

**AN ANTHROPOLOGICAL PERSPECTIVE ON CULTURAL CHANGE AND DEVELOPMENT :  
A CASE STUDY FROM THE HIGHLANDS OF ECUADOR.**

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It is commonly accepted that the traditional ceremonial system, the traditional way of allocating resources, the traditional kinship system, the traditional political alliances are obstacles to the growth of rational attitudes towards work and the acceptance of technological change. Therefore, if "tradition" is an obstacle to change and modernization, one of the implications of development projects must be to break down customs and values that hinder the acceptance of economic growth. In this connection rural development is intended to reduce poverty, to increase agricultural production and to raise productivity. An important dimension in the logic of rural development must be planned by some public agency. The hypothesis that lies behind is that cultural and social change can be rationally planned.

In the anthropological tradition the question of development has been related to two main areas of theoretical problems: the problem of cultural and social change and the existence of different rationalities. I will argue in my article that these two sets of problems are closely linked. In this direction, anthropologists and anthropological praxis have to do with understanding the knowledge and practices of other cultures, and not with defending a particular notion of rationality that is the product of modern experimental Western science.

Anthropologists, even when they are dealing with rural development and planned change, are always asking about cultural universes and how the intentions, meanings and objectives of actors are shaped by the existence of particular moral and social worlds. This implies that anthropologists assume as problematic the role of modernizers and modern scientific thought and knowledge. We confront "tradition" with "modernity" and out of this confrontations different truths can emerge, f.i. empirical truth, social truth (e.g. ceremonial value of guinea pigs in our concrete case study) and metaphoric truth (e.g. the identification of guinea pigs knowledge with "household" and "womanhood"). My paper will explicitly deal with this problem.

In relation to cultural change I will argue that social life and social processes take shape within a diversified frame of socially constructed meaning, elaborated continually over time. Culture is not a fixed system of classification and a timeless construct that is external to the way actors are involved in solving their daily problems. The analysis of culture is not a mathematical analysis. Values and meanings must be confronted with actions and the relevant positions of the actors. The role of social anthropology as discipline in the practical world of development is to point out that the acceptance of technological change must be seen in relation to the different contexts that condition the preferences of individual members of any target group. The social groups can not be constructed artificially though a project, they exist before and they will continue to reproduce themselves after the experts have left the field.

A last remark is needed. My paper will postulate that cultural analysis based on the axiomatic assumption that every society is culturally homogeneous can be misleading. My paper describes the "conflict" of women peasant culture in Ecuador with the culture of modernizers. In doing this I will show that there are different systems of symbolic representation in the same society. The decoding of such systems is the primary task of the social anthropologists.

In the concluding section of this paper I will discuss again the topics that I roughly mention in this short introduction.

*I. The transformation of Guinea Pig production in the Highlands of Ecuador.*

The Ministry of Agriculture of Ecuador, with the financial support of the World Bank, started in 1980 an ambitious project for modernizing peasant guinea pig production. The peasant population, and in particular the peasant women, breed guinea pigs and they have been doing so even before the Spanish conquest. Consequently, it was assumed that there exists a pool of "popular knowledge" on how to raise guinea pigs. Moreover, in the Highlands guinea pigs are an important element in the local diet, and there is a potential market for guinea pigs in the medium and large cities of Highlands. It was therefore assumed that the local population would be interested in a program that aims at increasing the productivity and production of guinea pigs. Following this logic, any increase in production implies on the one hand more animals for internal consumption, and on the other hand a surplus that could be sold on the local or regional markets. Furthermore, the project could reach the peasant woman, a long forgotten and ignored group in development policies, and its eventual success could bring about a better protein intake for the entire rural family while, at the same time, increasing cash income, in a context where money is a scarce resource.

