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SCIENCE, EXPERTISE AND DUE DEFERENCE

Ciju Puthuppally[*]

In general, the courts have refused to contradict public authorities in judicial review cases challenging the scientific basis of administrative decisions. They have rather granted them a great degree of deference on the ground of their superior expertise in such technical matters. However, there has been little in-depth examination of the character of the arguments employed in such 'technical' disputes and as to the nature of the expertise involved. This article addresses that deficit, and in that light argues that the current approach to reviewing 'scientific' cases is excessively deferential. To that end, the article provides an overview of the case law and scrutinises the given rationale, namely that public authorities possess a superior competence in relation to such matters. It asks and examines afresh what particular grounds might in logic endow experts with a superior competence. Three such proper grounds for deference are identified: the type of reasoning involved, the accessibility of relevant information and the volume of relevant information. However, relating these grounds to three sample cases, the article finds that the nature of scientific disputes is varied and not inevitably beyond the potential competence of the courts. It further questions the basis for preferring, by way of deference, the government's expertise over that of rival experts. On these grounds, the article calls for a more nuanced approach to expertise-based deference – one sensitive to the particulars of each case, however 'scientific'.

INTRODUCTION

Issues of science, expertise and judicial deference have become an oft-referenced and yet under-scrutinised theme in public law. As noted by Christopher Hilson, 'in recent times, challenges to the scientific basis of decisions have become the bread and butter of case law in many settings.'[1] This may be explained, in particular, by the increasing number and prevalence of environmental regulations as well as the opportunity afforded by the Human Rights Act 1998 (HRA) to review errors of fact.

Such claims have, however, been consistently met with especial judicial self-restraint. The courts have generally refused to contradict the scientific conclusions of administrative authorities, granting their decisions substantial

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[1] Christopher Hilson, 'Risk and the European Convention on Human Rights: Towards A New Approach' (2009) 11 CYELS 353.

deference on the ground of their superior expertise. However, whilst this approach may appeal to instinctive ideas about the complexity of scientific disputes, it is worrying that the nature of such arguments has rarely been more closely scrutinised and related to the competence of the courts. In many cases, deference has been backed by little more than a cursory insertion of the peremptory words 'technical' or 'scientific'.

This tendency raises significant concerns. There is a danger that the courts may fail to fulfil their constitutional function of ensuring that decision-makers respect the proper limits of their powers and stay true to the legislature's purpose.[2] The consequences in fields such as environmental regulation may be profound. In fact, the technicality of such fields itself raises special needs for judicial scrutiny because of the dangers of regulatory capture[3] and the ease of obscuring political considerations under the mask of 'science'.[4] A closer examination is therefore demanded of the relationship between science, expertise and due deference.

Conducting such an examination, this article argues that the current approach to reviewing 'scientific' cases is excessively deferential, and that a more nuanced, case-specific approach is needed. To that end, the article first provides an overview of the current deferential approach and scrutinises the given rationale, namely that public authorities possess a superior competence in relation to such matters. This reveals a general omission on the part of the courts to ensure that the rationale applies to the particulars of each given case. Beyond a cursory reference to technicality, judges rarely specify the factors which, on the facts before them, preclude their attaining a sufficient proficiency for the purposes of review.

In order to address this deficit, the article then asks and examines afresh what particular grounds might in logic endow experts with a superior competence and thus justify expertise-based deference. Three such grounds are identified. However, these do not invariably apply in scientific cases. Rather, the nature of such disputes varies from case to case and requires differing degrees and types of expertise. They are not therefore inevitably beyond the competence of the court. This conclusion is reinforced by relating the identified grounds to three example cases known for their technicality.

The article then considers a further problem inherent in these cases, namely that of rival expertise. It argues that the given rationale cannot explain why, in a clash between opposing experts, weight is invariably given to the expertise of the public authority over that of the claimant. Extrapolating from that rationale, it formulates the basis for an unbiased doctrine of deference.

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[2] For an American study of the dangers of political decision-making under deferential review, see Laura Anzie Nelson, 'Delineating Deference to Agency Science: Doctrine or Political Ideology?' (2010) 40 *Environmental Law* 1057.

[3] Theories of regulatory capture argue that the relationship that develops between the regulator and the regulated is likely to dissuade proper enforcement of the law. For an overview, see Maria Lee, *EU Environmental Law* (Hart Publishing 2014) Chapter Three.

[4] Laura Anzie Nelson, 'Delineating Deference to Agency Science: Doctrine or Political Ideology?' (2010) 40 Environmental Law 1057.

