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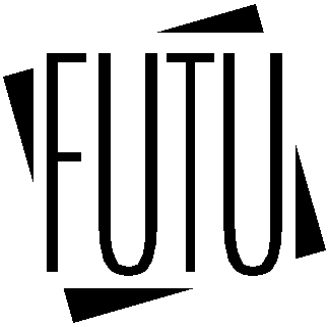

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CULTURAL MODELS OF RISK - THE MULTIPLE MEANINGS OF LIVING IN THE WORLD OF DANGEROUS POSSIBILITIES

The purpose of the research programme Citizenship and ecomodernization in the information society – the futures approach – is to study the social and ecological dimensions of emerging information society. Particularly we aim at assessing social impacts of new informational structures that are impinged on citizens. We also focus on analyzing the ways application of information technology influences on targets and realization of sustainable development. The study programme comprises of ten individual research project organized around above sketched themes.

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1. ABSTRACT

One of the contributions of cultural studies in risk and technology assessment is to emphasise the importance of cultural models and to show how cultural models of risk are best studied by means of ethnographic case studies.

In this article I shall first explicate the conceptual background and then proceed to present two case studies that illuminate my line of argument, one from Western Finland, and one from the Peruvian Amazon. Finally I will discuss some systematic connections between the risk profile of late modernity and the risks from the ”archaic” Amazonian case study.

2. CONCEPTUAL PREAMBLE

We experience ourselves as beings situated in the network of possible worlds. Some possible worlds are behind us, some lie in the future; some of them are accessible to us, and some are beyond our reach for one reason or another. We ethnographers believe all this. In addition, we believe that the people we study are very much like us. They, the notorious study objects, are cognitively competent, culturally groomed actors finding their way in the networks of possible worlds. Cultural models are tools for navigating in these worlds. Cultural models portray simplified worlds, in which relationships bind entities together into systemic networks. Cultural models concern, not only physical world and its material aspects, but also abstract entities like social relationships, moral obligations, and deities (D'Andrade, 1990). Models of dangerous possibilities provide maps with which to navigate in the world of uncertainty. Culture is created in and by human action. Cultural models regain a mode of independent existence of their own, and they can act back upon human beings, who generated them in the first place. Shweder (1991) calls them "intentional worlds" and claims that the dynamics of human consciousness are heavily dependent upon socio-cultural context in which it is embedded.

Dangerous possibilities are culturally manipulated not only in the sense that their existence and properties are conceptually specified, but also in the sense that material culture or technology is utilised in the processes of risk management and containment. Technological structures, together with other cultural systems, not only help to manage risks, but they create risks as well.

Attitudes towards technology - or the perception of risks of technology - are dependent upon their roles in the worldviews of the informants. The nature of conceived technology is affected its cognitive and cultural context. Risk perceptions are embedded in general models of reality; attitudes towards technology depend upon basic beliefs, which concern (i) the material world, its structure and dynamics, especially the probabilities and the furniture of the world, and (ii) the social world, especially the structures of power, trust, and knowledge.

When, for example, the laypeople's and the experts' views on technology collide, it usually stems from the fact that the respective parties live in different realities which are furnished with different things (Kamppinen et al., 1995). As Mary Douglas and Aaron Wildavsky (1982) have said, the magnitude of any risk is proportional to what bits of information are connected to it (see also Tonn et al., 1990; Kates et al., 1985).

Psychological studies on risk and technology assessment suggest as well that dangerous possibilities are cognised as parts of larger networks of things. Instead of

comparing quantitative estimates of risks, there is a tremendous need to study the structure and formation of systems of risk beliefs in their cultural contexts (see Cvetkovich & Earle, 1985; Johnson & Tversky, 1984; Brehmer, 1987; Sampson, 1981).