In order to implement the project two regional areas with guinea pigs production were selected. Integrated teams with agronomists, veterinary experts and extensionists began to work on the adaptation of appropriate technology. The need for technological change was based in the following assumptions:

1. The traditional breeding of guinea pigs was done in the houses, more precisely in the kitchen of the peasant huts. The reproduction process was not well controlled resulting in low fertility, high rate of mortality and a danger of genetical degeneration.
2. The feeding process was unsystematic because the guinea pigs were given the remains of daily foods as fodder.
3. Control of diseases was sporadic and in most cases detection and intervention was too late. This fact increased mortality and, consequently, reduced fertility.
4. The combined effect of 1, 2 and 3, was an extremely low productivity. Any increase of the stock was severely limited by the way production was organized. In other words, the common way of raising guinea pigs was seen by the experts as irrational and impeding a potential transformation.

The solution depicted in the new technological package were the following:

1. The breeding of guinea pigs must occur separate and apart from the kitchen and living space of peasants.
2. Cages were designed, permitting a segregation of the guinea pig stock according to age and sex.
3. This enabled a more efficient control of the breeding process. The best breeders, both male and female, had to be selected and a genetical control had to be introduced in order to avoid a high-rate of inbreeding. This would limit the problem of genetical degeneration. In addition, new breeders ought to be introduced, especially the Peruvian type.
4. The feeding process had to be changed. Alfalfa was considered to be the best element in the diet of the animals. The amount of feed had to be controlled in order to secure a better and more rational diet for the guinea pig population.
5. It was assumed that with the animals in the cages the different diseases would be easy to identify, and it would be possible to rapidly isolate the sick members. A guideline for correct medical treatment was distributed. This manual included detailed instructions in how to maintain better hygienic conditions in the cages.

In the starting phase, the peasants that accept the new technological package were to get free of charge new breeders and materials for the new cages. In addition, the extensionist would work with the producers in a very intensive way as they were defined as participants members of the experimental pilot project.

The reason why social anthropologists were eventually contracted is simple: the project did not work at the speed expected, and after almost three years of operation less than twenty women had adopted the new technology (the exact figures were hard to get). Furthermore, the project was considered very expensive as the credit was given in dollars.\* The teams were disappointed. Consequently, the Ministry decided that an analysis of the "cultural dimension" was urgently needed. The main hypothesis was that something was wrong with the target population and not with the philosophy of the project and the teams. Our research, therefore, was to focus on the target groups, and not on the way the extensionists have been working with them. We were not to evaluate the project as such or the way the teams organized their work. Neither were we to focus on the relation between the project team and its operationalization in relation to

the target group. This situation obviously put a severe limitation on many of our conclusions. Our research was thought to be an important input for the further implementation of the project and as well as for a possible expansion to other areas.

Our main task was to find out why Ecuadorian peasants preferred the traditional way of raising guinea pigs, or, in other words, why they did not accept the new technological package. The Ministry gave us total freedom for defining the best approach to be followed

## II. *The social and symbolic meaning of guinea pig.*

The point of departure of the research was the consideration of guinea pigs as "food". Food is not only feed, i.e. goods to be consumed and that have a nutritional value for the social actors. Food reflects at the same time a code of behaviour, a system of communication and a body of images and symbolic processes. A food system is a system of classification, evaluation and consolidation of social positions and hierarchies. Therefore, a food system puts "order" in nature, though different taboos, and in social life, through rituals and ceremonies. Our main task was to find out which role the guinea pig "plays" in the Ecuadorian food system.

We discovered that the consumption of guinea pigs was defined by the actors as "extraordinary food". The Ecuadorian peasants do not eat guinea pigs daily. Furthermore, the cuisine of guinea pigs is rather sophisticated and is regulated through different ceremonial activities and within the context of important social events. Our finding shows that the consumption of guinea pigs is related to the following social processes:

1. In first place, *social events related to the development cycle of the family* being the important occasions birth, baptism, first communion, confirmation, marriage, birthdays and death.
2. In second place, *social events in general* like showing deference for friends, neighbors, "compadres" (godfathers), relatives, and authorities or important persons, for instance priests or lawyers; initiating new relations; consolidating contracts, and celebrating some family events that occurs besides the developmental cycle, like the return of a son from the military service.

