


The Paradox Test in Climate Litigation

Adam Parr ^{1,*}

¹Smith School of Enterprise and the Environment, Hertford College, University of Oxford, Catte Street, Oxford OX1 3BW, UK

*Correspondence address. Hertford College, Catte Street, Oxford OX1 3BW, UK. Tel: +44 1865 589 918; E-mail: Jurisprudence@paradox.law

Abstract

The common law and natural law traditions have both sought authority in ‘reason’ and the ‘laws of nature’. Pollock applied this logic in explaining judicial development of negligence: the application of reason to emerging science and technology. The equivalent today is a growing body of scientific evidence that humans are destroying their own habitat through climate change, biodiversity destruction and pollution. Humanity depends on its habitat for survival and therefore each step in this direction increases the risk of its extinction. The courts are already being asked to declare as unlawful governmental decisions that breach human rights and statutory or constitutional protection of the environment. This perspective article proposes that when presented with scientific evidence of habitat destruction in judicial review cases, the courts could examine whether a decision is unlawful and/or irrational. This ‘Paradox Test’ would ask: (1) will the decision contribute to the destruction of the human habitat and (2) if so, is it justified on the ground of necessity? It is proposed that a decision that failed such a test would be unlawful and irrational as contrary to what is arguably the most fundamental law of nature: species survival. The essay defines the Paradox Test, sets it in an historical context and positions it as implicitly inside the boundaries of current English doctrine of judicial review, where it would need to be judicially recognized. Consequently, practitioners are invited to apply the test in court and to share their experience.

Keywords: climate change; climate litigation; habitat; common law; natural law

Introduction

Part I sets out a model test of irrationality and unlawfulness that can be adapted and deployed by practitioners in litigation seeking to prevent environmental damage such as global heating and biodiversity loss. The ‘Paradox Test’ can be applied in all jurisdictions to challenge legislative and administrative decisions that threaten the survival of our species.

It is both irrational and unlawful for a government to do something whose stated purpose is to benefit any individual or group of people, but whose effect will be to cause or accelerate the extinction of the entire human species. The same applies where a government fails to undertake legal duties that are necessary for the survival of the species. It is ‘irrational’ in the sense that the pursuit of a minor gain cannot be rational if such a pursuit would deprive the beneficiary of that gain as well as much more. ‘Illegal’ in the sense that if the law does not protect the human species, it fails in its most essential function.

Such actions, or failures to act, can only be justified on the ground of necessity, which will be defined in relation to comparable legal concepts. Necessity is an objective and strict test and, like the tests of unlawfulness and irrationality, is based on scientific evidence. Thus, the Paradox Test is a calculation derived exclusively from the laws of nature—chemistry, physics and biology.

Part II sets out the logic and scientific evidence which inform the test. The name reflects the paradox that *homo sapiens* has the ‘intelligence’ both to destroy itself and to do so knowingly and that this intelligence includes the ability to create legal systems that can promote or prevent such destruction. The ultimate paradox is that the courts should ever need to apply such a test.

Part III places the test in the context of English common law and the related civil law tradition of natural law. English law is an edge case as it has a stricter and more limited scope of judicial review than most other jurisdictions, yet the Paradox Test falls squarely within the strictest definition of judicial review in English law.

The common law and natural law are founded on ‘the laws of nature’, albeit that in this account of ‘nature’, humanity has been divorced from the natural world. This has led to the perverse situation in which individual rights and obligations have expanded while the species moves inexorably towards extinction. Common good constitutionalism recognizes the dilemma but lacks the grounding in the laws of nature to give it objectivity and legal effect. By re-affirming the historical identification of ‘natural law’ with ‘the laws of nature’, but now through the lens of modern science, there is a solid legal foundation for promoting the common good of humanity through judicial review.

The article concludes by asking practitioners to apply the Paradox Test in their own litigation, adapted as they think fit to their legal systems, and to share their experience so that the Paradox Test can be developed as a universal principle of climate and environmental litigation.

Part I—The Paradox Test

‘Some people think that all rules of justice are merely conventional, because whereas a law of nature is immutable and has the same validity everywhere, as fire burns both here and in Persia, rules of justice are seen to vary.’—Aristotle [1].

Received: May 25, 2023. Revised: July 5, 2023. Accepted: July 10, 2023

© The Author(s) 2023. Published by Oxford University Press.

This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted reuse, distribution, and reproduction in any medium, provided the original work is properly cited.

Environmental litigation can be conducted in public or private law. This article is concerned with public law, where the subject of the litigation is an act, decision or failure to act by a public body. For the sake of simplicity, we will call these all ‘decisions’. The respondent could be the legislature, the executive or the judiciary itself. For the purposes of this article, we will take three sample cases:

Case A—where the respondent is an agency granting a license for the development of new fossil fuel resources.

Case B—where the respondent is a regulator who has declined to carry out inspections and enforcement actions required to protect land, water and air from pollution caused by the release of nitrogenous materials into the countryside.

Case C—where the respondent is the national or federal legislature which has passed a law that includes a provision giving local communities the right to veto the permitting of onshore wind power generation.

In each such case, let us assume that the respondent is acting in line with policies of the UK government. In the first case, the policy is to increase the domestic production of fossil fuels so as to reduce imports. In the second, the policy is to work with farmers through voluntary efforts to reduce pollution and not to jeopardize food production. In the third, the government is responding to local communities who object to the visual effect of wind turbines.