This line of research sees risks (or risk representations) as cultural models that are constructed, maintained and modified by social processes. The papers in Johnson and Covello (1987) and Brown (1989) criticise the psychological work on risk for ignoring the social and cultural reality of human beings, whose cognitions they have proposed to study. Four specific points of criticism have been presented in the literature:

(1) Risk models are generated in cultural contexts - they are negotiated in and by social groups, and they are subject to change. The individual risk models are products of social processes, and the psychologist's overall individualism is unwarranted. That is, the ontological status of risk is not the one suggested by psychologists. Risks are cultural models, whose presence or absence in the individual minds depends on social dynamics.

(2) As the psychological studies have shown, media and the salience of a risky item affect its reception. Yet social networks are of primary importance in the formation and propagation of risk models.

(3) The concepts of probability and negative utility that constitute the common-sense conception of risk, are themselves culture-relative. The fixing of either of them is a process of negotiation that is affected by ideological and religious factors, the cognised plausibility of institutions, economy, and so on (cf. Cashdan, 1990).

(4) The gestalt of risk - on which dimensions it is assessed - is also affected by institutions, and by the interaction that takes place in the workplace, among friends and family members.

The classical work on the cultural construction of risk is Risk and Culture (1982) by Mary Douglas and Aaron Wildavsky. Its main tenet is largely based on the earlier work by Douglas (1966) and it can be summarised as follows: The classifications of risks are not based on the actual (for example physical) hazardousness of the items, but rather on their moral qualities and connections; the classification of risks, and by the same token their identification, perception and management, all serve social purposes - the maintenance of group identity, group survival, the concomitant reduction of cognitive dissonance, and the expression of moral values. These basic forms of social dynamics govern other cultural activities as well.

3. THE FIRST CASE STUDY: MERI-PORI COALPOWER PLANT

Our case study concerning the social and cultural aspects of a siting process of coalpower plant in Western Finland supports and illuminates the position outlined (Raivola & Kamppinen, 1994).

The aim of the study was to describe the diverse views of the impacts of a new power plant, situated in Meri-Pori in Western Finland. The plant was built during years 1990 to 1993, and the study was commissioned by the Finnish Ministry of Trade and Affairs.

The primary methods of data collection were interviews, documentary analysis, and participant observation - the classic ethnographic tools. The analysis of official documents revealed that the siting process was unique in the sense that it had its specific historical background. (All real world processes are of course unique in this sense, and their general aspects must be abstracted in order to have material for comparative research.) The siting process was also a process of gradual decision making: acts of decision under uncertainty followed one another.

3.1 The local perspective: acceptability and trust

The local perspective was reconstructed from the interview and observation material. It was characterised by two themes: acceptability of emissions and trust.

The physical impacts of emissions were framed in widely different ways, depending on how the emissions were contextualized. The locals (and experts) had a shared view of the numbers, but the significance of these numbers was interpreted in various ways. More to the point, the acceptability of emissions depended upon the views concerning for example employment effects and the identity of the community. Those who expected beneficial employment effects were more willing to accept the project. The conceptions of local identity were nicely geared into acceptability. The local community of Reposaari has a long and well-known history as an industrial community, and there were informants who saw the power plant as a natural and acceptable continuation of this tradition. Other half of the informants perceived the community as a potential marina, a tourist attraction for boaters. This future prospect could not tolerate power plants or other heavy industry.

The theme of trust recurred again and again in the interviews, conversations and day-to-day life. The questions pondered by the locals were: Are experts and politicians worth trusting? Are there some ”players in this game” who are systematically untrustworthy, misguiding or even outright evil? The notion of trust was linked with other moral and political qualities, and embedded in general models of reality which depicted the landscape of political actors, flow of knowledge and so on.

Our study also documented a prevalent rhetoric of irrationality, how the laypeople were accused of NIMBY (not in my backyard) and LULU (locally unwanted land uses) syndromes. We proposed that the laypeople’s reactions were in fact rational, if assessed against the background of their cultural models. Take, for example, the norm ”think globally, act locally.” Reacting against siting process within one’s living environment is in accord with this norm. It is rational to act in a familiar locality, which embodies personal and social values and which is well known for the actors.

