually is less than 800 kg. All salami is matured in a basement.

The local knowledge that allows the production of a good Caroya salami is distributed between knowing how to chose the supplies, specially the meats, preparation of the mixture, stuffing (generally done by men) and tying (generally done by women), and curing. Curing has the most impact on the quality of the salami, so humidity and room temperature is determinant. Most people responsible for this stage (mainly men) know whether to increase or diminish the humidity and temperature by touching the external surface of the salami.

In the traditional systems, the regulation of temperature is achieved by opening and closing the basement windows at different times of day. The humidity is modified by using hot coals when there is need for a drier environment. The exact temperature (between 15 and 18 Celsius degrees) and room humidity (over 70 percent) allow the normal development of two parallel processes: the fermentation of the mixture through the presence of bacteria and the progressive loss of humidity.
An important component in the maturity of the salami is the development of a mould in varied shades of grey, known as *mufa blanca* (white mould). This mould is an indicator of the curing process and contributes to the particular taste.

*Evolution pathways: from the basement to the cold store*

The change from household production for internal consumption to commercial production took place in the 1950 because of a local economical crisis caused by the loss of a fruit harvest as a result of a hailstorm. This crisis encouraged some families to switch from salami for internal consumption to bigger scale commercial production. Over time, output rose in terms of the number of producers and volumes each produced. There was in fact great variation in the scale of production and equipments and manufacturing processes.

The increase in output for commercial sale was mainly led by the local butchers, who often supplemented their income through making salami and *bondiolita*. In the last decade, many of were transformed into big producers specialising in salami, and also supplying products such as *bondiolita, jamoncito* and codeguin, etc. These enterprises produce salami year-round in volumes that vary from 1,800 to 150,000 kg annually. The labour is predominantly family members, and in the big enterprises is mainly hired. In most of these cases the distribution of labour is similar to that in household production.

However, the substantial increase in the volume, in industrial units, has led to a lower capacity in selecting meat according to quality, in separating the nerves on each processed cut and manage the curing. The central element of the original recipe has seen some variations. These affect, first, the proportion of bacon; to satisfy consumers worried by the impact of saturated fats on health, the percentage of bacon has decreased from 30% to 15 to 25% of total weight. The proportions of beef and pork vary according to traditional family recipes and variations in seasonal price and curing duration desired by the producer. Pork makes for a longer drying time than beef.

The changes which are less approved by the local population are, first, the use of synthetic gut instead of natural gut for casing. This technical resource is relatively little used and is confined to big volumes. The second aspect constitutes a taboo subject for the local population. The use of additives and ingredients to speed up fermentation (bacteria starters) or to imitate the consistency of a mature salami in less time (gluten) is very much disapproved of at local level. Among producers, “It is not talked about”. Among consumers it stirs ghosts. But the characteristics of the
product often make it appear that additives are being made use of. In some cases they result in the loss of organoleptic quality in the salami.

As regards facilities, the garages used slaughtering in the past have often been converted into processing rooms. To comply with current legislation, today they use tiled rooms and they keep processing rooms separate from others. Tools have mainly evolved in the type of material they are made of: the current spectrum of tools varies from epoxy painted machinery and wooden tables to the legally approved stainless steel.

One of the major changes is that salami is now made the whole year round. The need to generate income the whole year round brought the technical challenge of how to make it continuously. Curing now has to take place in extremely variable conditions of temperature and humidity. Equipment is now needed for air-cooling in the basement.

Traditionally curing took place in the basement, but in recent years the basement has often been replaced by industrial cold stores. At a symbolic level, the cold store is a synonym for industrial quality. Some artisan producers even say that the modification of the environment has a potential impact on the taste of the salami. The duration of curing is another aspect that has been modified. In numerous cases, the “traditional” minimum duration (at least 18 days before consumption) is not respected. Salami is sometimes sold locally or shipped when it has been cured for barely over a week.

Social changes such as smaller family size and the desire for healthier diets has also had an impact on the presentation of the salami. On one hand, the proportion of bacon used has decreased too. This is because consumers prefer to buy smaller units and avoid keeping pieces of salami in the fridge for a long time (more than a week). On the other hand, a smaller size, especially diameter, accelerates drying. This factor combined with a higher proportion of beef in the mixture is leading to faster production times.