3. In third place, *religious and civil ceremonies*, including all religious ceremonies and pilgrimages as well as important civil political ceremonies, for instance, the National day or an important political meeting with national politicians visiting the communities.

4. In fourth place, the curing processes. The guinea pig is eaten when someone is suffering from pneumonia, bronchitis or cold. During the period of pregnancy the woman must frequently eat guinea pig. It is also recommended that one week after birth of the child and for a period of three months, the mother should eat guinea pigs as often as possible and preferably as a soup.

The relationship between diseases, curing therapies and guinea pigs is related to a central dimension in any food system: the connection between food and health. In Ecuador, the different rawstuff for making meals are classified according to the binary opposition cold/hot. This binary classification is functionally connected to the different organs of the human body, on the one side, and to changes of temperature in the environment, on the other. The main objective in Ecuadorian traditional cuisine is to reach a balance between cold and hot elements. The guinea pig is defined as the hottest element along the hot dimension. Consequently, diseases related to cold in general and to situations where a person has been drained of energy, as for example after childbirth, are codified as appropriate for the consumption of guinea pigs. In order to achieve the desired balance between hot and cold, each meal consisting of guinea pigs as the main ingredient, must also contain cold elements. Because potatoes are very cold they are the "natural" element to combine with guinea pigs. It is unthinkable to eat guinea pig with maize which is by definition a very hot rawstuff.

The relation hot/cold is thought of in terms of opposition and contrast, but as I have observed the main goal is to reach a stable balance between the elements combined in each meal. Any unbalance is considered potentially dangerous.

In this sense guinea pig play a central role for Ecuadorian peasants. It is easier to imagine that if the cuisine of guinea pig is perceived as very structured, in the sense that a concrete order of meals must be followed, and extraordinary, almost logically we can suppose that a daily or very frequent consumption of guinea pig will be difficult to achieve. The transformation of food from extraordinary to ordinary or daily implies changes in the perception of social

territories of meanings and its implicit frontiers. Food in this context is used in order to ritualize events and occasions.

Therefore, the frequency of guinea pig consumption is always related to ceremonial life. The amount of social ceremonies varies from family to family according to the internal development cycle and the type of social involvement. The production is highly regulated by these social processes. Any increase in production, according to our observation, is correlated with expectation of particular ceremonies or social events. Only rarely do the peasants sell their guinea pigs. This explains in part the "shortage" of guinea pigs in the Highlands and their relative high price when compared with the price of pork, a typical market meat all over Ecuador.

I can conclude by saying that guinea pig is a key element in the articulation of a complex system of social relations within both domestic and public domains. The circulation of guinea pig as food serves as a useful guide for depicting the degree of social involvement between different households. Therefore, according to the women that we interviewed, there is not only no household without guinea pigs, there is no woman without them. The guinea pig is by definition the domestic animal of the Highlands of Ecuador that, at the same time, is eaten. The qualities of domestic and edibility are not easy to find in other cultures and there are taboos that hinder such combination.

The guinea pig can also be seen as an element with symbolic efficiency in the sense that social actors believe in the strength of given signs that regulate rituals and ceremonies. This efficiency is closely related to the fact that guinea pigs are part of a household. To be in the kitchen of a peasant hut is to be close to the family, close to the stove. At the same time, this proximity permits the definition of the guinea pig as a full member of the household: it is the only domesticated animal that sleeps inside the huts.

The Ecuadorian peasant see guinea pig as oracles. Many natural events like rain or frost, social events, like a possible visit, or a disease of a close relative or friend, are interpreted through the behaviour and "utterances" (noises) of the animals, usually

the older ones. In this direction, the strategy is to have some old animals in the stock. The old guinea pigs are not systematically slaughtered, and, therefore, many of them are not eaten until after their natural death.

