

belonging to the nineteenth century. What he appears to be saying is that the cost to the smelting company of reducing airborne concentrations of arsenic to the point at which people living nearby would not overtly be damaged might put the operating company in such financial difficulties that it could be compelled to shed jobs or even to close. So the local people, many of whom work at the plant, should be given a chance to say how they wish a balance to be struck. Ruckelshaus's main point, that too many people ignore the economic costs of pollution abatement, is fair enough, as is the common belief that absolute freedom from risk is possible. But he seems to have picked an unfortunate example on which to make his stand. For the people of Tacoma, Washington, are apparently being offered the chance to trade off between an economic benefit (job security) and a risk to their own health and that of their families. It is as if the workers in a nuclear plant were given an opportunity to cheapen the cost of their employer's operations by accepting high doses of radiation in return for extra payment, \$1,000 a rem, or something like that.

That there should be a market in people's willingness to shoulder environmental risks sounds logical enough, but this is the wrong market. There are two important objections to local dealing on pollution standards. First, it must be supposed that a community that now agrees to shoulder some likelihood of risk will retain the right to change its mind at some time in the future — hardly the best economic environment in which to operate. But the market in environmental hazards now proposed cuts across the more important pollution market — that arising from the principle that if the same rules apply to all polluters, and if the costs of complying with them are genuinely a burden on their trade, the long-term consequence will be that polluting enterprises will be located where the nuisance they cause can be most easily and most cheaply contained. This is the underlying national economic benefit of the principle of "polluter pays" — not to be mistaken for the kind of retributive licence it is supposed by extremists to be.

So how should the principle be applied? The ideal is that what the polluter pays (either by installing and operating equipment for the purpose or by payments to some public authority) should be related to the true marginal cost of pollution abatement. Properly calculated, these costs would increase faster than the gross amount of pollution, thus providing polluters with an economic incentive to be modest in their demands on the environment. The House of Lords study suggests that European practice, which is a long way ahead of the United States, falls a long way short of that. Too often, public authorities levy charges on polluters that provide no economic incentive (so much a unit of Biological Oxygen Demand for treating water, for example) and too often they have come to regard pollution charges as a source of revenue or as a means of subsidizing pollution abatement in other industries. (Even so, the committee does not share the opinion of British chemical manufacturers that European subsidies entail unfair distortion of what should be free trade.) So Europe believes that polluters should pay but so far has found only crude ways of making them do so.

Political chauvinism apart, three almost technical reasons account for the delay. First is the problem of sharing the absorptive capacity of some regional environment among the claimants on it. Should the whole cost be shouldered by the possibly efficient latecomers? This is what Gerard Hardin calls the problem of the commons. What can be done in the United States to reformulate pollution regulations in terms of the quality of the environment, which is what matters, rather than emission standards? And what can be done to aggregate the effects of several kinds of pollution so as to yield a unified index of, say, the hazards to human health that might then be accurately set off against a public understanding of what risks are acceptable? Ruckelshaus is entirely right to say that, ultimately, some such trade-off is necessary (and is already implicit in any attempt to regulate pollution). The truth is that freedom from pollution is a public good which must be a public purchase, as is elementary education for example. Local options may be easier to understand, but are diversionary. □

Trials on mistrial

A British anti-abortion pressure group is trying to ruin a well-planned study. It should stop.

WHILE some of the brickbats thrown at the British Medical Research Council over its controlled study of the efficacy of vitamin supplements in the prevention of spina bifida births (more generally, of congenital neural tube defects) have been merited, the council does not deserve the latest insult thrown at it — a publicity campaign by the Society for the Protection of Unborn Children whose declared objective is to bring the trials to a halt. The society is best known for its opposition to abortion, but last week it announced a plan to distribute half a million leaflets denouncing a programme which it calls "repugnant and immoral". Cleverly, the society intends to make its propaganda more effective by means of what it calls "pickets" stationed outside retail pharmacy stores owned by the company (Boots) supplying materials for the trial rather than outside the offices of the research council or the laboratories housing those planning the work that lies ahead. Credit for guile does not, however, excuse the exaggerations and misrepresentations of which the society's case consists.

The plan of the trial is now familiar. For many years, it has been suspected that congenital neural tube defects are a consequence of maternal vitamin deficiency. Neither biochemical investigations nor the less than fully controlled prospective studies so far carried out have, however, shown whether the deficiency is that of vitamins in general or of folic acid in particular. A series of studies coordinated by Professor Richard Smithells of the University of Leeds and involving women at several British centres has, however, shown that a vitamin preparation including folic acid appears to have a significant effect in reducing the chance of recurring neural tube defects in births to women to whom defective children have already been born. (Significance is judged by comparison with recurrence rates among women previously afflicted in this way but not taking part in the trials, usually because they were found already to be pregnant for a second time.) Three important issues are as yet unclear — the relative importance of folic acid and other vitamin supplements, the effectiveness of one, the other or both and the possible side-effects of folic acid given in comparatively large doses (4 mg a day) to large numbers of women. For it is accepted that a decision to use vitamin supplements of any kind will require that these should be offered to all potentially pregnant women, or all such women living in high risk areas. It is unthinkable that such procedures should be introduced, or that the use of a particular vitamin supplement should be publicly endorsed, without first being able to assess the benefits that might ensue, and the risks.

The Society for the Protection of Unborn Children has the benefit of an inner certainty on these difficult issues. It says that the trials are "totally unnecessary", protests at the use of a placebo (called "dummy pills") and asks why the Smithells regimen, "widely recognized throughout the world", should not promptly be introduced to Britain. The basis of this opinion is, however, clouded. The society's national director, Phyllis Bowman, seems not to have a formal mechanism for gathering medical advice but, on the telephone last week, had to rely on newspaper cuttings for her assertion that Professor Smithells, Professor J.H. Edwards (Oxford) and other medical people are "against the trials". That there are problems, and controversy about those problems, is not disputed. Some indeed consider that the case for the Smithells regimen is strong enough. Others are aware of the special character of this trial, which differs from most controlled clinical trials in that those involved are not manifestly ill (but their offspring may be). If the society had chosen to take an informed part in this debate, nobody would have complained. Its attempt to ruin the trials by picketing pharmacy stores, playing on the anxieties of pregnant women in the process, is discreditable. If the society wishes to keep its reputation untarnished it should acknowledge the shabbiness of what it is now about and call off its "campaign". □