Dealing with Uncertainty

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In C.S. Lewis's science fiction parable Perelandra was a planet which had no solid ground. At all times the floating landscape was continually swirling and moving, chasms would appear where a minute before there had been safe standing. The rational beings who lived there hopped nimbly on to another little island when the one on which they stood disappeared under their feet. They were used to it and took it for granted that nothing was certain. The visitor from our planet had to learn a completely new way of existence. But where did he get his idea of certainty in a fixed environment? It is more plausible that uncertainty is normal and the whole idea of certainty an illusion. Today gives an opportunity to reflect on how people deal with skepticism, doubt and uncertainty.

The questions apply to a current debate in the UK on risk. Opinion polls constantly reveal that the public lacks trust in government, and particularly it does not trust the government to reveal the information needed to assess important risks. From which the risk analysts conclude that the government should grant access to information more freely and encourage enquiry. They believe that openness would foster a better understanding on the part of the public which at present does not know what to believe. More information would create certainty, more certainty and the public would trust its spokesmen, unreasonable fears would be calmed. This is the advice of an expert enquiry.[1]

Certainty is not a mood, or a feeling, it is an institution: this is my thesis. Certainty is only possible because doubt is blocked institutionally: most individual decisions about risk are taken under pressure from institutions.[2] If we recognize more uncertainty now, it will be because of things that have happened to the institutional underpinning of our beliefs. And that is what we ought to be studying. In my student days the hottest controversies in anthropology were about why `other people' — that is people not living in advanced capitalist society — had certainty about their absurd beliefs. When trying to explain their misfortunes, why did they neglect the physical and scientific evidence, and draw instead on their beliefs in spirits, magic, and taboos? How could they be so obstinate in error? Anthropologists spent their energies on defending the allegedly irrational beliefs of other people, and I shall continue the tradition.

Why do we need certainty?

In modern post-industrial capitalist society strong institutions exert controls on knowledge. The place is positively littered with particular certainties. Professional institutions make and apply standards, and hand out penalties for deviation. Facts are essential forensic material. Our courts and tribunals demand accuracy and up-to-date knowledge, and get it. With such a powerful focus, why do we still have a sense of increasing uncertainty? Because the kind of certainty that the scientists achieve is the product of highly specialized ways of thinking, testing and proving, and the results have very specific applicability. Thanks to scientific advance, we know more about the physical causes of death, we can resist disease better, we can travel faster, live longer, and so on. But this view of certainty supposes that it is established by hard facts impinging on neutral minds. Paradoxically, if uncertainty increases according to the amount of unconfirmed or unestablished facts, general
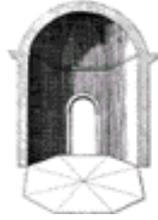
uncertainty would have increased in the last 300 years. The further we go in the direction of attributing certainty to science, the more factors have to be taken into account for explaining anything. In the world of science ever more theoretical fields are more densely occupied than ever before. New and half-tried theories are milling around looking for facts to establish them, so uncertainty, at a general level, is the order of the day. But certainty is usually there when we need it.

We need certainty as a basis for settling disputes. It is not for intellectual satisfaction, not for accuracy or prediction for its own sake, but for political and forensic reasons. The morning news on the English radio regularly announces three current disputes: what should have happened ten years ago in dealing with mad cow disease?, disagreement between government advisers and farmers about how to deal with foot and mouth disease, and the dangers from genetically modified organisms. They are essentially technical matters with political as well as economic and environmental implications. The experts cannot be experts on everything, so is it not strange that their best solution for a risk policy is that information should be made more widely available? At worst it is a counsel of despair; at best, it is a misapprehension about knowledge.