Our finding that the laypeople are rational accords well with the basic assumption in ethnographic and anthropological research: if the subjects appear irrational, then the cultural models affecting the situation should be studied more thoroughly. In other words, there is a principle of charity at work: the people we are studying should be interpreted as rational as possible. This principle does not water down the culturally interesting differences between experts and laypeople. Rather, it points out their shared features (both are rational) and explains the differences in behaviour (they operate with different cultural models).

4. THE SECOND CASE STUDY: AMAZONIAN MODELS OF RISK

In this chapter I will take a closer look at the models of risk among the Spanish-speaking Mestizos of the Peruvian Amazon. I will discuss two sites in which I have done ethnographic fieldwork: the models of risk in rural villages, and the respective models in a shantytown. The ethnographic material will be presented in quite an abundance in order to give the reader an accurate flavour of ethnographic research and reporting.

The theme of health and health-related risks will figure in these cases. It will be evident that the risk models concerning technology, society and its institutions all converge into the problematics of health.

4.1. Rural dangers

Among the Mestizo peasants of the Peruvian Amazon the risk portfolio is constructed in a way that suggests the presence of specific cultural constraints. The Mestizo peasants in the villages of San Rafael and Nuevo Progreso (see Kamppinen, 1989a; 1989b) are exposed to various fatal illnesses like smallpox, malaria, whooping cough and yellow fever. The most dangerous illnesses, however, are not among these "natural illnesses" (enfermedades de naturaleza). The most dreadful illnesses are due to witchcraft (brujería), which, in turn, stems from envy (envidia), evil (mal), and injustice (injusticia). Treating these illness categorisations as cultural models of risk, we may (i) hypothesise the set of norms supported by the presence of this risk, or we may (ii) hypothesise the social conditions which cause, maintain or mould the models in question.

Illnesses due to witchcraft differ from other illnesses in that their symptoms begin suddenly, the victim's condition deteriorates quickly, and the instruments of western medicine are counter-productive. The causal background of such an illness is the following: the victim possesses more commodities than some other villager. This uneven distribution causes envy. The envious one consults a witch and hires him/her to harm the victim. Envy and witchcraft may also spring from jealousy - ex-husbands and ex-wives especially are prone to inflict harm upon the newly married.

The commodities that feed envy are easily named, since they are closely related to the means of subsistence, that is, agriculture, fishing and hunting. Motorised water

pump, chain saw, out-board motor, boat and firearms are valuable instruments in increasing the nutrition level and especially in creating surplus value. One who owns such an instrument is frequently asked to lend it to another. To refuse feeds envy and causes witchcraft - almost automatically. To avoid witchcraft and the related illnesses one should lend commodities when asked to. The same holds for more transient commodities like food. One who has extra food to spare, should share it with those who have less and especially with those who ask for food, if one is to avoid witchcraft. As one of the informants, Hipolyto Lachuma from San Rafael, related:

> "We should always give to those who ask for. I have travelled many places, but I haven't been harmed, since I have always been on good terms with others. If I have been asked to give, I have given; if to sell, I have sold." (TKU 87/202)

The norm supported by means of the category of witchcraft is that of solidarity. It is not an unqualified or unrestricted principle of solidarity, but a selective one. Family members and relatives are entitled to receive help, and the fellow villagers are more entitled than strangers. If, however, one is travelling in distant places, he/she should be cautious and on good terms with the local people, who have a kind of prima facie right to ask for a share.

Exceptionally industrious villagers are also potential victims of witchcraft. They do not have to produce surplus value by means of successful cash crops - making a living by hard work is enough to cause envy. Michael Taussig (1980) describes a parallel situation in Colombian sugarcane plantations. There the industrious ones are accused for having made a contract with the Devil. What is distinctive in Taussig's example is that the plantation workers have undergone a drastic change from subsistence farming to wage labour. Novel consumption patterns and striving for economic profits are dangerous from the viewpoint of the traditional value system which construes the human transactions as a kind of zero-sum game, that is, one player's gain necessarily induces another's loss.