Other changes at consumer level have played an important role in the evolution of Colonia Caroya salami. Today, the Caroyans are tending to eat salami less mature. Forty years ago the majority would consume salami cured for 25 to 30 days but now a time-span of 18 to 20 days is more frequent. There has been an exponential increase in external consumers, people who travel Route 9 through Colonia Caroya or who “invade” the mountain zone adjacent to the city of Caroya. New selling points have in fact been opened on Route 9. Other external consumers are supplied with salami in their own cities throughout the country thanks to distribution by three retail companies. The most direct impact of this phenomenon is the lack of specific tasting skills among consumers, which means that
different levels of quality can be sold. This has a repercussion in the quality offered by some producers. Some Caroyans actually say, “Some people are producing inedible salami”. According to local people, there is a difference between homemade and commercial salami. Some Caroyans are even proud to say they have never eaten a commercial salami. Homemade salami is what is produced for local consumption in the farming area.

Another aspect of symbolic quality associated with volume is how the salami is tied. In large scale production it is difficult to respect the traditional three or four knots of a single string, which traditionally gives the salami its typical appearance.

3.3 Amblayo Cheese

Rise in production activity
The mountain range of Amblayo is situated in the province of Salta and is part of the called “Calchaquies Valleys”. This is a semiarid region with strongly marked seasons. The main activity is goat farming and goat’s milk cheese. This zone is located 140 km southwest of the city of Salta and three hours away, 2000 meters above sea level. The rural population is thinly spread and there are small centres of up to 150 inhabitants.

Amblayo producers would no doubt agree that a typical cheese is made of goats’ milk, using natural rennet, and matured in molds of cinchón for at least 15 to 20 days. The area of production would embrace the pastureland occupied by the community of Amblayo and its area of influence.

Construction of quality
In the organization of labour within the family units, the production of cheese is mainly in the hands of the women. Because of the location and type of labour, the cheese could be catalogued as a kitchen product\textsuperscript{18}, which implies that knowledge is transmitted mainly from mother to daughter.

According to the interviews with producers, a combination of knowledge appears to take place, mainly on the occasion of marriage. The bride tends to adapt to the practices of her husband’s family, but she brings an imprint of the acquired knowledge in her family. But the main source of the diversity in practice in maintaining the herd and producing cheese lies in the variations in humidity and particularly temperature registered between the different areas. Producers say that a cooler temperature and higher
altitude facilitates cheese ripening. So managing the ripening process is complex and requires greater technical resources in lower-lying areas.

Making and ripening also need to be adapted to the composition of food intake and composition of crops, which reflect the seasons and environmental conditions. Basically, the best cheese is obtained from March onwards thanks to the better quality of the pasture.

*Evolution pathways: from traditional mold to PVC*

The major changes in the quality of Amblayo cheese are the result of local changes. First, there was the opening of a road in the 1960. Up to that point, the cheese was transported by mile to the railroad station, and from there by train up to the city of Salta. This change impacted on the main characteristic of the cheese. Second, the wheels of cheese weighed up to 8 to 10 kg to facilitate its transportation on the mule’s back. This cheese was matured up to 12 months. It is around this type of cheese that the reputation of the cheese of Amblayo was built on.

Transportation by vehicle (refrigerated in the best of cases) led to the commercialisation of smaller wheels of less ripened cheese. Nowadays, the cheese tends to weigh from 1 to 1.5 kg has undergone from 5 to 15 days of ripening. Other territorial and technical changes had an impact. On the other hand, there has been a change in the composition of the herd due to an increase in the breeding rates of sheep. This is because sheep’s milk gives more cheese by litre and because sheep are more docile than goats. In addition, the physical capacity of the local population is lower because of the exodus of young people to towns. Sheeps’ milk makes the cheese creamier and less strong-tasting.

At the level of production practices, technical advice from external specialists has impacted on the genetic composition of herds. Few producers today keep the “pure” genetic biotype. Also, new water management systems for irrigation and domestic use have generated changes in seasonality and the quality of fodder. The impact of these two technical changes on cheese quality has not yet been studied. Another of the technical changes affecting cheese quality is the growing use of chemical rennet. As regards the current use of metallic or PVC moulds, these allow the whey to drain away more slowly, which directly affects the texture, taste, and appearance of the cheese, particularly the marks on the side of the wheel. This is mainly associated with the subjective variables of quality.

As regards food safety, it does not appear to be a central concern for producers. Skill of milkers and cheese-makers along with conditions of low humidity and low atmospheric pollution are probably sufficient to
neutralise the dangers posed by poverty of tools and facilities (adobe kitchens etc.). Research by the INTA (Chavez M. et al. 2009) show satisfactory parameters for health and hygiene quality of milk and production systems. Similar results would be expected for larger units if the same families were making the cheese.

