

POLLUTION AND PENALTIES

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1. Introduction

The nature of regulatory penalties and appropriate enforcement policies might appear to be very familiar issues, particularly in the context of environmental protection, and they have received much discussion in the law and economics literature. Nevertheless developments are occurring which suggest good reasons for looking at these matters afresh.

While governments and environmental lawyers have reiterated traditional concerns that the enforcement of command-and-control regulatory systems is insufficiently effective,¹ they have also explored and encouraged regimes which, because they focus on management structures, incentive devices and forms of self-regulation, seem no longer to rely on conventional sanctions and therefore orthodox deterrence theory.² Central to this paper is a third area of debate. In the United Kingdom, the imposition of penal sanctions has historically been reserved for the ordinary courts and always subject to the normal processes of criminal justice. Elsewhere in the common law world, particularly in the USA and Australia,³ there has been a growing tendency to grant powers to the public enforcement agencies to impose “civil” or “administrative” penalties, and without the procedures and protection of the criminal law. However, to the best of our knowledge, there has been little attempt to rationalise the use of these powers, nor to relate them to more traditional deterrence theory.

Our main purpose in this paper is to explore the deterrence dimension to the use of administrative penalties. We do so within the context of UK environmental regulation policy⁴ by contrasting current reliance on the criminal justice system with what might be achieved by greater use of administrative penalties. To complete the picture, we also consider other sanctions – notably the revocation and suspension of licences. We begin with a description of the enforcement powers and practices of the Environment

¹ See, for example: J. Bugler, *Polluting Britain* (Penguin, 1972); the editor’s note at “Sentencing for Environmental Offences” (1996) 8 *Journal of Environmental Law* 389; the recommendations of the Select Committee on the Environment, Transport and the Regions, HC Session 1999-2000, 34I-II, para. 98. See further, sections 4 and 6 of this paper

² N. Gunningham, P. Grabosky and D. Sinclair, *Smart Regulation: Designing Environmental Policy* (Clarendon Press, 1998); G.I. Balch, “The Stick, the Carrot, and Other Strategies: A Theoretical Analysis of Government Intervention” (1980) 2 *Law and Policy Quarterly* 35.

³ Australian Law Reform Commission, *Civil and Administrative Penalties*, Consultation Paper December 2000.

Agency of England and Wales. Drawing on the law and economics literature, there follows an evaluation of the current reliance on the criminal justice system and of the use of the sanction of suspension or revocation of a licence. We then turn to alternative enforcement strategies, in particular the use of administrative penalties.

2. Enforcement Powers and Practice: The Environment Agency in England and Wales

(a) General

One feature of most modern systems of pollution control is that the regulatory authority has strong powers of enforcement. Whilst the Environment Agency, in many instances, adopts a co-operative approach to enforcement, using persuasion, warnings and other informal, non-statutory measures to ensure compliance, it has recourse to a number of formal mechanisms which vary from function to function. These powers of enforcement fall into two broad categories. The first covers what are termed, administrative enforcement mechanisms; these include the variation, suspension or revocation of a licence, the issuing of enforcement, prohibition or works notices, and, if appropriate, the seeking of an injunction through the courts.⁵ The second involves criminal justice proceedings and contains the power to initiate prosecutions and to serve formal cautions⁶ and warnings⁷ where a criminal offence has been committed.

At the heart of the enforcement process lies a number of criminal offences which provide for prosecution through the criminal courts. These offences fall into several different categories two of which are important for our purposes: the general offences which can be committed regardless of whether a licence has been breached or indeed, whether a licence is required;⁸ and those specifically based on non-compliance with a condition of a licences or operating without an appropriate

⁴ We focus on the regulatory regimes of waste management, water quality and integrated pollution control (IPC). Although the latter has been superseded by a new system of pollution prevention and control (PPC), enforcement statistics relate to IPC, hence the continuing reference to that regime.

⁵ The pollution control regimes in the UK also refer to licences as permits, authorisations and consents.

⁶ A formal caution is a written acceptance by the offender that an offence has been committed. This power can only be used where a prosecution could properly be brought.

⁷ A warning can consist of either a site warning by the investigating officer or a warning letter.

⁸ See, e.g., section 33(1)(c) Environmental Protection Act 1990 (EPA 1990) and section 85(1) and (3) Water Resources Act 1991 (WRA 1991).

licence.⁹ Offences in the first category, are often couched in terms of ‘cause’, ‘knowingly cause’ or ‘knowingly permit’ pollution of the environment, the precise meaning of which has been subject to much judicial deliberation. In general, they are treated as offences of strict liability therefore requiring no *mens rea* in the sense of intention or negligence.¹⁰ Environmental offences are triable either in a Magistrates’ Court or the Crown Court, the latter option being invoked where the Agency is seeking an unlimited fine and/or imprisonment.

As regards administrative mechanisms, water discharge consents, integrated pollution control (IPC) authorisations and waste management licences can be revoked entirely¹¹ and indeed, a waste management licence can be partially revoked, thereby leaving parts of the licence in force.¹² Alternatively, the Agency can suspend an IPC authorisation and waste management licence, in the former case by serving a prohibition notice on the operator.¹³ These administrative penalties of revocation and suspension have potentially large financial consequences for operators, and yet they are subject to administrative procedures, without the protection offered to offenders by the criminal process. Admittedly, the administrative decision is subject to an appeal to the Secretary of State, but this is not an adjudicative procedure and will not necessarily involve an oral hearing.¹⁴

The Agency has considerable discretion when exercising the powers of prosecution, revocation and suspension but this is constrained by its internal Enforcement and Prosecution Policy.¹⁵ The policy statement, which sets out the general principles which the Agency intends to follow in relation to enforcement and prosecution, is used in conjunction with associated functional guidelines. The policy is divided into two sections, the first dealing with principles of enforcement, and the second with prosecution.

⁹ See, e.g. section 6(1) EPA 1990 and section 33(1)(a) and (b) EPA 1990.

¹⁰ See, e.g., the House of Lords decision in Empress Car Co. (Abertillery)Ltd.v National Rivers Authority [1998] 1 All ER 481 on section 85 of the WRA 1991.

¹¹ See Schedule 10 paragraph 7(3) WRA 1991, section 12 EPA 1990 and section 38 EPA 1990 respectively.

¹² Section 38(3) EPA 1990.

¹³ Sections 14 and 38 EPA 1990.

¹⁴ See sections 15 and 43 of the EPA 1990 and section 91 WRA 1991. With regard to IPC and waste management, it is interesting to note that the bringing of an appeal against the serving of a suspension or prohibition notice does not suspend the operation of that notice. This can be contrasted with an appeal against revocation of a licence where the notice is suspended until the appeal is determined.

¹⁵ Environment Agency Enforcement and Prosecution Policy (November 1998).