Thus, one may identify an ontological presupposition that grounds the norm "don't be too industrious!", namely, the principle of limited good; resources are finite and interconnected.

Marital relationships, too, are regulated by means of illness categories. Envy and witchcraft may stem from a jealous ex-husband or wife, as was noted above. What cultural norm, if any, is supported by this risk representation? One possibility is the norm that ex-wives are their ex-husbands' property even after they have divorced. This interpretation is confirmed by the fact that the typical victim (in the stories narrated) is a male. This particular form of witchcraft would therefore warn men of divorced women. Besides witchcraft, another illness called sapo (frog in Spanish) also regulates marital relations. Sapo is a children's illness - when it attacks, the child is suddenly

unable to walk and suffers from severe gastrointestinal pains. The cause of sapo is that the child's father has had an affair with a mistress. The treatment of sapo amounts to "family therapy" conducted by a specialised healer, curandero. The cultural norm supported by this illness category is that of matrimonial fidelity.

Illness categories identify potential harms - and the traditional means of avoiding illness signal cultural norms. Illness categories specify particular brands of evil (mal): mal de aire, mal de agua, mal de monte, and mal de gente. Evil abounds in the world, and it is unevenly distributed, just like goodness and good things. The cultural map concerning the general distribution of evil illuminates and grounds the specific risk representations.

From the viewpoint of the Mestizo peasants, the locus of evil is among the native Indians. Theirs is the most cunning witchcraft, the most powerful magic songs, and the most effective remedies. Another, less powerful locus of evil is the urban area, specifically the town of Iquitos. Which factor in the cultural and social environment would account for this particular distribution of evil?

Let us consider the case of native Indians first. Roughly, there are three ideal type social classes in Peru: the whites of mostly European descent, the Mestizos who are partly of Indian descent, and the Indians. The Mestizos are in-betweens, comprising those ex-Indians who are adopting the "mainstream" way of life and adapting themselves to the constraints of labour markets. Roughly again, the whites and the Mestizos scorn the Indians and the Mestizos scorn those Mestizos who are close to Indians.

An average Mestizo peasant living in the Peruvian Amazon is in constant danger of being classified as Indian. The Mestizo mode of subsistence, their housing, physiognomy and, for example, ethnomedicine resemble those of Indians, and therefore the cues for classification are present. To attribute evil to native Indians is a means of distinguishing oneself from them. Since the only direction from the social rank of native Indians is upwards, this attribution is readily intelligible.

The attribution of evil to the urban environment has a parallel motivation. The urban dwellers look down on the peasants. On the other hand, the town is full of commodities - it is a fertile ground for envy and witchcraft. Thirdly, the town is populated with numerous healers - the health-related problems there are of bigger magnitude than in the countryside. However, the urban healers are of poorer quality than the rural ones. They are accused of eagerness and fraud, of being interested more in getting hold of the patient's money than in restoring his health.

The urban healers are seen as incompetent on the basis that they do not know the true native Indian medicines, which are available only in the untouched regions of the rainforest.

To sum up, there is a cultural mechanism that renders the above distribution of evil intelligible; it is the ambivalent attitude of Mestizos towards their Indian past. On the one hand, the native Indians are of the lowest social rank and the Mestizos posit them

at a distance. On the other hand, the native Indians possess a "true knowledge", and by allying with them the Mestizos can look down on the urbandwellers. Thus the cultural map concerning the distribution of evil is at least partly maintained by the socio-cultural structure of the region.

4.2. Shantytown dangers

The material for the above case was collected in 1987 in two Mestizo peasant villages. In 1987 I paid short visits to the town of Iquitos; enough to realise that it should be studied in its own right. In 1989, 1990 and 1993 I returned to Iquitos, this time in order to find out what the world looks like from the viewpoint of those who had moved from rural areas into the shantytowns surrounding Iquitos.