The real problem is not knowledge but agreement. The experts, the representatives of the public, and government agencies, all have different constituencies. The more indiscriminately a sensitive topic is opened to debate, the more intractable it is bound to become. The more the technical aspects are opened up to non-experts, the less the hope of ever coming to a decision on policy. Why do such clever men and women speak so naïvely? They must know, surely, that by themselves facts cannot force a decisive verdict. They must know that opening a debate to all and sundry is going to make decisions impossible to reach. Why do they bewail the loss of certainty? What do they want certainty for? The policy of openness is bound to produce perverse results. If

these are the best solutions the experts can propose for dealing with the BSE and foot and mouth crises they may be out of their minds, or they may be quite sensibly reaching for the biggest accepted paradigm of the culture they live in. Even if participatory democracy is not the answer to everything, it is an idea which produces acceptable remedies. The acceptability of what they recommend covers the logical cracks in the argument. Unfortunately it also blocks the view of the right answers.

We know that certainty cannot be squeezed out of facts. Which means that pressure to close an argument must find some way *other* than an appeal to facts. Furthermore, passionate argument is exacerbated by the appeal to facts, because political dispute itself thrives by challenging `facts'. So more openness of information will create more uncertainty. It follows that the way to create certainty is to control information. This is bad news for the risk analysts who need to make a policy recommendation, and bad news for journalists who need a story. But remember that holding together as a community is difficult enough at the best of times. Disagreement about facts is apt to make rifts and tear friendships apart. Without agreement, arguments go on for ever. Without some certainty, society cannot demand accountability, and without accountability there is no society. It is a vicious spiral. Frustration fosters ill will. As soon as disinterested parties want a definitive decision there will be pressure to create certainty.

Sinister certainty

In a liberal democracy certainty has sinister aspects. It needs authority to back interpretation and control dissent. There are various strategies of closure that work to create an impersonal and indirect authority. For example, the group that is seeking to turn a particular set of beliefs into certainties can close itself up, shut out foreigners, label them barbarians, exclude them from the assembly, refuse intermarriage, exalt the idea of a pure race. These

procedures work well as defences against the ravages of uncertainty. Outsiders are not allowed to speak out. If they do, their opinions do not count. Though there is authority the system is not authoritarian in the ordinary sense. The controls are imposed by self-policing boundaries.

A liberal democracy would hardly be allowed to adopt these strategies. Commitment to open enquiry is part of its constitution. This will be part of the reason why certainty raises itself as a problem in these conditions. If there has to be a trade-off between certainty and openness, democracy tends to choose against the conditions that foster certainty. There are also more positive strategies, to be discussed. But they also have major drawbacks from the liberal point of view. The cultures which achieve certainty have instituted blocks to alternative opinion, they stop debates that might undermine their established world view, they are intellectually conservative, and they have to be if they intend to keep their community from falling apart.

For our part, in one important sense we have definitely entered a period where uncertainty is formally recognized. This very esoteric aspect of our culture might have some theoretical interest for risk analysis. For the present argument what is important is that it would inevitably have arrived in some form or other in an open democracy. The form it takes with us is mathematical, analytical, the results of pushing to extremes the forensic aspects of certainty, and trying to extend the certainty-seeking practice of science.

Indeterminacy

The last 100 years have witnessed a series of moves away from realism and philosophical foundationalism. They can be summed up as the long struggle of confirmation theory. Deductive logic has rules for determining validity; following the rules produces certainty. Inductive logic has no rules of validation; it produces conjectures which can be refuted by evidence.[3]

The principle of indeterminacy is a contemporary discovery. It is very abstract, based on a series of highly rigorous demonstrations, so it is nothing like a government department or an ordinary person's being uncertain what to do. It is not the kind of uncertainty that worries the person in the street. It is only known in a very small niche in our civilization, that is in small communities of philosophers and mathematicians. It is nothing new. In similar intellectual elites oriental sages have been teaching inherent uncertainty since time immemorial. Religions of every denomination have been preaching God's inscrutability. And then Gödel demonstrated to us that complete mathematical proof is impossible. This should have undermined philosophical `foundationalism'. It did shake confidence in the Enlightenment assumption that our knowledge rests on the clear ideas of mathematics. It brought the possibility of certainty under intensive scrutiny and, bit by bit, the edifice started to crumble. Set theory is indeterminate; statistical inference was found to be open; quantum physics developed its uncertainty principle; game theory cannot show any determinate outcomes; Quine declared that all theory is under-determined by facts.