The stated purpose of enforcement is to ensure that action is taken to protect the environment or to secure compliance with the regulatory system and whilst it is stressed that the Agency expects voluntary compliance, enforcement powers will be used where necessary.¹⁶ ‘Firm but fair regulation’ is the guiding policy in relation to enforcement. Underlying this policy are four principles: proportionality in applying the law and securing compliance, consistency of approach, targeting of enforcement action and transparency about how the Agency operates and what those regulated may expect.¹⁷ The first principle is designed to ensure that any action taken by the Agency to secure compliance is proportionate to the associated environmental risks and the seriousness of any potential legal breach. Whilst consistency requires that a similar approach be taken in similar circumstances to achieve similar ends it does not mean simple uniformity, as regulatory officials need to take into account variables such as the scale of environmental impact, the attitudes and actions of management and the history of previous incidents or breaches. Under the principle of transparency, the regulated have a right to understand their obligations and what they should expect from the Agency.¹⁸ Finally, the concept of targeting provides that those activities which give rise to serious environmental damage, uncontrollable risks or deliberate crime are made the primary target of inspection.¹⁹

Prosecution is expected to be taken in relation to, *inter alia*, incidents or breaches which have significant environmental consequences, operating without the relevant licence, excessive or persistent breaches of statutory requirements and reckless disregard for management or quality standards.²⁰ Public interest factors that should be considered when deciding whether or not to prosecute include the environmental effect of the offence, the foreseeability of the offence, the history of offending and the attitude of the offender.²¹

Further functional guidance on the implementation of the Agency’s Enforcement and Prosecution Policy was provided in September 1999.²² This relates enforcement to the Common Incident Classification Scheme (CICS) which is a

¹⁶ Ibid, paragraphs 4 and 6.

¹⁷ Ibid, paragraph 9.

¹⁸ Ibid, paragraph 14.

¹⁹ Ibid, paragraph 16.

²⁰ Ibid, paragraph 28.

²¹ Ibid, paragraph 21.

²² Environment Agency, Guidance for the Enforcement and Prosecution Policy, September 1999. Available on www.environment-agency.gov.uk

national system for recording incidents, assessing a response level and categorising incidents.²³ With regard to environmental protection and water management, an incident which has an actual environmental impact can fall into one of three categories: “major” (Category 1), “significant” (Category 2) or “minor” (Category 3); and there is a fourth category to cover incidents where there is no environmental impact.²⁴ The occurrence of a Category 1 incident should generally lead to prosecution, whereas Category 2 incidents might result in prosecution or formal caution

It can therefore be seen that the enforcement powers of the Agency are broad and varied, ranging from statutory administrative tools such as suspension and revocation notices to the formal criminal tool of prosecution. This wide range and the issued guidance should enable the Agency to adopt an enforcement policy consistent with the public interest goals of the relevant legislation. To explore whether such a policy has in fact emerged, we now turn to the Agency’s practice.

(b) Use of Criminal Justice System

As we have seen, the Agency’s enforcement process is underpinned by a number of criminal offences, the majority of which relate to specific Agency functions such as water, waste and integrated pollution control. According to the Agency, the initiation of a prosecution should punish wrongdoing, avoid a recurrence and deter others from committing an offence.²⁵ However, the use of the criminal justice system in achieving such aims is in practice dominated by two key factors: the low number of prosecutions brought by the Agency and the failure of the courts to impose fines that reflect the nature of the offence.

An examination of enforcement statistics indicates that the number of substantiated pollution incidents is much higher than the number of cases prosecuted. In 1999-2000, 17,592 waste incidents were investigated by the Agency, leading to the conclusion of a mere 342 prosecutions.²⁶ As regards water discharge consents, 246 prosecutions resulted from the investigation of 14,417 substantiated pollution

²³ An incident is defined as a “specific event which comes to the attention of the Agency, is of concern to the Agency, and which may have an environmental and/or operational impact.” Ibid, section 1, paragraph 3.2.

²⁴ The same categorisation scheme can be used in relation to incidents or other events which have a potential environmental impact.

²⁵ Above n.15, paragraph 21.

incidents.²⁷ Prosecutions relating to Integrated Pollution Control are the lowest with 22 resulting from 599 substantiated pollution incidents.²⁸

Such evidence of the Agency's failure to prosecute is amplified by what has been gleaned from a recent confidential internal review, that prosecutions are taken for less than a quarter of the worst environmental incidents.²⁹ The review also indicates that the Agency is failing to comply with its Enforcement and Prosecution Policy, the guidance for which prescribes enforcement action according to the nature and extent of environmental harm resulting from the offence. Although the normal response to Category 1 incidents is prosecution, only 23% of such incidents, where the offender was identified, lead to such action being taken and in 17% of cases, no action was taken at all.³⁰ With regard to Category 2 incidents, prosecution or formal caution are the possible responses. In only 27% of cases where the offender was identified was either action taken and in 30% of cases, no action was taken at all.³¹ There was also extensive non-compliance with the recommended response to Category 3 incidents, that being a warning letter or in some areas such as waste, a formal caution. Out of the 5 regions which provided data, warning letters or notices were issued in 4% to 29% of cases, with prosecutions or formal cautions being the response to another 2% to 10% of incidents.

Alongside the failure to prosecute, there are problems concerning the level of fines imposed by the courts. It is alleged that judges and magistrates have very little experience of dealing with these offences, and have therefore failed to impose fines that reflect the impact that business has had on the environment and human health.³² Despite the fact that the overall level of fines has increased since the Agency was created in 1996,³³ there is evidence that the amounts imposed are low relative to the

²⁶ Environment Agency Annual Report and Accounts 1999-2000, 131.

²⁷ *Ibid.*, 129.

²⁸ See further A. Mehta and K. Hawkins, "Integrated Pollution Control and Its Impact: Perspectives from Industry" (1998) 10(1) *Journal of Environmental Law* 61, 69.

²⁹ "Agency Flounders with Prosecution Policy" (2001) 315 *ENDS Report*, 3. The findings are based on reviews carried out to a standard specification by the Agency's eight regions.

³⁰ With decisions pending on 17% of cases.

³¹ Figures are based on a 10% sample.

³² This section focuses on the level of fines imposed by the courts. Although a number of other penalties, including prison sentences, can be imposed by the courts, Home Office statistics in 1997-98 indicate that where individuals or companies are convicted of offences under sections 23 and 33 of the EPA 1990 and section 85 of the WRA 1991, they are invariably fined.