The greater Iquitos is practically bounded by three rivers: the immense Rio Amazonas in the east, Rio Itaya in the south, and Rio Nanay in the west and north. The target area, a shantytown named Leoncio Prado, is in the northernmost part of Iquitos, high upon an ex-riverbank from where one can see Nanay. Descending towards Nanay, one comes to a grassland. West from Leoncio Prado one finds the lake of Morona Cocha, which runs parallel with the western Nanay.

The interviews (n=28) presented and analysed below were collected by means of semi-structured interviews in Leoncio Prado, an asentamiento poblacional.

In many parts of the rural Amazon area, traditional healers and home treatment are the only therapeutical options. Official health care, like health centres and so on, is simply too far away. From Leoncio Prado, which is in the outermost circle of Iquitos, one can walk in one hour to the nearest health centre, and in five minutes to the nearest hospital. Thus, official health care is accessible to these people. Traditional health care, especially healers, is accessible as well. I had known beforehand that in official health care, the major costs stem from purchasing the medicines; the consultation is not the decisive factor. This theme, that healers are affordable, is reflected in the following quotation:

> "I believe that most of the people living here go to healers. I, for one, took my daughter there. The difference between a doctor and a healer is, firstly, that the doctor gives you a prescription but you don't have the money to pay for it, and secondly, that you have to pay for the consultation although you don't have the money. For this reason you want to go to a healer because you cannot pay. He says that you can pay later. People who have money do not need healers, they go to their medical doctors, but we poor ones do not have that possibility." (INF6 TKU/A/89/146)

But there are cheaters among the urban healers; this has already been mentioned in the previous section as the opinion of rural people. What is interesting in the present

case is that the symptom of cheating is money, or rather, greed. And money, either in its presence or absence, seems to be the root of all evil in the cultural map of the informants:

> "Some healers are very expensive since they are cheaters, they take your money and they will not heal you." (INF14 TKU/A/89/149)

> "Healers who are cheaters are the most expensive. That is how you know them." (INF21 TKU/A/89/150)

The types of illnesses that are treated by healers are numerous. Anything that involves witchcraft or evil spirits is curable only by a healer. Persistent symptoms, unexplainable pains or unexpected course of illness signal the presence of witchcraft or evil spirits. The urban dwellers invoke knowledge that stems from their Indian past. The illness story below conforms to the same basic pattern as those documented in rural villages. So-called common people do not differentiate between healers and witches:

> "For example, a young man had as if tuberculosis in his lungs. He was taken to a hospital but they could not cure him. So they took him to a witch, who said that the man had been bewitched by means of these small animals that burrow in the soil. His symptoms were as if he had tuberculosis, but it was not. It was that he had been done harm, because he had a woman, with whom he had had children, and he had been with another woman, and for this reason the first woman had done harm to him. And he died, yes he died. These small animals left his lungs after he died. The woman had harmed him by putting these animals into his lungs. These animals are insects, playacuros, three centimetres long." (INF2 TKU/A/89/145)

It is typical of these stories that the official health care provided in health centres is not effective, but rather to the contrary. Even though the informants share approximately the same rural background, which includes the ethnomedicinal systems, the individual differences in experience provide heterogeneous grounds for disbelief and belief.

4.3. Mal aire

The specific brand of traditional illness I will scrutinise more thoroughly is mal de aire, or mal aire. It is an illness caused by supranormal beings, evil spirits, "bad wind" or "evil breeze". It affects mainly children. Its symptoms include diarrhoea, vomiting, unrest, and fever. It is caused by evil or vagabond spirits that cruise through the night

air. These spirits enter a person or fly so closely that a shock or fright results. Fright-related illnesses have their special term, manchari or susto, and in the rural "medical encyclopaedia", mal aire is distinguished from fright on the basis that fright involves a loss of one's own spirit, whereas mal aire involves an intrusion. In some of the accounts that follow, this distinction is not made.