In each case, the applicant is challenging the decision on the basis that it will have a material and negative effect on climate change and the environment. The first case is that the decision will not only increase the UK’s greenhouse gas emissions, it will increase international emissions and will also undermine efforts to reduce dependence on fossil fuels. The second case is that government inaction is causing excessive emissions of nitrous oxide (a powerful greenhouse gas) as well as killing soil and causing severe damage to river and sea life. The third case is that the ban will limit the rate at which the country builds renewable energy, leaving it more dependent on fossil fuels.

We will now examine the legal approach that would typically take place under English law, but with a sufficient degree of abstraction such that the general principles emerge alongside the peculiarities of the English legal system.

In the first and second cases, the decisions would be subject to judicial review on grounds of (a) illegality, (b) irrationality and (c) procedural impropriety. In the third case, the courts would entertain judicial review if there were a *prima facie* case of a breach of the Human Rights Act 1998, but in all three cases, the applicants would rely on the Human Rights Act. In a case of statutory interpretation, the applicants might rely on the principle of legality as described by Warnock and Preston [2] in an article which draws on the common law canon in the context of the climate emergency.

In response, the government’s lawyers would argue in all these cases that the decision in question is a matter of policy; that it involves the balancing of different interests and that in the English constitution, this balancing and decision-making is the function of the government or Parliament, and not of the judiciary. If a breach of the European Convention on Human Rights (ECHR) was argued, then the Government would seek to show that (a) there was no breach of a protected right and (b) that if there were, it was justified on the grounds of derogation in the ECHR. This, they would argue, is also a balancing exercise and one that the democratically elected government is

constitutionally best-placed to decide, albeit that the courts have a right of review.

So far, what has been described should not be contentious. It is intended as a description of the *lex lata*, the law and procedure as they exist. At this point, however, we move to the *lex ferenda*, an imagination of how the law might develop. This would most likely be through judicial law-making, although a government concerned with the subject could enact the test through legislation. In either case, the Paradox Test can be deployed in three ways: (1) inside a challenge on the ground of irrationality; (2) inside a challenge under the ECHR or (3) as a free-standing principle of common law in England (or natural law in civil jurisdictions). The test has two legs:

1. Will the challenged decision, in its own right or in combination with other similar decisions (past, present and future), contribute towards the destruction of the human habitat through climate change, biodiversity loss, pollution or other scientifically established mechanisms?
2. If so, is the decision necessary?

The burden of proof in the first leg would be on the applicant; in the second leg, it would fall on the government. The standard of proof would be the balance of probabilities.

The underlying principles of the test are set out in the next section. From the perspective of its application, however, it should be noted that:

1. The two legs are independent of one another.
2. The only evidence admissible under both legs would be scientific. Political, social and economic arguments are irrelevant, as we shall see.
3. The tests are objective.
4. Procedurally, the court may decide to hear each side’s arguments on both legs of the test or it might decide to address the first leg first, hearing from both sides. In the latter case, which is analogous to a criminal trial where the prosecution must establish that the defendant has a case to answer, the court would decide whether the applicant had established its case on the balance of probabilities. If the judge so finds, the respondent might decide not to seek to put forward a justification of necessity.

Part II—Logic and evidence

This part sets out the principles which underlie the Paradox Test. These are not arguments from law or the history of law, but a combination of logic, scientific laws and scientific evidence.

The first leg

The first leg of the test is ‘Will the challenged decision, in its own right or in combination with other similar decisions (past, present and future), contribute towards the destruction of the human habitat through climate change, biodiversity loss, pollution or other scientifically established mechanisms?’

This leg is a set of propositions supported by scientific evidence. Before examining that evidence, as compelling as it may be, it is important to note that the science tends towards conservatism [3] and that there has been ‘a collective, and rather successful, attempt to ignore the scale of the problem’ [4]. Nonetheless, the gravity of the situation cannot be overstated, ‘hundreds of millions of people are sadly already on the apocalyptic frontline of challenges to their livelihoods’ [5]. The

following evidence is drawn from international organizations or government-commissioned studies which, as exemplified by the Intergovernmental Panel on Climate Change (IPCC), generally add a further layer of caution as a result of their consensual processes. Consequently, the evidence may be conservative but, 'from a fact-finding perspective, this means that IPCC findings should be considered irrefutable in court' [6].

- A. The earth's biosphere is our habitat and as a species we depend upon it for our existence. The UN Secretariat of the Convention on Biological Diversity (CBD) advises that all food systems depend on biodiversity through pollination, pest control and soil fertility. Healthy ecosystems also underpin delivery of water supplies and water quality. The capacity of ecosystems to provide the essential services on which we depend is in decline. The species responsible for pollination are moving closer to extinction, as are species used for food and medicine [7].
- B. Greenhouse gas (GHG) emissions, pollution and other human impacts are degrading the biosphere. The CBD notes that demand for resources is having impacts 'well above safe ecological limits'. Pollution from excess nutrients (including fertilizers), pesticides, plastics and other waste is causing biodiversity loss and damaging ecosystem function. Plastics are severely impacting marine ecosystems [7]. The Stern Report concludes that 'climate change threatens the basic elements of life for people around the world—access to water, food, health, and use of land and the environment'. The effects are wide-ranging. The melting of glaciers will reduce water supplies to one-sixth of the world's population. Declining crop yields 'are likely to leave hundreds of millions without the ability to produce or purchase sufficient food' [8].
- C. Rapid and comprehensive system change is required in relation to food and land use, energy production and pollution in order to prevent the worst scenarios occurring. The United Nations Environment Programme (UNEP) describes a 'triple planetary crisis of climate change, pollution and biodiversity loss'. Drastic cuts in emissions are required: 'A stepwise approach is no longer an option ... Wide-ranging, large-scale, rapid and systemic transformation is now essential to achieve the temperature goal of the Paris Agreement'. 'This will require not just incremental sector-by-sector change, but wide-ranging, large-scale, rapid and systemic transformation'. This concerns financial and food systems as well as the more obvious energy and transport sectors. 'Transforming food systems is not only important for addressing climate change and environmental degradation, but also essential for ensuring healthy diets and food security for all' [9].
- D. Every action that degrades our habitat increases the risk and every such action that is prevented reduces the risk. Notwithstanding that negative change is occurring at the system level and positive change needs to do the same, both negative and positive changes consist of individual and specific activities. 'Every fraction of a degree matters: to vulnerable communities, to species and ecosystems, and to every one of us' [9].
- E. Time is of the essence. Non-linear effects such as feedback loops and tipping points mean that with each day that passes risks increase while the time horizon comes closer. In addition, looking at averages ignores the much larger impacts that can occur locally but with global implications,