³³ For example, the average level of fine increased from £2,786 in 1998 to £3,500 in 1999 (£4,750 if Milford Haven is included). *Spotlight on Business Environmental Performance 1999* (Environment Agency, 1999) 8.

profitability of the contravening activity.³⁴ Of all the companies that the Agency prosecuted in 1999, only 32 businesses were fined over £10,000. The average fine for prosecuted businesses and individuals was £6,800 and £1,000 respectively.³⁵ In some cases, such as illegal waste disposal, the level of fines is actually falling.³⁶ The Parliamentary Select Committee on Environment, Transport and the Regions, in its report on the Agency, expressed concern at the consistently low level of court fines for environmental offences.³⁷ This perception was shared by the respondents to the consultation paper including, not surprisingly, the Environment Agency itself which has also publicly drawn attention to what it regards as a failing on the part of the criminal courts.³⁸

In recognition of the problem, the Home Secretary issued a direction to the Sentencing Advisory Panel to produce sentencing guidelines to the Court of Appeal for a group of environmental offences.³⁹ The Panel's advice was published in March 2000. As the appropriate sentence will depend on the particular circumstances of the case, the Panel recommends that the court, in exercising its discretion, take into account a number of aggravating and mitigating factors.⁴⁰ In setting the level of fine, the Panel stresses that it should not be cheaper to offend than to prevent commission of an offence. It recommends that the court considers the culpability of the offender and the extent of the damage which has actually occurred or has been risked. In addition, the fine should reflect the means of the individual or company concerned.

By way of contrast it should be noted that the Agency is generally successful in those prosecutions which it does bring before the criminal courts, securing a conviction in over 95% of the prosecutions brought under waste, water and integrated

³⁴ See, for example, evidence given to the Select Committee on Environment, Transport and the Regions by the Environment Agency, HC Session 1999-2000, 34 I-II at 34 I paragraph 95: "Despite the large penalty in the Sea Empress case, fines are generally small in relation to the turnover or profits of companies, although there is no limit on what can be imposed by the crown court. A fine of £7,000 for one million gallons of largely untreated sewage discharged in a marina on a Bank Holiday, and a £20,000 fine for a company which saved £180,000 by illegally disposing of waste send the wrong signals to Board rooms. Bigger penalties from the courts are needed."

³⁵ With regard to the average fine for businesses, this is £9,000 if Milford Haven is included. *Ibid*, 8.

³⁶ HC Written Answers, 30 November 2000, Cols 768-773W.

³⁷ Above n. 34, paragraph 95.

³⁸ See, for example, the Agency's Water Pollution Incidents in England and Wales 1998 (1999) where the Agency comments that "the general level of fines imposed for water pollution offences remains relatively low". Paragraph 8.4, 36.

³⁹ Offences considered by Panel are listed in Annex A to the Panel's report. For a useful summary of the Report see N. Papworth, "Environmental Offences: Views from the Sentencing Advisory Panel" [2000] 3 *Environmental Liability* 91-96.

⁴⁰ "Environmental Offences: The Panel's Advice to the Court of Appeal" (March 1st 2000), paragraphs 6-12.

pollution control. Nevertheless, although such figures might appear to be impressive, they are apt to mislead. To put them in their appropriate context, it is necessary to refer to the Agency's Enforcement and Prosecution Policy which places great emphasis on the evidence being sufficient to justify a prosecution:

“A prosecution will not be commenced or continued by the Agency unless it is satisfied that there is sufficient, admissible and reliable evidence that the offence has been committed and there is a realistic prospect of conviction. If the case does not pass this evidential test, it will not go ahead, no matter how important or serious it may be.”⁴¹

Whilst the adoption of such a high threshold for bringing a prosecution is therefore likely to lead to a positive success rate, it also contributes to the low level of prosecutions brought by the Agency.

A final aspect merits attention. The Agency recognises that adverse publicity has a significant impact on the behaviour of potential offenders and may be more important than the other consequences of prosecution.⁴² This is evidenced by the Agency's strategy of 'naming and shaming' operators with poor compliance records, their environmental performance being assessed by the level of court fine awarded against the company.⁴³ Furthermore, the enhanced use of public registers, containing *inter alia* data on enforcement, enables the public to measure the extent of non-compliance.

To summarize this section, the Environment Agency adopts a cautious approach to use of the criminal process, only prosecuting when there is considerable confidence that the evidence will sustain a conviction, and not always in cases satisfying this condition. Although the consequence is a very high rate of convictions, the number of cases prosecuted is significantly low. For their part, the courts are reluctant to impose large fines.

⁴¹ Above n. 15, paragraph 21.

⁴² P. de Prez, "Beyond Judicial Sanctions: The Negative Impact of Conviction for Environmental Offences" [2000] 2 *Environmental Law Review* 11, 13. The author surveyed 100 Agency including personnel from water pollution, waste management, IPC and radioactive substances regulation sectors. The survey found that 49% of Agency officers felt that adverse publicity was the most important consequence of prosecution, compared with 20% who felt that the fine was the most important. This distinction was more pronounced by those officers who regulate the large-scale chemicals industries.

⁴³ See "Hall of Shame" on Environment Agency website (www.environment-agency.gov.uk). According to the recent Select Committee report on the Agency, the 'naming and shaming' of companies has an important role to play in deterring non-compliance. However, the Committee was critical of the basis on which the tables were compiled, stressing the need for fair and consistent publication of environmental data. (Above n.34, paragraphs 88-94).

(c) Use of Administrative Powers of Revocation and Suspension

Having examined the Agency's use of the criminal justice system in pursuing compliance, we now turn to the tools of revocation and suspension, and the extent to which the Agency has recourse to such administrative powers. Evidence pertaining to such matters is far less readily available than that relating to prosecution. It would seem that the power of revocation is used extremely sparingly. In February 2001, it was reported that only six waste management licences had been revoked by the Agency since its establishment in 1996.⁴⁴ In relation to water discharge consents, it has been suggested that only 4% of such consents are revoked,⁴⁵ again, a relatively low number considering that, for example in 1999-2000, there were approximately 14,400 substantiated pollution incidents. As for IPC, one empirical study carried out in 1993, three years after the IPC system came into force, found that the power to revoke had not been used although, at this time, the system was monitored and enforced by Her Majesty's Inspectorate of Pollution whose enforcement practices differ from those of the Environment Agency.⁴⁶ Secondary sources have revealed only three instances in which an IPC authorisation has been revoked.⁴⁷

However, it would appear that, in some instances, the Agency is slightly more willing to exercise its powers of suspension. Under the original IPC system, the Agency served a total of 30 prohibition notices between 1997 and 2000.⁴⁸ It would also seem that waste management licences are suspended more often than they are revoked. Nevertheless, there is still a marked reluctance on the part of the Agency to exercise its suspension powers. This is illustrated by its reaction to operators' non-compliance with the technical competence provisions.⁴⁹ The Waste Management Licensing Regulations 1994⁵⁰ made it a statutory requirement for managers of thousands of waste sites to obtain certificates of technical competence (COTCs) by August 1999. In derogating from its original policy of serving, in August 1999, suspension notices on all sites which lacked a technically competent manager, the Agency announced that due to high levels of non-compliance it would only serve

⁴⁴ HC Written Answers, 26th February 2001, Col 314W.

⁴⁵ S. Bell and D. McGillivray, *Environmental Law* (Blackstones, 2000 5th ed) 580.

⁴⁶ K. Allott, IPC: The First Three Years (ENDS) 1994.