These are all very specialized attacks on proof and certainty. Most people can get on with their lives without being bothered at all. An attack on similarity should be more devastating. We may never have been so simple as to think that similarity is a property of things, but one philosopher's teaching ought to be very disturbing: Goodman's insistence that similarity does not lie in the nature of the things we deem similar. Recognition of similarity depends on cultural training.[4] This should have been a real body blow to the possibility of certainty, a real boost for indeterminacy.
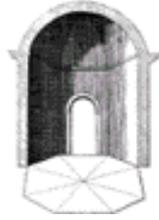
In spite of all that, most of us are ready to rely on analogy. One thing or one situation is so like another that we can treat them as equivalent. We try to deduce from the model more points in common than the visible common properties. Knowing that analogy is not reliable because it is based on similarity, which is not reliable, the question is sharpened. Where do we humans get our confidence in certain knowledge? The answer is cultural learning.

The splendid thing about indeterminacy for anthropology is that our arcane problems about other people's thought suddenly become common to us all as human beings. We are all creatures that live in uncertainty, and have done from earliest times; while we cope with uncertainty as best we can, we go on seeking certainty. We create institutions that protect our valued ideas. We use analogies to build them up like a house of cards, one weak and fragile idea balanced against another, with a few central ideas holding them in place like a roof.

Other people's certain ideas

Other people manage to create enough certainty to live together in stable communities by entrenching certain grand analogies. Here follow some examples of strange ideas to which people adhere with complete confidence because they have fashioned all-embracing analogic models to explain how the world is.

When Evans-Pritchard was doing fieldwork in the Sudan he encountered a strange belief held with utter conviction. The Nuer told him that in their opinion twins are birds.[5] The statement was similar to a famous case in which the Bororo people in South America were reported to believe that Bororo are parrots. It was a chance to add to the already extensive literature on people believing themselves to be birds, so he tried to get the Nuer to tell him what they really meant. He was not about to accept any explanation of their bizarre belief that invoked a primitive mentality, or even a different mentality

from ours, or different logic. So he tried to find out what the verb to `be' meant for them.

The following gives something of the flavour of his conversations with the Nuer. They tell him that human twins are birds. He struggles to save them from contradiction, but they don't want to be saved.

— "Do you mean twins are *like* birds?"
— "No".

They emphatically insist that they are not using the phrase as a simile or metaphor. Evans-Pritchard tries to check by asking whether the converse holds good:

— "Are birds twins?"
— "No, of course not!" say the Nuer.
So he reverses the case:
— "Well, is this twin a bird?"
— "No, of course not!" say the Nuer.

They proceed to give him a structuralist explanation of the world. Twins are near to God. God lives in the sky, humans live on the ground, and so are far from God; birds live in the sky and are nearer to God than other creatures. So if twins are near to God and birds are near to God, then twins are birds. This, they add to clinch their case, is why they never bury a dead twin in the ground. When they have said this, the Nuer consider that they have said all that is necessary. To them the questions are plain silly. They have themselves taught their ethnographer a structural view of their cosmology. He gradually discovers the unspoken part of their argument.