The following account of mal aire and its course of development hint at the causes and consequences of this particular health risk:

> "My daughter had vomiting and diarrhoea, and I went to a healer and asked that he would cure my daughter. He sang some magic songs and prepared some liquid. He cured my daughter. [How did she encounter this illness?] I had to work late in a house in which I was cooking and cleaning. I had left her sleeping alone in my house. The patron did not let me go until it was very late. I was at home ten-thirty, eleven-thirty, and during this period she had encountered mal aire. My little daughter, four months, five months of age, alone in the house. It is very bad for little children to be alone during the night." (INF6 TKU/A/89/146)

The following account describes the causally potent agents involved in mal aire. It also contains an informative description of the decision making involved. The patient is taken to a hospital first, and when the cure turns out ineffective or counter-productive, which signals the presence of evil spirits, the patient is taken to a traditional healer:

> "My child was once bewitched by an animal, or by a tunchi, an evil spirit, and the healer cured him. [What were the symptoms?] The child has diarrhoea, is very intranquil, and when you take him to a hospital, their remedies do not help, and then you take him to a healer. I took my child first to a hospital, but they could not cure him. Then I took him to a healer who cured him. My sister's children have also been cured of mal aire, they were also affected by the air that surrounds us. [What things in the air are dangerous?] Well, sometimes you walk outside in the night-time without thinking that it is the time for evil spirits, and for the souls of the dead who abound in the air. And then you encounter one of these, they shock you when they pass by. And they can bring illnesses to your children by means of contact." (INF16 TKU/A/89/148B)

4.4. Roots of evil

The following account describes an illness that was not cured in hospital but by a healer. Yet its ultimate cause is attributed to inaction on the part of the central government:

> "For example, there was a child who could not walk, and they took him to hospital in Iquitos. In hospital they could not help him, and he was taken back here. The healer here cured him in fifteen days. In fifteen days he walked although the doctors could not help him. Now he is a strong young man and works in the plantation. [In the rural area, similar illnesses are called sapo. Was this a case of sapo?] I cannot confirm that, but I think it was due to malnutrition. Some people here eat two times a day, some people eat only once a day. It is very difficult here, the people of the rural area and of the city as well do not get support from the central government." (INF10 TKU/A/89/147)

An analogous explanation is provided in the following:

> "People who have resorted to healers have suffered from arthritis, headache, pain in stomach, fever. Especially little children suffer because of malnutrition, they become weak and liable to illnesses. We don't have nutrition like other countries, developed countries. Imagine that there are people who are poorer than me, for example, who eat only once a day. How can their children sustain health? These people can buy only small fish and some plantains, which are not real nutrition, but good only for keeping your body working. They do not have vitamins. And if you don't have money for food, how much less you will have for medication." (INF21 TKU/A/89/150)

Part of the misery is attributed to the in-between situation of urban migrants. In the jungle there are the remedies needed, but the pertinent knowledge is lacking. The reference to the native Indians and their knowledge in the following is understandable.

> "I have experience in this, I am myself a sort of healer, I am familiar with natural medicine. Three persons have resorted to my help. A woman had ulcers, and it could not be operated. Well I said to her that take this and this and this. She agreed, took the medicine for a month and she was cured. And I have cured two children. You see, here all the green things we see, they are actually medicines, but we lack the knowledge concerning which particular illness they fit. Here in Loreto, we live and breath in the midst of medicine, but we don't possess the knowledge needed. For that reason one must study these matters. In the rural area there are people who know better, especially the natives." (INF21 TKU/A/89/150)

The current misery is due to a "Paradise Lost." The opposite characteristics are attributed to rural areas:

> "In the current situation I would prefer to live in the countryside, most importantly because there the community, the neighbours will help you. In the city you cannot get medication nor food without money. In the countryside, those who have plantains, for example, will give to those who don't have, and some day they will give back." (INF8 TKU/A/89/147)

The earmark that distinguishes urban and rural areas is money:

> "The countryside is better than the city in the current situation because in the countryside you can cultivate your land and get plantains, manioc, and fish, and it doesn't cost you anything, whereas here everything is for money." (INF12 TKU/A/89/148A)

The consequences of the differences are also evident:

> "Here in the city, everything in dangerous. It is not like it used to be. When I lived in the countryside, I lived a tranquil life. I could leave my house like that, there was no mistrust, no danger." (INF7 TKU/A/89/146)

The material presented above may be interpreted as follows. The people in question have moved to Iquitos from rural areas in search of better conditions of living, education and more "civilised" lifestyle. Yet they cannot afford urban health care, nor can they afford decent food.