⁴⁷ "Petrus Oils Denouncement" (2000) 305 *ENDS Report*, 18. HMIP Bulletin Issues 34 and 35.

⁴⁸ Above n.26, 130.

⁴⁹ Under section 74 of the EPA, the operator must ensure that the licensed activities are in the hands of a technically competent person.

⁵⁰ SI 1994/1056.

notices on those operators who had failed to make “substantial ongoing” progress and where a manager had achieved all the technical units of the relevant COTC and was making “substantial progress”, six months grace would be given with suspension notices not taking effect until February 2000. In September 1999, out of the 8,000 waste managers registered with the awarding body WAMITAB⁵¹, only 1,400 were awarded the relevant COTC by the August 1999 deadline.⁵² Only approximately 22 suspension notices were served, many of which gave operators a further six months to comply.⁵³ Relatively few led to the closure of operational sites.

Of course, suspension or revocation is not an option where an offender is unlawfully operating without a licence. Subject to this, we should attempt to understand the Agency’s approach to these sanctions in the light of its published Enforcement and Prosecution Policy.⁵⁴ This makes it clear that recourse to the administrative action of revocation and suspension, should, in most instances, be a last resort. Revocation of an IPC authorisation will normally be considered only in cases where other enforcement measures have been used exhaustively to the point where the Agency is satisfied that the operator is unable to carry on the process in accordance with the conditions of the authorisation.⁵⁵ A prohibition notice (equivalent to suspension) will only be served where there is an imminent risk of serious pollution of the environment.⁵⁶ Revocation or suspension of a waste management licence should only occur where a Category 1 incident has resulted from or is about to be caused by activities to which a licence relates, or where continuation of the licensed activities would cause a Category 2 incident and the serving of an enforcement notice or modification of the licence conditions is inappropriate.

In summary, the above statistics would suggest that revocation notices are served in the only the most serious of cases and the power of suspension is exercised with extreme caution. The exercise of revocation and suspension powers can prevent the occurrence of environmental harm and its use can clearly be rationalised on that basis, but it can obviously also serve a deterrence function. As such it should be compared with the prosecution of criminal offences. The latter is necessarily more formal, but the penalties are generally, and paradoxically, less severe. Unsurprisingly, the Agency

⁵¹ Waste Management Industry Training and Advisory Board.

⁵² “Waste Competence Rules Force Few Site Closures For Time Being” (1999) 297 *ENDS Report*, 18.

⁵³ “Agency Faces Enforcement Headache on Waste Competence” (2001) 314 *ENDS Report*, 19.

⁵⁴ Above n.22.

⁵⁵ *Ibid*, section 2, paragraph 7.1.2.

exercises its powers of prosecution more readily than those of suspension and revocation. From a deterrence perspective, it might seem to make sense to proceed with these sanctions only when the criminal process does not appear to achieve compliance.⁵⁷ But there is no compelling evidence that this is Agency policy; all we know is that where a licence has been suspended due to the imminent risk of further damage occurring, it typically pursues the case through the criminal courts, if a criminal offence has been committed.

3. Optimal Compliance and Deterrence Theory

(a) General

To evaluate the different aspects of enforcement policy described in the previous pages, we can use models derived from the standard literature on the economics of law enforcement.⁵⁸ The starting point is to recognise that since regulation is not self-enforcing and that the securing of compliance by a public agency involves (substantial) resources, perfect compliance is neither possible nor desirable. Rather, the goal of the system should be optimal compliance, that is, the point at which the marginal social benefits accruing from compliance are equivalent to the marginal costs incurred in securing that level of compliance.⁵⁹ If we identify the social benefits of compliance as the reduction of unprevented damage costs, the losses which would not have been incurred if there have been compliance (*UDC*), and the costs as comprising mainly those incurred in administrating the system of enforcement (*EC*), then the principal economic goal of enforcement policy is to minimise *UDC + EC*.

To understand the relationship between these two sets of costs, and therefore to explore the means of achieving the minimisation goal, we need a theory to explain how the level of compliance relates to enforcement activity. We adopt a simplified version of the familiar Becker deterrence model,⁶⁰ assuming that individuals and firms

⁵⁶ Ibid, section 2, paragraphs 7.1.5 and 7.1.6.

⁵⁷ Below n81, accompanying text and FIGURE 2.

⁵⁸ For a survey with bibliography, see A.M. Polinsky and S. Shavell, "Public Enforcement of Law" in B. Bouckaert and G. De Geest (eds.), *Encyclopedia of Law and Economics* (Elgar, 2000) vol 5, p.307.

⁵⁹ G. Stigler, "The Optimum Enforcement of Laws" (1970) 78 *Journal of Political Economy* 526.

⁶⁰ G. Becker, "Crime and Punishment: An Economic Approach" (1968) 76 *Journal of Political Economy* 161.

comply with regulatory obligations if the benefits derived from contravention are exceeded by the costs. This condition can be expressed as:

$$U < pD$$

where U is the profit to the offender from the contravening act(ivity), p is the probability of apprehension by a public agency and D the costs to the offender resulting from such apprehension.

Some aspects require clarification before we proceed further. First, the p and D variables reflect the potential offender's subjective perception of the probability of apprehension and of the associated level of costs respectively, rather than their objective values; and the accuracy of such perceptions will be a function of the offender's information costs. It follows, too, that pD should be weighted to reflect the degree of risk aversion (if any) towards the consequences.⁶¹ Secondly, since p refers to apprehension by the public agency and not, more narrowly, to a formal determination of liability (or guilt) by the court or agency with power to impose a penalty, D covers a far wider range of costs than any formal sanction. It thus includes the "hassle" costs of pressure by an agency to comply, legal and other defence expenditures and any stigma or loss of reputation resulting from the apprehension and subsequent events.

There are, of course, various strategies which can be employed by an enforcement agency: it can select a process leading to a particular sanction, for example a criminal penalty or revocation of a licence; and it can determine how far to proceed within any such process, for example, merely issuing a warning or instituting formal procedures. Different probabilities and associated costs attach to these possibilities, whether they are sequential or alternatives. It thus becomes preferable to rewrite the condition for compliance as:

$$U < pD_1 + pD_2 + pD_3 + pD_4 + pD_5 + \dots pD_n$$

⁶¹ A.M. Polinsky and S. Shavell, "The Optimal Tradeoff between the Probability and Magnitude of Fines" (1979) 69 *American Economic Review* 880.