for example at the poles and in biodiversity centres like the Amazon. The risk is now that there will be an existential threat to humanity during the lifetime of people alive today. The Stern Report identified nearly 20 years ago that 'if annual greenhouse gas emissions remained at the current level, concentrations would be more than treble pre-industrial levels by 2100, committing the world to 3–10°C warming, based on the latest climate projections'. Emissions have in fact risen since 2007. The implications are beyond modelling: 'A warming of 5°C on a global scale would be far outside the experience of human civilisation and comparable to the difference between temperatures during the last ice age and today' [9].

Given these facts, it should be self-evident that the courts cannot rely on the legislature or executive arms of government to take the necessary action. Both in the UK and internationally, governments have failed to meet even the targets they themselves have set. A recent assessment of progress over 40 indicators of systems change found that none is on track to meet 2030 targets [10]. Reports by the UK government's own bodies demonstrate that in spite of numerous commitments and targets, performance has deteriorated in almost every indicator of natural capital [11]. The UK Office for Environmental Protection (OEP) found that 'Biodiversity is intrinsic to the health of the environment and yet we are witnessing a chronic decline in species abundance in this country. Government is required by law to halt this decline by 2030. Species naturally depend on habitats, but the condition of many areas of land so essential to threatened species has continued to deteriorate'. The OEP's chair noted that the UK has 'fallen far short of what is needed to meet Government's ambition to leave the environment in a better state for future generations ... many extremely worrying environmental trends remain unchecked, including a chronic decline in species abundance' [12].

In relation to climate change, the main challenge for the UK is taking the actions necessary to deliver the UK's Net Zero Strategy, published in 2021. The Climate Change Committee considered that there are credible, funded plans in place for 39% of the emissions cuts. These plans relate to the new rules for zero-emission vehicles and the deployment of renewable energy. There are, however, significant gaps including agriculture and land use and buildings [13].

The seriousness of the threat has been recognized by the courts. Lord Carnwath, a retired judge of the UK Supreme Court, describes *Juliana v United States* as a case in which the US Court of Appeals for the 9th Circuit accepted the existential threat that climate change represents. The majority judgment stated that 'A substantial evidentiary record documents that the federal government has long promoted fossil fuel use despite knowing that it can cause catastrophic climate change, and that failure to change existing policy may hasten an environmental apocalypse ...' [14].

In summary, the weight of scientific evidence and logic demonstrates that any government action which contributes to the further destruction of the human habitat is part of a trend that will continue to cause grave and extensive damage and that this damage puts the safety and existence of the species at risk, and during the lifetime of people alive today. This is the logic and evidence that underpin the first leg of the Paradox Test.

The second leg

The second leg of the test is 'If so, is the decision necessary?' This leg permits a broader range of considerations than the first, but needs that could justify the destruction of the human habitat are inevitably limited. They would include those basic provisions that are objectively and universally necessary to support and protect life, but not those subjective needs that are better described as desires or expectations. Something is necessary if not having it would compromise the health and longevity of people. Critically, however, the legal test is not whether food or energy is necessary, but whether the decision in question is necessary to meet those needs.

As the three cases show, the legal challenge may not be to the government's stated objective but to the means being pursued. The stated objective in Case A is to produce energy, Case B concerns food production and Case C the protection of the countryside. However, the respondent in each case cannot simply demonstrate that food, energy and countryside are necessary. The respondent must show, given the damage that will be caused by the decision, that the UK *needs* more fossil fuel production or that excessive nutrient run-off is *necessary* to produce food. In the third case, the respondent must show that there is an objective human need that can only be satisfied by banning onshore wind turbines.

In the next section, we will examine the meaning of 'need' and 'necessity' but regardless of the definition, these three cases already illustrate how difficult it would be for the government to demonstrate necessity. One challenge would be internal inconsistencies between government policies. In Case C, government policy is to protect the countryside, while in Case B it is causing it great harm. In Case A, the policy is to promote domestic energy for reasons of security and cost, while in Case C it is refusing to allow onshore wind generation.

Part III—Legal context

'The only direct utility of legal history (I say nothing of its thrilling interest) lies in the lesson that each generation has an enormous power of shaping its own law' [15].

The common and natural law traditions

Whereas the common law is recognized by the courts as positive law, natural law is typically seen today as a theory of how the law should be. Whether in its traditional or modern forms, natural law has been assumed to be incapable of promoting protection of the environment because it is fundamentally anthropocentric—and antagonistic to ideas of the collective good [16]. It has been argued that traditional natural law could be applied in support of an ecocentric approach, that is, protection of the environment for its own sake [17]. However, this essay is not arguing for the law to subsume individual interests in favour of ecocentrism or collectivism. The threat to human survival means that any version of self-interested rationalism would have to acknowledge that the self-interest of every single individual human is to preserve the existence of the species. All other goods depend on this one.