Their world is organized according to certain grand cosmic analogies, or classifications, made by contrasting one set with its opposite.
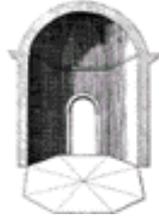
One of the most significant for their cosmos is the polar opposition of Above with Below. Many of their religious beliefs are framed by this contrast. Other analogies include the contrast between domesticated and wild, which gives a frame for moral categories; right and left frames the contrast between male and female, and there are many more analogies which fit together. The analogies work at different levels. At a practical level of organization, to say "a chicken is a bird" puts chickens into the same class as other birds, and though we can't imagine why it would ever be challenged, it can be tested empirically. "Twins are birds" cannot be tested. It only applies to the most inclusive cosmic level: twins are birds is a master analogy which applies when we are thinking about God the creator whose place is above everything. It is the above/below relation that governs the case.

By performing their various rituals for twins the Nuer honour the grand scheme of creation. And they have achieved complete certainty: Evans-Pritchard found them arrogant about the rightness of their own theories. Somehow they have institutionalized credibility. But how was it done? How did they achieve their strong certainty about twins as heavenly beings? How did all of a quarter of a million people manage to agree? Wherever you go in Nuerland and find the body of a dead twin lying in the fork of a tree, you will get the same body of beliefs. How did they manage to agree on a particular set of analogies? Analogy in itself is too weak to explain how they arrived at their certainty. The answer has to wait for a demonstration of how analogy may be institutionalized into a powerful paradigm which draws all thinking into its control.

Knowledge institutionalized by the Berber

A microcosm of the whole universe governs the cosmology of the Berber-speaking Kabyle that Pierre Bourdieu studied. He calls the process which develops the microcosm the "logic of practice". These North-African farmers project the cosmos onto the organization of their lives.[6] They have embodied the major categories of their knowledge in their daily routines. We saw that the Nuer polarize the cosmos in the up/down dimension, and create other analogic oppositions such as that between tame and wild. The Berber incorporate everything in a focus on the annual cycle of the seasons. They polarize two parts of the year: cold and wet versus hot and dry. Each change of season calls for different kinds of work, and as males and females are employed in different parts of the territory in different periods, the kinds of farming land and the sexual division of labour can be projected very completely and accurately upon the seasons. Calendar, work and gender are systematically plotted over space and time.

The agricultural year is the master analogy which absorbs all the others, it is the core model for all their relationships with each other and with objects. The contrast of light and dark corresponds to the contrast of summer and winter, night and day, east and west. Summer and winter govern the contrast between wet and dry, hot and cold, east and west, sunrise and sunset, birth, growth and decline. Life and death and all beginnings and endings are represented by rituals and separation rules. Within the space of the house the accepted contrasts of east and west, male and female, life and death, are inverted because the patterns of light and dark, hot and cold, male and female work spheres, go into intricate reversal.[7]

The initial scheme of the world constructs everything and generates the main normative principles. How a person ought to behave is given with complete clarity for any time or place, and criticism will fall on the person who ignores what are indisputably the facts of life. The Berber have developed a structure of knowledge that protects the categories of the universe from question. It produces certainty because it would be very difficult to have a private doubt when everyone else in the community is conforming.
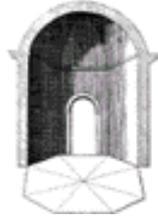
And since the work of the farms must conform to the cycle of the seasons, confirming evidence is there in the body's two hands, in the tools of work, and animal life. The physical world testifies, and so does the company of the co-workers on whom every person is dependent. Each intellectual category that a child comes to learn is embodied in a physical experience the child will know; the language wraps itself round the classifications. Each single category supports the rest, together the analogies make a solid frame for thought. At this point we should note that the cost of delivering certainty by such an all-embracing scheme of thought is the difficulty put in the way of alternative views. It is not the kind of society that will develop new science, all its efforts have been for shoring up tradition. There is a moral here for Flat Earthers, Creationists, as well as for latter-day Galileos. The society that has chosen certainty is not tolerant nor intellectually venturesome.