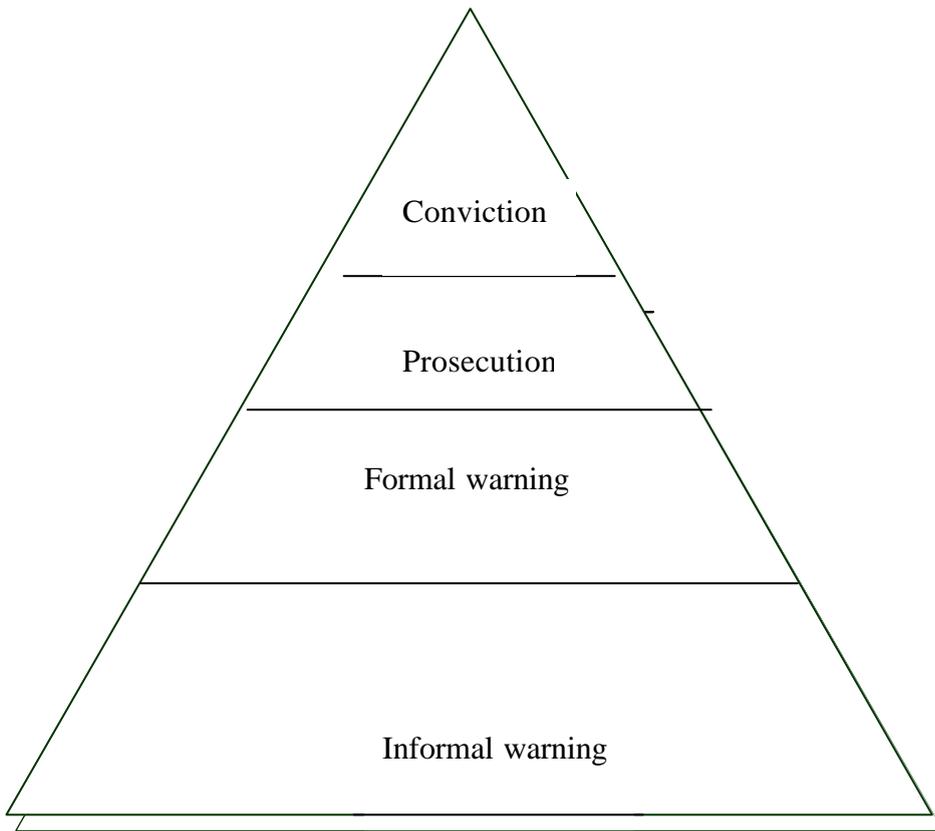
where each element in the right-hand side of the inequality represents the probability and the associated costs of a different predictable event in the enforcement process.⁶²

(b) The Criminal Justice Process

We begin by exploring the implications of this model for the criminal justice process which, as we have seen, in a previous section is assumed to be the principal or ultimate instrument of enforcement in many of the regimes of environmental protection in Britain. The steps taken towards this outcome may be illustrated by a pyramid (Figure 1), with the percentage of apprehended contraventions indicated on the horizontal axis.⁶³

⁶² I. Ayres and J. Braithwaite, *Responsive Regulation: Transcending the Deregulation Debate* (Oxford UP, 1992), 36. The events may be either sequential or alternatives.

⁶³ Ayres and Braithwaite, above n.62, 35. For a slightly different version, see B. Hutter, *The Reasonable Arm of the Law?* (Oxford UP, 1988), 149-153.



Here we observe the procedures of increasing severity which may be undertaken by the Environment Agency once a contravention has been identified. The logic is that the agency proceeds through these stages until it is satisfied that it has secured a particular offender's compliance.

In general, the costs (D) to the offending firm increase with each higher stage. At the same time, viewed *ex ante*, the probability (p) that that stage will be reached is reduced. At the apex we have a formal conviction and (generally) the imposition of a formal sanction. For most contraventions, the courts have power to impose a large financial penalty, but the average penalty falls well short of this: as we have seen above, the current figure is just under £7,000. We have also seen that the proportion of cases proceeding to the top of the pyramid is very small, between 2% and 10% of known contraventions. Given the presumably large number of undetected offences, the proportion of all contraventions reaching the prosecution stage must be significantly smaller

With such a relatively low value to the pD of a formal penalty following conviction, and – we are entitled to assume - a significant value to U , one or more of the following contingencies must occur if the compliance condition is to be met:

- The potential offender is highly risk averse;
- The potential offender's subjective perception of the formal sanction likely to be imposed is very high;
- The potential offender significantly over-estimates the probability of a conviction and formal sanction;
- Significant adverse consequences attach to enforcement procedures which fall short of a criminal conviction.

Empirical evidence goes some way to supporting these hypotheses. For example, in his study of enforcement of water pollution laws, Hawkins found that officials were wont to “bluff” firms into believing in the heavy hand of the law being applied to offenders,⁶⁴ and other research reveals that enforcement agencies are able to badger

⁶⁴ K. Hawkins, “Bargain and Bluff: Compliance Strategy and Deterrence in the Enforcement of Regulation” (1983) 5 *Law and Policy Quarterly* 35. See also the same author's *Environment and Enforcement : regulation and the social definition of pollution*. (Oxford UP, 1984), 149-153.

firms and thus impose quite substantial costs in no way related to prosecutions and formal sanctions.⁶⁵

As regards the costs (D) arising from procedures which fall short of a conviction, we know that adverse publicity is considered to be an important corollary to prosecution.⁶⁶ It is reasonable to assume that reputation is to some extent affected by an enforcement agency's involvement at an earlier stage. A more interesting possibility for reconciling non-prosecution with the deterrence condition emerges from an influential paper published by Fenn and Veljanovski in 1988.⁶⁷ They drew on empirical material but also developed a new dimension to the theoretical model. Given the high costs to the agency of observing acts of contravention, it is argued that there is potential for a mutually profitable bargain between agency and offender. Just as in plea-bargaining a prosecuting authority can “purchase” a guilty plea by reducing the proposed penalty, so the enforcement agency may secure a commitment to future compliance by an agreement not to prosecute a past offence. Of course, for the offender to be motivated to adhere to the agreement, there must still be a credible threat to prosecute on the occasion of the second bite of the cherry. But since the firm in question will be aware that it is now “under observation”, the probability of being apprehended is significantly increased – compared to its first contravention. And hence a higher perceived value to the pD of a formal conviction might be plausible.

The Fenn-Veljanovski model may be persuasive but it is still dependent on there being a plausible threat of a sufficient penal sanction being ultimately imposed. As we have seen, this is problematic and helps to explain the current disquiet about the enforcement policy of the Environment Agency. To proceed further, we need to address two related issues: Why are prosecutions so rare? Are there alternative approaches which might secure adequate deterrence at lower cost?

An explanation of low rates of prosecution much in vogue in the 1970s was that the relevant agency was the subject of capture or, at least, was pusillanimous.⁶⁸ Later studies reveal this to be simplistic, suggesting there are strong instrumental

⁶⁵ See de Prez, above n.42; also A. Blowers, *Something in the Air: Corporate Power in the Environment* (Harper and Row, 1984), 306.

⁶⁶ Above n.43 and accompanying text.

⁶⁷ P. Fenn and C. Veljanovski, “A Positive Economic Theory of Regulatory Enforcement” (1988) 98 *Economic Journal* 1055.