Finally, having established that the given rationale does not support the current, blanket deferential approach, the article considers whether the end-result might nonetheless be justified by constitutional imperatives regarding institutional allocations of responsibility. Whilst comparisons with private law and criminal law reveal that this factor is a significant one, it does not, however, suffice as an alternate justification for the case law. Ultimately, the article finds that a more nuanced approach to expertise-based deference is needed – one sensitive to the particulars of each case, however 'scientific'.

THE CURRENT DEFERENTIAL APPROACH

As noted, claims for review in scientific fields such as environmental regulation have commonly been met by substantial judicial deference. Courts have been loath to interfere with the scientific conclusions reached by specialist public authorities, irrespective of the quality of the arguments presented by them. This is most aptly demonstrated by the case of *Downs v Secretary of State for the Environment, Food and Rural Affairs.*[5] Holding in favour of the defendant public authority, the Court of Appeal criticised the High Court for having taken too robust an approach. In doing so, even where the general standard of review was already the inherently deferential one of 'manifest error', Sullivan LJ stressed that 'the hurdle of "manifest error" in such a highly technical field is a formidable one.'[6] Similarly, as in *ex p. Greenpeace and Lancashire CC,* judges have emphasised that 'it is no part of [the judicial] function to resolve scientific issues.'[7]

This hands-off approach has been grounded in considerations of expertise and relative institutional competence. As explained by Laws LJ:

> 'greater or lesser deference will be due [to the decision-maker's judgment] according to whether the subject-matter lies more readily within the actual *or potential* expertise of the democratic powers or the courts.'[8]

Similarly, *per* Lord Bingham in *ex p. Smith*:

> 'The more remote the subject matter of a decision from ordinary judicial experience, the more hesitant the court must necessarily be in holding a decision to be irrational.'[9]

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[5] [2009] EWCA Civ 664.
[6] Ibid [76]. Similarly, *R (Newsmith Stainless Steel) v Secretary of State for the Environment, Transport and the Regions* [2001] EWHC (Admin) 74 [7].
[7] *R v Secretary of State for the Environment, ex p. Greenpeace and Lancashire CC* [1994] Env LR 401, 426.
[8] *International Transport Roth v Secretary of State for the Home Department* [2002] EWCA Civ 158, [2003] QB 728 [87] (emphasis added).
[9] *R v Ministry of Defence, ex p. Smith* [1995] EWCA Civ 1103, [1996] QB 517, 556.

Thus courts have stressed that judges are not chemists, biologists or statisticians,[10] and that they are not therefore qualified to decide on scientific matters.

However, it should be remembered that even if they were to engage in intensive review, judges would not quite be playing the part of scientists. Judges would not be required to identify the relevant information of their own initiative, understand it by themselves, and deduce the flaws on their own. Far from it, they will have been guided through all this by means of written and oral submissions from counsel – counsel who will likely have been instructed by their own scientific experts. Furthermore, during the course of the hearing, the judge will have had an opportunity to seek specific clarification on issues of confusion or concern. Ultimately, the judge will have heard the particular arguments and counter-arguments for each view. Therefore, one might well expect a more detailed explanation as to the grounds on which the judge feels expertise-based deference is due.

In such circumstances, TRS Allan's criticism of the doctrine of expertise-based deference has special force.[11] Deference involves the conferral of weight to a view *independent of the apparent cogency of the reasons given to support it.* However, he argues, the very essence of expertise consists in the ability to generate convincing arguments to support one's views. It should follow that superior expertise is only relevant insofar as it does generate such arguments. Allan's point is particularly persuasive in this context since science purports, after all, to be a strictly evidence-based discipline.

Moreover, as Allan stresses, even an experienced and well-qualified public official can always make an error. Indeed, this in part grounds the very need for judicial review. However, he argues:

> 'a form of deference that deflects attention from the legislative or administrative act in order to evaluate the merits of the actor is ill-suited to the identification of the error.'[12]

Accordingly, greater caution is required when granting expertise-based deference. To justifiably adopt such a doctrine in the face of Allan's argument, it must always be asked why it is that a particular view should demand a weight going beyond the cogency of its supporting arguments as perceived by the judge.