Analogy's weakness

It is a merit of analogy that it allows considerable freedom of interpretation. Mary Hesse writes about the power of analogical thinking for scientists at very creative moments in their work.[8] An analogy compares two things which are partly similar (but not completely or they would be the same). Areas of greyness and uncertainty coexist along with the core of properties in common. This very ambiguity opens the mind to possible alternatives and fosters innovation. The sense of fit and due proportion carries conviction. It is an illusion. If it is true, as we have said above, that any two things may be reckoned similar because of qualities they share, the truth of analogical argument cannot depend on sameness.[9] Sameness is a cultural acquisition. So where does analogy derive its power to convince? By training.

To those who have have been trained to recognize a restricted set of abstract similarities, interpretation of analogy is obvious. To say to a Nuer, "a twin is a bird" needs no defence. A well-turned analogy is the best way to clinch an argument. Emotionally it is more telling than a logical syllogism. An analogy needs to go further than a well-chosen image, it usually elaborates on equivalences and proportions. There is immediate pleasure in the sense of fit. Aquinas said:

"The senses delight in things duly proportioned as in something akin to them, for the sense, too, is a kind of reason as is every cognitive power".[10]

But fit is not enough in itself for the analogy to carry conviction. Above all the meaning has to be welcome. It will be accepted easily so long as the hearers want that particular fit. They will want it so long as it seems to reinforce the elaborate defences they are continually making against openness of interpretation. It is not the indeterminacy that bothers them as such. They are worried about protecting the kind of society that they are building. They want to reduce ambiguity, they want to control interpretation. They want certainty about the things they want to be true. Analogy can only seduce belief if a believer is there already wanting to be seduced.

This brings us on to another of the planks of twentieth-century skepticism. Thomas Schelling's theory of convention struck a blow against the pretensions of rational choice theory to explain social behaviour. A convention does not have to have any other reason for its observance except the one common interest in having a convention. So it does not matter whether the rule of the road is to drive on the right or the left; all that matters is that there be a rule. The best conventions are self-policing because those who observe them have an interest in their being generally observed. Readiness to accept an analogy is like the readiness to adopt a convention. It serves individual interests by producing a common service.
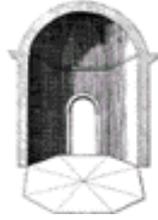
Granet, Hocart, Durkheim, Mauss and Hertz were the forerunners who showed how a community establishes the categories of its world by embedding them in a dense network of analogies. Nothing esoteric — the privileged analogies are entrenched by training in daily practice. This opens a dynamically interactive view of the mutually generative relation of knowledge to behaviour: the analogies are drawn from practice; the practice bears witness to the reliability of the knowledge; and certainty arrives to close the circle when the knowledge is used to justify the action. By this time something has happened to cancel the ambiguity of analogy. The action in which it is embedded makes its meanings publically visible. The public scheme of great interlocking analogies stabilizes the categories of culture.

This is how certainty is instituted; at least it is part of the story. Imagine its advantages, how smoothly a working group can be convened, how political support can be mustered and dissension quelled before it even starts, when everyone agrees in advance on the causes of things. However, though the great overarching classifications rest upon the logic of practice, they are still only fragile analogies. Even fully entrenched ideas need the support of penalties for anyone who challenges the analogic structure. Taboo is a technique for maintaining the knowledge system, and it is important not to think of it as a device that is strange to ourselves, something that only ignorant savages can employ.

Taboo as an institution

In his synthesis of research on taboo[11] the late Valerio Valeri explained it as a set of rules for giving physical, visible presence to the categories of knowledge, and for supporting them against attack. The rules can start off quite informally, like the first spontaneous censorship expressing shared disapproval. Recently, a senior member of the Department of Health and Safety told an audience at a conference on risk that the word `safe' is nowadays tabooed in his offices. Why? Because it is an embarrassing word: no one wants to be exposed to attack for having pronounced a process to be safe before a horrific accident proves it was not.