⁶⁸ See J. Rowan-Robinson, P. Watchman and C. Barker, *Crime and Regulation: A Study of the Enforcement of Regulatory Codes* (T & T Clark, 1990), 8 and the studies there cited.

reasons for an agency's reluctance to prosecute.⁶⁹ Perhaps the most important explanation is the very high cost to the enforcement agency of marshalling sufficient evidence to obtain a conviction, given existing principles of criminal procedure including, notably, the burden of proof, restrictive rules of evidence and (in very serious cases) requirement of a jury trial.⁷⁰ Why is the preparation of a criminal prosecution so onerous? The conventional reason is that it is to protect the innocent from wrongful conviction⁷¹ - in economic terms, to reduce error costs.⁷² Nevertheless, the more precautions we take to reduce these wrongful conviction costs (*WCC*), the more we generate increases to both *EC* (enforcement costs) and *UDC* (unprevented damage costs), the latter because we will fail to convict, and thus also to deter, some contraventions. It follows that there is, in theory, an optimal level of procedural safeguards where the marginal benefit (reduction in *WCC*) is approximately equal to the marginal cost (increase in *EC* and *UDC*).⁷³

The costs of false convictions are generally assumed to be significantly higher than those of false acquittals. Blackstone famously argued, if only intuitively, that it was “better that ten guilty persons escape, than one innocent suffer”.⁷⁴ The “beyond reasonable doubt” burden of proof is an example of a rule which reduces *WCC* but increases *UDC*. Hylton and Khanna have recently estimated that for to this be, on economic grounds, preferable to the “balance of probabilities” standard, *WCC* must be, in the given area, at least 2.64 times *UDC*.⁷⁵ However, this and other procedural rules serve to increase *UDC* not only by acquitting guilty parties, but also by failing to deter others, because of the reduction in the probability of conviction. Add to this the very significant additions to administrative costs resulting from the stricter rules and the weighting necessarily attributed to *WCC* by the current criminal process must be much larger than the 2.64 mentioned.

⁶⁹ B. Hutter, *Compliance, Regulation and Environment* (Oxford UP, 1997).

⁷⁰ Rowan-Robinson et al, above n.68, 255-263. See further above n.41 and accompanying text.

⁷¹ G. Williams, *The Proof of Guilt: a study of the English criminal trial* (2nd edn, Stevens, 1958), 154-158. In an interesting recent paper, it is justified as an effort rather to constrain the costs associated with abuses of prosecutorial or government authority: K.N. Hylton and V.S. Khanna, “Toward an Economic Theory of Pro-Defendant Criminal Procedure” (2001) available at http://papers.ssrn.com/paper.taf?abstract_id=265795.

⁷² R. Posner, “An Economic Approach to Legal Procedure and Judicial Administration” (1973) 2 *Journal of Legal Studies* 399.

⁷³ To similar effect Posner, above n.72, 410-417; L. Kaplow, “The Value of Accuracy in Adjudication: An Economic Analysis” (1994) 23 *Journal of Legal Studies* 307, 349-362 and for commentary, Hylton and Khanna, above n.71.

⁷⁴ W. Blackstone, *Commentaries Vol IV* 358 [19th ed. 1836].

⁷⁵ Above n.71, assuming the “beyond reasonable doubt” test to imply a probability of accuracy of 95%.

Of course, assessment of the costs in this area is particularly difficult, not the least because of the assumed large negative externalities associated with lack of confidence in the judicial system as well as a high degree of subjectivity attaching to the hurt arising from wrongful conviction. Using American empirical criminal justice data on some of the cost variables, Hylton and Khanna feel able to conclude that the higher standard of proof cannot be justified by the reduction in error costs rationale.⁷⁶ We remain agnostic of this judgement *insofar as it applies to mainstream criminal offences*. It may be that the traditional procedural safeguards associated with the criminal justice system approximate to that optimal level, once account is taken of the fact that criminal conviction for such offences often lead to imprisonment and generally a high level of social stigma. But intuition suggests that *in a regulatory context*, where firms are mostly the defendants, the costs of a wrongful conviction should not be exaggerated. Imprisonment is not in practice an option and stigma may not be serious. If that intuition is correct, the traditional criminal justice safeguards are not optimal.⁷⁷

(c) Suspension or Revocation of Licence

We have seen that the Environment Agency has another important instrument of enforcement, the suspension or revocation of a licence. Since this has the effect of depriving the firm of the lawful right to engage in the activity causing the pollution, it can be treated as incapacitating the offender, in the same way that imprisonment incapacitates an individual in relation to mainstream crime.⁷⁸ As such, it may obviously serve a preventative function, and thus is particularly appropriate where the social harm arising from the contravention is very large and/or there are problems in deterring the conduct by *ex post* sanctions.⁷⁹ But the very fact that it is a very heavy penalty, foreclosing profit-making activities and perhaps individual livelihoods, means that it can also play a significant deterrent role. Indeed, in some circumstances, it may be more effective than a conventional financial penalty, since the effect of the

⁷⁶ Hence their alternative explanation; see n.71, above.

⁷⁷ Posner, above n.72, 416, reaches the same conclusion. See also N. Garoupa and F. Gomez-Pomar, "Punish Once or Twice: a theory of the use of criminal sanctions in addition to regulatory penalties", Harvard Law and Economics Discussion Paper No 308, (2000), available at http://papers.ssrn.com/paper.taf?abstract_id=260212.

⁷⁸ Cf. S. Shavell, "A Model of Optimal Incapacitation" (1987) 77 *American Economic Review* 107.