In fact, natural law has visited a version of this problem before. In 1987, at the end of the last Cold War, Finnis *et al.* [18] argued that nuclear deterrence could not be morally justified, even though they acknowledged that it was necessary to deter Soviet aggression and tyranny. They also recognized the harm that would be caused to the common good if their proposal of

unilateral disarmament was adopted. Nonetheless, they held that natural law dictates that a morally upright person must repudiate even the intention to take innocent life: it is better to suffer evil than to do evil. Finnis' natural law appears therefore to proscribe any action that would lead humanity towards the destruction of its habitat if, as we have seen, this would lead to the large-scale loss of life. Further, it would not admit the possibility that a cost-benefit analysis could justify any such action (p. 252).

While modern natural law may not be recognized by the courts today, traditional natural law can be described as an implicit principle of common law and a more explicit principle in civil law jurisdictions. The common and natural law traditions share the same fundamental principles, notably: (a) the recognition of higher principles of law than the positive laws enacted by people; (b) accessing those principles through reason and due legal process and (c) the judiciary as the body constitutionally empowered to undertake this process. The UK, USA, India, Canada and Australia are common law jurisdictions where a substantial part of the law has been made over the centuries by judges.

The law follows the science in two senses. The first is that as science and technology advance, people create new legal issues, often because of unforeseen effects of new products (e.g. thalidomide). The second is that (usually after a time lag) people become aware of the problem, giving rise to novel legal issues, and science makes it possible for a court to assess the causes and effects of these problems forensically. Both common law and statutory law develop as a result. In this case, we are now at the point at which courts can take judicial notice of the existential risk to humanity caused by habitat destruction and climate change. Armed with this knowledge, the courts may conduct judicial review understanding the implications of governmental decisions in a way that they did not previously. They could apply the Paradox Test because it is the common and natural law response to these facts: the application of reason and reasonableness to this situation.

This fundamental principle of the common and natural law demanding reason and reasonableness in the face of developments in science is the only aspect of legal history that need concern us here. The purpose in referring to history is not to promote an abstract theory of law, but the opposite: to show how legal practice is already founded on this principle. To this end, no better resource exists than the description of the philosophy of the common law, its relationship to natural law, the laws of nature and the advances of science and technology set out 120 years ago by the jurist Sir Frederick Pollock (1845–1937). Given the natural conservatism of courts, it is of significance that the authority for our interpretation of both common and natural law derives from over a century ago when the present facts were not known.

In *The Expansion of the Common Law* (1904), Pollock describes how the law of negligence had developed in the nineteenth century, owing little to precedent and everything to changing times. 'In days when mechanical arts were few and simple, and the determination of disputed facts was still a rude and uncertain process' the courts essentially held a man liable only for his positive actions. 'But the law was capable of growing to the demands of new times and circumstances ... [the application] of living and still expanding principles. The knowledge and resources of a reasonable man are far greater in the twentieth than in the sixteenth or the eighteenth century, and accordingly so much the more is required of him'.

Even more remarkable is the formation, dating from less than forty years ago [of a] body of rules demanding a special and intensified caution from the occupiers of [fixed property]. [These] rules, which are still increasing in importance, [can be grouped] under the rubric of 'Duties of Insuring Safety'. *The justification of their existence lies not in any ancient maxims or forms of pleading, but in the intrinsic and indefensible competence of the law to stand in the forefront of social morality. We have powers of controlling the material world, and holding its various energies ready to be directed to our ends, which were wholly unknown to our forefathers. With those powers have come risks which were equally unknown to them.*

... In following and enlarging such rules we have really set them on a new foundation. Responsibility to one's neighbours increases in proportion as one's undertaking involves elements of common danger; and there comes a point of risk at which nothing short of 'consummate care' will serve, and no prudence is allowed to count as such in law which has not proved sufficient to avert disaster in fact. [emphasis added]

Pollock recognizes that the common law may even move too far, but avers that 'the zeal that devours is better, at any rate, than sloth that rusts. There must be fluctuations and now and then a safe step in a secular process like that of our science' [19].

In *The History of the Law of Nature* (1900), Pollock describes the long tradition of natural law. Pollock traces what he calls 'the law of nature' back to Aristotle's *Nicomachean Ethics* and the passage quoted at the head of this article, and forward through early modern European and English law. Aristotle distinguishes between human customary law, which varies locally, and natural law which is as universal as the (other) laws of nature—as *fire burns here and in Persia*. Pollock not only describes the common law as having the same roots and logic as natural law but as bearing its influence. He quotes (*The Expansion*: 109) the passage from Christopher St. German's *Doctor and Student* (1523) in which the Doctor explains that English lawyers do not use the term 'natural law' but mean the same:

As when anything is grounded upon the Law of Nature, they say that Reason will that such a thing be done; and if it be prohibited by the Law of Nature, they say it is against Reason, or that Reason will not suffer that to be done.

Pollock notes that (like the common law) natural law 'was a quite living doctrine ... What is more, it never ceased to be essentially rationalist and progressive'. But he also notes how degraded natural law has become: 'Modern aberrations have led to a widespread belief that the Law of Nature is only a cloak for arbitrary dogmas or fancies' [20]. But Pollock does not accept this verdict (*The Expansion*: 128):

I have endeavoured to show that the Law of Nature is not, as the English utilitarians in their ignorance of its history supposed, a synonym for arbitrary individual preference, but that on the contrary it is a living embodiment of the collective reason of civilized mankind, and as such is adopted by the Common Law in substance though not always by name.