In this light, it is concerning that, beyond general and cursory references to technicality, courts have rarely specified what aspect of a case attracted special expertise, and precisely what form of expertise it was that the experts possessed and that the judges could not attain. Case-specific examination of the nature of

[10] *Ethyl Corporation v EPA* 541 F.2d 1, 176 US App DC 373.
[11] TRS Allan, 'Human Rights and Judicial Review: A Critique of "Due Deference"' [2006] CLJ 671.
[12] Ibid, 689.

arguments supporting 'scientific' propositions has been lacking. In fact, whilst a deferential approach to scientific administration may accord with our instincts about its complexity, such examination reveals a more varied reality and demands a more tailored approach. This can be appreciated by closer consideration of the particular features of an argument or opinion that justify the conferral of weight to it independent of its perceived cogency. These features can be termed the proper grounds for expertise-based deference.

THE PROPER GROUNDS FOR EXPERTISE-BASED DEFERENCE

On reflection, three grounds might be identified which in logic could properly justify the conferral of weight to a view independent of its perceived cogency. In short, these are: the type of reasoning employed, the accessibility of relevant information, and the volume of relevant information. Examination of these grounds in the context of scientific disputes reveals that they do not invariably plague such cases, and that the current deferential approach is therefore unsatisfactory.

A. The type of reasoning employed

To the extent that scientific argumentation involves modes of reasoning distinct from those encountered judicially, courts will be less able to assess the cogency of the objections and justifications given. In such circumstances, one might rightly invoke grounds of institutional competence for accepting a decision-maker's view independent of the cogency of their arguments as perceived by the court. Indeed, scientific argumentation based on complex mathematical or chemical equations and formulae, though objective and logical, clearly involves a type of reasoning remote from ordinary judicial and common experience. In respect of such arguments, judges may fail to properly understand and appreciate the full force of the points raised by the decision-maker even when they think they have.

However, scientific disputes do not invariably centre on such techniques of reasoning. To the contrary, because scientific methodology is generally premised on the proof of hypotheses by means of empirical evidence, disputes, especially in the field of anthropocentric environmental regulation, may often turn on common sense reasoning relating to factual circumstances. For example, given all the factual information, no special analytic technique is required to assess, in relation to the safety of a nuclear reactor, the significance of a lack of physically separate back-up components where this is not based on statistical calculations.[13] Nor are complex modes of reasoning needed to appreciate the implications of the fact that studies denying air quality risks were centred on data taken upwind of the impugned installation, and not downwind.[14] The same may be said of the argument that a theory relied on data from sources known to engage in

[13] *Athanassoglou v Switzerland* (App. 27644/95).
[14] *Ardley Against Incineration v Secretary of State for Communities* [2011] EWHC 2230.

falsification.[15] Similarly, claims that past experiences of harm from an impugned activity are negligible because they were 'exceptional' and 'minor'[16] can be easily evaluated by asking how often such incidents have occurred, and what the consequences were.

In such cases, the only ground for thinking that there is a deficit in expertise derives from the judge's lack of the necessary background information to which he must apply ordinary modes of reasoning. The judge has the mechanical tool he must use and knows how to use it, but does not have the full range of raw material upon which it must be applied in order to extract the right answer.

B. The accessibility of information

Where expertise derives from access to information that cannot be fully disclosed or reproduced for the court, there will again be common sense reasons for deference independent of the cogency of the arguments raised. Indeed, it was on this ground that expertise-based deference was initially and most cogently grounded in cases such as *Huang v Secretary of State for the Home Department.*[17] However, these were cases in which directly relevant evidence could not be disclosed due to reasons of national security. That difficulty does not normally arise in scientific contexts such as environmental regulation.

Nevertheless, it is conceivable that reasons other than confidentiality may make certain forms of information inaccessible, or at least not equally accessible. For example, if, as in *LCB v UK*,[18] a scientific proposition as to the existence of a biological hazard is supported by the judgment that, on the basis of photographic evidence, an explosion took place at one particular height rather than at a lower one, expertise will derive from diverse past visual experiences in the field. Arguably the memory of such visual experiences cannot be fully or accurately captured in a form that can be made available to the court. Thus one might note the caution in the case of *Newsmith Stainless Steel* regarding the importance of personal on-site inspections:

> '...[I]he Inspector's conclusions will invariably be based not merely upon the evidence heard at an inquiry or an informal hearing, or contained in written representations, but, and this will often be of crucial importance, upon the impressions received on the site inspection... Maps and photographs may be helpful but they are no substitute for a site inspection. As those who attend planning inquiries know only too well, photomontages are often very far from being uncontroversial when produced in evidence and photographs not infrequently contradict the proposition that the camera cannot lie, particularly when questions of landscape impact are in dispute.'[19]