At that stage it is only an embryonic institution, a relative of the `political correctness' which we recognize in our own lives. Something of the kind was always there, unsystematized series of offensive words (in the interwar period mostly terms for the body, sex and womankind), and an informal monitoring of speech and writing. Political correctness takes the systematizing further: lists of offensive words are systematically proscribed to protect the community from the dangers of racism or of sexism. Once the censorship has started to sanction breaches of these rules, and to formulate them, they become institutionalized checks on what can be said. They also affect what can be thought. If we understand this, we can understand how taboo works, only taboo goes much further, restricting actions as well as speech, and threatening dire misfortune if the rules are flouted.

The Huaulu of Seram, in the Moluccas, maintain their knowledge system by instituted penalties for crossing category boundaries. The cosmology of these people living in the equatorial forest is dominated by the idea of the cruelty of the forest and agonism between living things. This first principle implies that antipathetic things should be kept apart. They protect crucial categories by physical separations (rules for not transgressing spaces and times) and some by verbal fences (rules forbidding certain words). Their thoughts about each each animal and vegetable kind are regulated, interactions carefully controlled, each type allotted its spaces, its proper times, and ranking. These forest hunters do not project their universe upon the cycle of the seasons, like the Berber, or on the up/down axis, like the Nuer, but upon distinctions between living species.
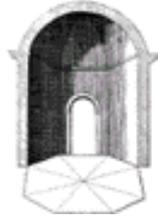
Ultimately their world view pivots upon the distinction between humans and animals, with the contrast between hunter and hunted uppermost. The taboos are required non-practices, abstentions from doing, gaps that ensure respect for the basic categories. It is not respectful to eat species, so those that call for respect must not be cooked or eaten. From respect they refrain from saying rude things about a living being, so it is taboo to insult a dog.[12]

Costs of certainty

Street level cosmology,[13] such as these examples, can be coherent only if the population is stable enough to have a shared history. It also needs a high degree of interdependence in the people's lives. They must have enough involvement with each other to be anxious not to hurt the feelings of their fellows, to wish not to annoy by seeming indifference to grief or frivolity about serious matters. Most significantly, the members of such a community recognize clearly their dependence on each other. Their patent need for solidarity makes it possible for them to overlook the weakness of the great cosmic analogies which anchor their certainties. A community that is tight enough, and closed enough, can regard outsiders as a threat, ridicule and exploit them. Xenophobia is one of the knowledge-protecting devices, so English society in the interwar years permitted quite painful jokes against Wogs and Jews, which became inadmissible after the defeat of the Nazi regime.

This has probably been enough to convince you that certainty has its costs. Also that it is not natural, but highly contrived. It is not something to have, or to arrive at, but something to institute. It turns out that establishing a fact is much more than just recognizing its fit with theory. If these are the institutions that institutionalize certainty it is hardly surprising that we should have lost it. Interdependence has disappeared, and so has stability and uniformity of experience. Our work organization disperses us, families are fragmented, foreigners live among us and enjoy respect — at least if they are rich. Demography, technology and the labour market may well have brought us into a period in which certainty cannot be institutionalized. Perhaps that does not matter. Certainty is a cheat and a bully. We should put a brake on our uncritical desire to have more of it. Perhaps we should prepare to live with uncertainty, without regrets.

The double conclusion is that there can be no strong society without certainty, and no certainty without closure on debate. If we could choose a form of society that does not need certainty it would not be rich, or powerful, or cohesive. With very diffuse social obligations, very weak responsibility, loyalty relaxed, easy escape from social pressures — as tramps, or dropouts, or computer isolates, what need would we have for certainty? The whole society could consist of cultural isolates.[14] Wittgenstein said that "explanations must come to an end". But why? I used to think it was because endless regression is intellectually unsatisfying; I now think explanations do not have to come to an end, ever, they can go on and on. There can be a society in which the world rests on a platform, which rests on the back of an elephant, which rests on the back of a turtle, which rests on another turtle. In Clifford Geertz's little parable, the Englishman who, hearing this repeated *ad infinitum*, rashly asks what happens next, and is told: "Ah, Sahib, after that it is turtles all the way down".[15] Some cultures avoid closure: the members try to keep all the options open. This was the prevailing mood in a Sherpa Buddhist community studied by Michael Thompson.[16] The ending of explanation is a formal closure, clamped down as a way of settling a dispute and controlling social conflict. In short, the demand for certainty stems from social necessity, not from intellectual need.
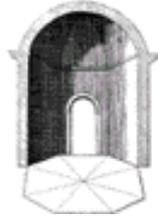
Social determinism inverted

