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Rothschild's numerate arrogance

LORD ROTHSCHILD, speaking on British television last week, argued that we should develop a table of risks so we could compare, say, the risk of our dying in an automobile accident with the risk of Baader-Meinhoff guerillas taking over the nuclear reactor next door. Then we would know how seriously to take our risks, be they nuclear power, damage to the environment or whatever. The 'econuts' (Lord Rothschild's usage) would soon be put in their place if we put numbers to the risks they envisage. What could be more reasonable than that? Has Rothschild lightened the darkness of the risk business with the light of science and number?

No. It is fine for Rothschild to demonstrate his agility with arithmetic, converting probabilities from one form to another (and implying that the viewers could not do it) but this is only the kindergarten of risk. He gave only the briefest of hints that there might be more to it when he called for errors to be quoted with risk estimates and when he remarked—in a brief aside—that occasionally one had to rely on expert assessment of risks, as in the case of nuclear reactors. But he threw these cautions away when he quoted not a single error on the risks he enumerated, nor developed the problem of the partisan 'expert'.

More than this, Rothschild confused two fundamental distinct kinds of risk in his table: known risks—such as car accidents—where the risk is simply calculated from past events; and unknown risks—such as the terrorists taking over a fast breeder—which are matters of estimating the future. The latter risks inevitably depend on theory. Whether the theory is a social theory of terrorism or a risk-tree analysis of fast breeder failure, it will be open to conjecture. And it ought to be remembered that the history of engineering is largely a history of unforeseen accidents. Risk estimates can be proved only by events. Thus it is easy for groups, consciously or unconsciously, to bend their calculations to suit their own objectives or prejudices. With unknown risks it is as important to take these into account as to come up with a number. Hence the danger of relying on 'experts' who are committed to a particular future. What is needed more than an expert table of risk values is a democracy of risk assessment, where the basic information on which conjectural risks

are calculated is made available to as many groups as possible.

Moreover some future risks are largely incalculable because we have no theory. What is the risk, for example, of a fast breeder economy leading to an erosion of civil liberties? This is a matter of legitimate concern, but how can Lord Rothschild's table deal with it? It is a conceit among some scientists that scientists alone are rational, and Lord Rothschild projected this conceit particularly clearly.

Peter Chapman, Director of the Open University Energy Group, caricatured this view when he spoke to the Parliamentary Liaison Group for Alternative Energy Strategies last week: "'rational' things, facts, are concerned with the reproducible aspects of the world. In the energy business this means the efficiency of machines, the heat loss from houses, the number of houses and so on. If we agree on the meaning of these terms we can agree how to measure them and hence have a basis for agreeing what to do. Anything that cannot be measured (and this included all my emotional reactions to things, people, and relationships) has to be left out. It is dubbed 'irrational' and excluded."

Science and numeracy are undoubtedly important parts of rationality, but they are by no means the whole of it; and scientists do a disservice to both by pretending that they are. In part they fail to distinguish the process of science from the product. Science in the making—like a projected risk—is always conjectural and hypothetical; it is confirmed by repeatability (part of the philosophy of a democracy of risk) and acceptance within the scientific community (a social event). It is never a matter of 'experts'; that is mere scholasticism. Future risks must be science in process for there can—by definition—be no experiment.

It is objective and rational to take account of imponderable factors. It is subjective, irrational, and dangerous not to take account of them. As that champion of rationality, the philosopher Bertrand Russell, would have argued, rationality involves the whole and balanced use of human faculty, not a rejection of that fraction of it that cannot be made numerical. By all means let us have numbers, where they can be agreed upon, but let us not be mesmerised by them. □