[15] *Athanassoglou* (n 13).
[16] E.g. in *Athanassoglou* (n 13) [39].
[17] [2007] 2 A.C. 167 [16] (Lord Bingham). See also *A v Secretary of State for the Home Department (No.2)* [2005] 2 WLR 87 [117], [192].
[18] *LCB v UK* (1998) 27 EHRR 212.
[19] *R (Newsmith Stainless Steel) v Secretary of State for Environment, Transport and the Regions* [2001] EWHC Admin 74 [8] – [11]

Similarly, it may be too easy for a judge to theorise that a particular approach is feasible whilst sitting in chambers, especially in challenges to scientific methodologies. Things are often more easily said than done. For example, experts may not be able to fully recreate for the court the complexities of counting desert lizards in the field so that the court could properly determine whether sufficient measures had been taken to monitor and maintain their population.[20] Accordingly, an expert's judgment on the propriety of particular methodologies may warrant deference on the basis that practical field experience cannot be fully captured in words.

In the above cases of visual and practical experience, deference can be grounded on inherent limitations to translating relevant information into a form that can fully capture its nuances. The problem of informational accessibility may arise in a different form in the case of 'experience' in its broader, collective sense relating to a host of individual experiences accumulated through time. Such accumulated experience may be relevant and warrant deference when it informs determinations on matters calling for an exercise of judgment. This is precisely because accumulated experience cannot simply be broken down into its constituent components and relayed to the court. The individual contributions that support it will likely be too numerous and historical to be capable of being specifically remembered and recounted. In that sense, then, the expert will indeed have an advantage over the court which is likely to enable him to make a better, more informed judgment warranting expertise-based deference.

C. The volume of information

Even if all the relevant information may in principle be put before the court, the more that a particular point in a scientific dispute or argument draws on 'background' knowledge – for example on the relevant terminology, the circumstances in which empirical evidence was gathered, and the factors capable of affecting the accuracy of such data – the less competence the judge can claim to assess it. This is because the more information is relevant, the greater the likelihood that one may fail to bear it all in mind when it has not been imbibed through extensive and repeated study. Any such in-depth study will clearly be beyond the court, given pragmatic considerations regarding the use of limited judicial time.

This factor is a significant one, since scientific disputes, particularly in the environmental field, are highly information-intensive.[21] For example, in the private law case of *Reay and Hope v British Nuclear Fuels,*[22] upon which the

[20] As in *Tucson Herpetological Society v. Salazar,* 566 F.3d 870 (9th Cir. 2009).
[21] Elizabeth Fisher, Bettina Lange and Eloise Scottford, *Environmental Law* (OUP 2013) 263; Richard Moules, *Environmental Judicial Review* (Hart Publishing 2011) 15-16. Moules notes that in *R (on the application of Hardy and Maile) v Pembrokeshire CC and Pembrokeshire Coast National Park Authority* [2005] EWHC 1872 (Admin), 'in addition to the claim bundle, appendices to the grounds of challenge and supporting witness statements, there were eight volumes of supporting documents running to over 500 pages.'
[22] [1994] Env LR.

court in *LCB v UK* relied to determine the question of causation, approximately one hundred written reports were submitted.[23] Indeed, courts have often noted the extensive volume of information to be considered.[24]

However, there is little reason to suppose that this is inevitably problematic. Firstly, the extent of the problem will vary from case to case, and more specifically from argument to argument. Not every scientific dispute is impractically information-intensive. In any case, it should be remembered that law is itself an information-intensive discipline. It should not be thought that judges are not trained to handle large volumes of unfamiliar detail. As stated by Laura Nelson:

> 'After all, judges are an intelligent collection of people who have devoted their careers to studying complex problems with specific sets of facts.'[25]

In fact, such problems of technical knowledge arise in many areas of the law where we routinely expect judges to handle them. As Judge Oakes notes,

> 'At the very least it can be said that lack of specialized knowledge at the appellate level is probably as much a problem in some other areas of the law where substantive review is widely accepted, such as tax or patent law, as it is [in the field of environmental judicial review].'[26]

THE VARIED NATURE OF 'SCIENTIFIC' DISPUTES: THREE EXAMPLE CASES

Assessed through the lens of the three proper grounds for deference, it can be understood that the problem of scientific complexity is too easily overstated because of a lack of regard to the specific nature of the arguments in question. This point is further illustrated by consideration of three putatively 'scientific' cases as they relate to those grounds. They demonstrate that scientific cases do not necessarily warrant a high degree of expertise-based deference. Rather, the nature of 'scientific' arguments is not uniform, and by consequence the potential competence[27] of the courts to assess them is variable. In many cases, disputes are based on ordinary modes of logic applied to circumstantial factors that can be sufficiently understood by judges given the assistance of submissions from both sides.