The explanation offered here is a form of social determinism. It says: certainty is at a low ebb in our present culture because economic and technological factors are transforming our communities. If this is right, it is useless to recommend a change of heart that will put community back on track again. And the costs of change would be so high that it would be difficult to recommend an effective change of institutions. There is one change of heart that would be useful and not impossible. A Multatuli transformation would change our thinking about ourselves. We could decide to do without certainty, to plunge knowingly into what must be unknown, eschew censorship, allow other ideas to seep through instead of rigorously excluding them in the name of intellectual rigour.[17]

Pursuing this path we would somehow try to shake ourselves free of the great overarching paradigm that governs us in the social sciences. The general idea of cognitive processes would be revised. Descartes's model of the disembodied mind would be dispensed with. It is time to trace instead the processes by which fully incarnate human understanding works through our physical brains and bodies, and through these to interactions with other people. An end to the solipsist individual of psychology, the isolated sovereign chooser of economics and rational choice. There must be more work on the kinds of cultures that support different kinds of institutions, and on how they change. The outcome of this approach will be a performative theory of cognition that combines politics and rational choice with the construction of culture. To try it at all we have to be prepared to waive our own loyal commitment to Enlightenment cognitive theory.

In the 19th and 20th centuries the main focus of debate on belief was on social determinism. Emile Durkheim provoked scandal by arguing that the idea of God is a projection of society, and that the social need for a moral authority beyond and outside the individual calls up the idea of divine justice and retribution. Even though his arguments were more finely calibrated than that, believers felt it as an attack on the validity of their faith. They could have argued that if God wanted to create humans to pay him cult he would have done well to have made them as social beings who could not make their society function without invoking him. If they had tried that argument, the idea of society as "*le gros animal*" which inexorably absorbs individual thought would be replaced by the idea of society as the fragile, incoherent product of happenstance and human interaction, which keeps breaking down, and which could not have come into existence in the first place without individuals invoking God.

Durkheim's general argument can also be based on the need for certainty. The secular objection to social determinism is that it derogates from individual rationality, it teaches that society imposes its beliefs on individuals, they are not free to choose or decide, their culture grips their minds in an iron cage. Ernst Cassirer, for example, described the traditionalism of myth-making culture and of religion out of context. He saw it as a futile attempt to make a piece of knowledge "firm and unquestionable. To call it into question would be a sacrilege, (…) any breach of continuity would destroy the very substance of mythical and religious life (…) Primitive religion can leave no room for any freedom of individual thought", and he concluded that "Human Culture taken as a whole, may be described as the process of man's progressive self-liberation".[18]

Durkheim and Mauss expressed similar views about the emancipation of individual thought in modern times. And these views were supported by a strong chorus of like-minded scholars. They assumed the incompatibility between a liberal culture and the development of a controlling paradigm. However, their common cause might have suggested that it is not only primitive culture which leaves no room for dissident views.
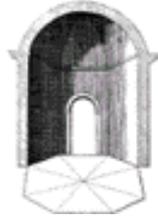
Conclusion

Now we can return to our risk experts who seem to think, against all reason, that opening up discussion and giving free access to facts will reduce uncertainty. They also think they want certainty, not realizing its severely repressive conditions. It now seems that their position is perfectly reasonable, in the sense that they are reaching out to the overarching analogic system of modern post-industrial society. Their solutions for awkward puzzles are drawn from the most powerful microcosm available, based on the idea of the sovereign rational individual, *homo economicus*, the hero of liberal culture.[19] Not such fools, they are sure of audience sympathy when they demand more freedom for him. The anthropologists of the 1950s were right: humans are the same the world over, we are all rational in the same kinds of ways.