Both the positive and negative aspects of Pollock's assessment of natural law apply today. But the critical point here is that both the common law and natural law appeal to a universal standard of reason and reasonableness—pointing to objective tests at law. Also, as Pollock observes in relation to negligence, reasonableness develops with our understanding of the world around us. It is the laws of nature that inform our ability to manipulate our

world and our understanding of the consequences of our actions. As our power and understanding progress so does the standard of what precautions it is reasonable for us to take to protect ourselves. The laws of nature are not human laws, but predictable rules of cause and effect. In the present case, the chain of cause and effect is: human activity > climate change, loss of biodiversity and pollution > habitat destruction > species extinction.

There is, however, common ground between at least one strand of modern natural law theory and the science-based view of Pollock. This lies in 'common good constitutionalism' which proposes that classical law is the basis of all European legal systems and the US constitution. This approach rejects both progressive and conservative interpretations of the US constitution, on the basis that both found themselves on *individual* rights and freedoms. The common good is more than the sum of individual goods; and personal rights and freedoms are the product of the common good, not its source. The classical tradition is the natural law tradition, appealing to principles higher than positive law:

The classical tradition ... openly embraces the view that law is ordered to the common good, explains why it is law's nature to be so ordered, and claims that the positive law based on the will of the civil lawmaker, while worthy of great respect in its sphere, is contained within a larger objective order of legal principles and can only be interpreted in accordance with those principles [21].

Natural law has not been driven out of the law, it has simply been driven underground—a view that echoes Fortescue and Pollock. The prospect of humanity's destroying itself at the species level is the definitive infringement of the 'common good'. Consequently, Vermeule proposes (p. 69) that judicial review should interpret the US constitution

to afford public authorities latitude to promote the flourishing of political communities, by promoting the classical triptych of peace, justice, and abundance, and their modern equivalents and corollaries. These include health, safety, and a right relationship to the natural environment. In a globalized world that relates to the natural and biological environment in a deeply disordered way, a just state is a state that has ample authority to protect the vulnerable from the ravages of pandemics, natural disasters, and climate change, and from the underlying structures of corporate power that contribute to these events.

This description of humanity's relationship with the natural world and its implications for the common good—and therefore law—is consistent with our analysis. However, Vermeule refers to a 'classical triptych of peace, justice, and abundance'. This presents a potential conflict with the Paradox Test, which would require governmental action to be justified on the ground of *necessity* not *abundance*. Abundance is a subjective matter while necessity is not. A government charged with providing *abundant* food and energy will have more latitude to degrade the environment than one whose duty is to meet the needs of its people.

Vermeule's source for the triptych is the *Reason of State* (1589) in which Botero defines *abundance* as when people 'have the necessary food at a good price' while the duty of government is to prevent 'scarcity of provisions and shortage of bread' [22]. Evidently, Botero is describing *necessity* not *abundance*. We will speak more of necessity below, but the point here is simply that the classical tradition and common good constitutionalism are not inconsistent with the Paradox Test. A just government must protect the environment *and* provide for people's needs. Both can be objectively assessed and there is no trade-off between them

since humanity is perfectly capable of meeting its needs without compromising the environment. The trade-off comes in the pursuit of abundance, as we see from the fact that 1% of the world's population is responsible for more GHG emissions than the poorest half of humanity [23]. Abundance is not part of the common good, it is destroying it. The correct legal formulation, therefore, under common law, natural law and common good constitutionalism, is that humanity cannot lawfully destroy its own habitat knowing that this will result in the extinction of our species. *To do so is irrational and therefore unlawful.*

The test of reasonableness in English judicial review

The Paradox Test could be applied in three dimensions of public law: (1) in legislative functions including policy formation, primary and secondary legislation; (2) in the decisions of government officers and agencies such as planning and other permitting functions and (3) by tribunals and courts in appeals and judicial review.

The Human Rights Act 1998 has changed the nature of judicial review in England by establishing the rights of the courts to apply the ECHR to all decisions of public bodies, including primary legislation by the Houses of Parliament. Nonetheless, English public law is the edge application of the Paradox Test as it has a stricter and more limited scope of judicial review than most other jurisdictions; England lacks either a written constitution or a constitutional court and has a doctrine of Parliamentary supremacy. Yet, in English law, as in any legal system, the rule of law prevails over all other social, political and economic considerations.

In *Council of Civil Service Unions v Minister for the Civil Service*, Lord Diplock identified three grounds for judicial review: illegality, irrationality and procedural impropriety. He added, 'That is not to say that further development on a case by case basis may not in course of time add further grounds'. The courts have been consistent in their understanding of the 'illegality' and 'procedural impropriety' tests although the former is now informed by the application of human rights protections.

By 'irrationality' I mean what can by now be succinctly referred to as 'Wednesbury unreasonableness' (*Associated Provincial Picture Houses Ltd. v. Wednesbury Corporation* [1948] 1 K.B. 223). It applies to a decision which is so outrageous in its defiance of logic or of accepted moral standards that no sensible person who had applied his mind to the question to be decided could have arrived at it. Whether a decision falls within this category is a question that judges by their training and experience should be well equipped to answer, or else there would be something badly wrong with our judicial system [24].

'Wednesbury unreasonableness' is generally accepted to be the strictest interpretation of the 'irrationality' test and, as Craig observes, subsequent judgements have distanced themselves from it:

This was judicially recognized most explicitly by Lord Cooke, who regarded *Wednesbury* as a retrograde decision in terms of the extremity that the claimant had to prove to succeed ... It has moreover been shown that the very narrow interpretation of reasonableness currently used as the base point does not cohere with historical usage of the term [25].