[23] *LCB v UK* (1998) 27 EHRR 212.
[24] Ibid; *Downs* (n 5).
[25] Nelson (n 4), 1068.
[26] James Oakes, 'Substantive Judicial Review in Environmental Law' (1977) 7 ELR 50029.
[27] *Viz.* given the necessary background information and both parties' submissions. On 'potential competence', see n 8 above.

A. ***The Downs Case***

Some 'scientific' disputes, especially those relating to anthropocentric environmental harm, are based on empirical evidence of effects on humans in the course of daily life rather than on highly esoteric arguments as to the specific interactions of particular substances at a molecular level. Admittedly, background knowledge will generally be needed. However, this will often be of a type that can be imbibed without impractically extensive study. This is illustrated by the *Downs* case.

A central point of dispute in *Downs* concerned the adequacy of the model on the basis of which the Secretary of State for the Environment, Food and Rural Affairs had concluded that a pesticide posed no health hazard. The claimant argued that the model was inadequate because, undisputedly, it was based on exposures to operators of the pesticide plant. This was explained to be problematic because, whilst precautions such as hazard symbols, safety phrases on labels and protective clothing may well be sufficient to protect operatives, they are of no assistance to residents living near the spraying site. Such an objection is based on common sense reasoning relating to factual occurrences and circumstances that are not so far remote from ordinary life experience as to be beyond proper comprehension by judges, certainly not where both parties have provided explanations. The differences between plant operators and nearby residents are readily comprehensible.

Moreover, the Secretary's arguments that there had been no challenge to the fact that the given model was 'at the forefront of international standards', that no EU Member State had declined to recognise authorisations under it, and that no better model currently exists require little expertise to assess insofar as they relate to the objection regarding residents. As a matter of logic, they are incapable of explaining why, even if it is the best available model, the circumstantial difference between residents and operators should be insignificant. Therefore, despite the fact that the disputed point related to a matter as apparently technical as the adequacy of the Secretary's 'bystander exposure model', it cannot be said to have warranted any expertise-based deference to the Secretary's view, at least not in respect of this particular objection and the counter-arguments raised to it, given their particular nature.

B. Reay and Hope v British Nuclear Fuel

The arguments raised in *Reay and Hope v British Nuclear Fuel,*[28] a private law case noted in *LCB v UK* for its expert evidence,[29] further illustrate this point about the nature of scientific disputes. The key question was whether a nuclear power reactor in Sellafield had caused leukaemia in the claimants. Central evidence in support of that assertion pointed to undisputedly abnormal rates of leukaemia in the children of men who had been exposed to high doses of radiation from that power plant. The counter-argument to this relied mainly on a study showing that children of the Nagasaki and Hiroshima bombings, by contrast, did not suffer from unusually high rates of leukaemia.

[28] [1994] Env LR.
[29] *LCB v UK* (n 21) [39].

Again, although the nature of the dispute is scientific and, in the context of a human rights claim, would presumably have attracted substantial deference, it is difficult to point to specific reasons why a judge would be ill-equipped to understand and evaluate these arguments. Evaluation of the relevance of the correlation in the first case, and the lack of correlation in the second, cannot properly be said to involve any special analytic skills. Any inferiority of expertise here would rather derive from the judge's lack of background knowledge as to what other factors might cause or neutralise the carcinogen, and whether these too show a similar or better statistical association. For example, hypothetically, it may be that some special substance was prevalent in Nagasaki and Hiroshima that counteracted the radiation from the exposure, but was not present in Sellafield. The judge, lacking such knowledge, would falsely conclude that the Sellafield statistics failed to establish a probable correlation on the basis of the lack of leukaemia incidence in Nagasaki and Hiroshima. However, that would be a case of expertise on the grounds of information, and there is no reason why such information – *viz.* information on the proposed distinguishing factor – could not be put before the court.

C. Ecology Center v Austin

A less straightforward illustration of these issues is provided by *Ecology Center v Austin,*[30] an American case, controversial for the lack of deference afforded by the majority.[31] The case involved a challenge to the decision by the Forest Service, a public authority for forest management, to permit commercial logging in old-growth forests affected by fires. One of the grounds of challenge was that this would adversely affect soil quality, the Forest Service being legally obliged to maintain soil productivity. The agency had made an assessment on the basis of maps, samples taken throughout the forest, aerial reconnaissance, and computer modelling. Crucially, however, it had failed to conduct on-the-ground verification of its assessment in circumstances when it could have done so. The Center argued that this rendered the assessment inadequate, since the sampling was based on burned areas generally, and not on the specific site in question. The issue then was whether on-site verification of the agency's projections was required to ensure that soil quality would not be adversely affected.