Despite the big impact of local changes, the image of Amblayo cheese has not altered among the consumers and visitors in Salta. Regardless of the big changes in qualities, all output is easily sold in Salta. In fact, the municipal market of San Miguel in Salta is one of the other places in which the artisan product is commercialised, and where Amblayo cheese is object of imitation. This implies that there is little specific knowledge of the product by most consumers, especially the inhabitants of Salta. Only some consumers are capable of differentiating the typical Amblayo cheese from its imitations or some of the cheese produced nowadays in Amblayo that differs from the traditional quality.

A somewhat unhelpful element in the process of definition of a typical product is the cheese contest that takes place in the city of Isonza near Amblayo. The fact that its jury is composed of political and other personalities with little expertise in cheese tasting can lead to widespread misperceptions about cheese quality. It has been known for mixed milk cheese rather than a pure goats cheese to win the best Amblayo cheese award.

4. From the territorial food to the (re)construction of territorial qualities

The three cases help us to understand the multiplicity of factors that interact in the processes of territorialisation/deterritorialisation of the quality of food and offer indications for possible intervention. The understanding of the dynamics of the objectifiable and subjective variables and the interactions among them lie at the centre of the analysis. This type of analysis can clarify the pertinence of the intervention and the type of strategy to be implemented for re-territorialisation of quality, and can also give some idea of the probabilities of success.

4.1 Territorial quality is vanishing?

The three cases analysed show that there is a general tendency towards the relative loss of territorial food quality. In the cases of Pampas bovine meat and Amblayo cheese, this tendency involves a large part of
production, and in the case of Caroya salami it involves half or more of the objectifiable and subjective components of quality. These changes are summarised in Table 4-1.

**Table 4-1 Evolution of the two variables of quality for the three products analysed.**

<table>
<thead>
<tr>
<th>Product</th>
<th>Objectifiable Quality</th>
<th>Subjective Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pampas Beef</td>
<td>Earlier ages and lower slaughtering weight.</td>
<td>Extensive systems. “Natural” foods. Healthy food (protein and iron) with negative impact on cholesterol. Negative impact of feedlots on the environment but without translation on the qualification of the meat.</td>
</tr>
<tr>
<td></td>
<td>In steaks: strip loin steak, smaller rib eye, lighter colours.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Increase of marbled and proportion of saturated fatty acid. Greater probability of tender meats.</td>
<td></td>
</tr>
</tbody>
</table>

It can be observed first that the most important changes in the territorial quality of the products occurred at the level of the objectifiable variables. In two of the products (Pampas meat and Amblayo cheese) these changes result from big local changes. In both cases, the products tend to suffer a trivialisation of their quality, that is, the loss of specificity of the quality associated with the area. In the case of the cheese, this deterritorialisation is associated with the partial loss of local know-how. This is seen in the tasting ability of consumers of Salta and at a local level, and in the partial abandonment of natural rennet and the use of modern molds. This tendency is exacerbated by the aging of local population and by a rapid spread of practices that simplify daily tasks.
The cases also show that apart from idealistic issues, subjectivity and cognitive limitations can generate inconsistencies and conflicts in the processes of qualification. The “productive actors” in agri-food systems can produce and elaborate qualities that are substantially different from the expectations of the consumers. Regarding the contradiction between the tendency of consumers to favour natural food and the artificialisation in the production of Pampas beef, Champredonde (2008, 197) postulates the hypothesis that this difference in the definition of quality is due to the fact that the qualities evolved “...regardless of the wishes of the consumer... given the ‘failures’ in the translations (throughout these agri-food systems) and the interdependencies with other territorial and market phenomena”. In the case of beef, this situation is aggravated by the fact that the first variable perceived by a consumer of meat is tenderness, and by the difficulty of perceiving changes in the composition of fatty acid in the tasting.

In the case of Colonia Caroeya, the main changes were due to the impact of new technologies and the complicity of numerous consumers (mainly extraterritorial) who lack specific tasting skills.

**The interaction among objectifiable and subjective variables in the processes of deterritorialisation**

On top of consideration of single objectifiable and subjective quality variables, it is also important to consider the interaction between them. We need, on one hand, to observe how the changes at the level of the objectifiable quality influence the transformations of the subjective qualities. For example, the consumers in Salta have got used to eating Amblayo cheese made with chemical rennet, and a part of the new generation of Caroysans have adapted their taste to the fresher “industrial” type of salami. On the other hand, we need to observe how the variables proper to symbolic quality influence the implementation of technical innovations. For example, the practice of peeling and storing cured salami in vacuum packaging is limited, mainly because many consumers consider this a less natural product. The complexity of the interaction between both types of quality variables presents particular points as regards each territorial food. These constitute a spectrum of qualities varying in importance. For Amblayo cheese, a wide spectrum of qualities generated by the diversity in the goat milk production systems, in cheese-making and in market strategy can be observed. The market influences conditions and duration of the cheese ripening, and the variables activated by the process of qualification.
Systems where only goats milk and the traditional mould are used alongside chemical rennet coexist with systems where a mixture of goat and sheep milk but natural rennet are used, etc.. The complexity of the process of qualification implies that in some cases different qualities can be found in the same point of sale, even where all products are called Amblayo cheese.