Craig was later quoted with approval by the House of Lords in *Kennedy v Charity Commission*. Lord Mance described a flexible approach to judicial review based on the context. This determines not only the questions that the court will ask in judicial review,

but also the intensity with which it will examine the decision. The court will consider substance as well as procedure, and fact as well as law—if the issues at stake justify intense scrutiny:

More recently, the same process was carried further by emphasising that the remedy of judicial review is in appropriate cases apt to cover issues of fact as well as law—see the cases referred to in para 38 above. As Professor Paul Craig has shown (see e.g. 'The Nature of Reasonableness' (2013) 66 CLP 131), both reasonableness review and proportionality involve considerations of weight and balance, with the intensity of the scrutiny and the weight to be given to any primary decision maker's view depending on the context. The advantage of the terminology of proportionality is that it introduces an element of structure into the exercise, by directing attention to factors such as suitability or appropriateness, necessity and the balance or imbalance of benefits and disadvantages. There seems no reason why such factors should not be relevant in judicial review even outside the scope of Convention and EU law. Whatever the context, the court deploying them must be aware that they overlap potentially and that the intensity with which they are applied is heavily dependent on the context. In the context of fundamental rights, it is a truism that the scrutiny is likely to be more intense than where other interests are involved [26].

Given that the Paradox Test would address the most profound breach of human rights—species extinction—the most intense scrutiny would be warranted. On the contextual understanding of judicial review, the Paradox Test could be applied either as the main test of irrationality or as part of a broader review of the merits of the decision. For example, the decisions in our three cases could all be challenged on the basis of proportionality as described above by Lord Mance, considering 'factors such as suitability or appropriateness, necessity and the balance or imbalance of benefits and disadvantages'. A court would struggle to find any necessity or scientific evidence to justify a ban on on-shore wind turbines when three UK governments of the same party promoted three different policies on this within the same year [27].

But the Paradox Test does not depend on such an analysis or on a broad understanding of judicial review. It is a test of *Wednesbury* unreasonableness applied to a certain category of government decisions that threaten the species: if there is no necessity that would justify the scientifically demonstrated consequences of these decisions, they are 'decisions so outrageous in their defiance of logic that no sensible person who had applied their mind to the question to be decided could have arrived at them'.

In conclusion, the Paradox Test would not be a progressive development of the law dependent on the courts expanding the scope or intensity of judicial review. It would be a conservative application of common and natural law principles as they have been understood for over a century and as they are practised as positive law today. In judicial review, the Paradox Test would be available on the narrowest not the widest interpretation of judicial review.

Necessity

This section provides some legal context for the idea of necessity, which would form the second leg of the Paradox Test. If the Supreme Court was in due course to accept the logic premises of the first leg of the test, then there would be very little debate about its application in subsequent cases. It is likely to be on the second leg where such cases would be fought.

Before turning to the law, there is one striking example in the scholarship of the distinction we are seeking to make between necessity and cost-benefit analysis, in which Wiggins distinguishes vital needs from more subjective desires in the context of planning and development decisions. He questions the ‘pseudo-science’ of cost-benefit analysis where on one side, there was the “prize of leisure and affluence: mobility” (represented by minutes or hours saved over various routes multiplied by the projected number of motorized trips along those routes) and on the other ‘the annihilation or degradation of many times more than 20,000 established niches for ordinary citizens to inhabit’ [28]. Unlike a desire, a need exists *objectively*: ‘What I need depends not on thought or the working of my mind (or not only on these), as wanting or desiring do, but depends on the way things really are’ [29].

There are numerous applications of necessity in law, of which four are considered here because of their relevance to the present subject-matter: the common law defence of necessity; necessity in human rights law and international law and the *absence* of necessity in the statutory crime of bribery.

The common law recognizes necessity as a defence. One example is where harm is done in the course of medical treatment. In such cases, the defendant must show: (a) that the act is ‘necessary to avoid inevitable and irreparable evil’; (b) that ‘no more should be done than is reasonably necessary for the purpose to be achieved’ and (c) that ‘the evil inflicted must not be disproportionate to the evil avoided’ [30].

In international law, which is derived from the same classical tradition as natural law, wrongful conduct by a state may be justified in case of necessity. This requires the state to satisfy a set of cumulative conditions including that ‘the act in question is the only way for it to safeguard an essential interest against a grave and imminent peril’ [31]. From the above, it is clear that in both common and natural law traditions, a defence or justification of necessity is a very strict test.

Several provisions of the ECHR refer to necessity in the context of restrictions on human rights. The first category relates to the fundamental rights set out in Articles 2 (Right to life), 5 (Right to liberty and security) and 6 (Right to a fair trial); in each case there are exceptions for circumstances, respectively, described as ‘absolutely necessary’, ‘reasonably considered necessary’ or ‘to the extent strictly necessary’.

In Articles 8 (Right to respect for private and family life), 9 (Freedom of thought, conscience and religion), 10 (Freedom of expression) and 11 (Freedom of assembly and association), the ECHR acknowledges that the freedoms may be restricted if *inter alia* the restrictions are ‘necessary in a democratic society’. This phrase has been described as ‘arguably one of the most important clauses in the entire Convention’. As with the Paradox Test, it is necessity that determines when human rights can be restricted. ‘One of the key tasks for the Court and Commission, and one of the most difficult, is to test the persuasiveness of any such defence to ensure that it complies with the genuine interests of democracy and is not merely political expediency in disguise’ [32].