In theory, this is a dispute that attacks scientific methodology and as such would appear to be a highly technical claim. But is the particular nature of the argument for that reason alone truly beyond the potential competence of the court? The reasoning involved is hardly complex or unfamiliar. Arguments on the point did not draw on any special mathematical or scientific calculations. It was rather a matter for common sense reasoning.

The crux of the expertise then becomes an issue of information. Do the experts in this field possess relevant information that cannot be fully or properly put before the court? Arguably in this sense there is more of a case to be made. Expertise in relation to the determination of whether or not the methodology without on-site

[30] 430 F.3d 1057 (9th Cir. 2005).
[31] E.g. in *Lands Council v McNair* 537 F.3d 981 (9th Cir. 2008).

inspections is sufficiently accurate may be founded on past experiences of theories derived from similar methodologies being later proven accurate or inaccurate. Ideally one might imagine that these various examples from the past might simply be made available to the court. That, however, is unrealistic both in terms of the volume of information engaged and the precision of memory required. As to the former, there may be innumerable past experiences informing the present judgment. On the latter point, the expert might reasonably feel something more of an instinct that this is sufficient based on his experience, without being able to remember specifically all the various methodologies which have induced that instinct so as to put them before the court.

This then would be an explanation for why the court might be relatively inexpert and why deference should be due. However, the degree of expertise-based deference afforded should correspond with the extent to which this special factor can be considered applicable and significant. That is to say that the weight given to the expert's view should be proportionate to the degree to which they can be thought to have had relevant past experiences and to which such experiences cannot feasibly or expediently be recalled and relayed to the court.

IMPLICATIONS

The three example cases show that categorisation of the general subject matter of a dispute as 'scientific' or 'technical' does not of itself determine that an especially high degree of judicial restraint is required on grounds of expertise. Neither *Downs* nor *Reay*, though apparently 'technical', revolved around issues beyond the potential competence of the court. Nor can *Ecology Center* be thought to have demanded mastery of any special techniques of scientific analysis. On the other hand, it did arguably engage issues in respect of which experts are likely to have had relevant past experiences that could not properly be relayed to the court. To that extent, and that extent only, deference was warranted in that case.

Accordingly, a more discriminating, nuanced approach is needed. This should take account of the nature of the arguments raised even if invoked in support of a technical proposition. The judge should assess how far removed the nature of the particular point of argument is from their own judicial and common experience, and from their potential competence in the light of the information available to them. The more the argument relies on unfamiliar modes of reasoning, information not amenable to proper reproduction, or daunting volumes of background knowledge, the more deference will be due. However, where, as is not rarely the case, the argument is based on common sense reasoning applied to factual settings that are not alien to ordinary human experience, there is little ground for attaching weight to a decision-maker's view independent of the cogency of arguments raised to support it.

Ultimately, not every argument that has come into contact with a scientific proposition should be treated as dangerously contaminated with problems of

expertise, and therefore to be summarily quarantined in the zone of highly deferential review. More careful examination is needed as to whether the particular point made and the specific responses to it exhibit the dangerous symptoms.

RIVAL EXPERTISE AND IMPROPER PREFERENCE

A further difficulty arises with respect to expertise-based deference that is accentuated in scientific disputes. These cases generally involve a clash between two opposing experts. Claimants do not simply rely on their own opinions as laypersons, but will usually have secured the support of experienced scientists. Why then should judges presumptively prefer the public authority's expertise over that of the claimant's expert, as they do by granting the former expertise-based deference?

Both experts will have had access to all the relevant information. Moreover, both will usually have conducted extensive studies on the specific subject of the dispute in a manner that perhaps cannot be compared to other cases involving much more personal and confined issues, such as whether or not a particular individual poses a threat to the public. Furthermore, there is no basis for thinking that public authorities are always or generally able to hire the best, most qualified experts in the field. Consequently, it is inappropriate to assume that the appointed decision-maker's view is necessarily more expert than that of the opposing professional. Expertise-based deference, insofar as it automatically favours the government's expertise, therefore seems dubious.