4.2 Can and should territorial quality be rebuilt?

The evolution of the three foods shows an apparent tendency to de-territorialisation. This general tendency is modified by particular situations specific to each area and production distribution and consumption processes of each food.

Many reconstructions of the situations of the three foods are possible, but the above description raises several urgent questions. These include whether the identity of Argentinean Pampas meat will be lost, whether the quality of Amblayo cheese will be trivialised due to the disappearance of local knowledge, and whether the Caroyan consumer over time will end up adapting to fresh and “industrial” type salami. The three cases show that the processes of territorialisation and de-territorialisation of the quality of food reflect multiple processes in each agri-food system. In fact, they are the result of social consumption. Within overall processes a relative diversity of situations and qualities can be found. The big transformation of Pampas beef quality took place along with economic and social processes of a great magnitude linked to global economic changes such as the expansion of soy crops in direct sowing and the relative pricing of beef, grain and fodder. There was also a background of local phenomena such repeated droughts in some farming zones, financial incentive to slaughter houses by means of differential pricing for feed-lot animals, etc.

There are still production systems with extensive fattening and commercial mechanisms such as the Hilton Quota for beef to export to Europe. In the current context, the reconstruction of territorial quality of these meats would seem possible for small volumes of meat, re-qualified on the basis of symbolic quality variables, such as Geographic Indications, private and collective brands, or the optional labelling in the case of the province of La Pampa (Champredonde 2008). Such tools are more suited to medium to large scale production with the capacity to organise their production systems in response to seasonal demand and quality. The similarity with the case of Amblayo cheese is that big changes are occurring at the level of objectifiable quality variables and hence important territorial transformations. For Amblayo cheese, reconstruction
of territorial quality would seem to be possible through collective local initiatives. The challenge would seem to be less difficult than for Pampas beef. For Pampas beef, on the other hand, the challenge to generate a collective brand that contributes to the reconstruction of its typicity would appear to be less difficult. This is because it entails a delimited number of potentially involved producers and there is geographical and cultural proximity among them.

Training in tasting for the people of Salta should also be developed at the same time. Knowing how to appreciate a territorial food allows it to be re-qualified. The adverse factors for this type of projects is, first, the aged local population, and second, the current structure of the market and its mechanisms of qualification. This favour the simplification of production and commercial practices, the image of the product is not affected because demand largely exceeds supply.

Another factor to be taken into account, in a process of increasing formalisation of the commercialisation of cheese, is the adaptation of the premises and tools used in order to comply with health regulations. Today, this adaptation would imply the systematic exclusion of a large part of the local producers. Besides, consideration of this component of objectifiable quality gives rise to the well-known debate on pasteurisation of milk for speciality cheeses. Amblayo is particularly sensitive to this issue as it has a short ripening time. The debate concerns the opposition between legal aspects with the preservation of local qualities based on practices legitimated by the local culture.

In the case of Colonia Caroya salami, the main issue is the controversy between legality and the legitimacy given to certain practices by local traditions. Some producers have adapted to comply with national legislation. They claim to offer quality based on objectifiable variables, such as product safety and the legality of their commercial transactions in procurement and sales. Others seek to confirm their identity as artisan producers, based on practices inherited from their Friulian ancestors. But it is clear that the whole set of local producers looks for the protection of their products under the image a typical product.

Another factor to take into account is that the systematic dissociation of technical, regulatory and objectifiable variables from subjective ones should not lead to regulations that marginalise producers immersed in the local technical culture. The reconstruction of the territorial quality of the Colonia Caroya salami implies, first, the mobilisation of local producers into a project for containment of supply, and codifying various practices and ripening times. Second, although at local level knowledge of tasting is a factor that has kept up territorial quality in local production of salami, it
is important to encourage typical salami tasting skills. A preliminary hypothesis can be based on constructivist views, but the basis of this analysis should not be left aside. The quality and qualification of territorial qualities constitute complex social constructions. This involves not only the presentation of possible goals and tools for the re-qualification of the product, but also the consideration of the particularities of the process of construction.

In this sense, new questions are raised regarding for example the governance of systems that will support these collective processes, the competencies of the institutions and professionals that will accompany these processes, and the evolution of the territory and the markets for these products.