It is easy to realize that guinea pig is conceptualized as a very sensible animal that like to protect their owners. In this direction, the traditional therapeutical devices are unconceivable without the presence of guinea pig. In this connection, the guinea pig is a central element in a very important ritual that is carried out by some of the traditional healers ("sobadores de cuy"). And when a member of the family is sick and after he/she has been treated without many success by the mother or the grandmother, he/she is taken to the traditional healer. A ceremony called "sobada de cuy" is performed. The ceremony is simple but it is saturated with meaning. The healer demands a guinea pig that lives with the family. The size and the color of the animal varies with the type of patient and the praxis of the healer. The healer takes the animal and vigorously rubs it over the body of the sick person. In the course of a few minutes the animal dies. Immediately after, the healer opens it and begins a careful analysis of the organs. The hypothesis is that the guinea pig "absorbs" the disease of the patient and permit an identification of the sickness. This "absorption" is possible only if the guinea pig has had a close relation with the sick person. Furthermore, the very absorption in itself initiates the curing process.

The ritualization of the guinea pig consumption and use serves the goal of keeping alive "traditions". A cultural analysis of this tradition allows us to see the basic assumption behind the symbolism of guinea pig. I have tried to demonstrate how symbolic and social aspects articulate widely social relations, religious beliefs and magical practices. The culture of guinea pig is a kind of restricted code with a rather clear defined meaning. In this case, to actively choose and apply a new technology in the breeding of guinea pigs implies a change in the system of codification: a change from a restricted to an elaborated code.



*III. The traditional knowledge of raising guinea pigs: imperfections and discontinuities.*

I have illustrated the social and symbolic significance of guinea pigs in the Highlands of Ecuador. Without doubt, the production of guinea pigs is an ancestral tradition and a vast "popular" knowledge in this field exists in Ecuador. It is impossible to summarize and present it all in this short paper. Here, I will only indicate the type of knowledge the women are concerned with and how some divergences with "reality" can be depicted. In doing this I would like to emphasize that, contrary to the "belief" of modern agronomists and veterinary experts, the peasant women of Ecuador possess a complex knowledge embracing all the relevant items for production. Moreover, it is a knowledge that is rooted in an ancient practice that has remained almost intact until the present.

I will start by discussing the feeding practice of guinea pigs. The main fodder in many areas is straw ("paja" in the local expression in Spanish or "uksha" in Quechua). The peasants classify four different types of straw according to size, colour and nutritional properties (the most important is called "ranka uksha"). In addition, sixteen different types of grass are classified as "good food" for guinea pigs, and, among them, alfalfa, ray grass and clover. In many areas alfalfa is the main fodder. If they can choose between straw and alfalfa they will always prefer the latter. However, alfalfa is scarce, and, consequently very expensive to buy.

In addition to grass the guinea pigs eat the remains of the daily food: the peels of potatoes, the shell of kidney beans and the husks of barley being the most common. It is considered ideal to combine these with appropriate portions of grass. In doing this, they will also try to avoid the feeding of what is considered very dangerous: the "bad grass". Ten different types of grass are put into this category. Furthermore, in the combination, they are very careful in not giving very fresh or very humid grass because both are considered to be cold food. Therefore, the straw or the grass is always partially dried under the sun for one or two hours.

This kind of knowledge can be considered very appropriate

even from the point of view of modern production. The women know that straw, alfalfa, and, in some areas, the leaves of maize are the best food. In modern feeding, both alfalfa and leaves of maize are defined as excellent fodder. In this respect, without many hesitations we can consider their knowledge as correct. I also mentioned above that the grass given is not completely dried. This practice is not only due to the idea that guinea pigs must not eat cold food but also because they do not give them water. They believe that "fresh water" can be the cause of diseases, especially diarrhoeas. This knowledge, however, goes against modern practices. The experts emphasize that guinea pigs can drink fresh water and that they are perfectly able to regulate the quantity that they want to drink. However, in a traditional context of production the quality of water is far from being good enough. This is even the case for the local population that is suffering from diarrhoeas and intestinal diseases. Therefore, an incorrect practice has, in many cases like this example, a correct consequence because by not giving fresh water to their animals they avoid the risk of diarrhoea. The problem is not water but its quality.