One might think that, if at all expertise-based deference is due, it should in principle be open to both parties and result from a closer assessment of their expertise relative to each other and not simply relative to the judge. Thus, for example, the court might have regard to the relative independence of the experts, as in *Athanassoglou v Switzerland.*[32] In fact, an example of a more careful approach may be found in the case of *Downs*. Although, as noted above, the court failed to examine the argument-specific grounds for deference, it did commendably assess the relative expertise of the scientific associations relied on by each party. Thus the court, in preferring the conclusions of the Advisory Committee on Pesticides (ACP) over that of the Royal Commission on Environmental Pollution (RCEP), explained:

> 'The RCEP was established in 1970 as an independent body to provide authoritative advice on environmental issues. Its members "have a wide range of expertise and experience in natural and social sciences, medicine, engineering, law, economics and business"... By contrast, the expertise of the membership of the ACP is, given that committee's much narrower remit, heavily weighted towards those

[32] *Athanassoglou* (n 13) [39], [49].

> branches of science that have particular relevance to the evaluation of pesticides, e.g. toxicology.'[33]

Since the disputed issue concerned precisely the toxicity of pesticides, the ACP's expertise could therefore be justifiably preferred.

However, the courts have in general failed to engage in this more careful analysis of relative expertise. In fact, in *Downs* itself, both expert bodies were government-commissioned. The comparative evaluation seems to have been conducted only because the government had rejected the conclusions of the study it had itself first commissioned (the RCEP's) in order to then commission a new one (by the ACP). It was simply a response to the claim that it was irrational to reject the conclusions of the body the government had itself commissioned. Nevertheless, it is the sort of evaluation that must arguably be undertaken if deference is to be justified on the basis of expertise. Certainly it cannot simply be assumed that the government's expertise is superior to that relied upon by the claimant.

INSTITUTIONAL ALLOCATIONS OF RESPONSIBILITY AS A GROUND FOR DEFERENCE

It has so far been argued that expertise-based deference is not appropriate simply because the subject matter of a claim is 'scientific'. That alone does not establish that a court is necessarily less competent to assess the claim, or, even if it were, that deference should automatically be due to the government's own expert as opposed to the claimant's. This argument has proceeded on the basis that institutional competence, *viz*. expertise, grounds the basis of deference. However, persisting unease about the prospect of significant judicial interventionism in technical fields might be articulated in a different way. One might seek to ground deference not simply on grounds of superior expertise but on the basis of constitutional allocations of responsibility. Analysis reveals, however, that although this factor is an important one in justifying the contrast to the approach taken in private law and criminal law, it provides no additional factor for consideration in a given case.

The argument based on institutional allocations of responsibility stresses that Parliament will have specifically assigned responsibility for the impugned decision to the defendant public authority. There is then a constitutional imperative following from the sovereignty of Parliament to respect its choice of decision-maker. That imperative may be said to found a presumption in favour of Parliament's delegate as the person with the responsibility and the right to decide between rival schools of experts for the purposes of public administration. At least where the court itself can claim no greater expertise than the chosen decision-maker, there is no reason to infer that an expert's decision was beyond the discretion afforded to the latter, and the courts should rightly

[33] *Downs* (n 5) [51].

respect Parliament's choice. Thus whereas courts are institutionally responsible for matters of law, the same cannot be said of scientific matters. This then is not simply a matter of expertise in giving weight to the opinion of those who are likely to know best, but a matter of institutional allocations of responsibility.

Indeed, this factor would appear to provide a more viable justification for deference in technical cases, for it alone can explain the difference in the way expert opinions are treated in judicial review as compared to private and criminal law. Generally, in the latter fields, the duty of the expert is to provide the court with that which is necessary for the court to reach its own conclusion on the basis of the facts.[34] Notably, no special directions are given to juries and no principles are incumbent on judges to the effect that special weight must be given to expert witnesses on technical matters. It is left to them to decide in each case how to evaluate the expert's evidence.[35]

The approach is thus not presumptuous, but rather flexible to the particulars of each case. It can accommodate more or less weight being given to each expert's opinion according to how reliable and how necessary the jury or judge finds their expertise in respect of the particular issue before them. In fact, a jury must be specially reminded that they are not bound by the expert's opinion, and that the issue is, in the final analysis, for them to decide.[36] Moreover, in a private law case involving public bodies, for example in negligence actions against water authorities or health services, there is no question of giving the government's expert automatic preference over rival witnesses.

While it is thought right for judges and juries to conduct such a case-by-case evaluation of expert evidence in these contexts, it seems decidedly odd to hold otherwise in judicial review cases by a blanket policy of deference. After all, the very same sorts of technical issues arise in both fields. Note, for example, that the scientific judgment in the above-mentioned private law case of *Reay* played a decisive role in the public law case of *LCB v UK*. This cannot, then, be explained simply by invoking relative competence without making the strange assumption that courts in private and criminal law cases possess a special competence not shared by administrative courts.