5. Conclusions

The contribution of a constructivist view to the comprehension and possible assistance of the processes of re-territorialisation of the food quality allow us to evaluate and mobilise concerns about objectifiable and subjective approaches to quality. Cognitive limitations of the actors directly involved in the agri-food systems are assumed, and may determine important differences and even contradiction in the definitions of qualities throughout systems even at the same stage.

Rationality of the situation allows an understanding of the nature of the processes of quality construction and qualification, and an explanation the unpredictable impact of the transformations of territories. The three cases analysed in this article highlight three aspects to be taken into account: (i) the historic nature of “territorial products”, (ii) the process of quality construction by means of interaction between the objectifiable and subjective variables, and (iii) the socio-technological trajectories that result in the current diversity of production systems. These three aspects also explain most of the causes of the territorialisation (de-territorialisation) of each food.

The cognitive limitations of researchers and participants in processes of reconstruction should be also considered. The constructivist view in this sense may frame intervention. Intervention needs to take account of what already exists albeit in an incomplete sense and of the transitory, nature of every process of qualification and observation. The existent and the transitory are both, by definition, dynamic. What exists, exists as a function of interaction between objectifiable and subjective variables in a given context. What is transitory exists as a function of the evolution of work teams, the faculties of its members and of the views mobilised.
So the processes of reconstruction of territorial food quality is an open process of construction, where unforeseeable orientation results in complex interactions among the multiple territorial and extraterritorial factors of every agri-food system. The project of re-qualification of food is no more than one of the many factors that interact in this dynamic. The result of the process, in terms of qualification and local impact, is constantly built and rebuilt. It is a process of constant learning in which the goal is to frame this learning within the rules, norms and practices of a given culture that validates them as legitimate. The qualities offered thus constitute an identitary reference for the members of that culture.

Notes

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1. Experiences developed in the Module “SIAL: investigación/acción en diferenciación de alimentos típicos” [SIAL: research on the differentiation of typical foods], that belongs to the Área Estratégica de Teconología de los Alimentos del INTA, Argentina [Strategic Area of Food Technology of INTA, Argentina]. Investigation carried out with the French-Argentinean Agriterris laboratory and the RIMISP (Latin American Center for Rural Development).

2. In the scientific environment, terms such as FOSHU, nutraceutic, enriched or functional food, etc. have been coined (Ruiz Martinez et al. 2003, 467).

3. The author postulates four principles for performance improvement in the line productions: a) the definition of quality agrees with the necessities (of the design), b) the system of quality is prevention, c) a standard management equals zero error, and d) the measure of quality is the price for inconformity.

4. This is one of the multiple definitions proposed by the Real Academia Española [Royal Spanish Academy] (www.rae.es/rae.html).

5. The “cost” component in the definition of quality may comprehend also a collective dimension. Japanese engineer Genichi Taguchi introduced the concept of Quality as “the minor loss possible for the society”. Taguchi used statistics to define the loss function to measure the financial loss resulting from bad quality. (Sukthomya and Tannock 2005).

6. These new products approach to what Salais and Storper (1993) defined as generic products, i.e. anonymous as regards to whom they are destined to, and defined independently of the persons.

7. The translation of boeuf is beef. However, in France there is the commercialisation under this denomination of meat of diverse category of animals, such as cows, heifers, bulls and eventually calves.

8. Named by Edgar Morin in terms of “neo-archaism”.

9. J.-P. Poulain also rescues another phenomenon associated with the symbolic quality of food, the “artistic” innovation of meals, associated with the names of
restaurants or famous chefs (1997, 110). This chapter discusses only this one aspect of symbolic quality.

10. Medicine: substance administered with curative or preventive purpose for a disease (Dictionary of the Real Academia Española).

11. Cinchón: mold made by a belt of intertwined plant matter. This girth possesses a certain porosity that enables the loss of cheese whey in the period of maturation. A thin porous fabric is placed between the cheese and the container.

12. To qualify: to appreciate, express or determine the qualities or circumstances of a person or thing (www.wordreference.com.ar).

13. This concept is proposed by Laville (2000), based on the contributions of Herber Simon (1959), over the limited rationality of economical actors.

14. Intermediaries that facilitate the sales of livestock by farmers to slaughterhouses.

15. The mixer is a trailer that has internal blades to mix the components of the animal diets (rolls of hay, corn grains, etc.) previous to the distribution to the feeder in the intensive fattening systems.

16. Even one of the enterprises is called Sotanos de Caroya (Caroya’s basement).

17. Current researches may come up with new elements to deduce the impact of the maturity in the cold store over the flavor of the salami.

18. In relation to the typology made by Oustry as of kitchen elaborations and patio elaborations.

References