Another important area of knowledge is related to the identification and treatment of diseases. Contrary to the belief of the veterinary experts, the peasant women have in fact a broad knowledge of diseases that may affect their guinea pigs.

Unfortunately, I have no place here for examples, but they would have illustrated the kind of connection that exists between an old practice and clearly reveals that the women take care of their animals. They do not breed "naturally" and they are carefully treated when they are sick. The traditional medicines that they apply are in many cases very effective. In addition, the preoccupation for hygiene exists, and the different kinds of beds that they are able to make are a clear manifestation of it. The identification of diseases is correct and the only problem that remains is related to the effectiveness of some treatments. Some of the traditional methods of curing cannot compete with sulfas and antibiotics.

I believe that regarding feeding and medical treatment in principle there is no contradiction between the local and the scientific knowledge. The popular knowledge is based on many correct

observations and on a sophisticated classification of plants, herbs and animal reactions. A "torsón" is a salmonellosis. The name is different but the same symptoms are identified in both systems. A treatment that entails a better recuperation of the animals can be accepted without major resistences.

The area in which contradictions are evident is related to the concepts and beliefs that sustain reproduction practices. The women do not consider as relevant for reproduction the degree of in-breeding in their stocks. This implies that a "father guinea pig" (a "tata cuy") will serve indiscriminately all the females. The only effective control is exercised through castration of all the young males of the stock. Moreover, they always prefer to eat or eventually to sell the young males, keeping as far as possible the female stock unchanged. There is no selection of able females, and the main consequence of this practice is that unfertile ones are in most of the cases noticed to late. Unfertile females are called "cold" or "machorras" which metaphorically alludes to masculinity. Many of the women producers explicitly stated that the reproduction process goes without much control. This attitude has negative consequences for fertility rates because in many instances the female guinea pigs are too young or too weak. A pregnancy under such conditions can be very dangerous. We calculated that on average birth rates are between one and two guinea pigs three times a year per mother. This is half the birth average considered as normal by modern standards. In addition, after birth the mothers do not get special care, they are not separated from the other members of the stock and they do not get extra food.

One of the most controversial issues is connected with the criteria for selecting the male reproducers. Colour, size and type of hair are important but the paramount criterion is the amount of fingers on one of the front legs. A male guinea pig that has more than five fingers is highly appreciated, because more fingers than normal is codified as a sign of "potency" and "real masculinity". Conversely when they have less than five this is seen as very negative. According to the veterinary experts the amount fingers, below or

above the normal, is an indication of genetical mutation that can be transmitted to other generations.

We can accept that these beliefs and practices imply that the reproduction process does not guarantee a better selection, a higher fertility and a higher overall productivity. The idea of moving guinea pigs from the kitchen to the outside cages, thus ensuring a better control of reproduction, enters into contradiction with a firm and established knowledge. This knowledge was not perceived as either problematic or irrational by the women producers. In a sense, this is an area of confrontation between different logics of reproduction and as we expected, the main resistance for accepting the implications of the new package were related to ideas about the reproduction process. The beliefs and concepts on reproduction that women accepted and put into practice are in conflict with the "reality of production", with a possible alternative for a better production of guinea pigs.

From this example, we can see how the cultural dimension lies behind preferences and want formation. The cultural dimension is not external to preferences and want. However, the possibility for cultural change can only be related to the concepts and beliefs that contradict a better management and control of production. The role of the anthropological analysis is related to the identification of these types of discontinuities that in many cases the actors themselves do not acknowledge in a precise and systematic way.