Thus the rural lifestyle, the village, is present in multiple senses. Traditional ethnomedicine is a viable option, and in many cases it is deemed better than official health care. Yet some informants point out that healers are utilised mainly because they are more affordable than official health care. In addition, the ultimate causes even in traditional illnesses are attributed to malnutrition. That is, although the effective cause in mal aire is an evil spirit, the undernourished children are more easily exposed to them. Thus it is the combination of evil spirits and malnutrition that creates and sustains the risk of illness.

The traditional self-sustaining production of edible crops is often referred to as an ideal way of living, and it is contrasted with the urban system, where you have to buy everything, even the most basic foodstuffs. Traditional agricultural production is seen as a component of a "Golden Past".

The Mestizo peasants, described in the previous section, were in-betweens; between the urban and the native Indian lifestyle. The urban migrants have tried to move

towards the urban end of the continuum, but at the same the rural and Indian lifestyles are being articulated more forcefully. Thus the tension has not eased.

5. FROM CASE STUDIES TO INTERNATIONAL COMPARISONS

Ethnographic case studies like the ones described above are usually criticised on the basis that they do not allow comparative study of attitudes towards technology. The critique is without foundations. Ethnographic studies are always conducted by means of conceptualisations, which select and highlight some themes emerging from the community under study. Acceptability and trust, to name two important social aspects of technology, can be easily studies in comparative settings. Trust in political institutions, for example, is likely to vary in accordance with the nature of social security systems.

All in all, survey techniques probing the public understanding of science and technology should be accompanied by ethnographic methods of field research and anthropological theories of cultural systems. There is no other way to gain scientific understanding of public understanding.

Decisions about environmental and technological issues make ontological commitments concerning the structure of reality, knowledge and values. Risk assessment can be seen as a process of reality construction, which defines risks, that is, probabilities and values.

In Risk and Technology Assessment, there exists a strong need for conceptual tools for navigating in the multilevel reality, where adjacent levels (chemical, biological, psychological, social and cultural) are interdependent, but not reducible into one another (Covello et al., 1986). I propose that social and cultural dimensions should be construed as constituents of risks, not as their effects. The apt methodology for studying the social and cultural dimensions is based on the ontology of social and cultural entities, especially on the ontology of shared meaning systems, or cultural models (Kamppinen, 1993). To put it briefly, cultural models of technology are socially and culturally shared meaning systems, and their properties are best studied by means of open interview, participant observation and other ethnographic methods. Cultural models do not exist on the level of reality, which is investigated by means of surveys.

6. CONCLUSION: THE ARCHAIC NATURE OF LATE MODERNITY

The importance of moral qualities and the prevalence of ultimate questions in risk assessment has been interpreted as a central characteristic of our era of late modernity. The situation in our late modernity resembles the situation of premodern or archaic societies, as Ulrich Beck (1986) has noted. In both types of societies, the games of social life are played with an against superior beings: gods, evil spirits, and destiny in premodern societies, and supra-individual collective entities like transnational companies in post-modern societies. Both players are difficult to understand, to cope with, and to manipulate. Our age of late modernity has been aptly characterised as religious age: for example, the rituals by means of which we maintain our body and health against invisible toxicants are comparable to the rituals of archaic societies.

7. ACKNOWLEDGEMENTS

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ABSTRACT

One of the contributions of cultural studies in risk and technology assessment is to emphasise the importance of cultural models and to show how cultural models of risk are best studied by means of ethnographic case studies. In this article I shall first explicate the conceptual background and then proceed to present two case studies that illuminate my line of argument, one from Western Finland, and one from the Peruvian Amazon. Finally I will discuss some systematic connections between the risk profile of late modernity and the risks from the ”archaic” Amazonian case study.

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