On the other hand, this divergence in approach is readily explained by the idea of constitutional allocations of responsibility. In the context of administrative law, as opposed to private law, the expert public authority's role is not simply to furnish the court with the evidence necessary to make the ultimate decision. Rather, in general, it is the public authority's institutional role to make the decision for the purposes of public administration, and the court's role is simply to ensure that the decision did not exceed the limits of its powers – hence the profound public law distinction between appeal and review. The court does not make the decision anew. This is a matter not of expertise *per se*, but of constitutional allocations of responsibility. Drawing on this important

[34] See e.g. *Davie v Magistrates of Edinburgh* (1953) SC 34.
[35] *R v Stockwell* (1993) 97 Cr App R 260, 265.
[36] Ibid, 266.

constitutional consideration, one might reassert the underlying concern that it is not for judges to decide scientific matters.

However, this constitutional consideration does not in fact provide any additional factor for judicial consideration. Institutional allocations of responsibility will already have been factored into the determination of the general standard or type of review applicable. It should be remembered that, in the ordinary case of judicial review, purely factual challenges are impermissible [37] and otherwise the applicable test is generally one of *Wednesbury* unreasonableness.[38] This respects the fact that it is not the general function of the court to resolve scientific disputes. Thus the court will not intervene simply because it feels the decision was wrong. Rather, if at all it is entitled to hear the question, it will intervene only if the error is so unreasonable that it cannot be considered to have been within the discretion conferred by Parliament. The point made in respect of such cases is that the applicable standard should not, as in *Downs,* automatically drop further to an even more deferential one merely on account of the 'scientific' nature of the case. Such an ultra-deferential or 'super-Wednesbury' approach must be justified by reference to the particular nature of the scientific arguments at issue in light of the three factors examined above. To do so on the basis of constitutional allocations of responsibility would be to double-count that consideration.

On the other hand, in cases of proportionality review under the European Convention on Human Rights, the applicability of the Human Rights Act 1998 signifies that Parliament has granted the courts a special responsibility for close scrutiny. This is understandable in view of the profundity of the rights at stake. For that reason, invocations of constitutional imperatives and allocations of responsibility get us no further. Because human rights are at stake, it cannot be presumed that Parliament has afforded the decision-maker the authority and responsibility to make the final determination even where the courts would be competent to review it. The only basis for special deference in respect of the scientific nature of the case in this context must rest on considerations of relative institutional competence. The reason the latter is relevant is because it raises the prospect that the court itself is not positioned to identify the 'right' answer. However, as argued, such deference is not invariably due.

[37] 'Error of fact' remains a very narrowly confined ground of review under *E v Secretary of State for the Home Department* [2004] QB 1044. *Per* Lord Brightman in *R v Hillingdon LBC, ex p Pulhofer* [1986] AC 484, 518: 'Parliament intend[s] the local authority to be the judge of fact... It is the duty of the court to leave the decision of that fact to the public body to whom Parliament has entrusted the decision-making power save in a case where it is obvious that the public body, consciously or unconsciously, are [acting] perversely.'

[38] The rule against reviewing errors of fact does not preclude every form of scientific challenge. Challenges to factual determinations are permissible in the context of human rights claims, on the ground of irrationality, and in relation to jurisdictional errors of fact on a less deferential basis: *R v Hillingdon LBC, ex p Pulhofer* [1986] AC 484; *R v Secretary of State for the Home Department, ex p Khawaja* [1984] AC 74. Notably, for example, challenges to determinations on what is the most 'appropriate' methodology for a particular purpose remain reviewable on the ground of irrationality.

CONCLUSION

In conclusion, the current approach to judicial review in scientific cases is unsatisfactory. It fails to identify the nature of the court's relative incompetence and assumes that the character of scientific argumentation is uniform. In fact, scientific propositions are often supported by common sense reasoning made comprehensible by submissions from both parties. It follows that categorisation of the subject matter of a dispute as 'scientific' should not of itself determine the degree of judicial restraint required on grounds of expertise. A more discriminating, nuanced approach is needed. This should take account of the nature of the particular arguments raised even if invoked in support of a technical proposition. The judge should assess how far removed the nature of the particular point is from their potential competence in the light of the information available to them. The less the argument relies on unfamiliar modes of reasoning, information not amenable to proper articulation, or daunting volumes of background knowledge, the less deference will be due. Only then can the courts fulfil their duty to keep the executive true to its mandate.