This formulation may be less strict than the way in which necessity is used in the ‘higher-level’ rights, but it is nonetheless a strict test. The Court has made frequent statements about the need to interpret these rules narrowly:

The Court has noted that, whilst the adjective ‘necessary’, within the meaning of Article 10(2), is not synonymous with ‘indispensable’, neither has it the flexibility of such expressions as ‘admissible’, ‘ordinary’, ‘useful’, ‘reasonable’ or

‘desirable’ and that it implies the existence of a ‘pressing social need’ [33].

On the meaning of a ‘pressing social need,’ the Court has stated that it must

determine whether the reasons adduced by the national authorities to justify the interference were ‘relevant and sufficient’ and whether the measure taken was ‘proportionate to the legitimate aims pursued’ In doing so, the Court has to satisfy itself that the national authorities, basing themselves on an acceptable assessment of the relevant facts, applied standards which were in conformity with the principles embodied in Article 10. [references omitted] [34].

In all of the above tests, as with the Paradox Test, the burden of proof falls on the state (as defendant) to demonstrate that its actions are necessary. In none of these examples does necessity mean ‘useful’, ‘reasonable’ or ‘desirable’. In common law, the action must also not be worse than the harm it causes and in international law, it must be the only way to avoid that harm. Consequently, in any of these areas of law, the action must be necessary in the sense that *there is no better way of achieving the same end*. That will be crucial in many cases where the Paradox Test would be applied since it would generally be the proposed *means* rather than the stated *ends* that are being challenged.

Finally, there is the Bribery Act 2010. This Act is important not because it has a defence of necessity, but because it does not. In addition, the UK statute is based on a theory of change that is also central to the Paradox Test and all law—which is that individual decisions matter.

Bribes take two forms: payments to officials to act improperly and bribes to officials to do their job—the latter known as facilitation payments. There are many countries where facilitation payments are common—from securing a doctor’s appointment to being granted an entry visa. Corruption of this nature is a systemic problem and it could be argued that whether a British company or individual pays a bribe does not in itself change the system. In addition, it is quite likely that a company that does not pay bribes will not be able to operate in some countries.

Nonetheless, there is no defence of necessity for facilitation payments in the UK (unlike the US Foreign Corrupt Practices Act). As the UK government points out:

[The OECD] recognises the corrosive effect of facilitation payments and asks adhering countries to discourage companies from making such payments. Exemptions in this context create artificial distinctions that are difficult to enforce, undermine corporate anti-bribery procedures, confuse anti-bribery communication with employees and other associated persons, perpetuate an existing ‘culture’ of bribery and have the potential to be abused [35].

Accordingly, the Crown Prosecution Service advises: ‘There is no exemption in respect of facilitation payments. They were illegal under the previous legislation and the common law and remain so under the Act’ [36].

Just as it is argued that one new oil exploration license will not in itself destroy the human species, so it is argued that one small bribe does not corrupt a country. And just as there may be a short-term argument for relaxing environmental standards to promote national business and economic interests, so there might be for turning a blind eye to bribery that wins business for British companies. And yet, there is no defence of necessity in the Bribery Act.

The logic behind the Bribery Act 2010 is the logic behind the Paradox Test. The courts can only review the cases that come before them. Every bribe—in fact every criminal act—when looked at in isolation could be ignored. But the rule of law is built up of one decision at a time. A healthy legal system is built on the individual decisions of the courts. And the corruption of institutions starts with one bribe and continues with each new one. So, as we make decision after decision that individually and collectively destroy our habitat the only option available to the courts is to strike down those decisions, one at a time. This is how the law works, whether it is to eliminate bribery or to protect the environment.

Conclusion

This article has argued that it is objectively irrational and contrary to the laws of nature that a species should knowingly destroy its own habitat and thereby put its own survival at risk. That humans are doing this, and the consequences of our actions, can be demonstrated objectively through scientific evidence. The only defence for governmental actions that take the human species further down this path is necessity. This concept is present in other areas of law and is a strict and objective test. From these two principles, it follows that the common and natural law traditions, which base themselves on the application of reason to the laws of nature, would declare such conduct irrational and unlawful. The Paradox Test is therefore proposed as a statement of the law as it would apply to such cases.

We now invite legal practitioners to apply the Paradox Test in their own litigation. To do this, they would need to assemble the scientific evidence that the decision they are challenging will contribute to the destruction of the human habitat and that there is no necessity to justify it. They must avoid the trap of mistaking good ends with bad means by focusing on whether the means are the only way to achieve the proposed end. They will need to adapt the Test to their jurisprudence and legal systems. They may use the Test as an additional argument, as part of a test such as ‘Wednesbury unreasonableness’ in the English courts, or as an evidential structure for existing tests. Substantively, it might sit within constitutional provisions that protect human rights or as a separate layer of protection operating at the species level. Some may wish to develop and apply it in private law.

Practitioners and jurists are invited to share their approach and their experience in court with the corresponding author so that we can collectively develop the Paradox Test as a global principle of climate and environmental litigation. We hope that the ingenuity of lawyers and the diversity of international jurisprudence will stimulate the evolution of this doctrine for the benefit of all.

Conflict of interest

None declared.

Authors' Contributions

Adam Parr (Conceptualization [lead], Writing—original draft [lead]).