#### *IV. On cultural change and development.*

The reader of this paper must be aware that what I am describing is an encounter of cultures: the culture of peasant women of Ecuador with the culture of modernizers (experts, extensionists, World Bank in last instance). The first lesson to be learnt is that there are different cultures of guinea pigs in Ecuador. I cannot accept the assertion that all the Ecuadorians share the same general beliefs, the same overall world-view and the same ideas of how guinea pig production should be arranged. The local and popular knowledge and the new technological proposal are different systems of symbolic representation. I have tried to decode and point out in which areas

there are discontinuities and contradictions. The traditional holistic cultural perspective of anthropology sometimes obscures the fact that culture is always plural and that in any society there are subcultures and countercultures.

The second lesson is related to the idea of some social scientists that the culture dimension is a separate sphere. This idea is connected to the image of culture as an obstacle to modernization and change. I have tried to demonstrate that the peasant and the experts live within different frames of references and that they communicate with the help of their ideas, concepts and beliefs. These ideas are a part of production, they are not external to social and material production. The question of cultural change remit us to the problem of confronting these conceptual artifacts with the tasks of production. Some concepts and beliefs are more effective than others for solving technical problems. Without accepting as possible this solution the alternatives to existing explanations and cultural practices cannot exist in society. What I have briefly presented are different "theories of knowledge" and their implications for the organization of production. Obviously, these different theories have a strong normative component, in the sense that once accepting the premises a given practice must be followed. The main difference lies in the way guinea pig is defined in the traditional system. For the peasant women the endorsement of concepts and beliefs related to production, circulation and consumption have social, symbolic and moral consequences that are not explicit in the modern definition. The modern system is represented as extraterritorial, as related to a given truth that is valid in Ecuador, in Peru or in Zambia. This dimension is clear in the parts of the discourse related to genetics. Therefore, for many of the women producers the acceptance of the new technological package implies a break of the continuity of domestic closeness/magic element in curing/oracle that the guinea pig represents in their eyes and sentiments. The change is possible and perhaps will occur in the future in a rapid and massive way. But this transformation is dependent on the way individuals will be able to identify the implications of the new logic for some of their beliefs that must either be denied or replaced. If the cost is a significant cultural

disturbance and dislocation of fundamental assumptions the change will occur slowly. The individuals will fluctuate from one system to the other and perhaps will create a patch-work system of production in a transitional period. The peasant women of Ecuador have a long experience in doing this in other areas like health and education, in which "tradition" coexists with "modernity", the modern doctor with the traditional healer and the written culture with rich oral tradition. The example of guinea pigs is just only one more in a long and complicated history of social and cultural change.

The third lesson of the paper is related to the complexity of want formation and preferences. The consideration of the symbolic meaning of guinea pigs was combined with a sociological examination of the daily life of women. I emphasized that stress and competition with more fundamental activities were the most explicit consequences of the project. I think that this kind of argumentation is valid for any type of development project that is not only complex but also has a particular character of altering the daily routine of the local population. I have shown how sociological spaces are open, when the household enter the phase of fission giving women more independence permitting them to acquire a new status based on wisdom and mobility. This implies that the category women is not static. The status of women varies over time according to demographic and social changes. To identify the actores who are more available to the new discourse requires this kind of anthropological inquiry. But there is a long and complicated way from the identification of available individuals to the acceptance of a new model of production. The process of cultural change cannot be predicted with mathematical precision. The anthropological research permits the examination of discontinuities between paradigms and of some of the basic concepts and beliefs with the practical requirements of reality. This particular reality in Ecuador, like in any other underdeveloped society, is based on a model, the scientific explanation of reality, that has more power and legitimation than the traditional system of thought. The different ways of legitimating the contrasting models remit us to the chapter of power that lies beyond the scope of this paper. In cultural change

there is always a conflict between a "little" tradition that is oral and a "great" tradition that is scholarly and masterly written. The great advantage of any "great" tradition is the flexibility of its presentation, from scientific, esoteric, complicated books on genetics to the manuals that the extensionists distribute among the peasant women of the Highlands of Ecuador. This flexibility is a sign of power. Our example can be seen as an attempt to demonstrate the richness and complexity of a "little" tradition and the way their holders, the peasant women, agreeable to use it, to resist, to compete and to survive in a context which ignores and despises their knowledge.

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