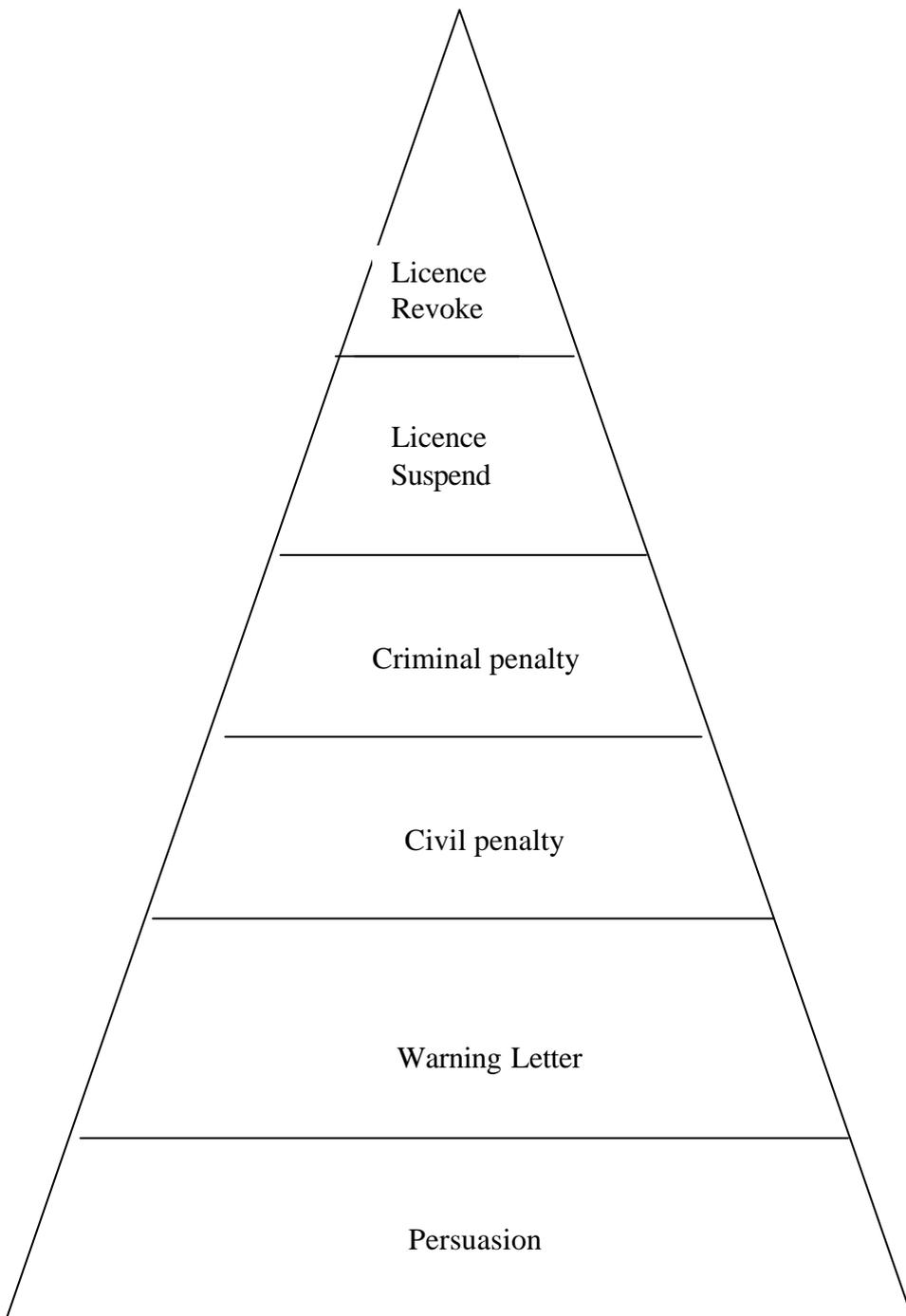
⁷⁹ S. Shavell, "The Optimal Structure of Law Enforcement" (1993) 36 *Journal of Law and Economics* 255, 261-262.

latter is dependent on the wealth of the offender. Imprisonment is not a feasible option for an insolvent firm and potential bankruptcy thus impedes deterrence.⁸⁰

It is, therefore unsurprising that Ayres and Braithwaite, in their model enforcement pyramid (Figure 2), place the suspension and revocation of a licence at the apex, to be invoked if, but only if, the conventional criminal penalty fails to deter.⁸¹

⁸⁰ J. Coffee, “‘No Soul to Damn; No Body to Kick’: An Unscandalised Inquiry into the Problem of Corporate Punishment (1981) 79 *Michigan Law Review* 386, 390.

⁸¹ Above n.62, 35.



The rationality of such an approach is evident. The ultimate sanction, loss of the licence, is, as they observe, “such a drastic one ... that it is politically impossible and morally unacceptable to use it with any but the most extraordinary offences”.⁸² A situation in which the ordinary processes of criminal justice have failed to secure compliance, presumably because U is high and/or the D of the penal sanction is low, may be considered “extraordinary” for this purpose. With the loss of a licence, D necessarily exceeds U , and the fact that there has been a previous conviction should mean that the value of p is relatively high. The sanction will, presumably be rarely invoked, but the threat should be sufficient to render it an effective deterrent.

Ayres and Braithwaite are nevertheless rightly sceptical of the appropriateness of loss of the licence as a sanction if it is the only deterrence option, or it is not consequent on the criminal justice process. The problem here is that the understandable and presumably widely known reluctance to use the device robs the threat of its credibility.⁸³ In these circumstances, the perceived low value of p will lead most potential offenders to apply a very high discount to D .

This argument can be forcefully applied to the arrangements in the United Kingdom, even though suspension or revocation of the licence is not the only sanction but ranks alongside the criminal process, described above. The historically-founded⁸⁴ decision to characterise the withdrawal of a licence as an administrative act, exercisable by the regulatory agencies - and not as a “last resort” judicial sanction - might seem at first blush to compensate for what we have seen to be problematic deterrence features of the criminal process. Sadly it exacerbates, rather than alleviates, the problem. The Environment Agency can threaten to invoke loss of a licence as an alternative to the criminal process, but clearly there must be evidence that it is willing to initiate proceedings if the threat is to be credible and, as we have seen,⁸⁵ it is known to be very reluctant to do this.

The present arrangements must be treated as even more unsatisfactory when account is taken also of the procedural aspects. Given the high financial and non-financial costs associated with the loss of a licence, we can assume that errors of the

⁸² Ibid, 36.

⁸³ Ibid.

⁸⁴ See, for example, section 7(4) Control of Pollution Act 1974 which provided for the revocation of waste disposal licences by the waste regulation authority and section 43 Water Resources Act 1963 which gave a river authority the power to revoke water abstraction licences.

⁸⁵ Above ns.44-52 and accompanying text. See to similar effect, on consumer credit licensing, C. Scott and J. Black, *Cranston's Consumers and the Law* (Butterworths, 2000, 3rd edn.), 450.

agency involving the false imposition of this sanction lead to high wrongful conviction costs (**WCC**), even though the stigma of a criminal conviction is absent. As such one would expect there to be, in analogy with the criminal process, a system of procedures – and an increased administrative expenditure – designed to reduce the errors. Such procedures do not exist and, although appeals or an application for judicial review may be brought against decisions, agency accountability in this area is considered to be low.⁸⁶

(d) Administrative penalties

The preceding application of deterrence theory suggests how the enforcement policy of the Environment Agency might be improved. A substantial, but not crushing, financial penalty imposed administratively would not involve the complexities and attendant costs of the criminal justice process. And the need for the added protection of the criminal procedural rules would be reduced because, it is assumed, there would also be a decrease in wrongful conviction costs (**WCC**), given that the stigma of a criminal conviction would be avoided.

At the same time, because the costs associated with imposition (**D**) would be lower, the probability of imposition (**p**) would have to be increased for the deterrence value of the enforcement policy to be maintained.⁸⁷ There should, however, be no problem in achieving this if the power to impose the penalty is conferred on the enforcement agency and the restrictive burden of proof, and other procedural rules inhibiting prosecution, do not apply.⁸⁸

Such an approach is implicit in the “civil penalty” tier of the Ayres-Braithwaite pyramid (Figure 2). Recent discussion reveals this device is still seen as somewhat anachronistic in the common law world.⁸⁹ Common lawyers are notoriously blinkered when it comes to observing ideas in rival legal cultures and it is amazing that in the now plentiful literature on administrative penalties there is so little

⁸⁶ Criticised on this ground in Rowan-Robinson et al, above n.68, 251-252.