References

1. Aristotle. *Nichomachean Ethics*. 1134b. In: H. Rackham (ed.), *Aristotle in 23 Volumes*. Vol. 19. Cambridge, MA: Harvard University Press (Perseus Digital Library: Tufts University), 1934. Accessed 1 February 2023.
2. Warnock C, Preston BJ. Climate change, fundamental rights, and statutory interpretation. *J Environ Law* 2023;**35**:47–64.
3. Brysse K, Oreskes N, O'Reilly J et al. Climate change prediction: erring on the side of least drama? *Global Environ Change* 2013;**23**: 327–37.
4. Brown O. *Migration and Climate Change*. IOM Migration Research Series No. 31, Geneva: International Organization for Migration, 2008.
5. Bradshaw CJA, Ehrlich PR, Beattie A et al. Response: commentary: underestimating the challenges of avoiding a ghastly future. *Front Conserv Sci* 2021, p. 2.
6. Cox R, Reij M. *Defending the Danger Line: A Manual for Climate Litigators*. Amsterdam: Paulussen Advocaten and Milieudefensie, 2022, p. 11.
7. Secretariat of the Convention on Biological Diversity. *Global Biodiversity Outlook 5—Summary for Policy Makers*. Montréal, 2020, p. 3, 8, 9, 10.
8. Stern NH. *The Economics of Climate Change: The Stern Review*. Cambridge, 2007, p. 65, 3. <https://doi.org/10.1017/CBO9780511817434>.
9. United Nations Environment Programme. *Emissions Gap Report 2022: The Closing Window—Climate Crisis Calls for Rapid Transformation of Societies*. Nairobi, 2022, p. xvi, xv, xxv, xxvi.
10. Boehm S, Jeffery L, Levin K et al. *State of Climate Action 2022*. United States of America: WRI: World Resources Institute, 2022. <https://doi.org/10.46830/wri.rpt.22.00028>.
11. Natural Capital Committee. Final response to the 25 year environment plan progress report, London: Report to Parliament, 2020. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/933803/ncc-final-response-25yr-env-plan.pdf.
12. Office for Environmental Protection. Progress in improving the natural environment in England, 2021/2022. London: Report to Parliament, 2023.
13. Climate Change Committee. Progress in reducing emissions 2022. London: Report to Parliament, 2022, pp. 21–22.
14. Carnwath R. *Climate Change and the Rule of Law*. Bucerius School, Germany, 2021 (citing *Juliana v United States* No. 18-36082 D.C. No. 6:15-cv-01517-AA).
15. Cosgrove RA. *The Rule of Law: Albert Venn Dicey, Victorian Jurist*. 1980, p. 177. (Quoted in *Council of Civil Service Unions v Minister for the Civil Service* [1985] AC 374, [1984] 3 All ER 935, [1985] IRLR 28, per Lord Roskill at 417).
16. George RP. Natural law. *Harv J Law Public Policy* 2008;**31**:171–96, 73.
17. Donnelly B, Bishop P. Natural law and ecocentrism. *J Environ Law* 2007;**19**:89–102.
18. Finnis J, Boyle J, Grisez G. *Nuclear Deterrence, Morality and Realism*. Oxford: Clarendon Press, 1987.
19. Pollock F. *The Expansion of the Common Law*. London: Stevens and Sons, 1904, pp. 124–26.
20. Pollock F. The history of the law of nature: a preliminary study. *J Soc Comp Legislation* 1900;**2**:418–33, 418.
21. Vermeule A. *Common Good Constitutionalism*. Kindle edition. Polity Press, 2022, p. 12.
22. Botero G. *The Reason of State* (R Bireley, transl.). Cambridge: Cambridge University Press, 2017, 71–2.
23. Chancel L, Bothe P, Voituriez T. Climate inequality report 2023, World Inequality Lab Study, 2023/1. <https://wid.world/document/climate-inequality-report-2023>.

24. Council of Civil Service Unions v Minister for the Civil Service [1985] AC 374, [1984] 3 All ER 935, [1985] IRLR 28, per Lord Diplock; 407ff.
25. Craig P. *The Nature of Reasonableness Review*. 66 CLP 2013, 131–67 (citing Lord Cooke in *R v Secretary of State for the Home Department, Exp Daly* [2001] 2 AC 532, 549 and T Hickman, *Public Law after the Human Rights Act* (Hart 2010) Ch 7).
26. *Kennedy v Charity Commission* [2014] UKSC 20 at [54].
27. Pickard J. Boris Johnson and Liz Truss join Tory rebellion over onshore wind farms. *Financial Times*, **24** November, 2022.
28. Wiggins D. An idea we cannot do without: What difference will it make (e.g. to moral, political and environmental philosophy) to recognize and put to use a substantial conception of need? *R Inst Philos Suppl* 2005;**57**:25–50, 27. <https://doi.org/10.1017/S1358246100009139>.
29. Wiggins D, Dermen S. Needs, need, needing. *J Med Ethics* 1987;**13**: 62–8, 62.
30. Halsbury's Laws of England. *Criminal Law Volume*, Vol. **25**, London: Lexis Nexis, 2020, §51.
31. Halsbury's Laws of England. *International Law and Foreign Relations*, Vol. **61**, London: Lexis Nexis, 2018, §358.
32. Greer SC. *The Exceptions to Articles 8 to 11 of the European Convention on Human Rights*. Human Rights Files No. 15. Council of Europe Publishing, 1997, 14. <https://book.coe.int/en/human-rights-files/717-the-exceptions-to-article-8-to-11-of-the-european-convention-on-human-rights-human-rights-files-no-15.html>.
33. *Sunday Times (No. 1) v. the United Kingdom*, 1979, §59. (Cited in Mendel T. *A Guide to the Interpretation and Meaning of Article 10 of the European Convention on Human Rights*. Centre for Law and Democracy, 2012, 39.)
34. *Cumpănă and Mazăre v. Romania*, 2004, §90. (Cited in Mendel (note 33); 39).
35. Ministry of Justice, *Bribery Act, 2010* (Guidance, 2011).
36. Crown Prosecution Service. *Bribery Act 2010: Joint Prosecution Guidance of the Director of the Serious Fraud Office and the Director of Public Prosecutions*, 2019.