I would be proud to think of this thesis as an extension of Bernard Williams's argument about the foundations of logic.[20] He showed that the demand for non-contradiction responds to a person's need to be accepted by companions as honourable and honest. Without non-contradiction there could be no formal logic. So logic is like Durkheim's God, it depends on society. Likewise, I see the demand for certainty as based on the need for coordination. A leader needs to recruit followers to a banner, and the followers need to be recruited. There have to be promises, guarantees, and justifications, claims of secure knowledge, which work well when the followers want to be convinced. The most fundamental idea which upholds the possibility of society, more fundamental even than the idea of God, is the idea that there can be certain knowledge. And this turns out to be extraordinarily robust, passionately defended by law and taboo in ancient and modern civilizations.

Notes

1. The *Phillips Enquiry* into BSE, 4 vols, 2000, discussed at the launch of the Research Programme on Understanding Risk, in the University of East Anglia.

2. M. Douglas, *How Institutions Think* (Syracuse: Syracuse University Press, 1986).

3. Karl Raimund Popper, *Conjectures and Refutations: The Growth of Scientific Knowledge* (London: Routledge and Kegan Paul, 1963).

4. Nelson Goodman, *Ways of World Making* (Hassocks: Harvester Press, 1978).

5. Evans-Pritchard had first written about Nuer twins in 1936, the fuller version in 1956. E.E. Evans-Pritchard, "Customs and beliefs relating to Twins among the Nilotic Nuer" in *Uganda Journal,* 1936.

6. This is a straightforward application of Durkheim's theory of totemic classification, and of the cruder version taken over by Radcliffe-Brown. It is a bit different from Levi-Strauss's more intellectualist theory of totemism in so far as it starts with the work cycle and the seasons rather than with the structuralist working of mind.

7. Pierre Bourdieu, "The Berber House or the World Reversed" in *Social Science Information* 9(1970)2, pp. 151-170.

8. Mary Hesse, *The Structure of Scientific Inference* (Berkeley: University of California Press, 1974).

9. Goodman, *Op. cit.*

10. Cited by Roman Jakobson, *Verbal Art, Verbal Sign, Verbal Time* (Oxford: Blackwell, 1985).

11. Valerio Valeri, *The Forest of Taboos: Morality, Hunting, and Identity Among the Huaulu of the Moluccas* (Wisconsin: University of Wisconsin Press, 2000).

12. We should understand this form of taboo sensitivity when we remember the political correctness that caused Lévy-
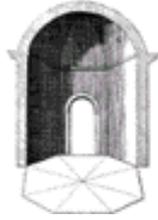
Bruhl to be attacked.

13.This is borrowing Russell Hardin's felicitous phrase: `street level epistemology'.

14.Mary Douglas and Steven Ney, *Missing Persons* (California: UPO, 1998).

15.Clifford Geertz, *The Interpretation of Cultures* (New York: Basic Books, 1973), p. 29.

16.Michael Thompson, "The Problem of the Centre: An Autonomous Cosmology" in Mary Douglas (ed.), *Essays in the Sociology of Perception* (London: Routledge, 1982), pp. 302-327.

17.For example, grid-group analysis and cultural theory based on it have had a hard time swimming against the current of this strong paradigm.

18.Ernst Cassirer, *The Myth of the State* (New Haven: Yale UP, 1946), pp. 225-228.

19.Douglas and Ney, *Op. cit.*

20.Bernard Williams, *Shame and Necessity* (Berkeley: University of California Press, 1994).