⁸⁷ A.M. Polinsky and S. Shavell, “The Optimal Tradeoff between the Probability and Magnitude of Fines” (1979) 69 *American Economic Review* 880.

⁸⁸ Posner, above n.72, 416. He suggests, nevertheless, that since the agency (unlike a court) might weigh the benefits from a successful prosecution more heavily than the costs of punishing the innocent, constraints on the agency’s power through, for example, judicial review are important.

⁸⁹ Australian Law Reform Commission, above n.3. See also: W.Funk, “Close Enough for Government Work? Using Informal Procedures for Imposing Administrative Penalties” (1993) 24 *Seton Hall Law Review* 1; L.J. Kerrigan et al, “Project: The Decriminalisation of Administrative Law Penalties” (1993) 45 *Administrative Law Review* 367; M Gillooly and N.L. Wallace-Bruce, “Civil Penalties in Australian Legislation” (1994) 13 *University of Tasmania Law Review* 269.

by way of reference to civilian systems where there has been much experience of the phenomenon.⁹⁰

Here we focus on Germany which has, perhaps, the most coherent and comprehensive system of regulatory enforcement.⁹¹ Its origin can be traced to the end of the 19th century and the major expansion in that period of state intervention. Theorists then argued that non-compliance with administrative regulation should be distinct from traditional criminal processes.⁹² However the concept of “administrative offences” (*Ordnungswidrigkeiten*) was introduced only in 1949.⁹³ A general; legislative framework for dealing with them was established in 1952,⁹⁴ the current system dating from 1968.⁹⁵

Its main features can be briefly summarised. In comparison with the criminal law, notions of blameworthiness are largely absent: the legislation used the term “*verwerfbar*” (objectionable), rather than *schuldig* (morally guilty) to characterise liability, which is effectively strict. Criminal procedures, especially the rules of evidence are relaxed. The financial sanctions employed (*Geldbuße*) are conceptually distinct from criminal fines (*Geldstrafe*) and there is formal adjudication in an administrative, and not criminal, tribunal only if there is an appeal against the agency administrative penalty.

An enforcement pyramid devised from the German system appears in Figure 3). There are, of course, similarities – we can assume that the probabilities and the cost to an offender of the fine order being formally confirmed by the tribunal at the apex are broadly equivalent to those in the UK criminal justice model. The key difference is that, whereas the German agency can issue an administrative financial penalty, at the equivalent stage the British agency can only issue an abatement order. In short, with significantly reduced administrative costs, it is to be assumed that the German system is able to secure an increased *pD* figure and presumptively thus

⁹⁰ Conseil d'Etat, *Les pouvoirs de l'administration dans le domaine des sanctions*, (Documentation Française, 1995); European Commission, *The system of administrative and penal sanctions in the Member States of the European Communities* (1994, Office for Official Publications of the European Communities).

⁹¹ The following two paragraphs draw on the German national report in European Commission, above n.90.

⁹² E.g. J. Goldschmidt, *Das Verwaltungsstrafrecht* (Scientia, 1969, reprinting of original 1902 Berlin edition).

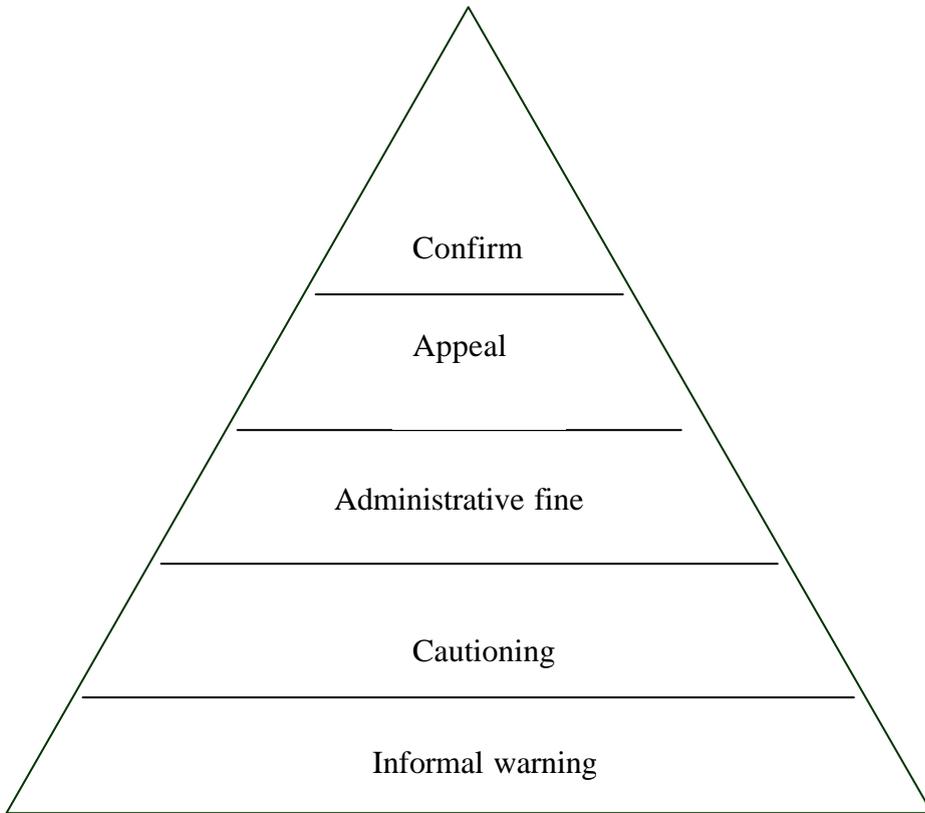
⁹³ *Gesetz zur Vereinfachung des Wirtschaftsstrafrechts*.

⁹⁴ *Gesetz über Ordnungswidrigkeiten*, 25 March 1952.

⁹⁵ *Gesetz über Ordnungswidrigkeiten*, 24 May 1968, as amended on 19 February 1987.

minimise *UDC* (unprevented damage costs) and *EC* (enforcement costs) more effectively than its traditional common law counterpart.

FIGURE 3



4. Conclusions

The enforcement policy of the Environment Agency of England and Wales reveals a cautious approach to the prosecution of criminal offences, often because of the problems of securing a conviction, and an even greater reluctance to suspend or revoke a licence, except where this is deemed necessary to prevent further environmental harm. We have seen that, viewed from a deterrence perspective, the policy has generated concern, not the least because of the relatively low fines typically imposed by the courts.

Our theoretical analysis suggests that the concern is justified. The ex ante cost to the potential offender of contravening environmental regulation is assumed to be too low, given the small probability of a substantial imposition. To resolve the problem, we argue that the Agency should be given powers to levy administrative financial charges from offenders without the procedures and onus of proof with which the criminal process protects defendants, but which also inhibits prosecution. The German system of *Ordnungswidrigkeit* provides an excellent model for this purpose.